

Kentico CMS 5.5 Developer's Guide



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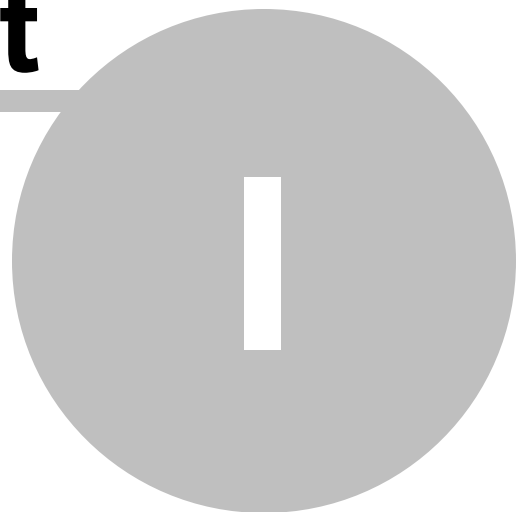
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Part



Introduction

1 Introduction

1.1 Introduction



Thank you for using Kentico CMS, the content management system for ASP.NET developers. Kentico CMS 5.5 empowers developers in creation of dynamic websites. It provides rich functionality out of the box:

- Flexible content repository for storing structured content with versioning and workflow.
- Powerful portal engine for assembling web pages from web parts.
- A wide range of built-in web parts and web controls.
- Export and import for easy deployment.
- Granular security model.
- Support for multiple-site configuration.
- Support for multiple-languages on a single website.
- Many built-in modules:
 - E-commerce
 - On-line forms
 - Forums
 - Image gallery
 - Media libraries
 - Content staging
 - Content rating
 - Blogs
 - Polls
 - Reporting
 - Web Analytics
 - Time zones
 - Booking system
 - User contributions (Wiki)
 - and others

The screenshot displays the Kentico CMS Desk interface. At the top, there's a navigation bar with 'Content', 'My desk', 'Tools', and 'Administration'. Below this is a toolbar with icons for 'New', 'Delete', 'Move', 'Down', 'Edit', 'Preview', 'Live site', 'List', and 'Search'. A sidebar on the left shows a tree view of the 'Corporate Site' with folders for Home, Services, Products, News, Partners, Company, Blogs, Forums, Events, Images, Wiki, Examples, and Special pages. The main content area shows a website template with a 'CompanyLogo' header, a navigation menu (Home, Services, Products, News, Partners, Company, Blogs, Forums, Events, Images, Wiki, Examples), a search bar, and several widgets: 'Newsletter subscription', 'Main text' (with a welcome message), 'Latest news', and 'Do you like our product?'. The interface is clean and professional, designed for easy content management.

Kentico CMS enables a **high level of flexibility, customization and integration** – you can create:

- custom page templates
- custom web parts
- custom document types
- custom workflow schemas
- custom modules

Kentico CMS object model and **open, well-documented application programming interface (API)** allow you to enhance the system and script any system feature by your .NET code. You can also write custom handlers to add your own actions when a system event (such as creation of a new document) occurs.



More product information

You can download Kentico CMS, find additional information, make the purchase and get support at <http://www.kentico.com>

1.2 About this guide

Who is this guide for?

Kentico CMS Developer's Guide contains reference information for Kentico CMS developers and system administrators.

It is expected that you are familiar with the basics of Kentico CMS explained in [Kentico CMS Tutorial](#) (or [Kentico CMS Tutorial ASPX](#) if you are developing in the ASPX page templates mode). It is also expected that you have a certain degree of experience in ASP.NET web development and C# programming to be able to fully understand all articles in this guide.

What information can I find in the guide?

This guide should provide comprehensive reference for website development and administration in Kentico CMS. It provides description of the system's functionality and step-by-step examples of typical development and administration tasks.

How is the guide structured?

The guide is divided into several logical chapters:

- [Kentico CMS overview](#) - basic information about the system and intended for a first-time user
- [Installation and deployment](#) - covers the installation process, additional configuration tasks that might be needed after installation and a troubleshooting section with solutions to usual installation issues
- [Content management](#) - information on how to manage the content of your website; it explains how pages can be edited, how the WYSIWYG editor can be used, how files can be managed, etc.
- [Managing sites](#) - management of sites, i.e. creation of a new site, running and stopping sites, import and export of sites and objects, license management, etc.
- [website settings](#) - overview chapter with links to other sections of the guide where various website settings are explained in different contexts
- [Development](#) - provides information on various topics related to website development and system administration
- [Modules](#) - reference on in-box modules in Kentico CMS
- [API programming and Kentico CMS internals](#) - examples of the usage of Kentico CMS API and explanation of the internals of the system

Valuable reference can also be found in the four appendices:

- [Appendix A - Macro expressions](#) - explains the possibilities of using macro expressions in Kentico CMS
- [Appendix B - Path expressions](#) - explains how path expressions can be entered in various parts of the system
- [Appendix C - Web.config parameters](#) - list of keys which can be added to the *web.config* file of your site to perform additional low-level settings

1.3 Where do I get further help?

This guide is not the only reference available. All documentation can be get in various formats at devnet.kentico.com/documentation.aspx.

If you can't find the information that you are looking for, please visit devnet.kentico.com. This is the official portal for Kentico CMS developers where you can find:

- [Blogs](#)
- [Discussion forums](#)
- [Knowledge base](#)
- [FAQs](#)

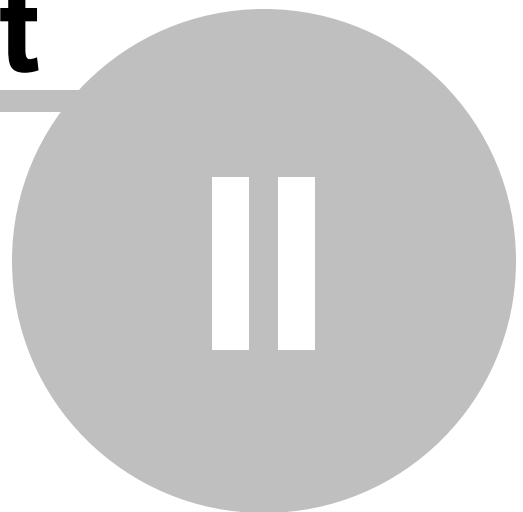
Paid license owners can also contact our highly-responsive support team, please visit www.kentico.com/support.aspx to learn more details.

You are also welcome to send us feedback on particular topics in this guide. You can do it by clicking the **Mail us feedback on this topic!** button at the top right corner of the HTML and CHM versions.

1.4 Version history

Listing of all new features, minor improvements and bug fixes in each released version of Kentico CMS can be found at http://www.kentico.com/Download/Version_History.aspx.

Part



Kentico CMS overview

2 Kentico CMS overview

2.1 What are the benefits of Kentico CMS?

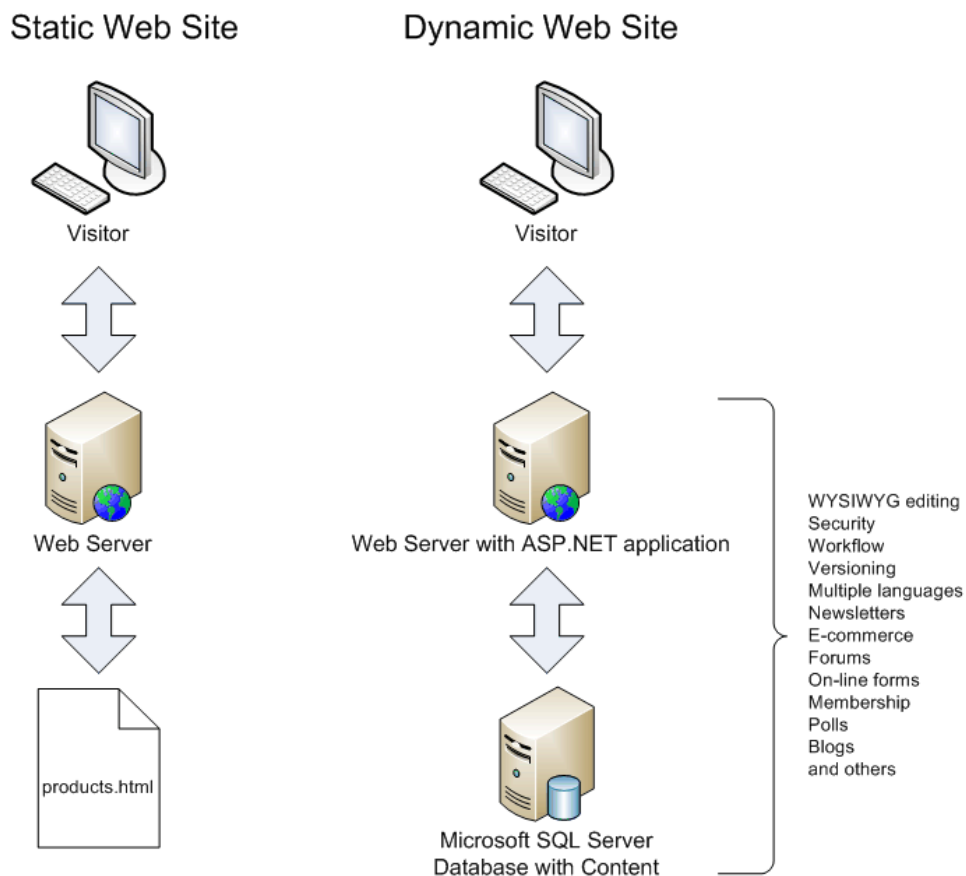
Before you dive into the details, it may be useful to understand the big picture. This chapter explains how the system works, describes its architecture and answers the most common questions you may have.

Is Kentico CMS a standard ASP.NET application?

Yes, Kentico CMS is a standard ASP.NET 2.0 application written in C#. It uses only standard functionality of .NET managed code which means you can use it on basically any ASP.NET 2.0-enabled web server without complicated configuration.

How does the CMS work?

The CMS allows you to manage content of dynamic websites. Unlike static websites that uses static HTML files stored on the disk, a dynamic website displays content from the database. Kentico CMS provides both content storage and all surrounding infrastructure to manage the content and display it on the website. Kentico CMS doesn't pre-render static HTML pages; instead, it renders the content in real time, when it's requested by the visitor.



The main advantages of dynamic website with content management system include:

- **Easy content editing** through a WYSIWYG, browser-based interface for non-technical users
- **Content re-use** - you can display the same structured content in various ways while managing the data at one place
- **Multi-user environment** - website management is not limited to a single web developer
- **Additional functionality and applications**, such as Newsletters, E-commerce, Forums, etc.

Why should I use Kentico CMS and what benefits does it bring to me?

Kentico CMS simplifies the development of dynamic websites. Instead of developing the whole infrastructure for editing, you can utilize the flexible content management framework of Kentico CMS and focus on the site-specific functionality and design. If you consider how much time you would spend only by developing the security system, there's no doubt you should use an existing framework.

With Kentico CMS, you:

- save time and money by developing the dynamic website faster
- focus on the client's business needs instead of core infrastructure
- provide your client with additional functionality, such as Newsletters, Forums, and others that would be difficult and expensive to develop

Is it flexible enough for my needs?

Well, now you may think "If I develop the website from scratch I can create the system and enhance it at any time as my client requests." Yes, you're right, but you can do the same with Kentico CMS. Kentico CMS has been used for hundreds of websites worldwide and it was designed to fit various needs of web developers and their clients. Beside, if you need to add extra functionality, you can:

- create your own modules
- add your own code to the pages
- modify default system behavior using custom handlers and providers
- customize the core engine of the system (if you purchase the source code version)

Kentico CMS was designed for the needs of web developers and their clients. You can be confident that you can **implement basically any website structure, navigation, graphic design and integrate custom functionality**.



Don't take our word for it

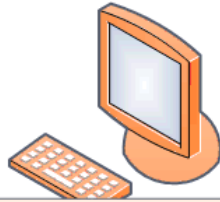
Please visit the Kentico CMS Showcase at <http://www.kentico.com/Showcase.aspx> for reference websites, clients and testimonials.

2.2 How does it really work?

If you're familiar with dynamic websites, you may want to know what the difference between a CMS system and a common ASP.NET website is. Technically, Kentico CMS is just another ASP.NET web application. It's advantage is that it provides a ready-to use framework for all common tasks.

Here's a comparison of page processing in a typical ASP.NET and Kentico CMS:

Common ASP.NET Web Site



http://www.mydomain.com/news.aspx?id=173

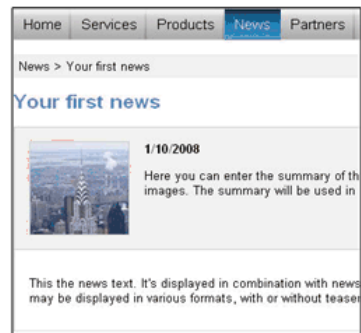


The news.aspx page is called.
 The page parses the ID value.
 The page uses ADO.NET to retrieve the news item.
 The page renders the news item content using server controls.

Kentico CMS Web Site



http://www.mydomain.com/news/your-first-news.aspx



The CMS engine locates the required document, looks up its **page template** and calls the page template with path of the required document.



http://www.mydomain.com/news.aspx?aliaspath=/news/your-first-news



/news/your-first-news



The **page template** contains controls that automatically retrieve the required **document by given path** from the database and applies appropriate **transformation** to display the content with required design.

But it looks more complex!

Yes, the CMS system is more complex to make your job easier. In Kentico CMS, you do not need to develop complex pages, write ADO.NET code or SQL queries.

The CMS does much of that for you and you usually only drag-and-drop controls or web parts and set their properties. Then, you write .NET code only if you need to add additional business logic or functionality that is not supported out-of-the-box.

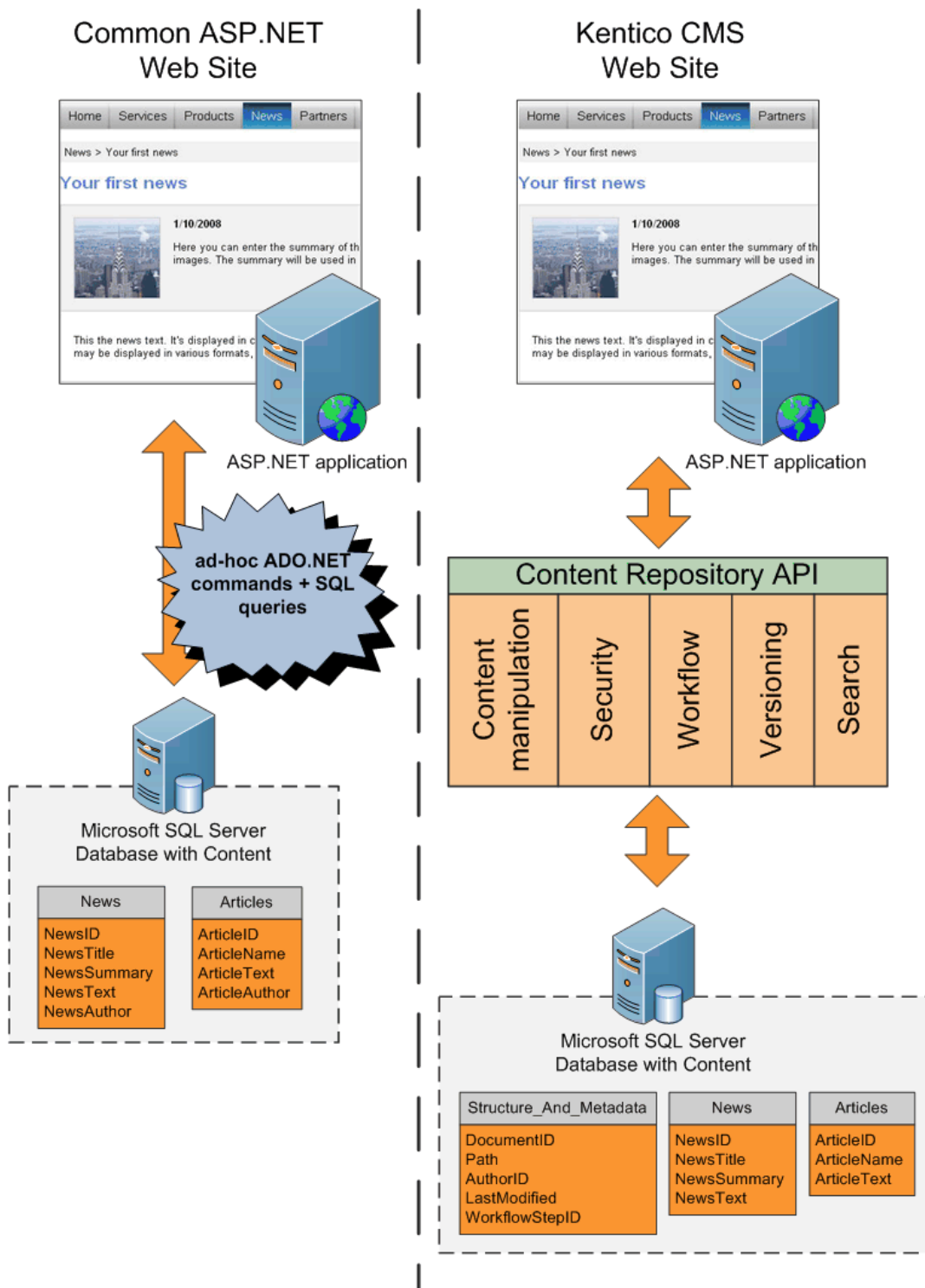
What else does the CMS do for me?

Kentico CMS provides a powerful content repository for your web content. Read the next chapter to learn more.

2.3 Where is the content stored?

Kentico CMS provides a content management sub-system, also known as **content repository**, that allows you to organize website structure and content. Moreover, it provides **a layer of security, workflow, versioning, search** and other services. All types of content can be retrieved and modified through a single **Application Programming Interface (API)**.

The following figure explains the difference between common data access approach and a content repository of Kentico CMS:



As you can see, a common approach to building dynamic websites is to write code for every page and every content type. It means that you need to write similar ADO.NET commands and SQL queries over and over again. With unified content repository, you use a complete set of API methods that allow you to save and retrieve any content type using methods someone wrote for you.

It greatly simplifies the management and retrieval of content since:

- you do not need to write your own methods, **you only call API or use built-in controls**
- **same rules and mechanisms can be applied to any content type**, without writing additional code for every new type

An important part of content repository is **metadata**. The metadata includes:

- content organization into a tree hierarchy that also represents the site map
- information about content authors and modifications
- workflow-related details, such as current workflow step
- content expiration
- permissions for the given document

In the example above, you can see that with classic approach, both News and Articles tables contain the attribute Author. In the content repository, the author is stored in shared metadata for all documents, regardless of their type.



Please note

All metafiles and attachments are stored under a folder specified in **Site Manager -> Settings -> Files -> Files folder**. If this path is not set:

- metafiles of objects not connected with a particular site (global objects) are stored under <web root>/CMSFiles
- metafiles of objects connected with a particular site are stored under <web root>/<site name>/metafiles
- attachments (always connected with a particular site) are stored under <web root>/site name>/files

As you can see, the **content repository represents a systematic approach to content storage, manipulation and security**.

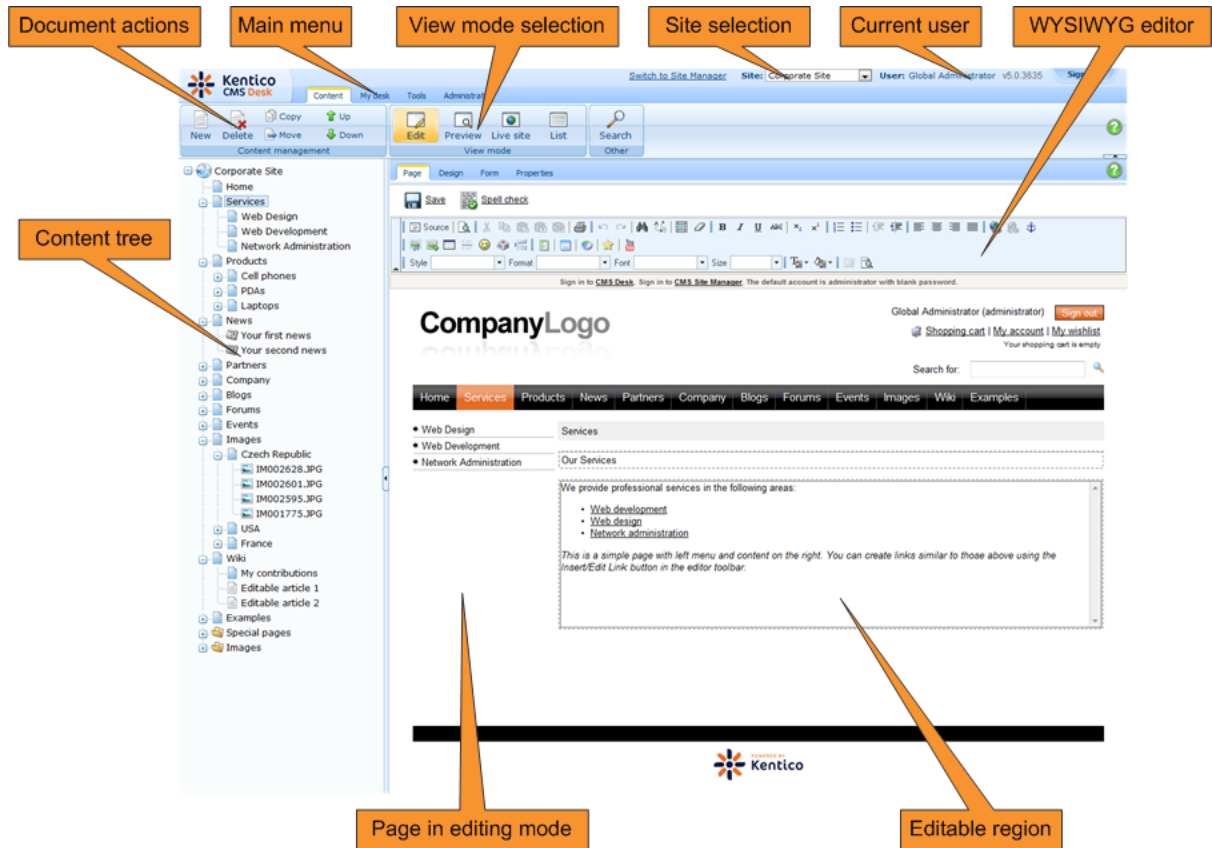
2.4 How do I edit content?

Until now, we were talking about the architecture and how the system works. But how do I edit the content? After all, it's the most important feature of a content management system.

Kentico CMS comes with browser-based administration interface. It's divided into two parts:

- **CMS Desk** (typically <http://www.example.com/cmsdesk>) - the user interface for content editors
- **CMS Site Manager** (typically <http://www.example.com/cmssitemanager>) - the user interface for administrators and web developers

The following figure shows the CMS Desk user interface.



The left **content tree** allows you to browse the content and choose the document you want to edit. The content tree also represents a site map of the site and it's used for rendering navigation. In the following figure, you can see how the content tree, navigation and site map fit together:



The **action menu** allows you to create, delete, copy, move and order documents.

The **view mode** allows you to switch between the following views:

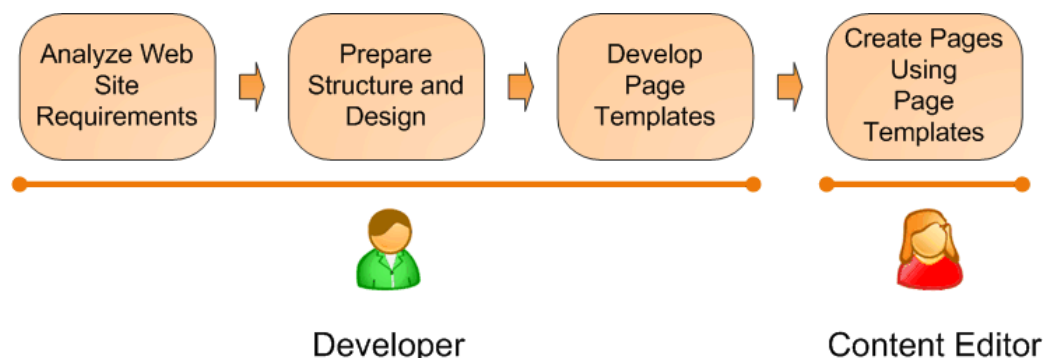
- **Edit** - editing mode
- **Preview** - preview mode. It displays the current version of the page before it's published (if you're using workflow). It also displays the content without using caching, which allows you to preview the content even if the live website displays the cached version.
- **Live site** - live site view
- **List** - displays a list of child documents under the currently selected document. It can be used for delete of multiple documents at the same time and it's useful if there are too many documents in the given section and cannot be browsed comfortably in the content tree.

The **editing area** allows you to edit the content and metadata of the document you selected in the content tree. You can choose from the following tabs/editing modes:

- **Page** - here you can edit the content of editable regions that are used for unstructured content. Besides, any document can have also structured content that can be edited in the editing form on the Form tab.
- **Design** - here you can modify the page layout and web parts (this applies to portal engine development that will be described later in this guide). This tab is only available for global administrators (developers).
- **Form** - here you can modify the structured data, such as news title, news summary, release date, etc.
- **Product** - here you can modify the product specification if the given document represents a product that can be added to the shopping cart (if you're using the e-commerce module).
- **Properties** - here you can modify various settings, permissions, metadata and design settings of the document.

2.5 How do I develop a website?

Now that you know how to edit the content, you may want to know how to develop the website and manage the design. Although these topics will be described later in this guide, let's have take a quick overview of the development process:



This figure shows how you develop the website and how the roles are split between developers and editors. A typical development process consists of the following steps:

1. The developer analyzes the client requirements.
2. The developer prepares the site structure (site map) and web design.

3. The developer creates **page templates** for every type of the page (home page, solutions, products, news, etc.)
4. The content editor creates new pages - they enter text and images into the page templates defined by the developer.

What is a page template?

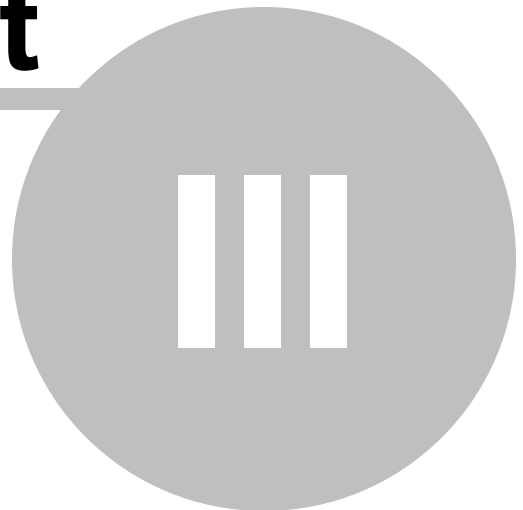
The page template is a predefined look of the page that allows content editors to enter the content. A single page template can be re-used for multiple pages with the same structure and design, but with different content.

The templates allow content editors to focus on content editing, without taking care of the page formatting. They also help keep the web design consistent throughout the website. The following figure shows how a single page template can be used for multiple pages:



The details on page template development will be described later.

Part



Installation and deployment

3 Installation and deployment

3.1 Overview

Kentico CMS installation consists of several steps depending on the installation type:

Installation on the local development machine

- [Setup \(kenticocms.exe\)](#) - installs only the web project files. No changes to the system configuration (registry, IIS or SQL Server) are made. You do not need to run the setup on your production server - it's intended primarily for development machines.
- [Web Installer](#) - creates a new website project and optionally configures IIS or uploads the project to the server using FTP. Again, you do not need to run the Web Installer on your production server - you can run it locally and deploy the files over FTP.
- [Database setup](#) - runs in the web user interface. It creates a new database on your SQL Server with system tables and basic data.
- [New site wizard](#) - runs in the web user interface after you create a new database. It allows you to create a new site managed by Kentico CMS.

Installation on the remote (production) server

On the remote (production) server, it's not necessary to run any executable or register DLL libraries. Unless you have full administrative access to the server, you will typically follow these steps:

- After you install Kentico CMS on your development machine using [Setup \(KenticoCMS.exe\)](#) you need to run [Web Installer](#) on your development machine and choose to install Kentico CMS on a remote server. Choose the temporary folder on your local disk.
- Copy the files from the temporary folder to the production server (e.g. over FTP). If the files are not copied directly to the root of the website, you will need to create a virtual directory - see [Additional configuration tasks -> Creating a virtual directory](#) for details.
- Open web browser and navigate to the root URL of the copied files on your web server.
- The rest of the installation is the same as on the local machine.

If you encounter any problems during the installation, please see the [Troubleshooting installation issues](#) chapter.



Tip: There's no magic behind!

Kentico CMS is a **standard ASP.NET application**. Since it doesn't make any modifications to the system, you can move it to another system as you do with any other ASP.NET project. You can also open the project in Visual Studio and debug it or compile it.

The database is a standard MSSQL database, so you can move it to another server using a common backup/restore procedure. The connection string is stored in the web.config file, in the ConnectionStrings/CMSCConnectionString value.

3.2 System requirements

The following configurations are supported by Kentico CMS. Other configurations may work too, but the system was not tested on them.

Server-side Requirements

- Windows XP, 2003, 2008, 2008 R2, Windows Vista Home Premium/Business/Enterprise/Ultimate or Windows 7 (both 32bit and 64bit)
- Microsoft .NET Framework 2.0 or higher
- Microsoft Internet Information Services (IIS) or Visual Studio/Visual Web Developer 2005/2008/2010 built-in web server
- Microsoft SQL Server 2005, 2008 (including free SQL Server Express Edition)

Hosting Requirements

- ASP.NET 2.0 (or higher) and Microsoft SQL Server 2005/2008 support
- Medium-trust or full-trust permissions for the ASP.NET application
- If the server uses medium trust, ASP.NET AJAX 1.0 must be installed on the server.
- It's recommended that your hosting plan comes with 125 MB or more memory and 100+ MB database.

You can use your favorite hosting provider or choose from our [hosting partners](#).

Development Tools

If you want to create custom web parts or integrate custom code, you need **Visual Studio 2005/2008/2010** or **Visual Web Developer 2005/2008/2010 Express Edition**.

Supported Client Browsers for Content Editors

- IE 7.0, IE 8.0
- Firefox 3.5
- Safari 4.0 or Firefox 3.5 on Mac OS

Supported Client Browsers for Site Visitors

- IE 6.0, IE 7.0, IE 8.0
- Firefox 1.0.5+
- Mozilla 1.7.1+
- Netscape 7.1+
- Opera 7.52+
- Safari or Firefox on Mac OS

(the visitor browser requirements depend on functionality used on the website)

3.3 Installation procedure

3.3.1 Setup (KenticoCMS.exe)



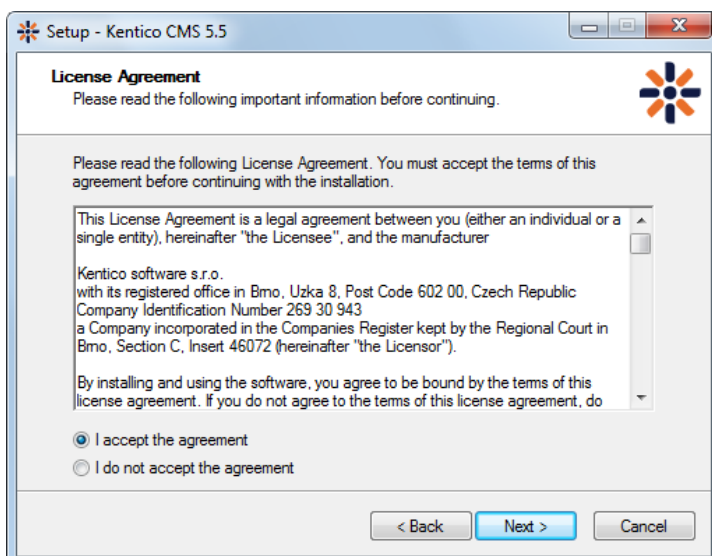
Installation on shared hosting server

If you're going to run Kentico CMS on a shared hosting server, you do not need to run any EXE file or register any DLL file on the server (you're usually not allowed to do that anyway). Please read [Additional configuration tasks -> Installation on shared hosting server](#) to find how to solve this.

1. Run *KenticoCMS_<version>.exe*. You will see the welcome screen. Click **Next**.

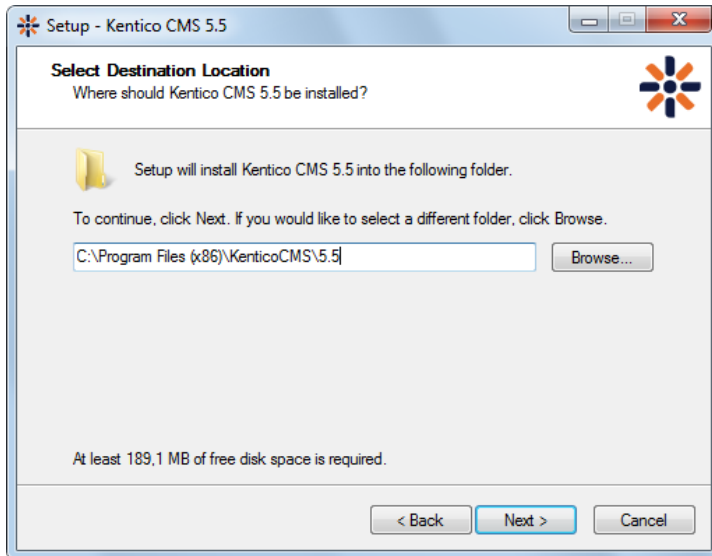


2. Read and accept the license agreement if you want to continue. Click **Next**.



3. Choose the location where Kentico CMS web installer and documentation will be deployed. Click **Next** and then **Install**.

Please note: this is not the folder where your website will be placed, it's only a place for Kentico CMS program files and help files.



4. After the installation is finished, enable the **Launch Kentico CMS Web Installer** option and click **Finish**. Continue to [Kentico CMS Web Installer](#).



3.3.2 Web installer

3.3.2.1 Overview

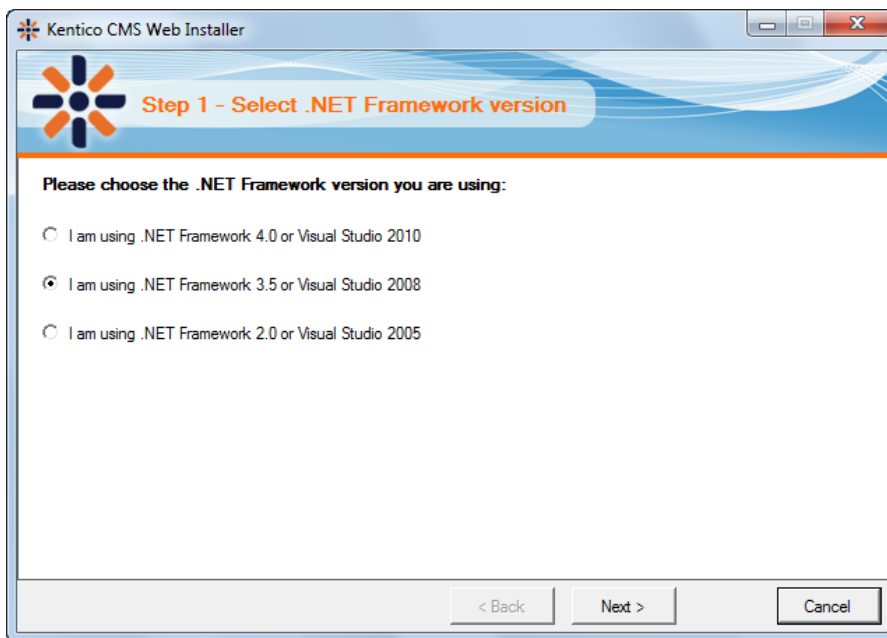
Kentico CMS Web Installer allows you to create a new project and (optionally) configure Microsoft IIS web server.

Step 1 - Select .NET Framework version

First, you need to choose whether you use:

- **.NET Framework 4.0 and Visual Studio 2010**
- **.NET Framework 3.5 and Visual Studio 2008**
- **.NET Framework 2.0 and Visual Studio 2005**

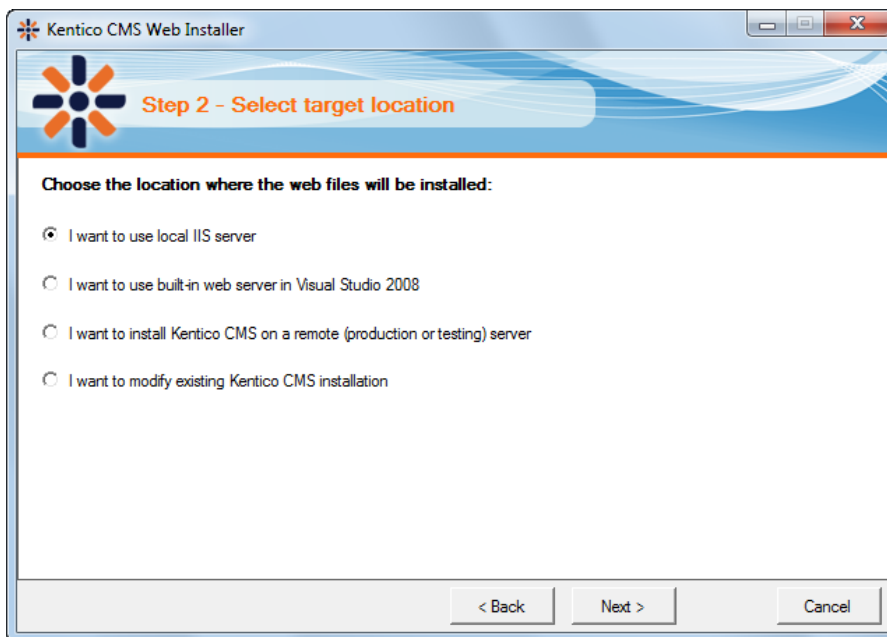
Depending on your choice, the installer will use appropriate web.config and webproject.sln files. The binaries and code are same for all options; they are compiled for .NET 2.0 and can be used with .NET 3.5 or .NET 4.0 as well.



Step 2 - Choosing the target location

Choose one of the options. Click the link to view instructions for the selected option.

- [I want to use local IIS server](#) - you must have local IIS server installed, running and configured for the version of ASP.NET which you chose in the previous step
- [I want to use built-in web server in Visual Studio](#) - you must have Visual Studio or Visual Web Developer Express Edition installed on your local machine
- [I want to install Kentico CMS on a remote \(production or testing\) server](#) - this option only copies the project files to a temporary folder on your disk and you need to copy the files to your production server manually (e.g. over FTP)
- [I want to modify existing Kentico CMS installation](#) - this option modifies (adds or removes components) an existing installation on the local machine



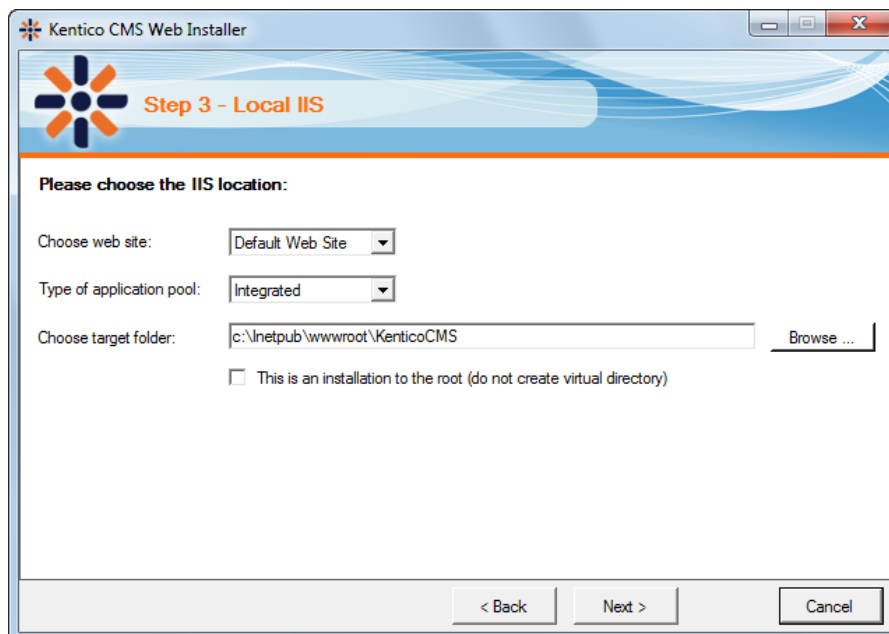
3.3.2.2 Local IIS server

If you run local IIS server on your machine, choose **I want to use local IIS server** in Step 2 of the Web installer and click **Next**.

1. In Step 3, you need to specify the following information:

- **Choose website:** choose one of the websites configured on your IIS; please make sure that the website you choose is running
- **Type of application pool:** type of application pool which will be used for the website (*Integrated* by default, read [here](#) for more information)
- **Choose target folder:** choose the disk folder where web project files will be placed

Please note: if you're installing Kentico CMS into the root of your website (such as *http://www.domain.com*) and do not wish to create a virtual directory (such as *http://www.domain.com/cms*), please check the **This is an installation to the root** check-box.



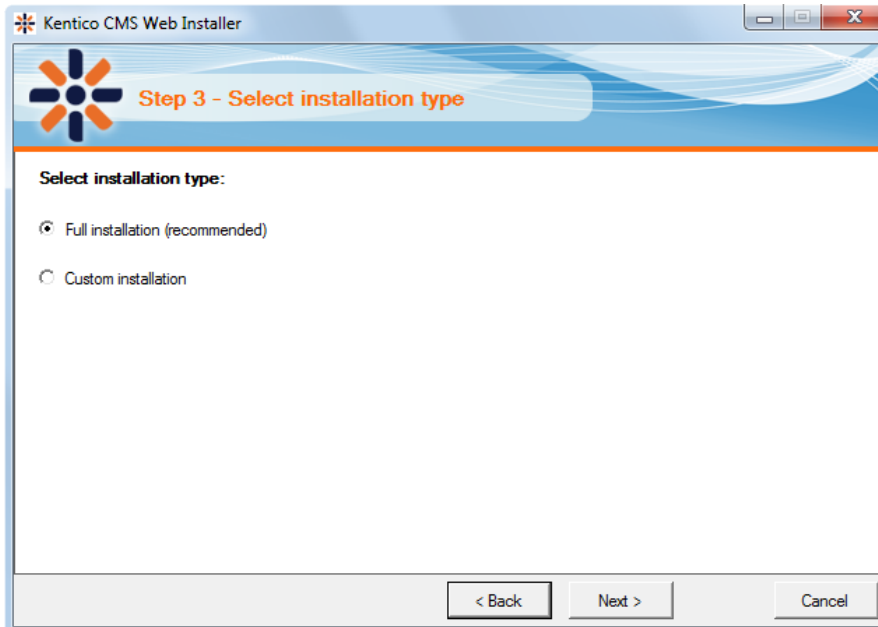
The screenshot shows the 'Step 3 - Local IIS' configuration window of the Kentico CMS Web Installer. The window title is 'Kentico CMS Web Installer'. The main content area is titled 'Please choose the IIS location:' and contains the following fields:

- 'Choose web site:' with a dropdown menu showing 'Default Web Site'.
- 'Type of application pool:' with a dropdown menu showing 'Integrated'.
- 'Choose target folder:' with a text input field containing 'c:\inetpub\wwwroot\KenticoCMS' and a 'Browse ...' button.
- A checkbox labeled 'This is an installation to the root (do not create virtual directory)' which is currently unchecked.

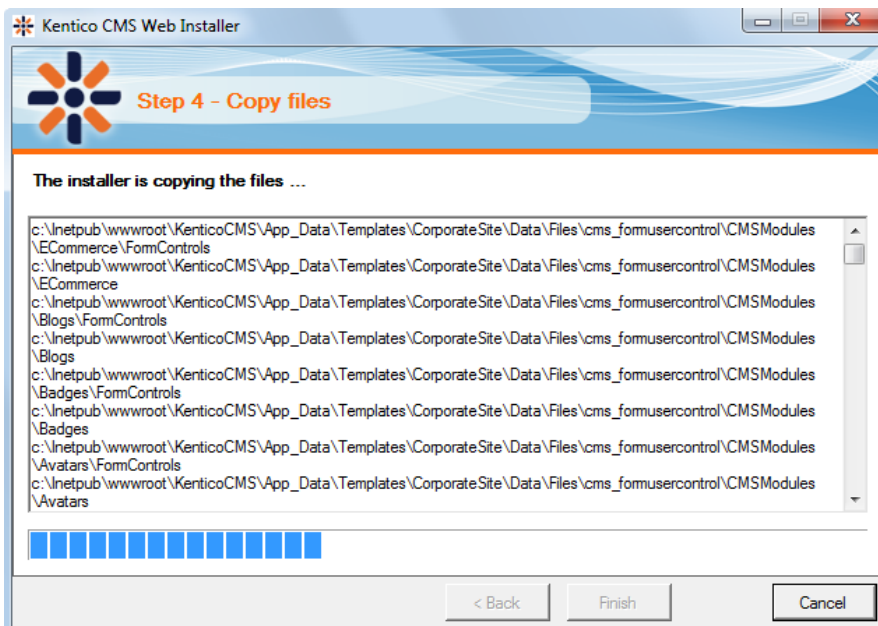
At the bottom of the window, there are three buttons: '< Back', 'Next >', and 'Cancel'.

2. Now you need to decide between the following options:

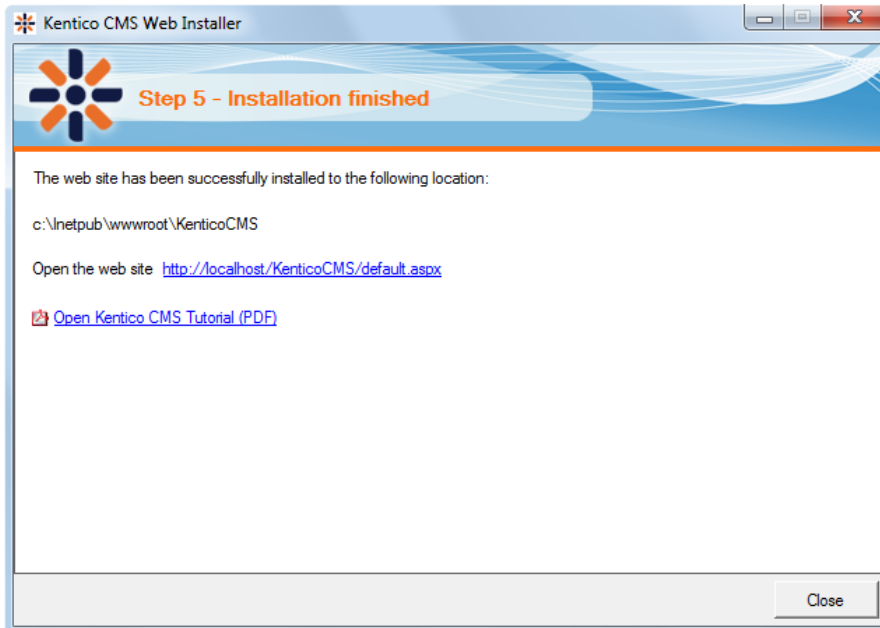
- **Full installation** - performs full installation using all optional components
- **Custom installation** - lets you choose which components will be installed



3. Now the installer copies the project files to the specified folder:



4. At the end, you're displayed with URL of the new Kentico CMS installation. Please put down this URL for future use.

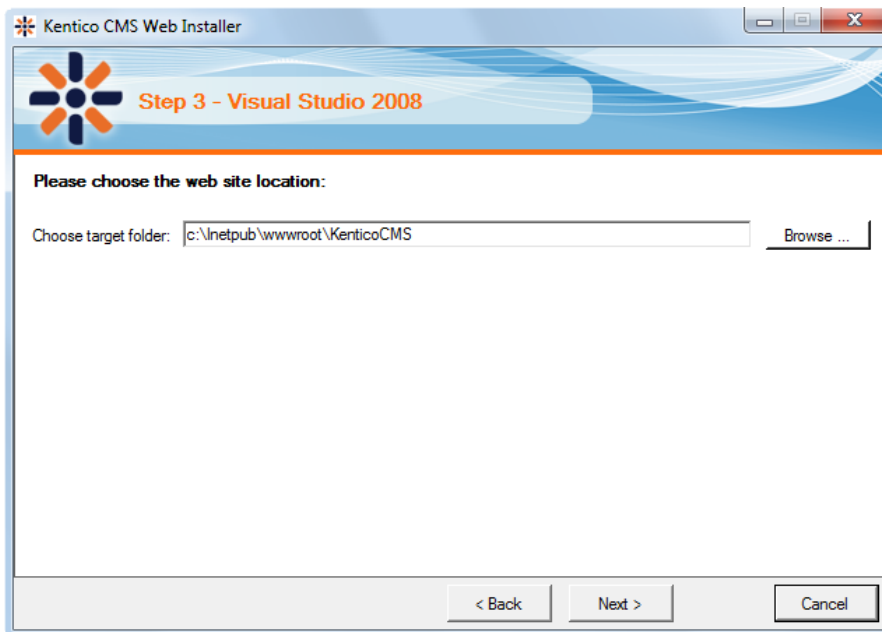


5. Now you can continue to [Database setup wizard](#).

3.3.2.3 Built-in web server in Visual Studio

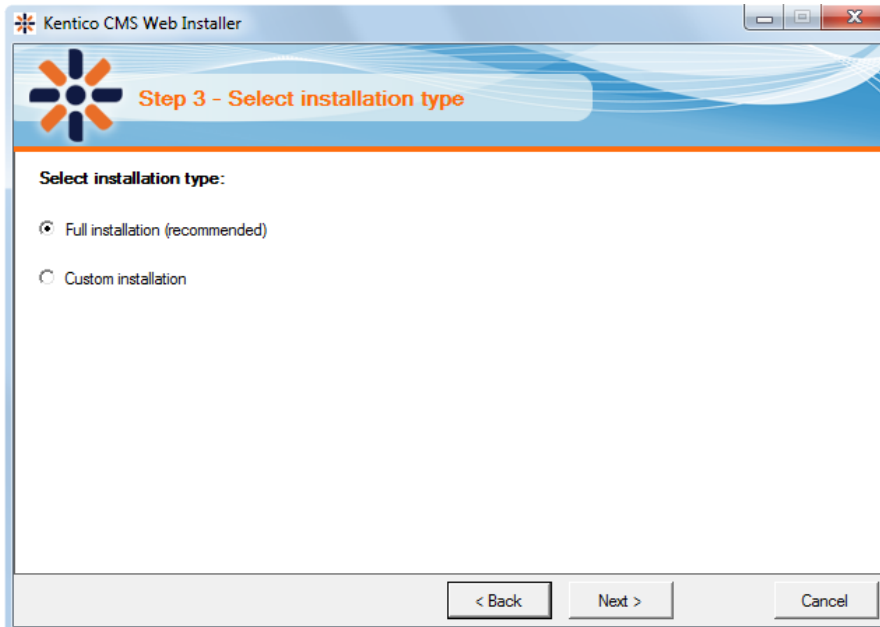
If you want to use the build-in server which is included in Visual Studio, choose **I want to use built-in web server in Visual Studio** in Step 2 of the Web installer and click **Next**.

1. You will need to enter the target location of the files on your disk in Step 3 and proceed by clicking **Next**.

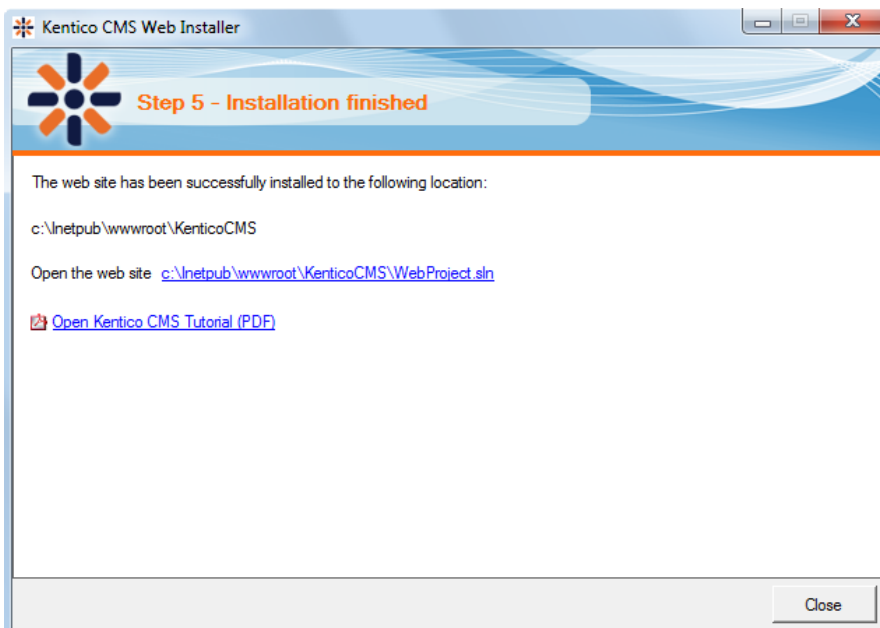


2. Now you need to decide between the following options:

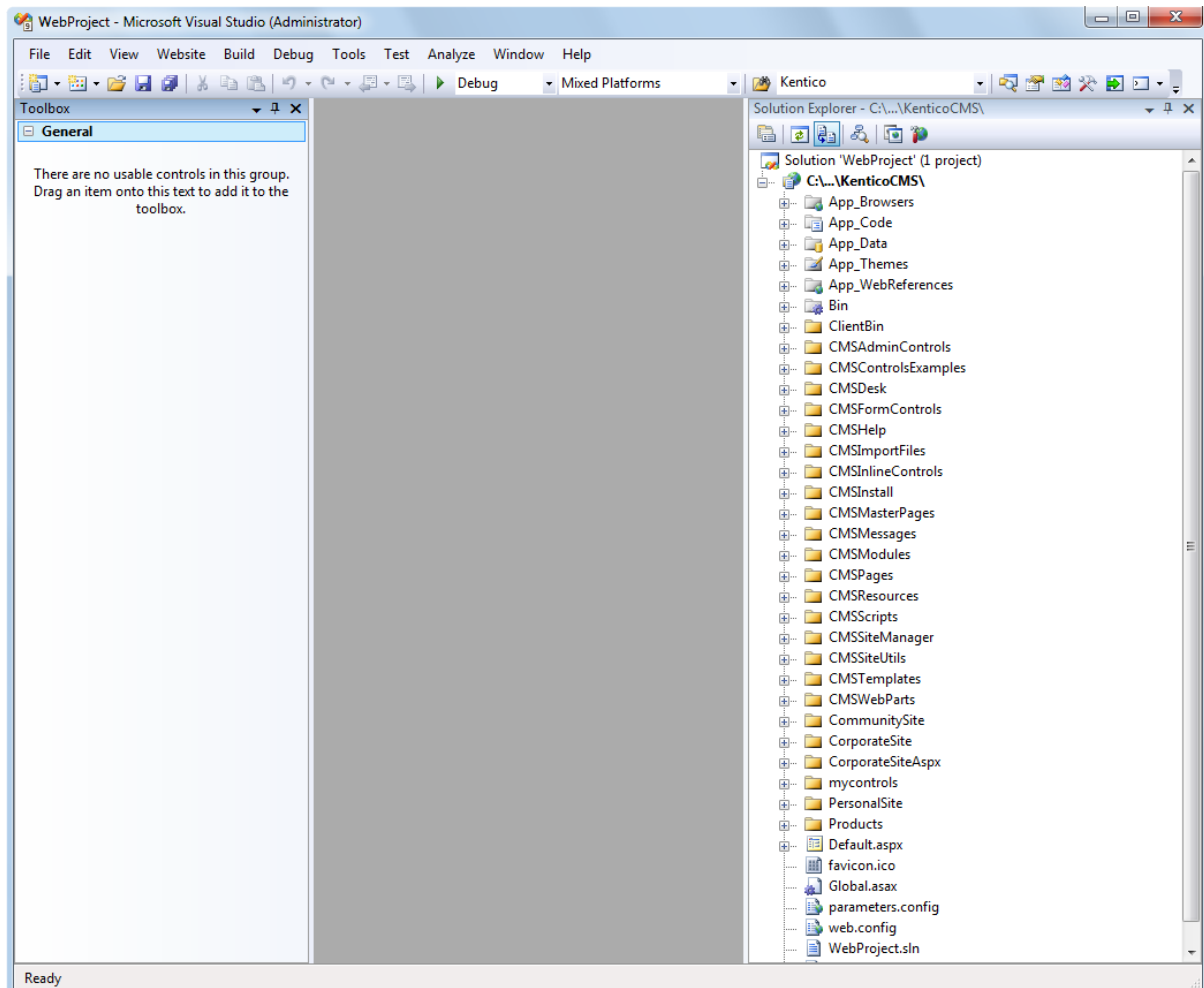
- **Full installation** - performs full installation using all optional components
- **Custom installation** - lets you choose which components will be installed



3. After the files are copied to the folder, you can open the solution in Visual Studio by clicking the link:



4. The project will open in Visual Studio:



5. Choose **Debug -> Start without debugging** from the main menu. The site is displayed in the new browser window, using the built-in VS web server.



When you cannot open the website in Visual Studio

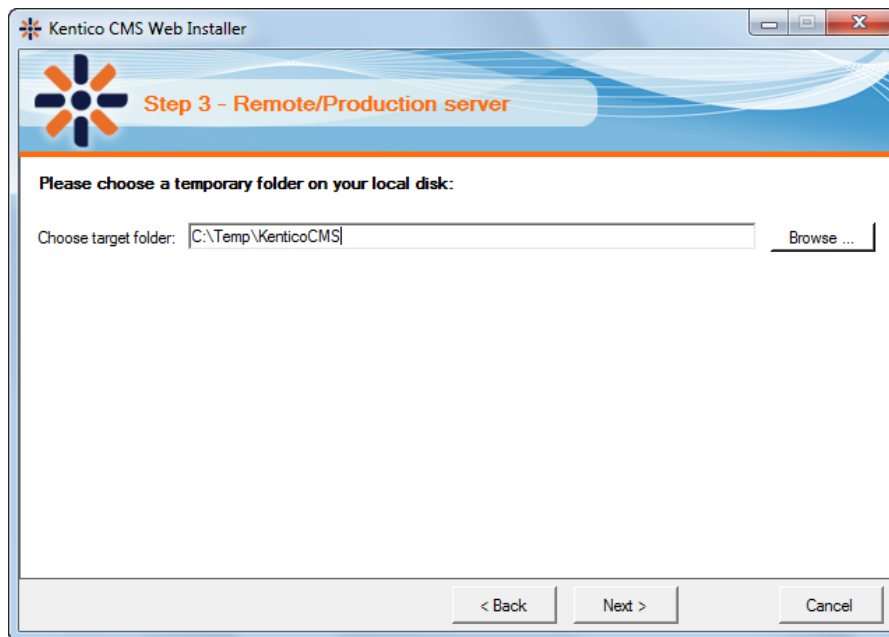
If the link for opening the project in Visual Studio doesn't work, you may need to start Visual Studio manually. Then choose **File -> Open -> website...** from the main menu and locate the project folder on your disk manually.

6. Now you can continue to [Database setup wizard](#).

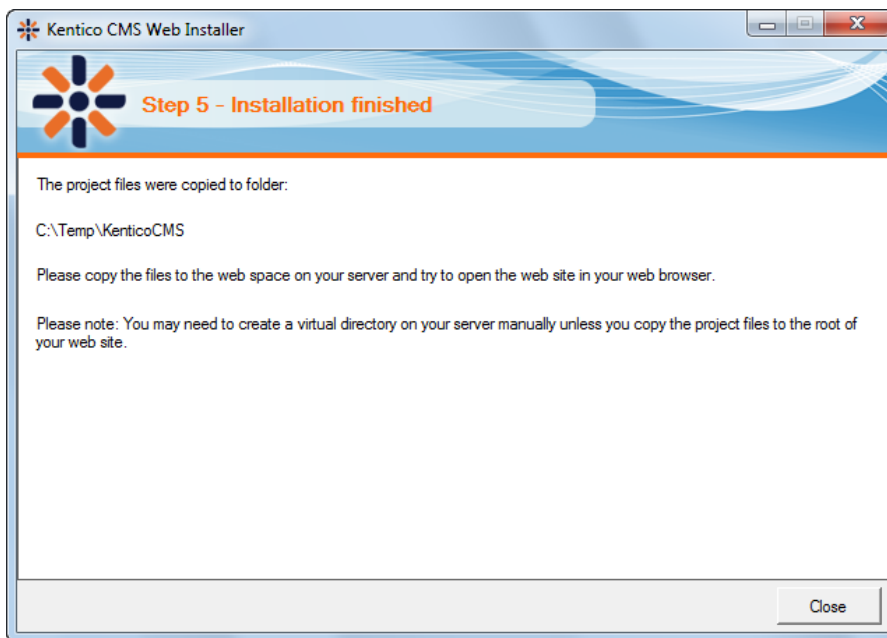
3.3.2.4 Remote server

If you need to install Kentico CMS on a remote web server where you cannot run the setup directly (e.g. a shared hosting server), you need to choose the **I want to use built-in web server in Visual Studio** option in Step 2 of the Web installer.

1. In Step 3, you will need to specify a temporary folder on your local disk where the web project will be created. Proceed through the rest of the wizard.



2. When you reach Step 5, the web project is created on your disk and a confirmation message is displayed:



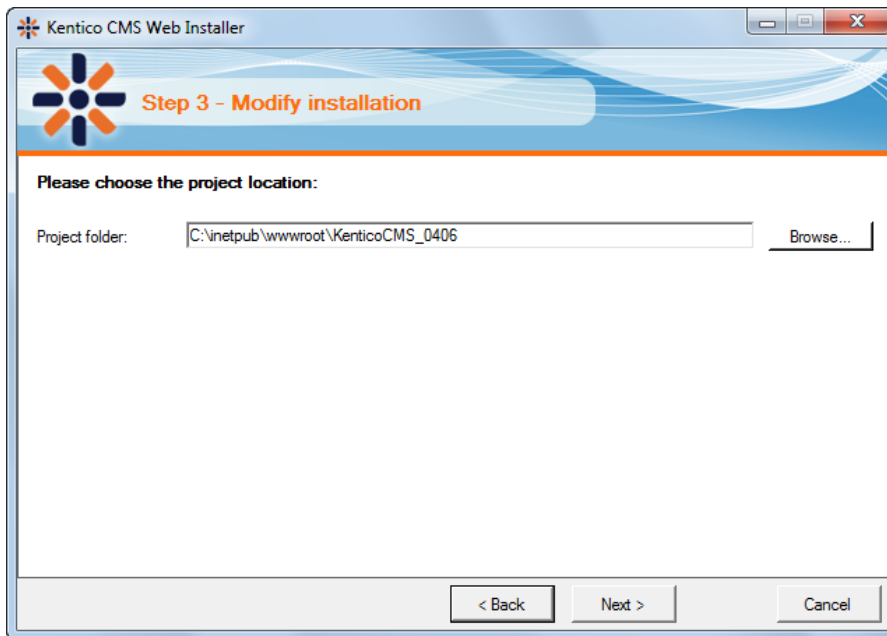
3. You need to copy the website to your server (e.g. over FTP). If your web project isn't placed in the root of the remote website, you may need to create a virtual directory as described in [Creating a virtual directory](#).

4. Now you can continue to [Database setup wizard](#).

3.3.2.5 Existing installation

The **I want to modify existing Kentico CMS installation** option in Step 2 of the Web installer enables you to add or remove components in an existing Kentico CMS web project.

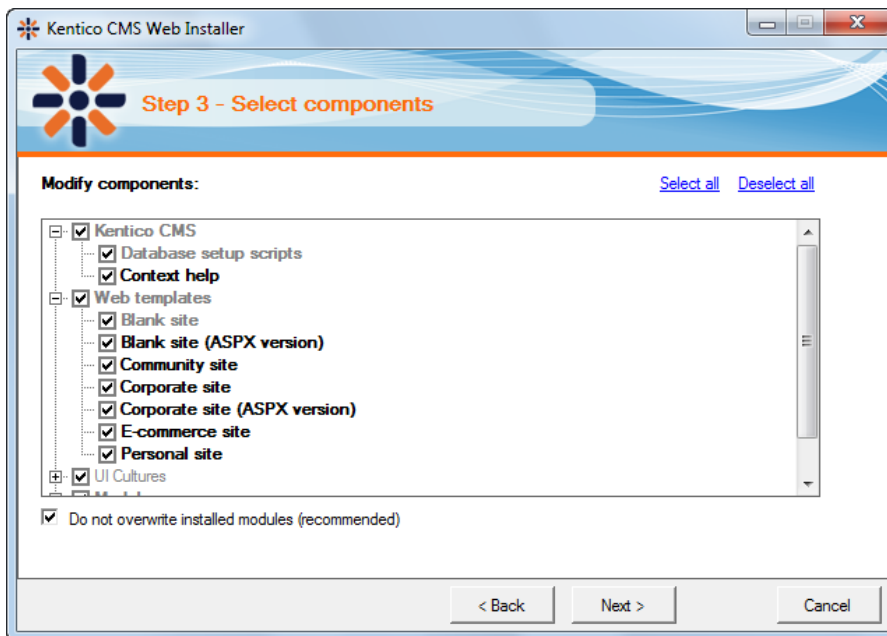
1. In Step 3, you need to specify the root folder of the project that you want to modify. Enter the path to the project folder and click **Next**.



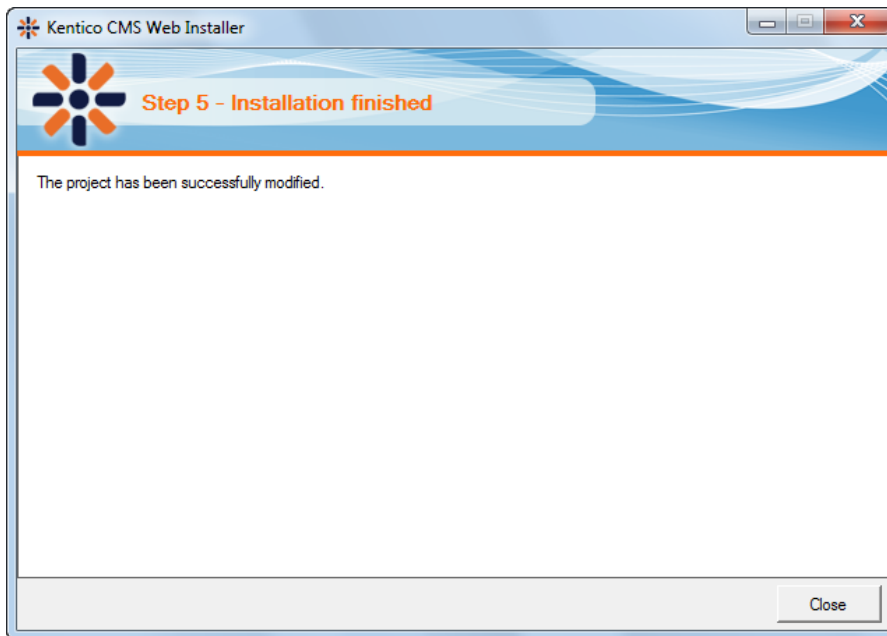
2. The following step displays the component tree. Gray components are a native part of the installation and can not be removed. Black components are optional. The check-boxes indicate which components are currently installed and you can modify the installation by selecting or unselecting them.

If you enable the **Do not overwrite installed modules (recommended)**, only unselected components will be removed and additionally selected components will be added. If the option is disabled, all enabled components (including *web.config*) will be overwritten by the installation, which means that your modifications to these components may get lost!

Click **Next**.



3. When you reach the following screen, it indicates that your project has been successfully modified.



3.3.3 Database setup

After you finish the Web Installer successfully, you open a web browser with the Database Setup. It will create database tables for Kentico CMS in a specified SQL Server database.

1. In Step 1, you need to specify the SQL Server and authentication mode used to access the server:

- **SQL Server name or IP address** - enter the name of the server. You will typically use one of these:
 - the name of the server (such as DBSERVER1) or
 - the IP address of the server (such as 192.168.1.105) or (local)
 - <SERVERNAME>\sql`express` (if you're using Microsoft SQL Server 2005 Express Edition)
- **Use SQL Server account** - use this option if your server is configured for **mixed mode** authentication with SQL logins
- **Use integrated Windows authentication (ASP.NET account)** - use this option if your server is configured for Windows integrated authentication. In this case, you need to use SQL Server 2005/2008 Management Studio to create a new login for user account under which you currently run the web application (ASPNET for Windows XP and Network Service for 2003 - the actual ASP.NET account name is displayed on the screen).

Click the **Next** button.

Kentico CMS Database Setup - Windows Internet Explorer

http://localhost/KenticoCMS_0420/cmsinstall/install.aspx

Kentico CMS Database Setup

Step 1 - SQL Server and Authentication Mode

SQL Settings → Database → Starter Site → Finish

SQL server

SQL Server name or IP address:

Use SQL Server account

Login name:

Password:

Use integrated Windows authentication
(ASP.NET account: NT AUTHORITY\NETWORK SERVICE)

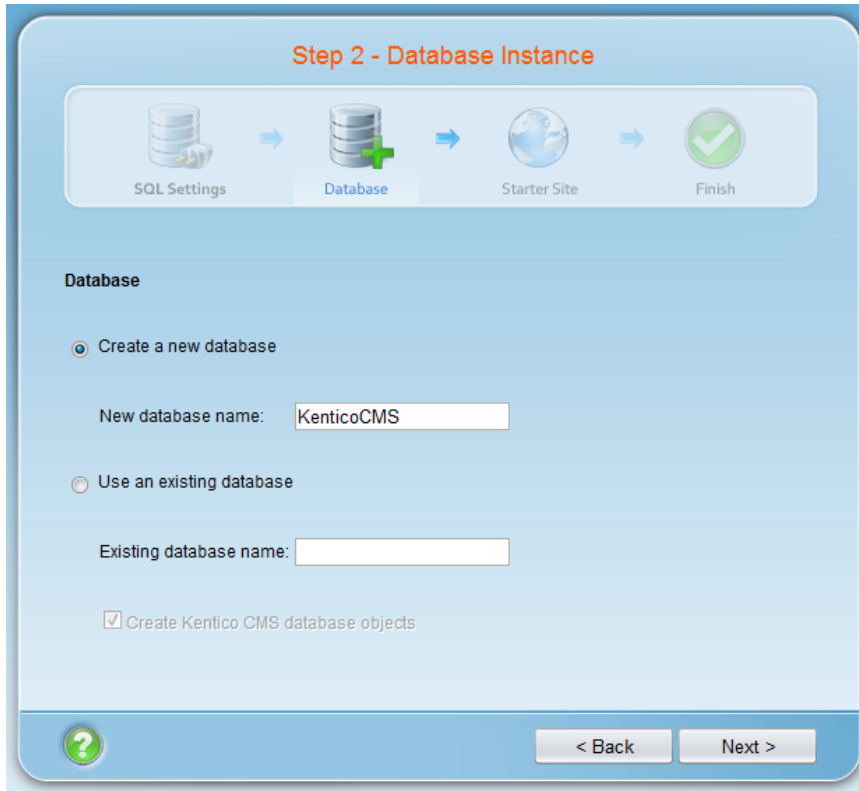
Version: 5.5 Build: 5.5.3762

Local intranet | Protected Mode: Off

2. Now you can decide if you want to use an **existing database** or **create a new database**. In both cases, you need to enter the name of the database into the appropriate field.

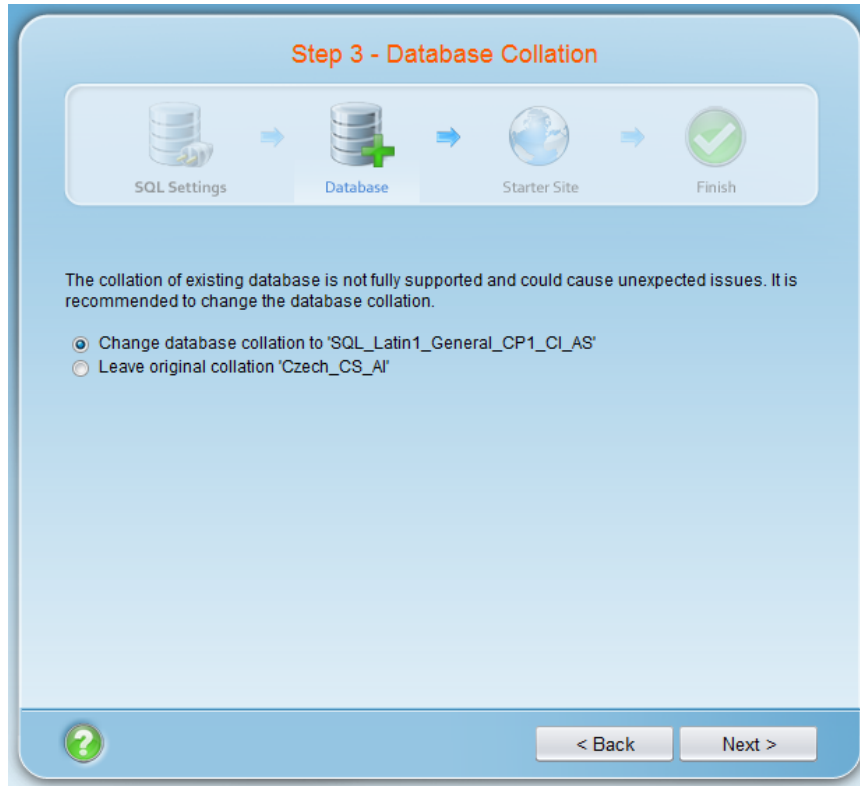
In case you are using an existing database, you can choose if you want to **Create Kentico CMS database objects**. If the existing database already contains Kentico CMS objects (tables, stored procedures, views), you need to uncheck the box. If the database does not contain these objects (typically when you are installing into an empty database), you need to leave the option enabled.

Click **Next**.

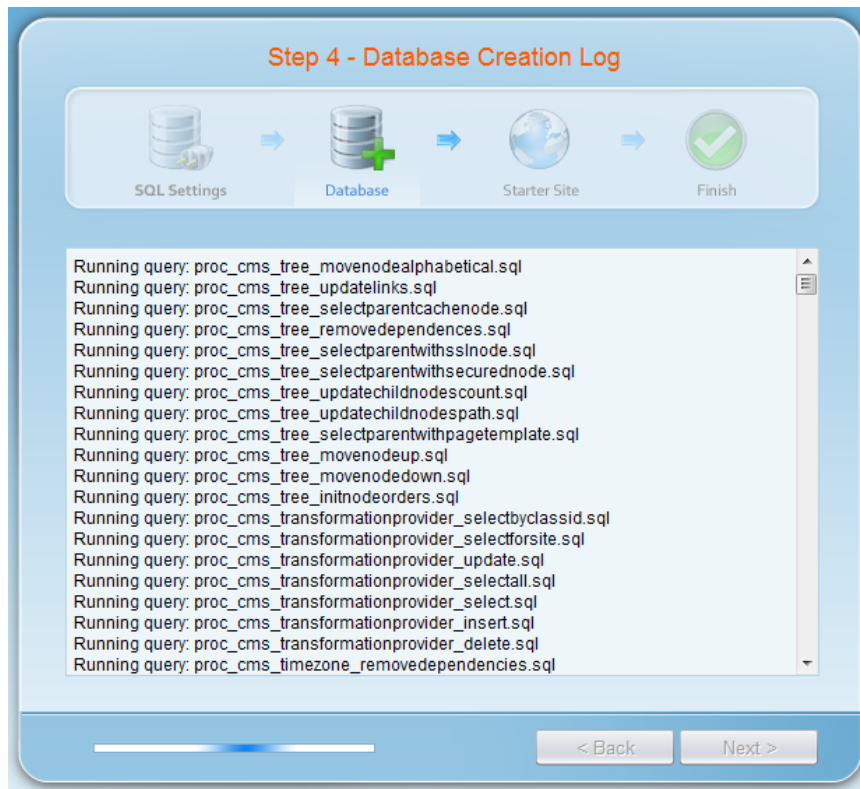


The screenshot shows the 'Step 2 - Database Instance' configuration window. At the top, a progress bar indicates the current step: 'SQL Settings' (completed), 'Database' (current step, highlighted with a green plus sign), 'Starter Site' (pending), and 'Finish' (pending). Below the progress bar, the 'Database' section contains two radio button options: 'Create a new database' (selected) and 'Use an existing database'. Under 'Create a new database', there is a text input field for 'New database name' containing the text 'KenticoCMS'. Under 'Use an existing database', there is a text input field for 'Existing database name'. At the bottom of the form, there is a checked checkbox labeled 'Create Kentico CMS database objects'. The bottom of the window features a blue bar with a help icon (question mark) on the left and '< Back' and 'Next >' buttons on the right.

3. When using an existing database, you may also come across the following dialog. It is displayed in case that the [database collation](#) is different than `SQL_Latin1_General_CP1_CI_AS`. The dialog lets you choose if you want to change the collation or leave the original one. For correct functionality, it is highly recommended to change it to the recommended value.



4. A log will be displayed, showing the progress of database creation. After it finishes, a message *Database has been successfully created.* appears at the top of the log and you are moved forward to the next step.



5. If you run Kentico CMS on a domain other than *localhost* or *127.0.0.1*, you will be asked for inserting a license key, since the trial version works only with *http://localhost* and *http://127.0.0.1*. The same dialog is displayed if your trial period has expired.

Enter a valid license key and click the **Next** button. Alternatively, you can skip this dialog and go to **Site Manager -> Sites -> New site wizard** by clicking **Skip this dialog** at the bottom left part of the dialog.

Step 5 - License Key

SQL Settings → Database → Starter Site → Finish

Your trial license key has expired, please enter a valid license key for domain: localhost

Tip: If you need a temporary license key for this domain, please write to support@kentico.com and ask for a trial key for the following domain name: localhost

You can also get a license of Kentico CMS Free Edition after registration at <http://www.kentico.com>.

Please enter the key:

[Skip this dialog](#)

Next >

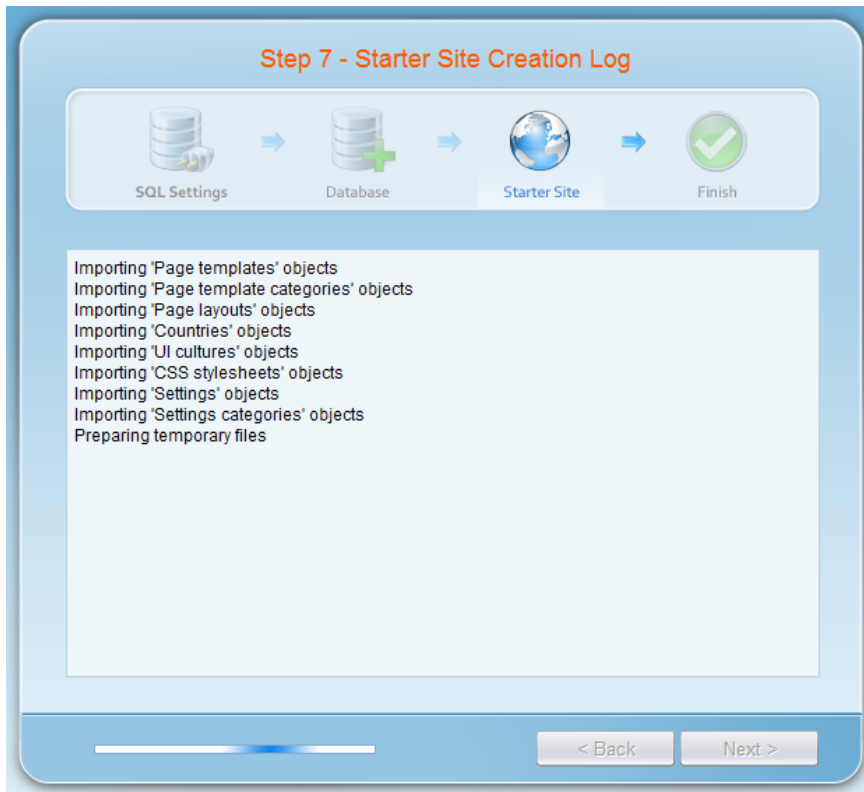
6. On the next screen, you will be offered with the following options:

- **Choose a starter site such as:**
 - **Corporate Site** - this option installs the sample corporate site - it is recommended for most users, especially for evaluators
 - **Corporate Site ASPX** - this option is recommended only for experienced ASP.NET developers who want to use ASPX page templates instead of portal templates
 - **Blank site** - this is a blank site without any content; you will use it to create a new site from scratch
 - **Blank site ASPX** - the same as above, but for ASPX page templates
 - and others
- **Continue to the New site wizard** - this option is recommended if you're starting a new site from scratch; learn more in the [New site wizard](#) chapter
- **Import an existing Kentico CMS website** - use this option if you already created a website with Kentico CMS and need to import it into a new installation (e.g. on the production server)

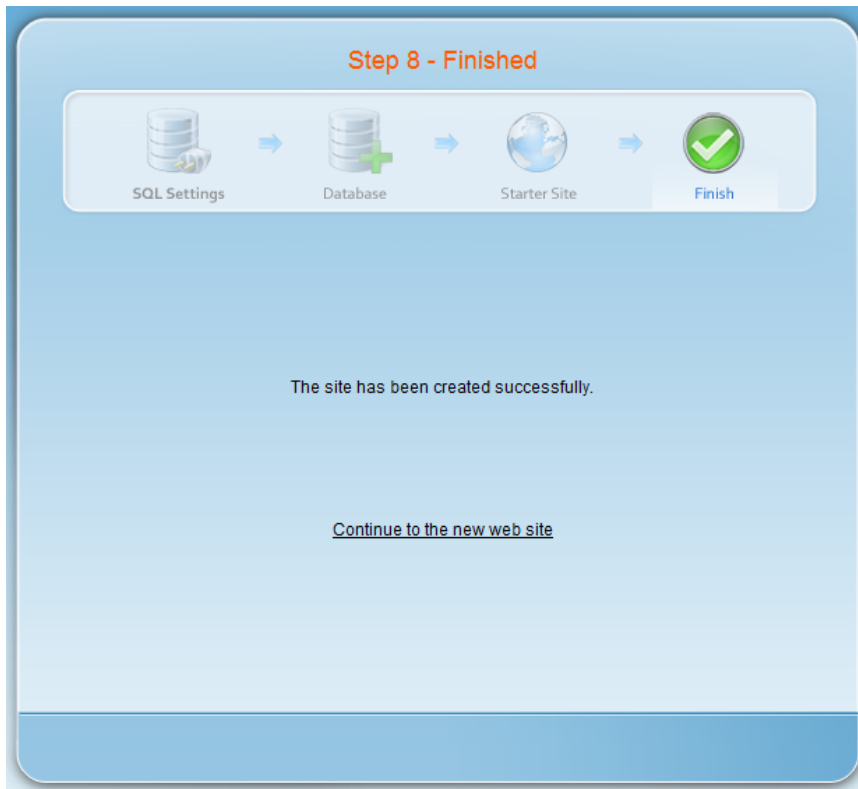
If you're new to Kentico CMS, it's highly recommended that you start with sample Corporate Site (portal engine). If you decide to run the New site wizard, you can find more details in the following chapter. Select an option and click the **Next** button.



7. A log will be displayed in the next step, showing you progress of website creation.



8. Once the website is created, you will be displayed with a confirmation and link to your live website.



Default user name and password

The default user name is **administrator**, the default password is blank.

It's highly recommended that you change the password after you finish the installation.

The default URL of your site is *http://localhost/KenticoCMS*.

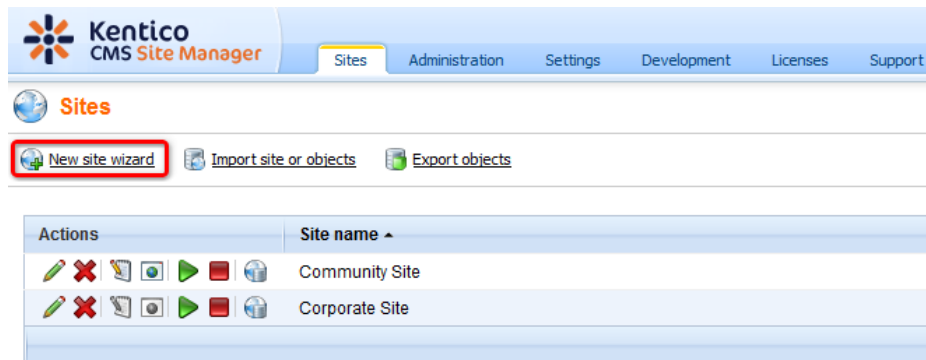
The default URL of CMS Desk is *http://localhost/KenticoCMS/CMSDesk*.

The default URL of Site Manager is *http://localhost/KenticoCMS/CMSSiteManager*.

3.3.4 New site wizard

3.3.4.1 Overview

The New site wizard guides you through the process of adding a new website to the system. It is accessible from the *Starter Site* step of the [Database setup](#). You can also launch the wizard from **Site Manager -> Sites**.



In the first step of the wizard, you can select if you want to create the new site using a wizard or use a website template.

- [Create a new site using a wizard](#) - creates a new blank site and allows you to configure the basic structure of the site.
- [Use website template](#) - creates a new site based on a template chosen in the next step.

Select one of the options and click the **Next** button. Click one of the links above to learn about the following steps of the wizard for the chosen option.

Step 1 | **Choose default web site**

If you choose to create a blank site, the wizard will guide you through the process of creating a new site. If you choose to use a template, you will be able to choose one of the predefined web site templates.

Create a new site using a wizard

Use web site template

Next >

3.3.4.2 New site

This topic describes adding of a new website to the system using the **New site wizard** when the **Create a new site using a wizard** option is chosen in the [first step](#) of the wizard.

1. In the second step, you need to enter the following basic site properties:

- **Site display name** - name of the new site displayed in the administration interface.
- **Site code name** - name of the new site used in website code.
- **Domain name** - domain name on which the new site will be running.
- **Site culture** - default culture of the site.

Click **Next** to continue.

Step 2**Enter new site settings**

Enter the display name and code name of the web site. The Domain field must contain the domain that you will use to access the web site during development (you may change it when the site goes live). The default culture is the main language of the web site.

Site display name:
Site code name:
Domain name:
Site culture:

[< Previous](#)[Next >](#)

2. In Step 3, you can select which objects will be imported along with your new site. You can make this selection by choosing one of the categories displayed in the tree view on the left side of the screen. By selecting a category, a set of check boxes appears in the right part of the screen, letting you select the exported objects.

If you select the root of the tree, you will be offered with the following options:

Global selection

- **Load default selection** - if clicked, object pre-selection will be done based on choice in Step 1.
- **Select all objects** - if clicked, all objects will be preselected.
- **Select only new objects** - if clicked, only objects not existing in the database will be preselected.
- **Deselect all objects** - if clicked, all objects will be de-selected.

Import settings

- **Assign all objects to the imported site (recommended)** - if checked, all imported site related objects will be assigned to the imported site.
- **Run the site after import** - if checked, the updated site will be run after the import is finished.
- **Delete incomplete site when import fails** - if checked, incomplete site will be deleted when import fails.
- **Import files (recommended)** - if checked, files will be imported.

Click **Next** to continue.

Step 3 | **Objects selection**
Please select objects which should be imported.

All objects

- Web site
 - Documents
 - Administration
 - Settings
 - Development
- Global objects
 - Tools
 - Administration
 - Development

Import objects

Please note: The import process may overwrite your existing objects. The existing objects are marked with * and will be overwritten if checked.

Please select the object type from the tree if you wish to change the default selection. Click **Next** to start the import of selected objects.

Global selection

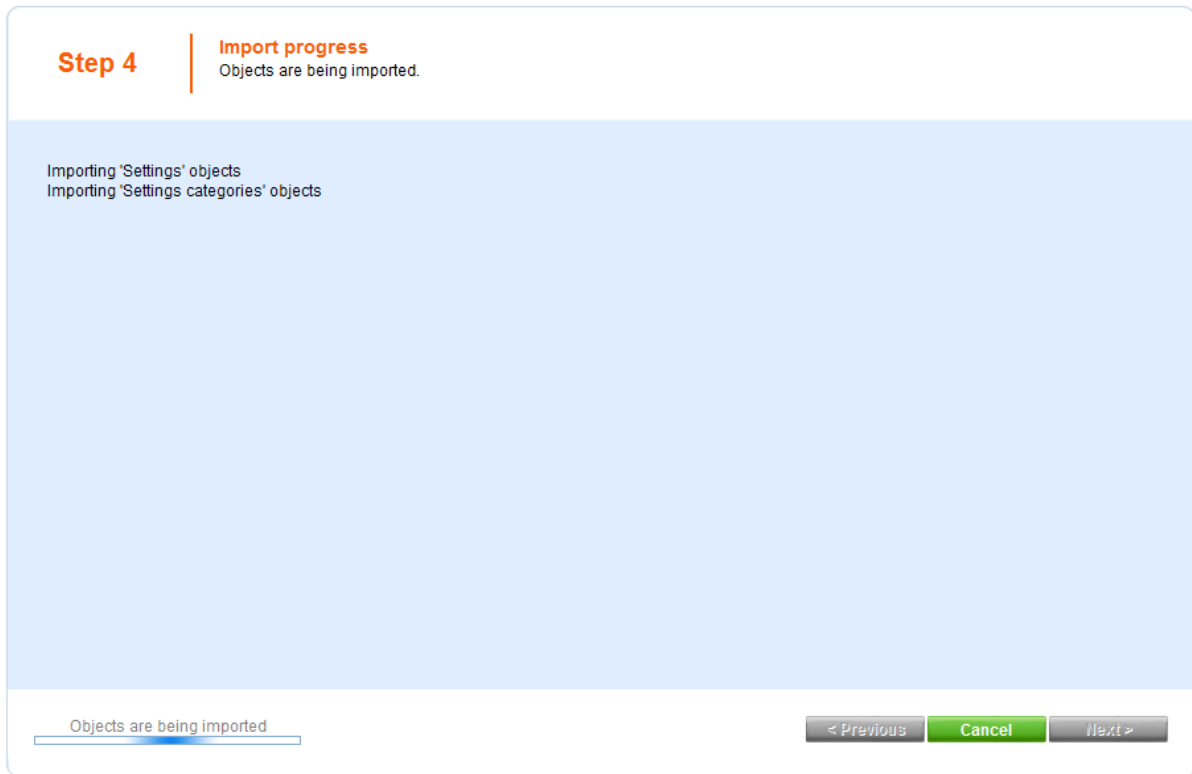
[Load default selection](#) | [Select all objects](#) | [Select only new objects](#) | [Deselect all objects](#)

Import settings

- Assign all objects to the imported site (recommended)
- Run the site after import
- Delete incomplete site when import fails
- Import files (recommended)
- Do not import objects where parent object is missing
- Import tasks (recommended)

< Previous | Next >

3. A log will be displayed, showing you the progress of site import. When the export process finishes, click the **Next** button.



Step 4 | **Import progress**
Objects are being imported.

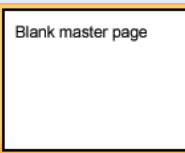


Importing 'Settings' objects
Importing 'Settings categories' objects

Objects are being imported

< Previous Cancel Next >

4. In Step 5, you can select the master page layout. This defines the basic visual structure of the website. These settings can be altered any time later, no matter which layout you have selected. Select one of the layouts and click **Next**.

Step 5 | **Select master page**
The master page defines the layout of the main menu, logo and content placeholders. You can change it at any time later.

	Blank master page Generic default page template.
	Top logo and left menu Master page template with logo on the top and menu on the left side.
	Top logo and menu Master page for the Sample web site.

[Next >](#)

5. Site map of you new website can be defined in Step 6. Select the node of the tree under which you want to place a new page and click **New**. Enter the name of the new page and select a page template which will be used on the page. Alternatively, you can inherit the page template from the parent page by clicking the **Inherit template** button. Click **OK**.

The newly created page will appear in the tree view. Repeat this procedure until you have defined the desired site structure, then click **Next**. The defined site structure can be modified later.

Step 6 | **Define basic site structure**
Define the site map of your new web site. The pages you create will be displayed in the site menu. Every page must have some template specified or it can inherit page template from the parent page.

Content management

new site

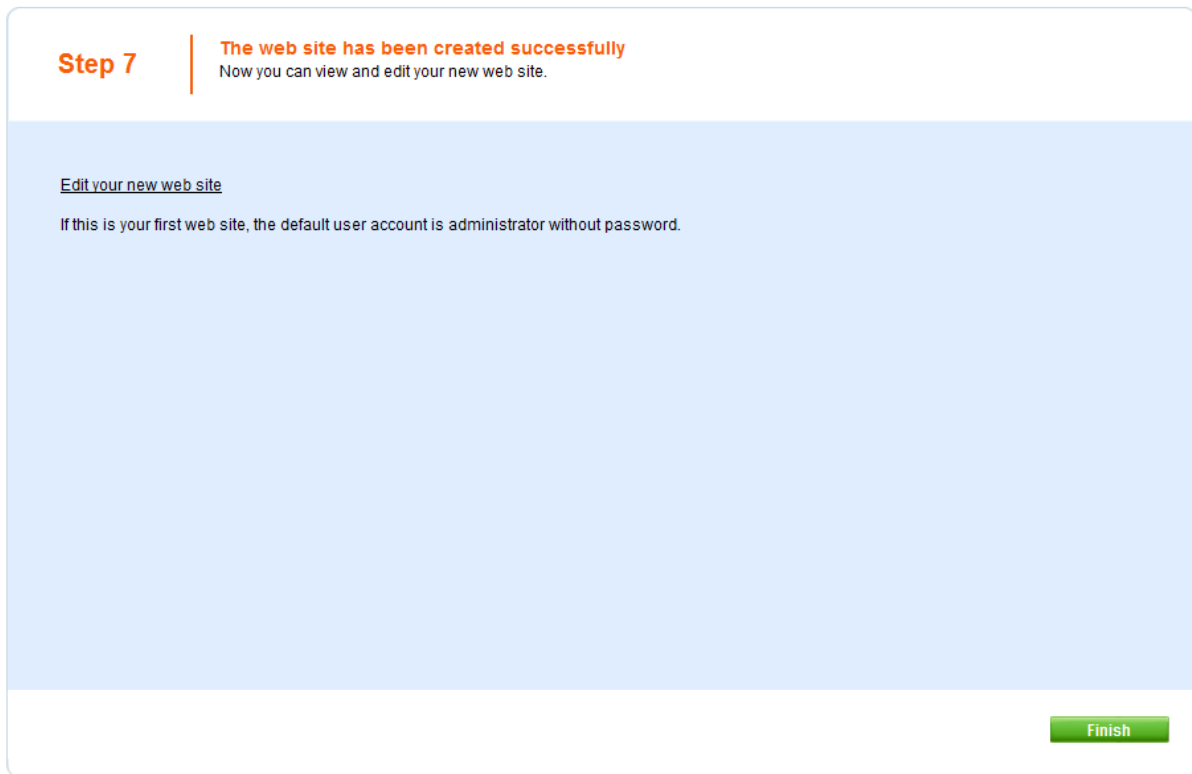
- Home
- Links

Page properties

Page name:

Page template:

6. If you have reached Step 7, you have successfully created the new website. Click the **Edit your new website** link to switch to CMSDesk and start editing the site immediately. Alternatively, click the **Finish** button to get redirected to **Site manager -> Sites**.



3.3.4.3 Website template

This topic describes creation of a new website using the **New site wizard** when the **Use website template** is chosen in the [first step](#) of the wizard.

1. In Step 2, you can choose from a number of website templates:




- **Corporate site** is a typical web presentation of a company.
- **E-commerce site** is a typical e-shop showing the possibilities of the E-commerce module.
- **Community site** is a sample community website demonstrating social networking capabilities of Kentico CMS.
- **Blank site** is a blank template used for creating websites from scratch.
- and others.

Some of the templates are available in two versions, one using the [portal engine](#) and the other using [ASPX page templates](#).

Choose one of the listed website templates and click the **Next** button.

Step 2**Choose web site template**

Choose the predefined web site template that will be used for your new web site. The web site template may contain site structure, design, basic content, new document types and other settings.

	Corporate Site This is a web template for a general corporate site. It's used as a showcase of Kentico CMS capabilities and it can be used as a starting site that you modify as needed. It uses the portal engine and it's the recommended choice for developers who are new to Kentico CMS.
	Corporate Site ASPX This is a web template for a general corporate site. It's used as a showcase of Kentico CMS capabilities and it can be used as a starting site that you modify as needed. It uses the ASPX page templates that require a higher level of .NET knowledge than the portal engine.
	E-commerce Site This is a web template for a simple E-commerce site. It's used as a showcase of Kentico CMS E-commerce module capabilities and it can be used as a starting site that you modify as needed. It uses the portal engine and it's the recommended choice for developers who are new to Kentico CMS.

[< Previous](#)[Next >](#)

2. In this step, enter the following basic site properties:

- **Site display name** - display name of the new site.
- **Site code name** - code name of the new site.
- **Domain name** - domain name on that the new site will be running.

Click **Next** to continue.

Step 3

Enter new site settings
Enter the display name and code name of the web site. The Domain field must contain the domain that you will use to access the web site during development (you may change it when the site goes live). The default culture is the main language of the web site.

Site display name:

Site code name:

Domain name:

[< Previous](#) [Next >](#)

3. In Step 4, you can select which of the objects from the site package will be imported. You can make this selection by choosing one of the categories displayed in the tree on the left side of the screen. By selecting a category, a set of check boxes appears in the right part of the screen, letting you select which objects will to be imported.

If you select the root of the tree, you will be offered with the following options:

Global selection

- **Load default selection** - if clicked, object preselection will be done based on choice in Step 1.
- **Select all objects** - if clicked, all objects will be preselected.
- **Select only new objects** - if clicked, only objects not existing in the database will be preselected.
- **Deselect all objects** - if clicked, all objects will be deselected.

Import settings

- **Assign all objects to the imported site (recommended)** - if checked, all imported site related objects will be assigned to the imported site.
- **Run the site after import** - if checked, the updated site will be run after the import is finished.

- **Delete incomplete site when import fails** - if checked, incomplete site will be deleted when import fails.
- **Import files (recommended)** - if checked, files will be imported.

Click **Next** to continue.

Step 4 | **Objects selection**
Please select objects which should be imported.

All objects

- Web site
 - Documents
 - Tools
 - Administration
 - Settings
 - Development
 - E-commerce
- Global objects
 - Tools
 - Administration
 - Development
 - E-commerce

Import objects ?

Please note: The import process may overwrite your existing objects. The existing objects are marked with * and will be overwritten if checked.

Please select the object type from the tree if you wish to change the default selection. Click **Next** to start the import of selected objects.

Global selection
[Load default selection](#) [Select all objects](#) [Select only new objects](#) [Deselect all objects](#)

Import settings

- Assign all objects to the imported site (recommended)
- Run the site after import
- Delete incomplete site when import fails
- Import files (recommended)
- Do not import objects where parent object is missing
- Import tasks (recommended)

< Previous Next >

4. A log will be displayed, showing you the progress of website import. When the export process finishes, click the **Next** button.

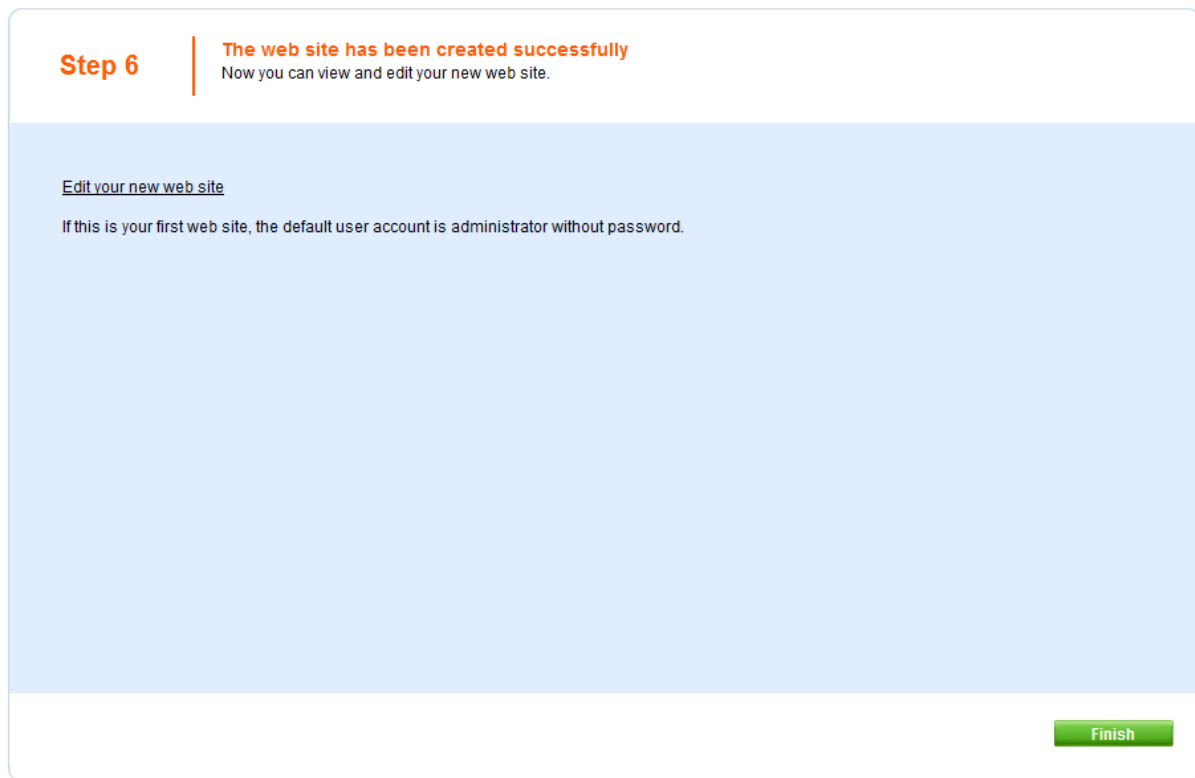
Step 5 | **Import progress**
Objects are being imported.

Importing document/SpecialPages/Logon (en-US)
Importing document/Partners/Gold-partners (en-US)
Importing document/Partners/Silver-partners (en-US)
Importing document/Products/Cell-phones (en-US)
Importing document/Products/PDAs (en-us)
Importing document/Products/Laptops (en-us)
Importing document/Services/Network-administration (en-US)
Importing document/Company/Carriers (en-US)
Importing document/Company/Offices (en-US)
Importing document/Services/Web-development (en-US)
Importing document/Services/Web-design (en-US)
Importing document/News/Your-second-news (en-US)
Importing document/News/Your-first-news (en-US)
Importing document/Images-(1)/DefaultProductImage (en-US)
Importing document/Images-(1)/Services_webdevelop (en-US)
Importing document/Images-(1)/Services_webdesign (en-US)
Importing document/Images-(1)/Services_network (en-US)
Importing document/Images-(1)/CompanyLogo (en-US)
Importing document/Images-(1)/homepage (en-US)
Importing document/Events/September-conference (en-US)
Importing document/Events/October-conference (en-US)
Importing document/Events/November-conference (en-US)
Importing document/Events/December-conference (en-US)
Importing document/Blogs/My-blog-1 (en-US)
Importing document/Images (en-US)
Importing document/Products (en-us)
Importing document/Events (en-US)

Objects are being imported

< Previous Cancel Next >

5. If you have reached Step 6, you have successfully created the new website. Click the **Edit your new website** link to switch to CMSDesk and start editing the site immediately. Alternatively, click the **Finish** button to get back to **Site manager -> Sites**.



3.3.5 Deployment to the live server

With Kentico CMS, you can easily develop the website on your local machine. When the website is ready to go live, you need to export it into an export package. You will need to make sure that the ASP.NET account has the **Modify permission** for the disk, specifically for the `CMSSiteUtils\Export` folder. See the [Troubleshooting installation issues -> Disk permissions problems](#) chapter for more information on how to set up these permissions.

Go to **Site Manager -> Sites** and click the **Export site** icon next to the site to be exported. Enter the name of the export package and click **OK**. The site will be exported to the `<web project>\CMSSiteUtils\Export` folder.

Now you need to install Kentico CMS on the live server. If you're using a remote server without desktop access, you need to:

1. Run [Kentico CMS Web Installer](#) on your local development computer.
2. Choose to create a new website on a remote (production) server and deploy the website into some local disk folder.
3. **Copy all deployed files** to the root of your web server (i.e. the web.config file must be placed in the root of the server). If you need to run the website in a sub-folder, you need to create virtual directory manually as described in [Additional configuration tasks -> Creating a virtual directory](#).
4. Copy your exported package into the `<website root>\CMSSiteUtils\Import` folder.
5. Make sure your live server is **configured for ASP.NET 2.0**. It's also highly recommended that the ASP.NET account has Modify permission on the server disk for easy import (however, it's possible to complete the import without Modify permission as well).
6. Open the page /default.aspx of your live web server in the web browser.
7. You will be displayed with [Database setup](#) wizard. Create the database for Kentico CMS.

8. You may be asked for the license key for your production domain.
9. In step 3, choose to **Import existing Kentico CMS website**.
10. Choose to import the previously exported package and overwrite all duplicates. The import wizard is described in [Managing sites -> Export and import -> Importing a site](#).

Now that you have imported the site, you may need to adjust its configuration:

1. Go to the **Sites** section. Edit website properties and make sure the website domain and domain aliases are configured correctly for the production domain(s).
2. Go to the **Site Manager -> Settings** and make sure your site settings contain correct values, especially the **SMTP server** value in the **E-mails** section.
3. Go to the **Sites** section. Click the **Open live site** icon next to your new site and make sure the website is displayed correctly.

Alternative Approach

If you, for some reason, cannot deploy the website using the procedure described above, you can use a classic backup/restore approach:

1. Backup your development database and restore it on the production server.
2. Copy the web project folder into the root of your production website.
3. Update the `ConnectionString` value in the `web.config` file.



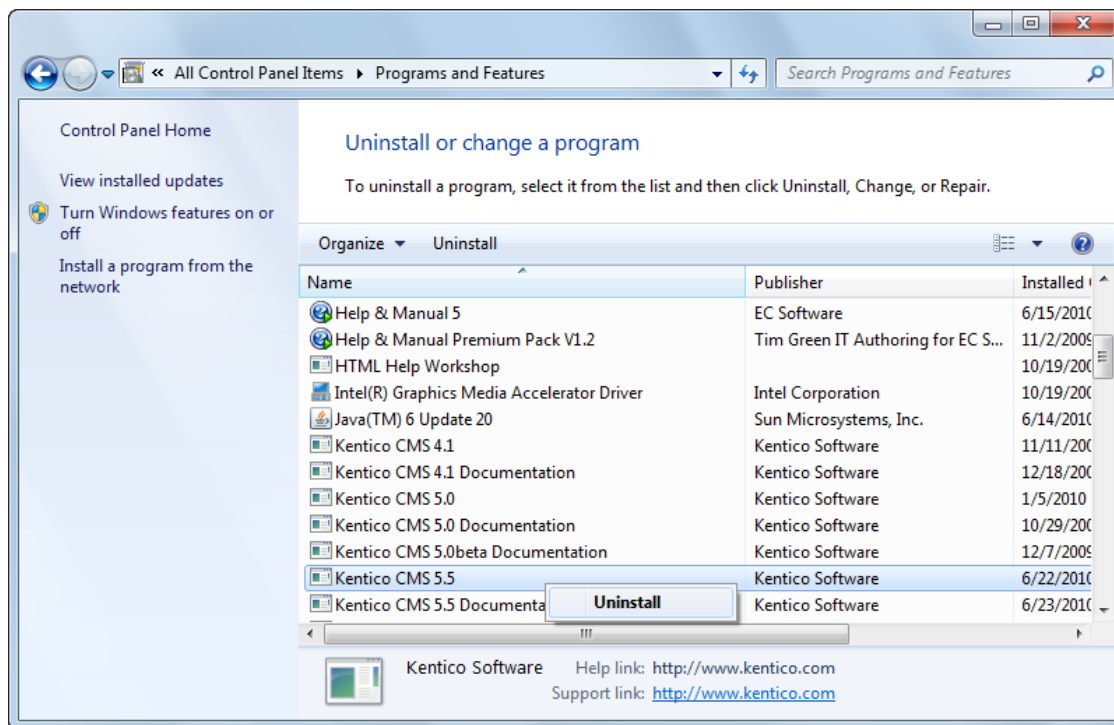
Shared Hosting Environment and Medium Trust Level

If you're deploying Kentico CMS on a shared hosting server that requires medium trust level, you may need to make additional configuration changes as described in [Additional configuration tasks -> Configuration for Medium Trust environment](#).

Related topics: [Visual Studio integration -> Pre-compilation \(Publish function\)](#)

3.3.6 Uninstallation

To uninstall Kentico CMS from your computer, open **Start -> Control Panel -> Programs and Features**. Right-click **Kentico CMS** and choose **Uninstall** from the context menu.



The uninstaller will delete all files created on your computer except the deployed instances of Kentico CMS - it means that the database instances and the website folders will not be removed and you have to delete them manually if needed.

3.4 Additional configuration tasks

3.4.1 Overview

The following chapters contain description of various configuration tasks that require changes to your system. You needn't perform them for [standard installation](#), they are required only in specific situations.

3.4.2 Creating a virtual directory

If you need to install Kentico CMS manually on a remote server or restored it from backup and, at the same time, you run Kentico CMS in a sub-folder (in contrast to running Kentico CMS in the root of the website), you need to create a new virtual directory for the folder where you have the web project files.



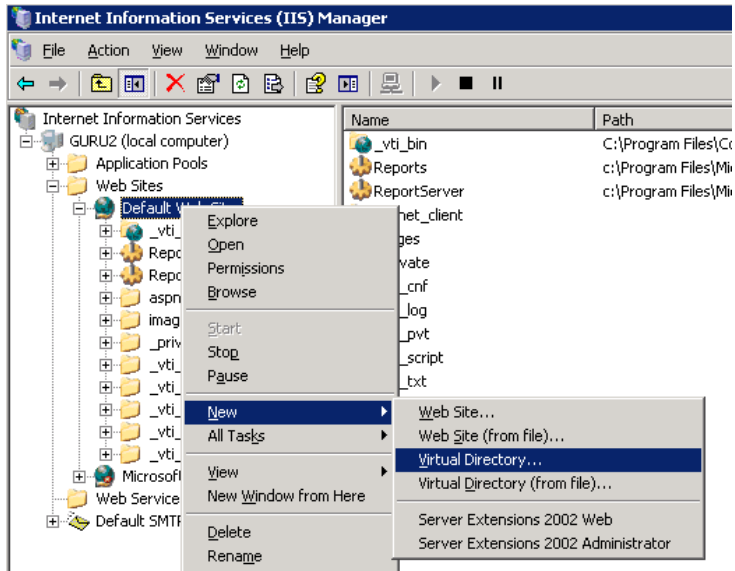
Application root

The root of the website or the virtual directory must be the same as the folder that contains the web.config file of Kentico CMS. This folder is called **application root**.

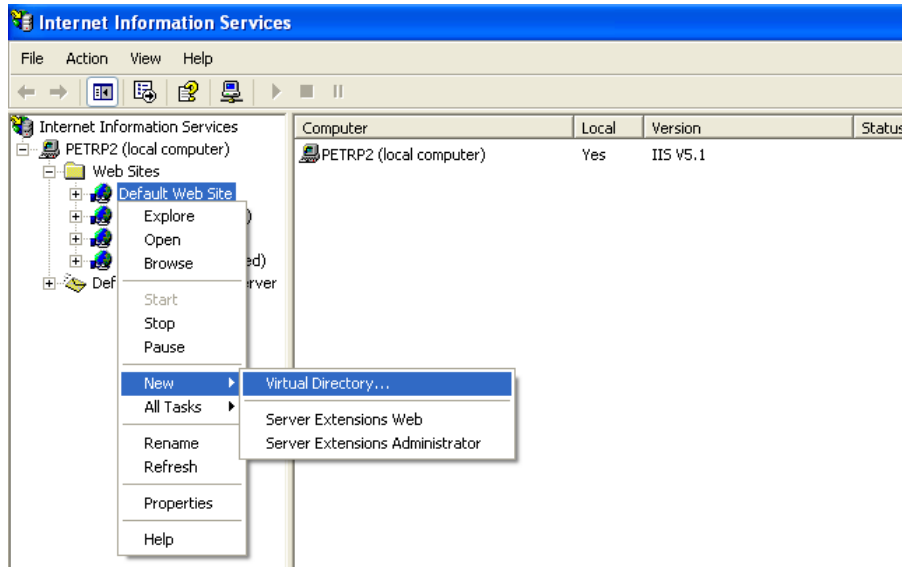
Follow these steps to create and configure a virtual directory on your web server:

Configuring a Virtual Directory

On Windows Server 2003, open **Start -> Administrative Tools -> Internet Information Services (IIS) Manager**. Right-click **Computer -> websites -> chosen website** and choose **New -> Virtual Directory**.

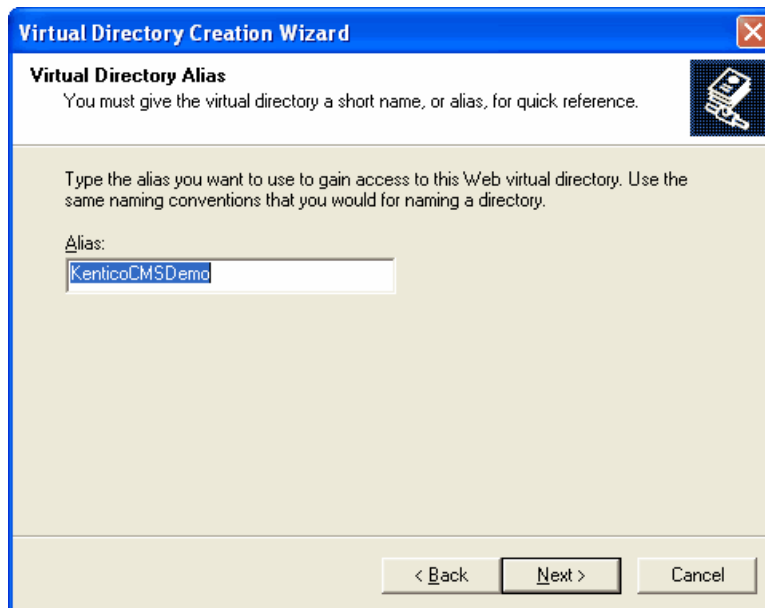


On Windows XP, **open Start -> Control Panel -> Administrative Tools -> Internet Information Services**. Right-click the **Computer -> websites -> Default website** item (or other website if you're running multiple websites on the same computer) and choose **New -> Virtual Directory....**



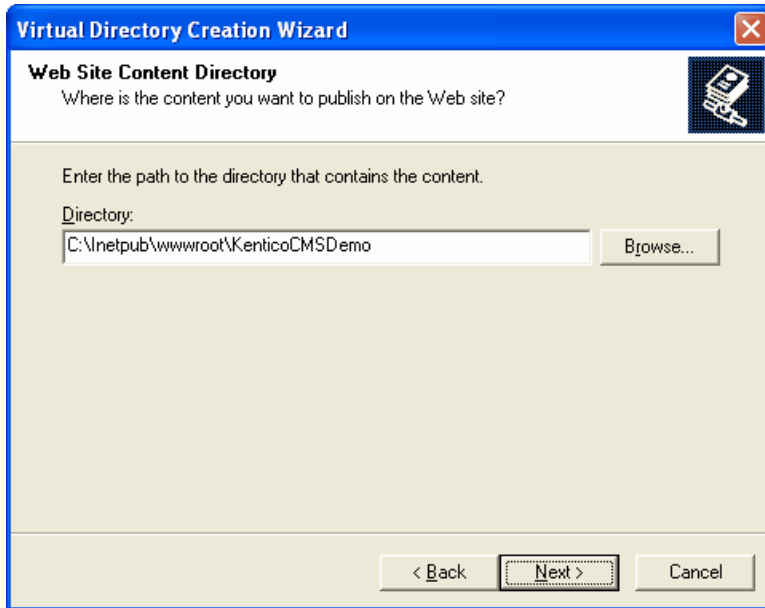
The rest is same for all operating systems:

1. The **Virtual Directory Creation Wizard** appears. Click **Next** on the first screen.
2. Enter the **Virtual Directory Alias**. If you want the website to run as `http://localhost/KenticoCMSDemo`, you need to enter alias **KenticoCMSDemo**. Click **Next**.

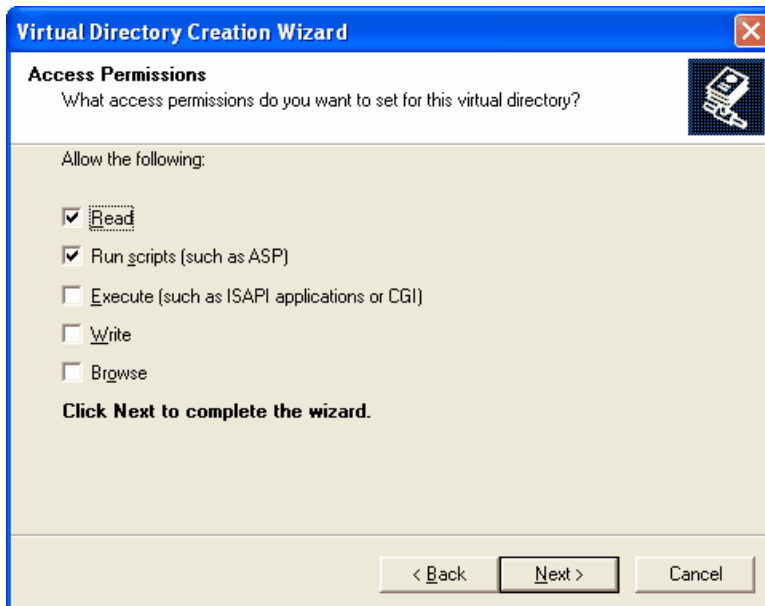


3. Now choose the disk folder on your machine where the Kentico CMS web project files are placed. Please note that you cannot use a remote (shared) disk. The web project files are NOT the files in the C:\Program Files folder - you need to create the web project using the Kentico CMS Web Installer first -

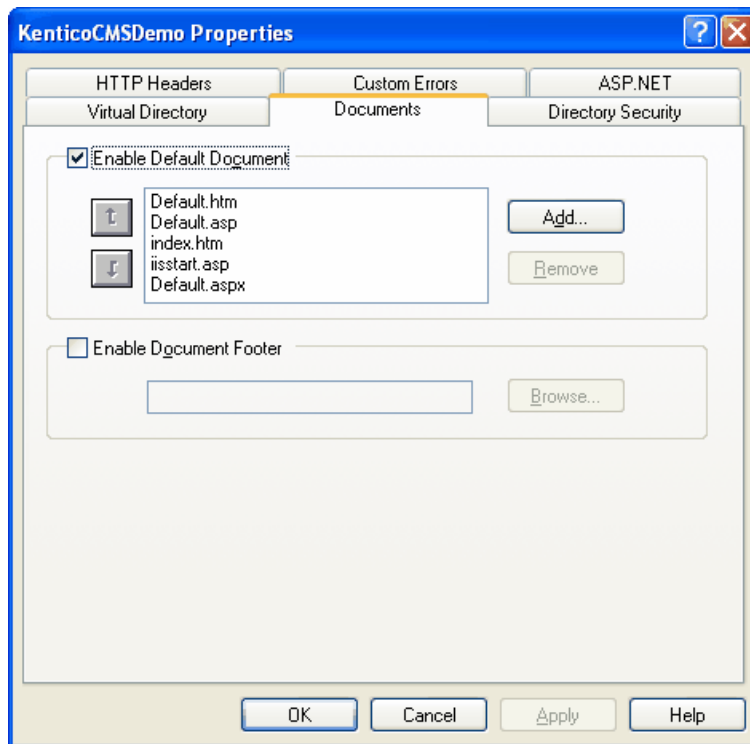
see chapter [Web Installer](#) for details. Enter the directory path and click **Next**.



4. Now you need to specify the access permissions for the new virtual directory. You need to choose at least **Read** and **Run scripts** and it's recommended that you do NOT allow any other options. Click **Next** and click **Finish**.

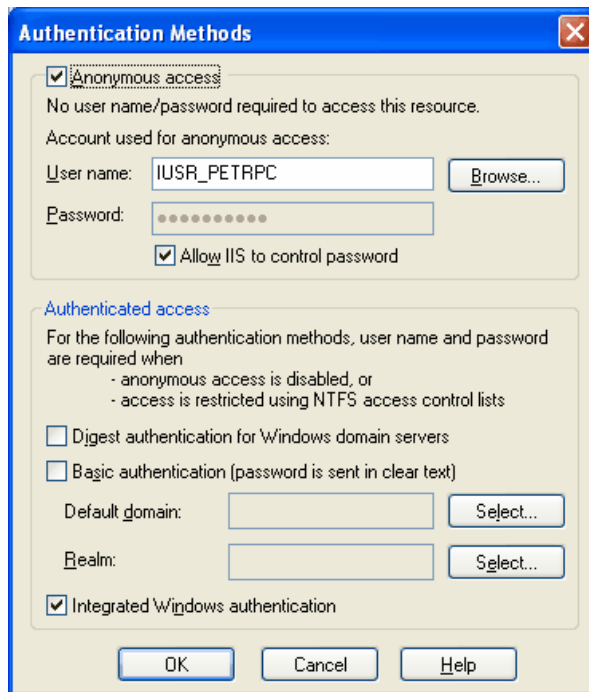


5. Right-click the newly created virtual directory and choose **Properties**. Choose the **Documents** tab and make sure the **Enable Default Document** box is checked and the list contains the **Default.aspx** file.



6. Choose the **ASP.NET** tab and make sure the **ASP.NET version is 2.0.50727** (the last number may be different). If you cannot see the **ASP.NET** tab, you may not have **ASP.NET 2.0** installed or registered correctly.

7. Choose the **Directory Security** tab, click **Edit** in the **Anonymous access and authentication control** section and make sure that both **Anonymous access** and **Integrated Windows authentication** are chosen.



8. Click **OK** on all dialogs to save the changes.

3.4.3 Configuration for Medium Trust environment

This chapter describes the procedure of running Kentico CMS in Medium Trust Level environment and the steps required to configure the system for it. It also describes the Precompilation/Deployment procedure and requirements.

Medium trust level

Medium trust level is often used on shared servers by the providers to disallow the applications to access certain resources that could be harmful to other websites running on the server. Kentico CMS can be used with default medium trust policy provided with the Microsoft .NET Framework. To run the system with medium trust, you need to follow certain rules. There are two main components that require higher than medium trust and must be considered in this situation:

- **VirtualPathProvider** – provides virtual objects (layouts, transformations) from the database.
- [Content staging module](#) – ensures synchronization of content between production and live site servers.

Virtual path provider

This library provides the interface for virtual objects stored in the database that can be compiled, such as document transformations and page layouts. The system references the files with virtual path, and VirtualPathProvider provides the control code to the compiler.

Since the virtual provider cannot run in a medium trust environment (requires `AspNetHostingPermission` with "high" trust level), you need to store the physical files to the file system. You can save all the virtual objects to the file system in **CMS Site Manager -> Administration -> System -> Deployment interface by clicking the button "Save all virtual objects to disk"**. This will make the copies of the virtual objects in following folders:

- **~/CMSTransformations** - contains transformation files for documents and custom tables
- **~/CMSLayouts** - contains shared page layouts
- **~/CMSTemplateLayouts** - contains custom page template layouts
- **~/CMSAdhocTemplateLayouts** - contains custom ad-hoc page template layouts

Please note that these files are just copies of the actual virtual object and will be used by the system only if the VirtualPathProvider cannot start. Also that the changes to the objects through the administration interface will not affect these files until you save all the objects to the disk again.



Limitations

In the medium trust environment, the VirtualPathProvider is stopped automatically. When VirtualPathProvider is stopped, **you cannot edit transformations and layouts through the user interface** without saving them on the disk again.

In the portal development model, you cannot use **custom web part code (Web part properties -> Code tab)**. If you need to add custom code on the Code tab and run the website in the medium trust environment, you need to create user controls, place web parts to the user controls and add your custom code to the web parts. Then, you can place the user controls to the page using the General/User control web part.

Please note that **you shouldn't run the system in medium trust while developing the website**. You should use this trust level only for the live website.

Content staging (Microsoft Web Services Extensions 3.0)

This section applies only if you're using content staging.

Library `Microsoft.Web.Services3.dll` from the Web Services Extensions 3 (WSE) package which is used by the Content staging module requires Full trust permissions because of the low level operations related to the communication protocols. To ensure the proper functionality, the library needs to be registered in the Global Assembly Cache (GAC) of the server. The library is provided by Microsoft and most of the hosting providers pre-install it on their shared servers.

If you manage the server, please follow these steps:

1. Go to **Control panel -> Administrative tools -> Microsoft .NET Framework 2.0 Configuration**.
2. Select the **Assembly cache**, click on **Add an Assembly to the Assembly Cache** and select the `bin\Microsoft.Web.Services3.dll` library file from your web project.
3. Delete the `bin\Microsoft.Web.Services3.dll` file from your web project if it's present.
4. Make sure that your project `web.config` file contains the following item:

```
<system.web>
...
  <compilation debug="false" numRecompilesBeforeAppRestart="100">
    <assemblies>
      ...
      <add assembly="Microsoft.Web.Services3, Version=3.0.0.0, Culture=neutral,
        PublicKeyToken=31bf3856ad364e35" />
    </assemblies>
  </compilation>
...
</system.web>
```

If your hosting provider cannot install the library to GAC, you need to manually remove some of the system components. See the paragraph **Special cases** for details.

Running the website

Now the system should work under medium trust level properly. Restart your IIS for configuration changes to take effect and run the website.

If your website uses any third-party components that do not support medium trust level by default, you may need to configure the system for them. In this case, please contact their author to get the information how to configure the environment to run it in the medium trust environment.

Special cases

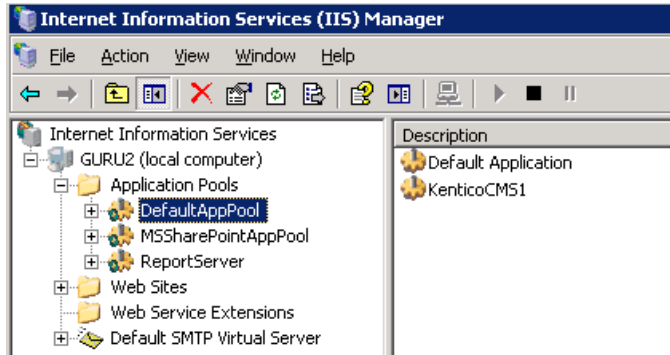
You may not be able to access the GAC or convince your hosting provider to add the WSE library to the GAC. In this case, you may still run Kentico CMS in medium trust level, but you will not be able to use the Content staging module.

If this is your case, please delete the *bin/Microsoft.Web.Services3.dll* file from your web project if it's present

After these changes, your system will work correctly in the medium trust environment but you will not be able to use the Content staging operations.

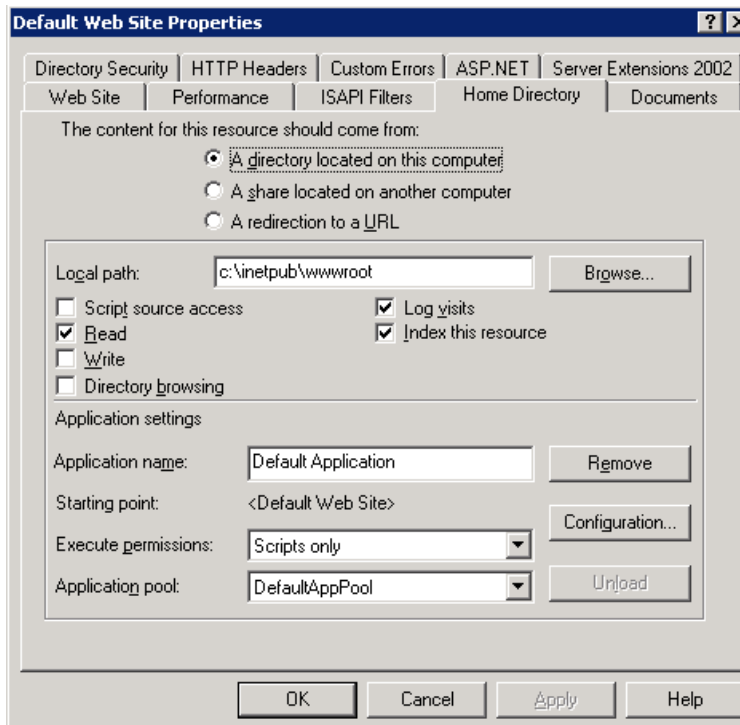
3.4.4 Configuring Application Pools

Application Pools provide you with additional level of website management. They are supported only on Windows Server 2003/2008/Vista/7. You can configure them in **Start -> Control Panel -> Administrative Tools -> Internet Information Services (IIS) Manager -> Computer -> Application Pools**.

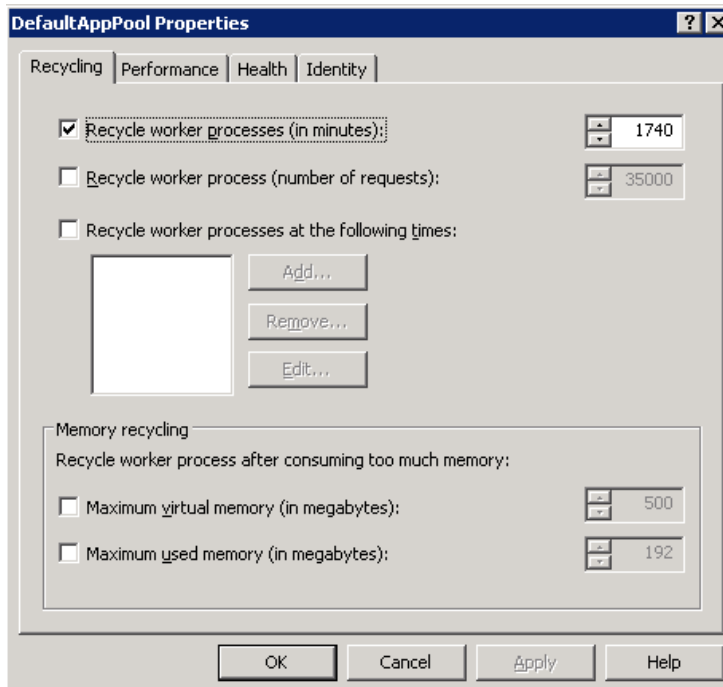


The application pools allow you to group applications (websites) into pools that share server resources using the same rules. This chapter contains recommendations on how to configure the website application pool for Kentico CMS.

You can check the name of the application pool in the website Properties dialog, on the Home directory tab. If you're running Kentico CMS in a virtual directory, you will find it in the Virtual Directory Properties dialog, on the Virtual Directory tab.



You can see the **Application Pool Properties** dialog by right-clicking the appropriate application pool and selecting Properties from the context menu. You will see dialog like this:



Recommended Application Pool Configuration

1. It's highly recommended that you run Kentico CMS in a separate application pool. If you share the pool with other websites, the system may behave unpredictably.
2. If you need to run multiple websites in a single pool, be sure to run only ASP.NET 2.0 applications in the same pool.
3. It's recommended that you specify some value in the **Recycle worker** processes on the **Recycling** tab. This value shouldn't be too short (less than **60 minutes**) or too long (more than **1440 minutes/1 day**). Setting this value ensures that the **memory is recycled and the application is automatically recovered from failures** by regular restart. **If your website freezes** time to time, you can temporarily set the value to 30 minutes to ensure that the website is restarted automatically. **Short intervals** may lead to high server load and slow response since after each recycling, the application needs to be restarted and data reloaded to the cache.
4. It's recommended that you **do not limit the maximum virtual or used memory**. If you need to use some value, use **at least 100 MB**. If your website is being **restarted too often**, it may be caused by low maximum memory limit. You can check the frequency of application restarts in Kentico CMS Event Log (Site Manager -> Administration -> Event log).
5. The **Maximum number of worker processes** on the **Performance** tab must be set to 1. If you set a higher value, the worker processes will not be synchronized and Kentico CMS website will not work correctly. This may lead to **unexpected caching of content and system objects**.
6. You can configure the **user account** under which the application runs on the **Identity** tab. This information is useful if you need to troubleshoot issues with **permissions**, such as disk write

permissions.

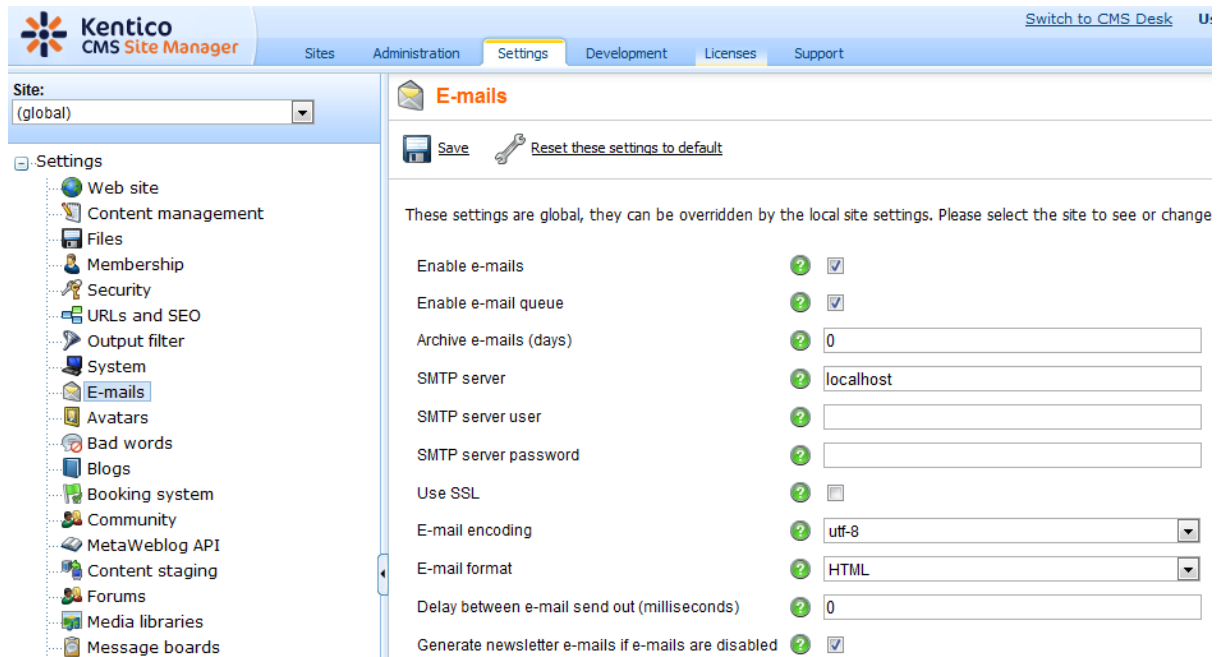
7. Kentico CMS **does not support Web garden**. Therefore, the **Maximum number of worker processes** has to be set to 1.

3.4.5 SMTP server configuration

If you want to send e-mails from the web application, you may need to configure the SMTP server.

After you finish the [New site wizard](#), you can configure the SMTP server in **Site Manager -> Settings -> E-mails**. Here, you can set up the following values:

- **SMTP server** - The name, address or IP address of your SMTP server, including the port number (if it's not 25).
- **SMTP server user** - User name - use this value only if your SMTP server requires authentication.
- **SMTP server password** - Password - use this value only if your SMTP server requires authentication.
- **E-mail encoding** - Here you can enter the encoding of the e-mails. The default and recommended value is UTF-8. Change this value only if you encounter issues with extended characters in your e-mails.

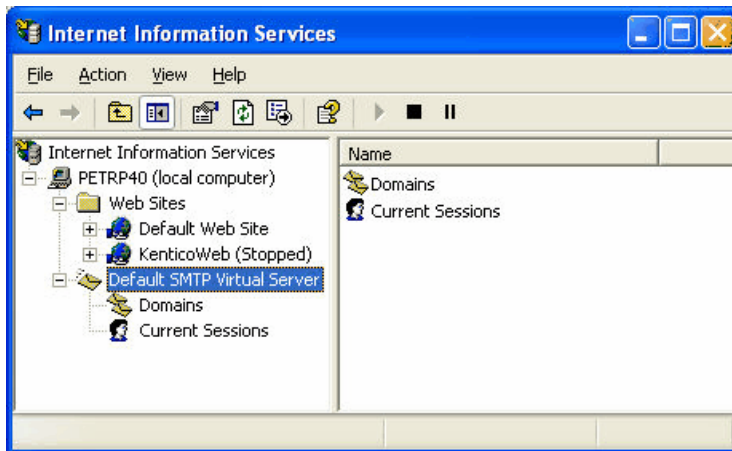


The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The 'Settings' tab is active, and the 'E-mails' configuration page is displayed. The page title is 'E-mails' and it includes a 'Save' button and a 'Reset these settings to default' link. The settings are global and can be overridden by local site settings. The configuration options are:

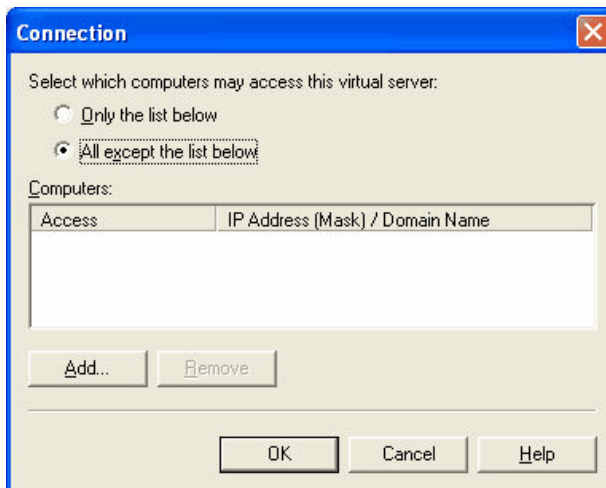
Setting	Value
Enable e-mails	<input checked="" type="checkbox"/>
Enable e-mail queue	<input checked="" type="checkbox"/>
Archive e-mails (days)	0
SMTP server	localhost
SMTP server user	
SMTP server password	
Use SSL	<input type="checkbox"/>
E-mail encoding	utf-8
E-mail format	HTML
Delay between e-mail send out (milliseconds)	0
Generate newsletter e-mails if e-mails are disabled	<input checked="" type="checkbox"/>

If you experience any problem when sending e-mails through your own SMTP server that is part of IIS, please follow this guide:

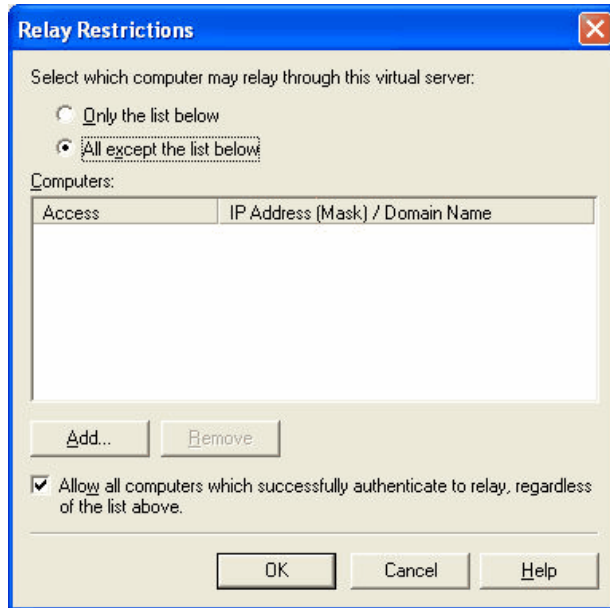
1. Open **Control Panels -> Administrative Tools -> Internet Information Services** console. Check that the SMTP server is installed and running:



2. Open SMTP server properties and choose tab **Access**. Click **Connection control** and make sure that the local machine may access the SMTP server:



3. Click **Relay restrictions** and check that the local machine can relay through the SMTP server:



Testing E-mail Sending

You can test sending e-mails from Kentico CMS using the **CMS Site Manager -> Administration -> System -> E-mail** dialog.

3.4.6 Installation on shared hosting server

If you want to deploy Kentico CMS directly to the live server (or generally to a remote server), you need to follow these steps:

1. Install Kentico CMS on your **local machine** if you haven't done so yet.
2. Run [Kentico CMS Web Installer](#) (you can find it in Start -> All Programs -> Kentico CMS).
3. Choose to **install Kentico CMS on a remote (production or testing) server** and enter the path C:\tempfiles. Finish the wizard - it only copies the files to the given folder. You do not need to have Visual Studio installed.
4. **Copy the files** from your local folder C:\tempfiles to the root of the website using FTP. If you want to use a sub-folder, you will need to create a new virtual directory as described in [Creating a virtual directory](#).
5. **Open web browser** and navigate to your website. You will be displayed with **Database Setup Wizard**.
6. Go through the wizard and create a **new Kentico CMS database** on your live server.
7. At the end of the Database Setup Wizard, choose either to create a new website or import your existing Kentico CMS website.



Installation in Medium Trust Level

If you're installing Kentico CMS in medium-trust environment, please read chapters [Installation in medium-trust environment](#) and [Configuration for Medium Trust environment](#).

Related topics: [Deployment to the live server](#), [Configuration for Medium Trust environment](#)

3.4.7 Installation in medium-trust environment

If you want to deploy Kentico CMS directly to the live server (or generally to a remote server) that uses **medium-trust security level**, you need to follow these steps:

1. Install Kentico CMS on your **local machine** if you haven't done so yet.
2. Run [Kentico CMS Web Installer](#) (you can find it in Start -> All Programs -> Kentico CMS).
3. Choose to **install Kentico CMS on a remote (production or testing) server** and enter the path C:\tempfiles. Finish the wizard - it only copies the files to the given folder. You do not need to have Visual Studio installed.
4. **Copy the files** from your local folder C:\tempfiles to the root of the website using FTP. If you want to use a sub-folder, you will need to create a new virtual directory as described in [Creating a virtual directory](#).
5. Make sure the web.config file on your server contains the following value in the **appSettings** section (it specifies that the CMS should use the managed provider):

```
<add key="CMSDirectoryProviderAssembly" value="CMS.DirectoryProviderDotNet" />
```

6. **Open web browser** and navigate to your website. You will be displayed with the first step of the [Database Setup](#).
7. Go through the wizard and create a **new Kentico CMS database** on your live server. At the end of

the process, you will be asked to update your web.config file manually - please follow the instructions on the screen.

8. Choose either to create a **new website or import your existing** Kentico CMS website.
9. After you create a new website, you will need to save all virtual objects to the disk. Go to **Site Manager -> Administration -> System -> Deployment** and click **Save all virtual objects to disk**

If your web application is not allowed to write on the disk, you will need to install Kentico CMS on your local machine, save all virtual objects to disk and then copy the web project over FTP to your server.



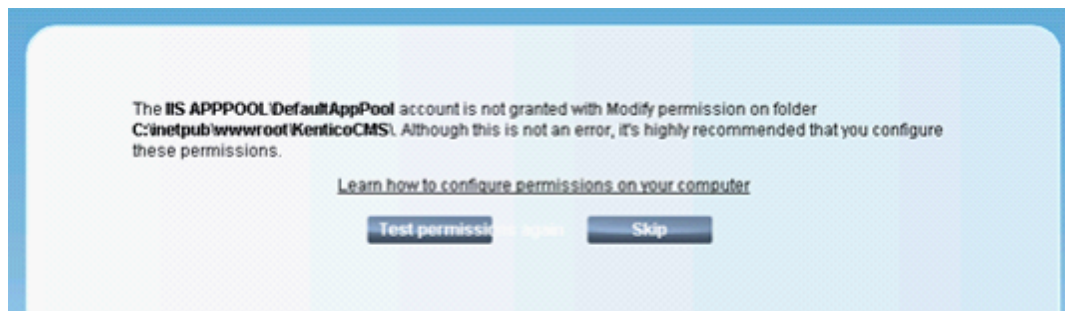
Medium Trust Environment Specifics

For more information on medium trust level please read chapter [Configuration for Medium Trust environment](#).

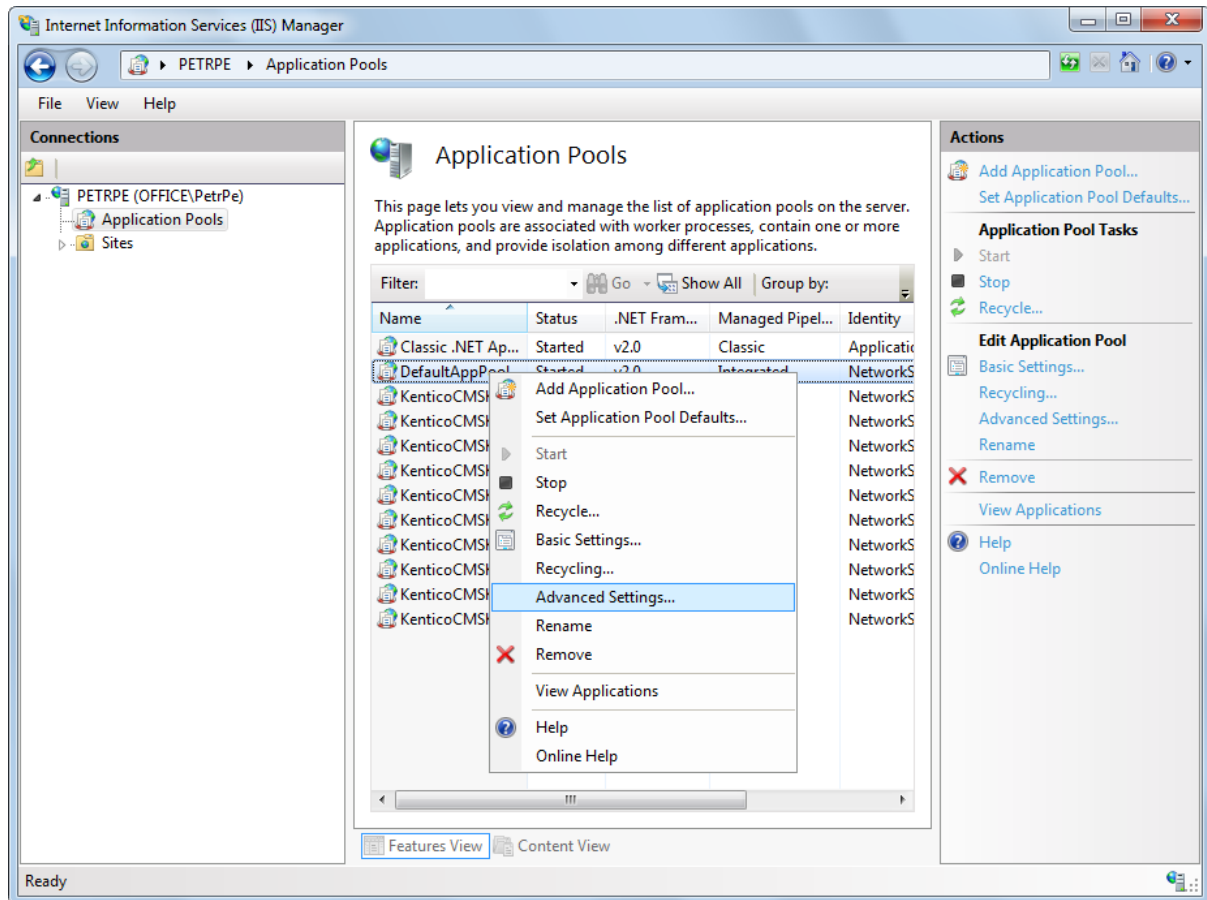
3.4.8 AppPool permissions on Windows 7 or Windows Server 2008 R2

Kentico CMS runs on both **Windows 7** and **Windows Server 2008 R2**. On both systems, you need to add the **Write** permission to the website's folder as described in [Troubleshooting installation issues -> Disk permissions problems](#).

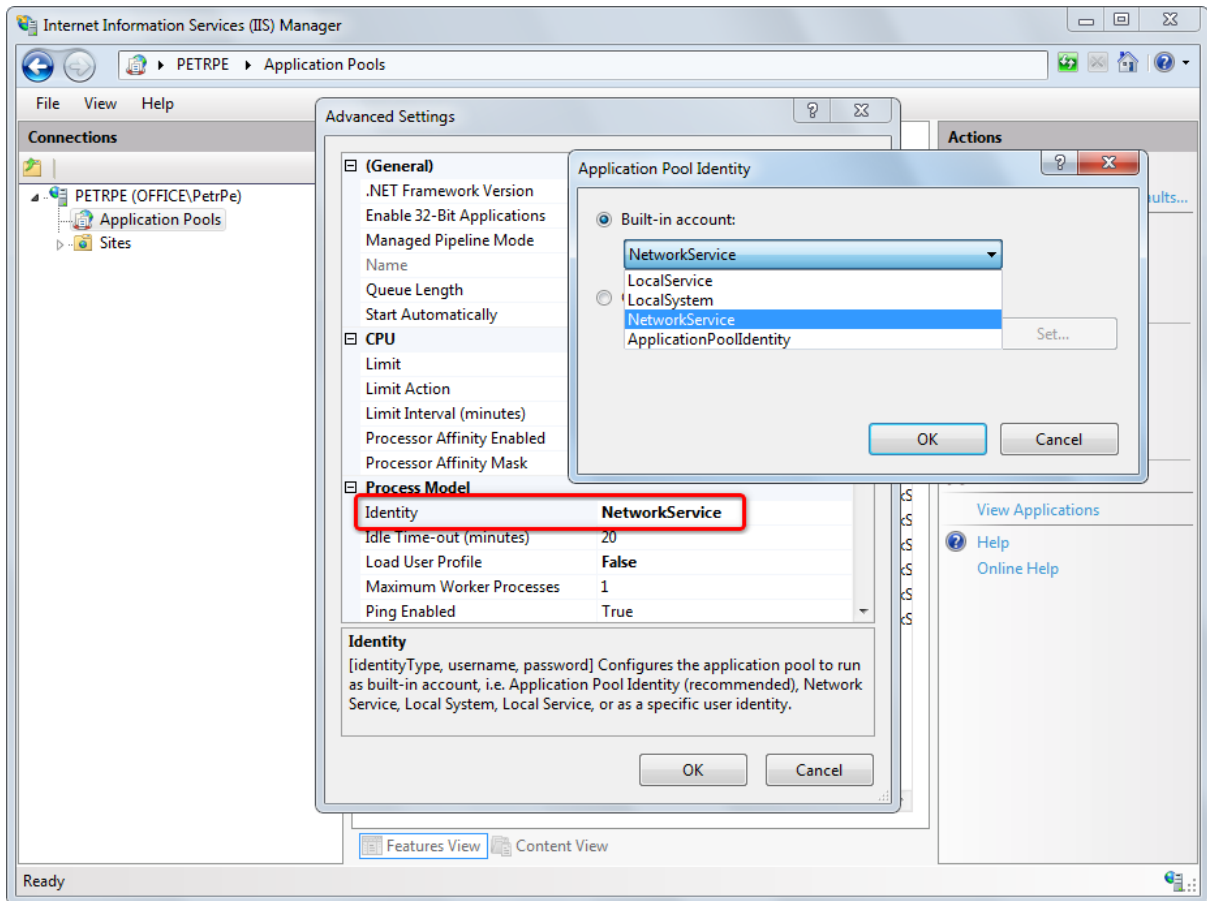
If you can still see the following screen after the end of the [Database setup](#) in either of the systems, it's necessary to make some further settings in your IIS.



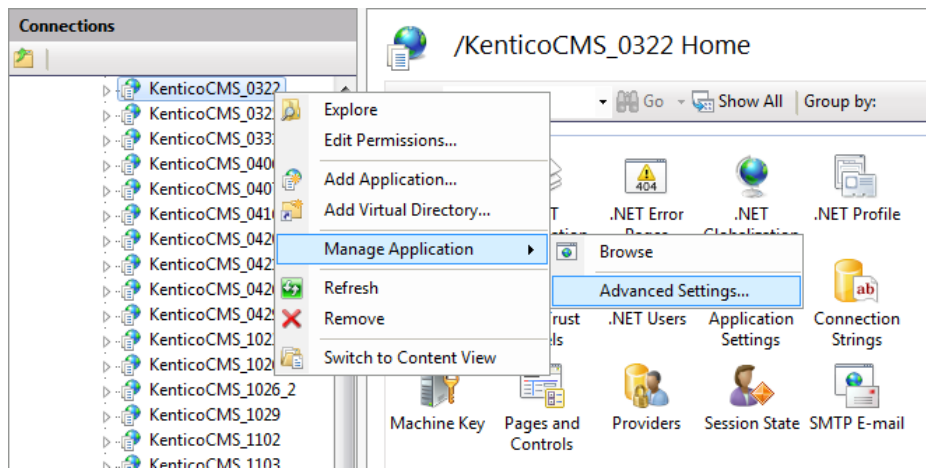
1. Select the **Application Pools** node in the **Connections** tree in the IIS console. All application pools will be listed. Right-click the **DefaultAppPool** and chose **Advanced settings** from the context menu.



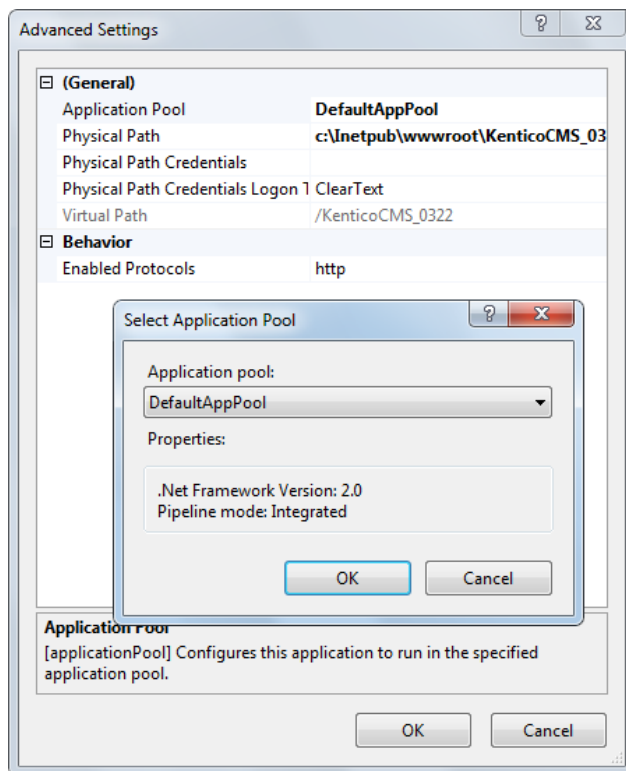
2. In the following dialog, switch the **Identity** value in the **Process Model** category to **Network Service**.



3. Now go to your website's **Advanced settings** ...

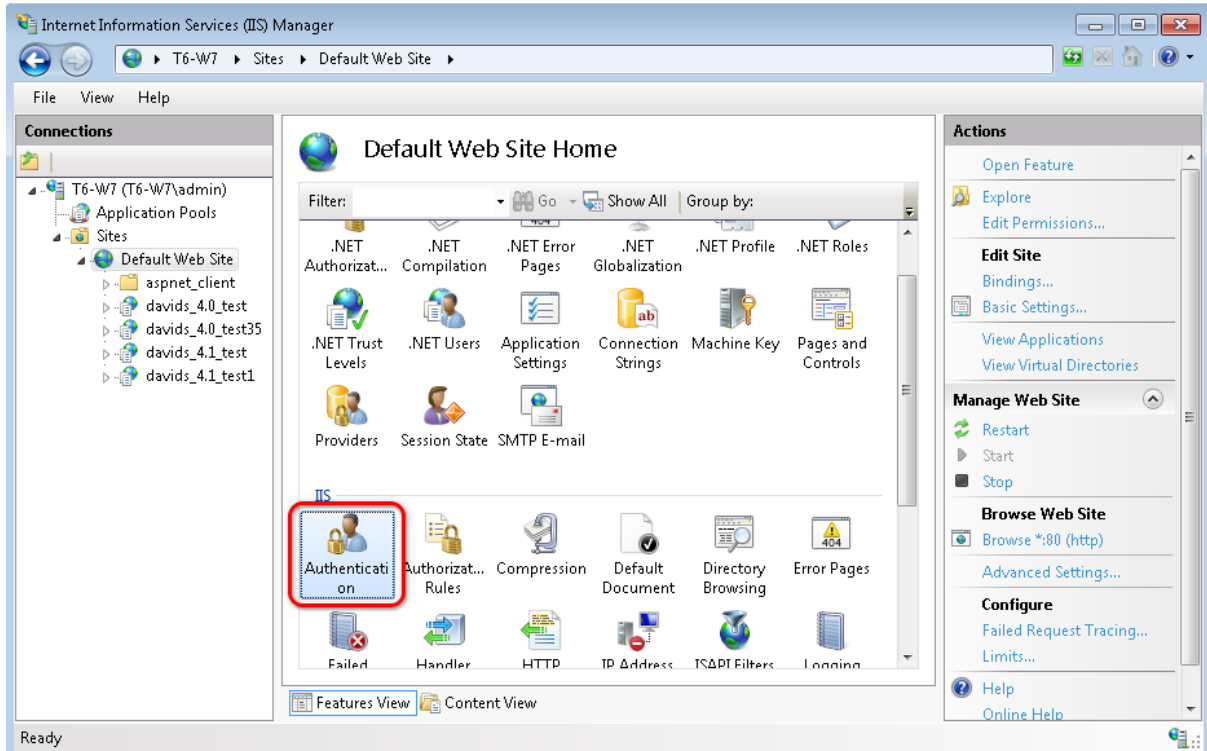


4. ... and set the **Application Pool** property to **DefaultAppPool**.

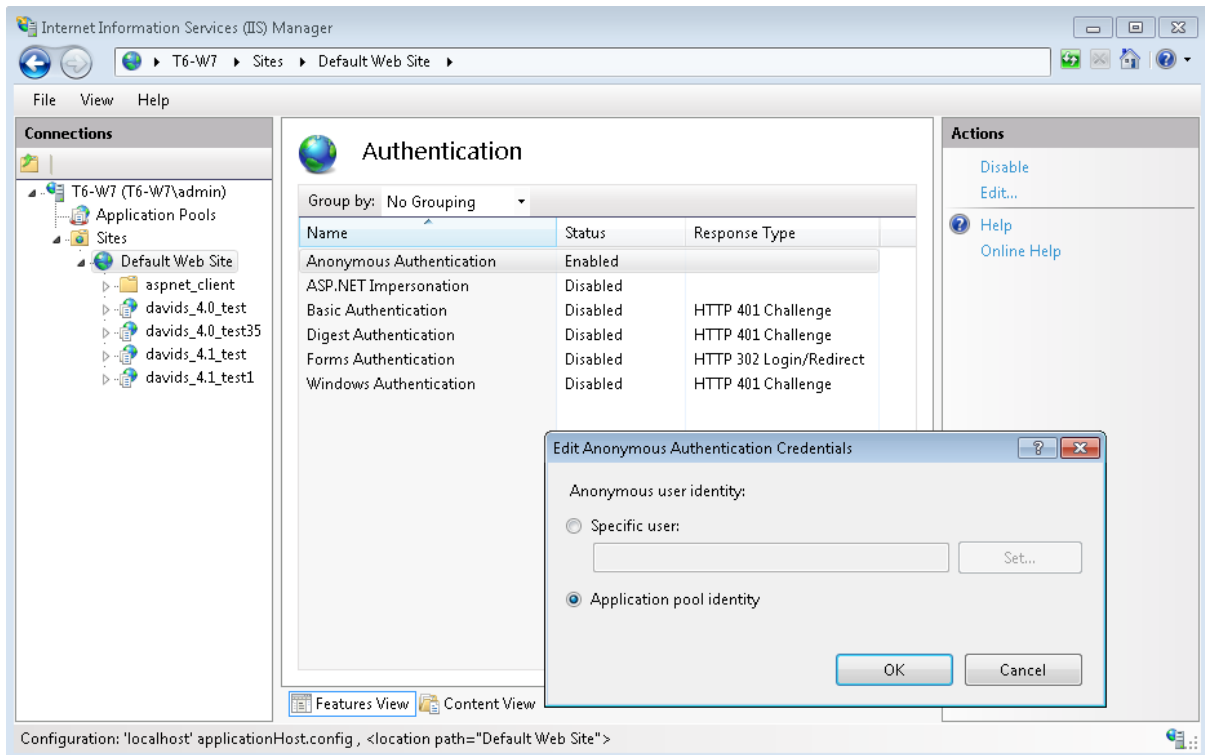


On **Windows 7**, you also need to change the Anonymous authentication settings as described below:

1. Open **IIS manager**, select your site and double-click the **IIS -> Authentication** icon.



2. Select **Anonymous authentication** from the list and click **Edit**. In the pop-up dialog, choose **Application pool identity** and click **OK**.



3.4.9 Database replication

3.4.9.1 Overview

Replication is a set of technologies for copying and distributing data and database objects from one database to another and then synchronizing between databases to maintain consistency. The databases can be running either on separate servers or even on the same server. You will typically use it for back-up purposes (you have two databases with the same content) or in case that you need to spread the load among more databases.

Kentico CMS database can be replicated using the **merge replication**. It can be configured in MS SQL Server Management Studio. The configuration process consists of creating a publication and one or more subscriptions:

- [Publication](#) - the database which has the data to offer to the other server
- [Subscription](#) - the database which receives updates from the publisher when the data is modified

Detailed information about replication in MS SQL can be found at: <http://msdn.microsoft.com/en-us/library/ms151198.aspx>.



Limitations caused by DB replication!

Using database replication with Kentico CMS results in the following limitations:

- importing is not functional
- upgrade from previous versions of Kentico CMS to a higher one is not possible
- newly created document types, BizForms and custom tables can not be synchronized to the subscribers
- field changes in document types and system tables can not be synchronized to the subscribers
- any other additional changes to the database structure are not guaranteed to be synchronized to the subscribers

It is therefore recommended to go through the following procedure when your website is complete, i.e. when you won't need to use any of the limited features.

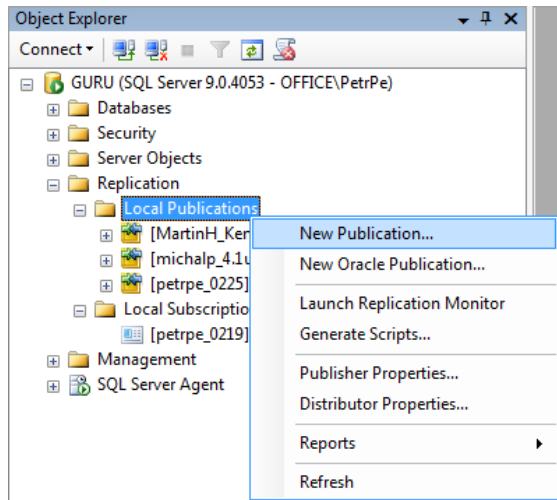
In case that you needed to use any of the limited features listed above, you would need to disestablish your existing replication, make the required changes and set up new database replication from scratch.

If you want to achieve this manually without disestablishing the existing replication, you can follow the instructions on [this page](#).

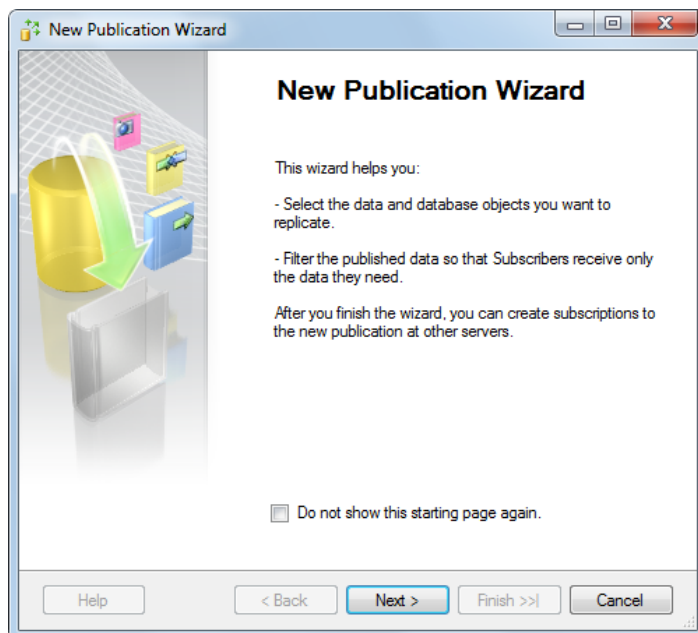
3.4.9.2 Creating a publication

The first logical step in setting up database replication is to create the publication.

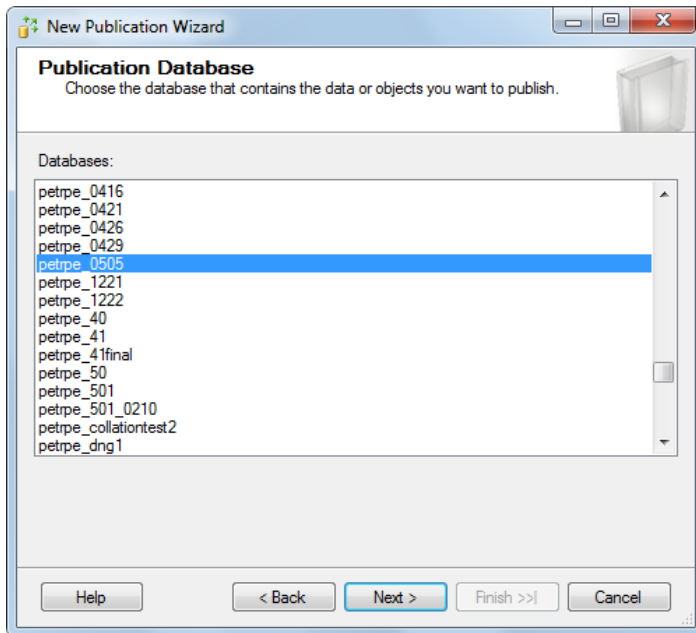
1. Open MS SQL Server Management Studio. Expand the **Replication** node, right-click the **Local Publications** folder and select **New Publication** from the context menu.



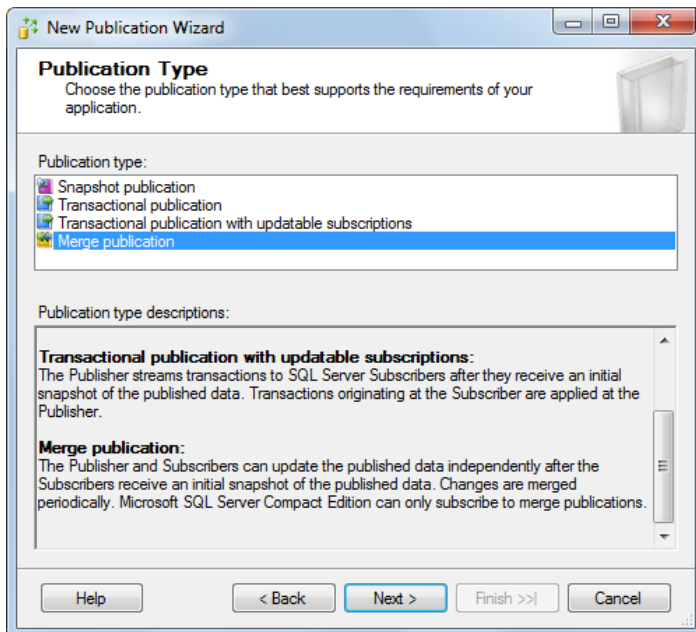
2. The **New Publication Wizard** starts. Click **Next** in the first step.



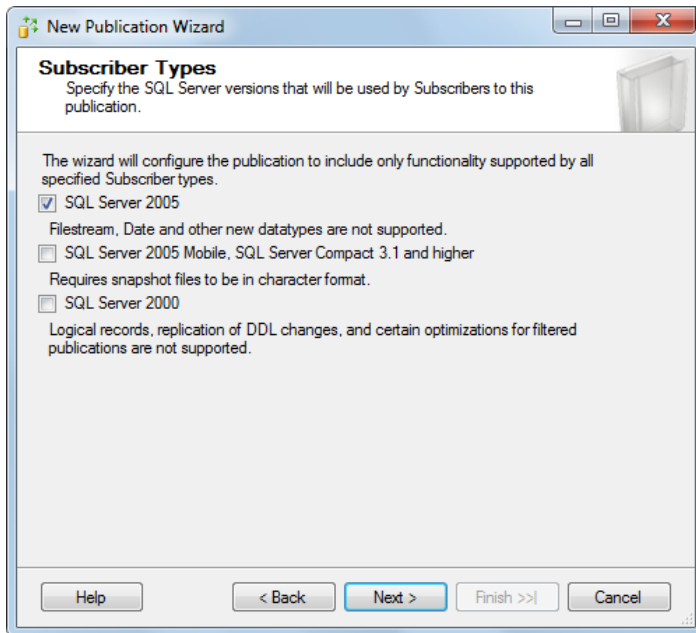
3. Now you need to select the publication database. All databases on the server will be listed, so choose the one which you want to be the publisher and click **Next**.



4. The **Publication Type** step lets you choose the type of replication which you are going to use. Kentico CMS supports merge replication only, so choose **Merge publication** and click **Next**.

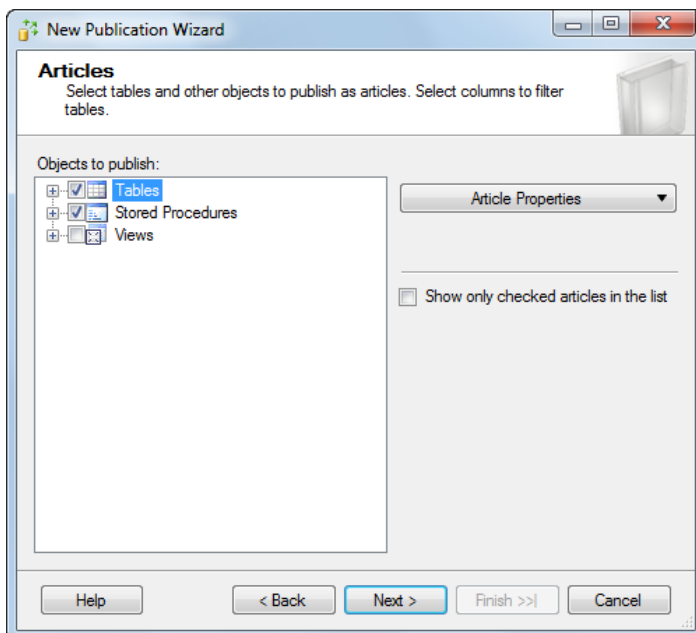


5. This step lets you specify which versions of SQL Server are supported for the subscribers. Choose the versions that your subscribers are running on and click **Next**.



6. This step lets you configure which **Tables** and **Stored Procedures** will be synchronized between the servers. You should not select any **Views** as because changes in metadata which cause changes in any of the Views can not be synchronized automatically (see the note in [Overview](#) for more details).

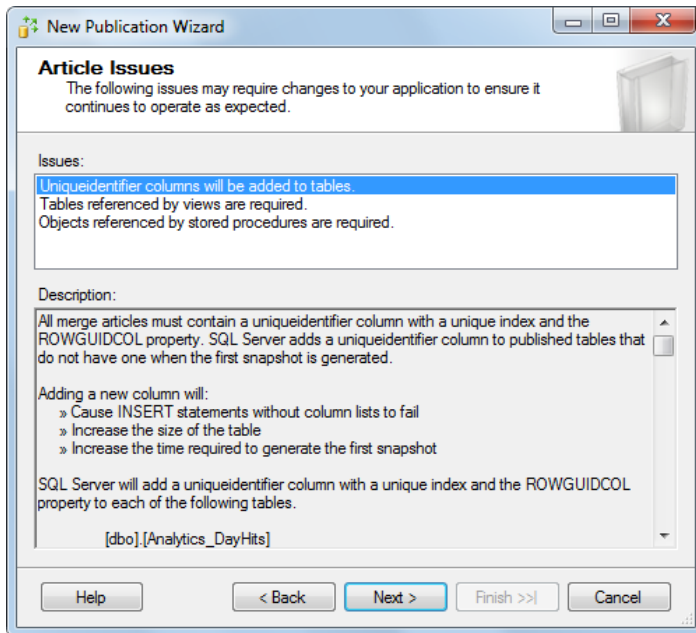
Select the tables and stored procedures that you wish to synchronize (unless you have some specific needs, it makes the most sense to select all) and click **Next**.



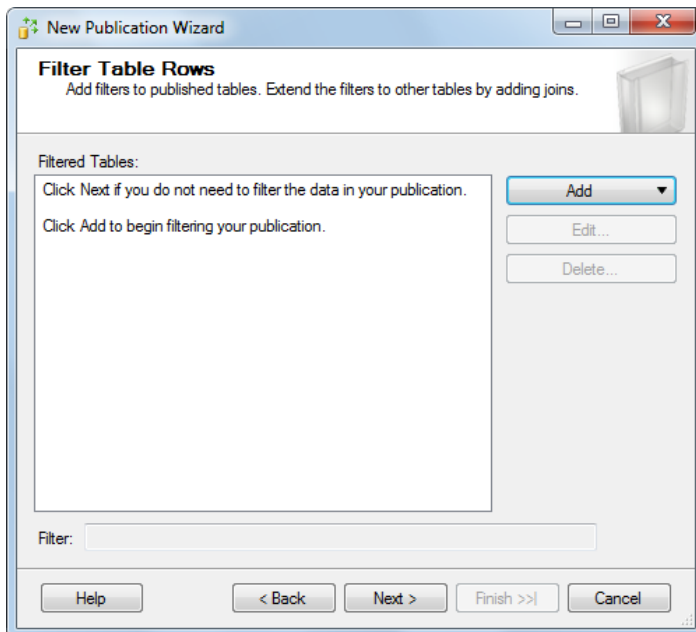
7. The **Arcile Issues** step is only informational - it notifies you about modifications to your database which are required for the application to work as expected with the replication.

The most important modification is that a column named **rowguid** (uniqueidentifier column with a unique index) and the **ROWGUIDCOL** property are added to each table.

Read through the info and click **Next**.



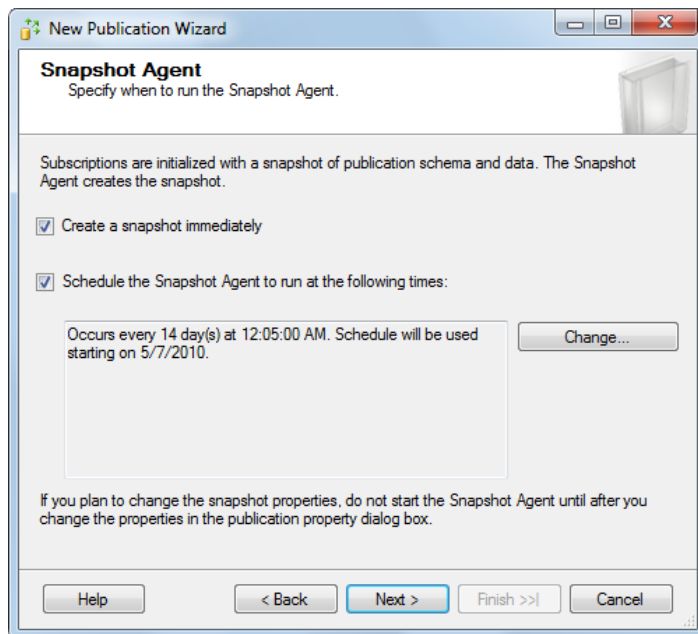
8. In the **Filter Table Rows** step, you can add filters the published tables. This depends on your specific needs, so add filters as needed (or do not add any) and click **Next**.



9. Now you need to configure the **Snapshot Agent** to take a snapshot of the publisher database. The snapshot will be used for the initial content of the subscriber database, which can not be created without it. You have the following two options:

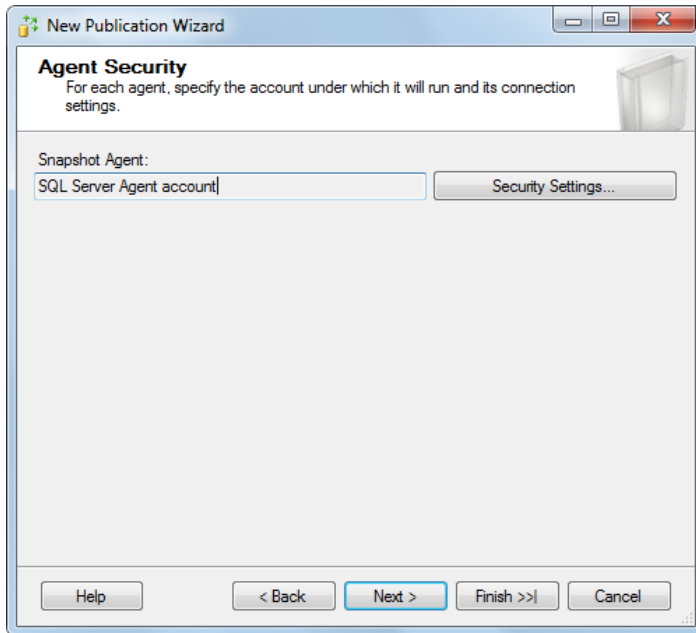
- **Create a snapshot immediately** - if enabled, the Snapshot Agent will take the snapshot immediately after this wizard is completed
- **Schedule the Snapshot Agent to run at the following times** - if enabled, the Snapshot Agent will take the snapshot on a regular basis, which can be specified if you click the *Change* button

Make the selection and click **Next**.



10. In this step, you need to configure the Snapshot Agent's security settings, i.e. how the Snapshot Agent will get authenticated when accessing the database to create the snapshot. The default **SQL Server Agent account** works fine in most cases, but you may need to specify different account in specific cases.

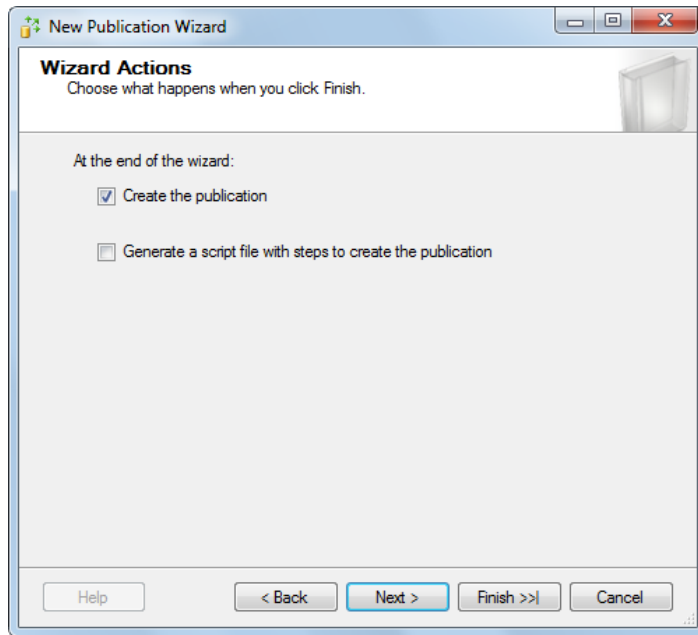
Make a configuration suitable for your environment and click **Next**.



11. The **Wizard Actions** step lets you decide what happens when you finish the wizard. You have the following two options:

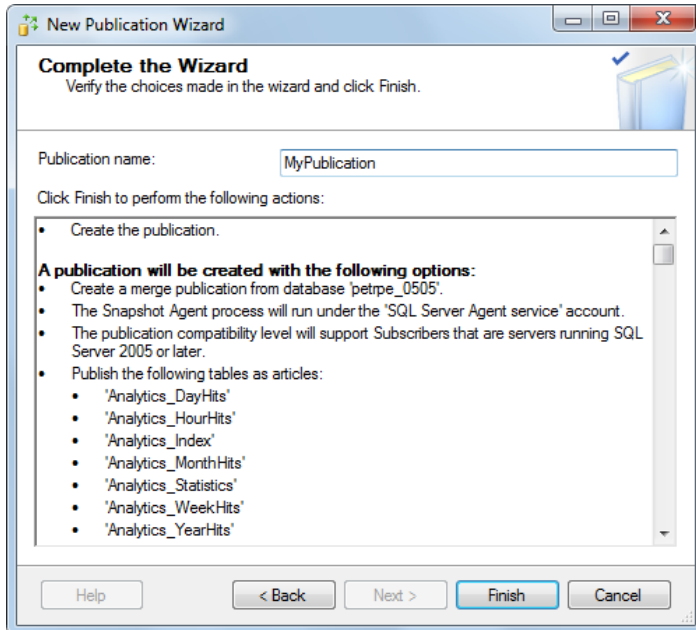
- **Create the publication** - if enabled, the publication will be created as defined throughout the wizard
- **Generate a script file with steps to create the publication** - if enabled, the wizard generates a script which, when executed, creates the publication as defined throughout the wizard

Click **Next**.



12. In the final step, you need to enter the name of your new publication into the **Publication name** field. The section below gives an overview of options which you defined throughout the wizard.

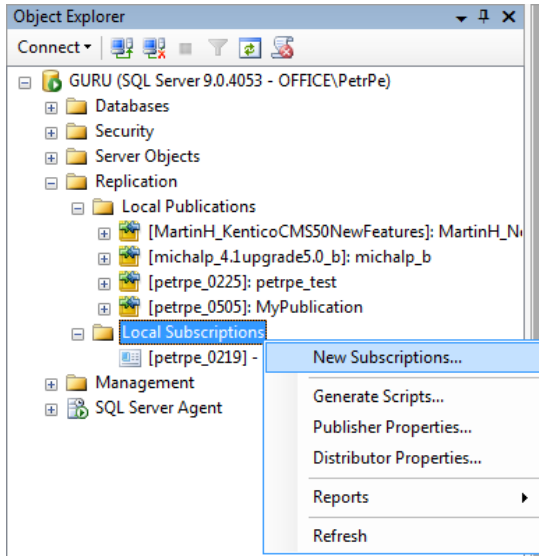
Click **Finish** to create the publication based on the listed options.



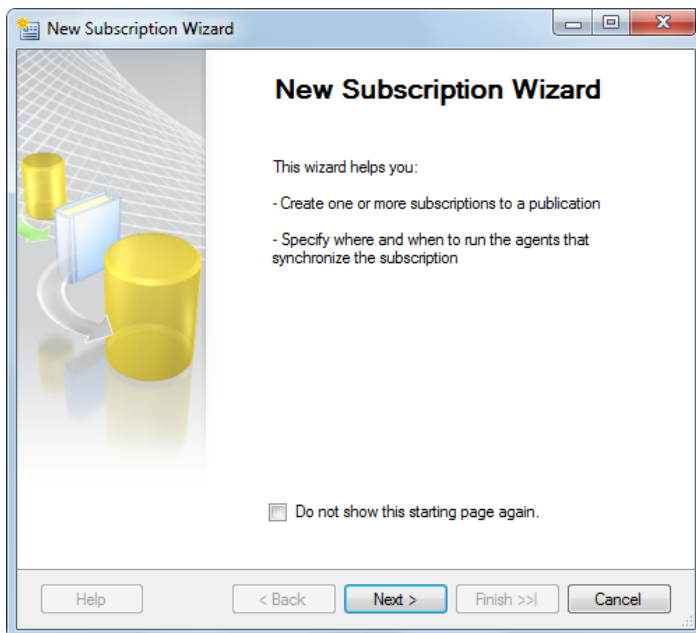
3.4.9.3 Creating a subscription

When you have a publication configured, you can proceed to creating the subscriptions. There can be one or more subscriptions, while you will need a dedicated database for each subscription. Each subscription database needs to be an **exact copy of the publication database**. The copy can be created using [backup](#) and [restore](#) in SQL Server Management Studio.

1. In **SQL Server Management Studio**, expand the **Replication** node and right-click the **Local Subscriptions** folder. Choose **New Subscriptions** from the context menu.

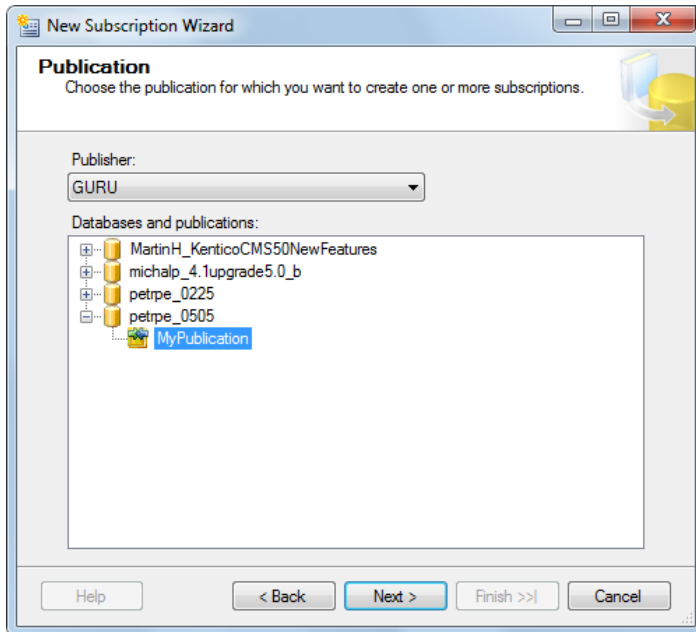


2. The **New Subscription Wizard** starts. Click **Next** in the first step.



3. In the **Publication** step, you need to select the publication to which you want to subscribe. Select the server where the publication is located from the **Publisher** drop-down list. All publications on the selected server will be listed in the **Databases and publications** section below.

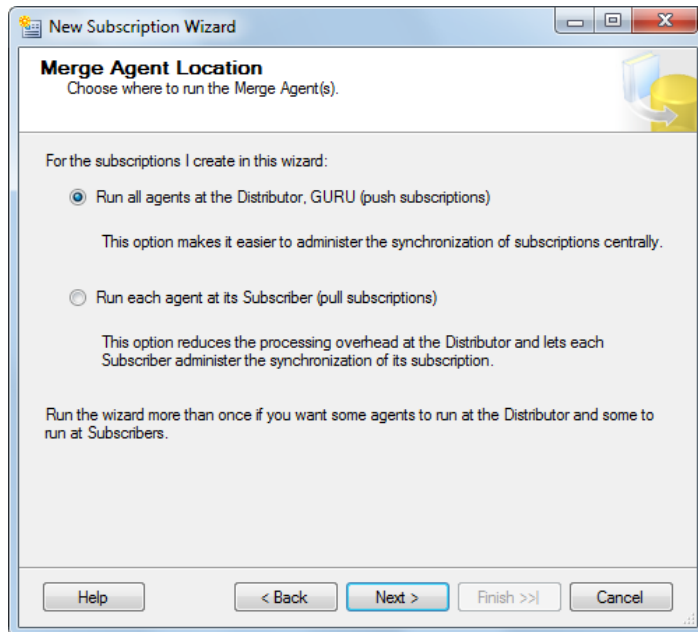
Select the required publication and click **Next**.



4. In this step, you need to decide where the Merge Agent will be run. You have the following two options:

- **Run all agents at the Distributor (push subscription)** - if selected, the Merge Agent will run at the distributor (the server where the publication is)
- **Run each agent at its Subscriber (pull subscription)** - if selected, the Merge Agent will run at the subscriber (the server where the subscription is)

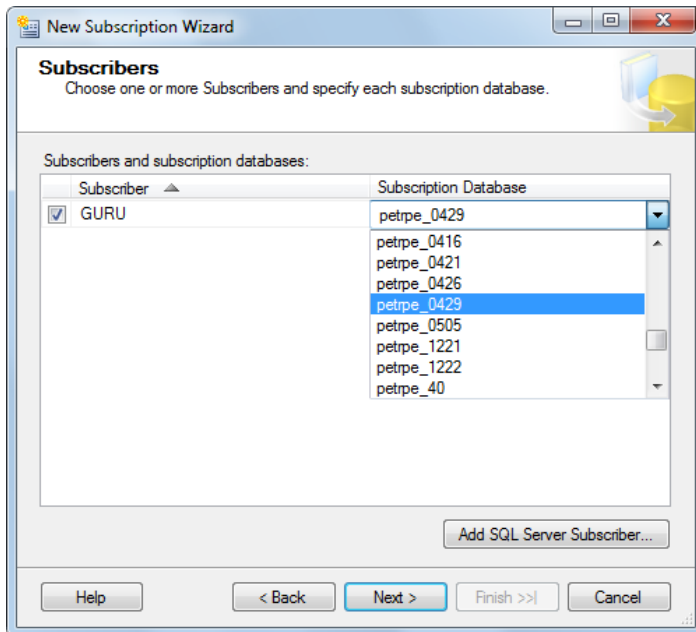
Make your choice (running the agent at the Distributor is recommended for most cases) and click **Next**.



5. Now you need to select the subscription database(s).

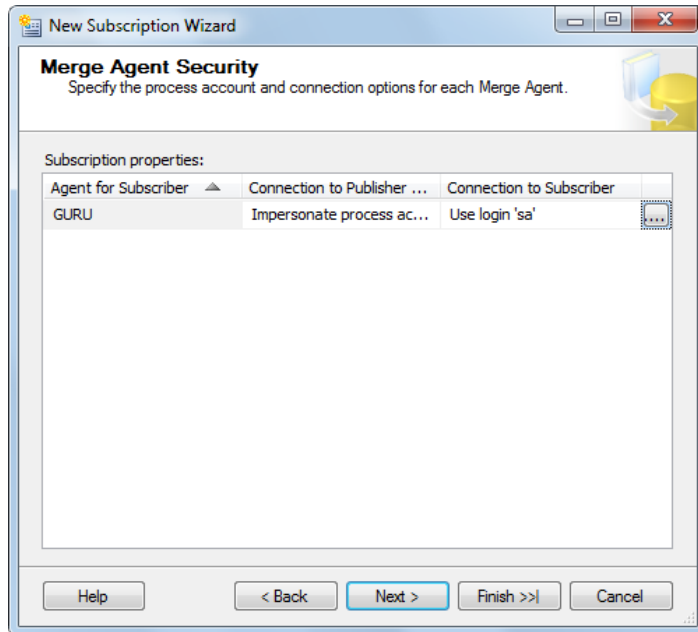
The currently managed database server will be offered in the **Subscriber** column. Using the **Add SQL Server Subscriber** button, you can add other servers to the list, which enables you to create subscriptions on a different server than the currently managed one. Next to each server, you can find a drop-down list containing all databases on the server.

Choose the subscription database(s) that you prepared before starting this wizard (as described at the beginning of this page) and click **Next**.



6. In the **Merge Agent Security** step, you are asked to specify the process account and connection options for the Merge Agent. This can be specified for each server by clicking the appropriate "..." button.

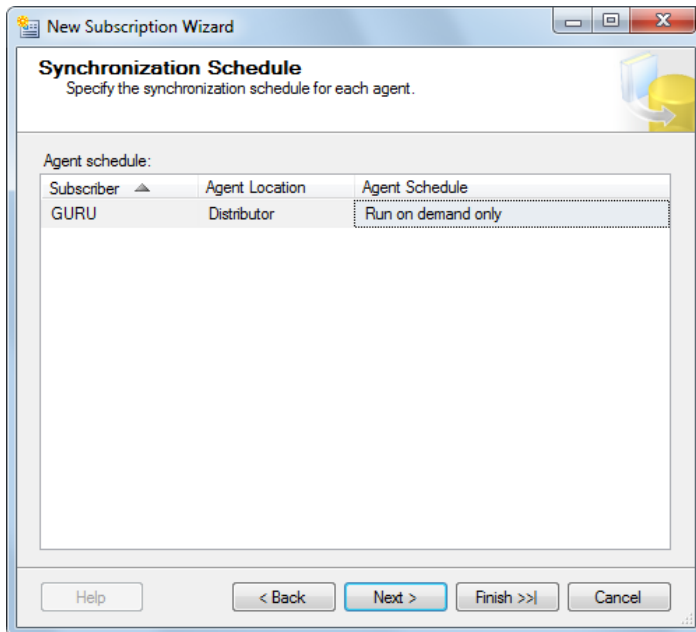
Specify the required information according to your environment and click **Next**.



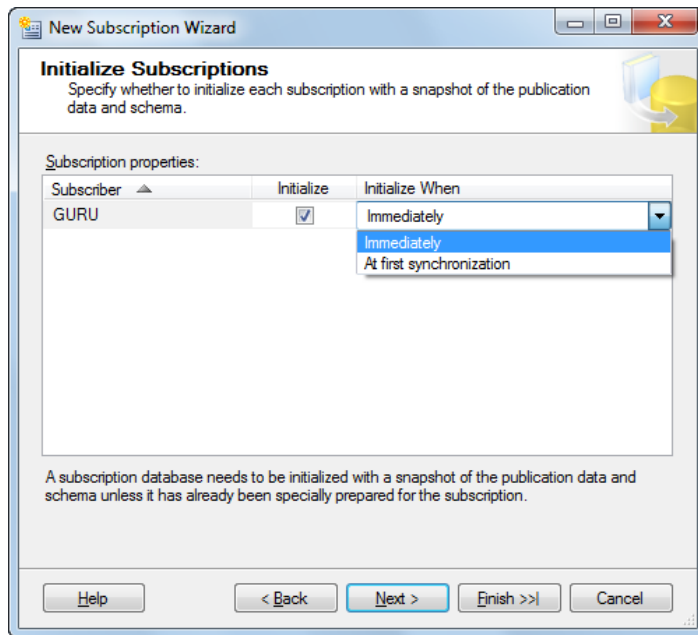
7. In the **Synchronization Schedule** step, you need to specify when will synchronization between the subscriber and the publisher be performed. You have the following options:

- **Run continuously** - synchronizes immediately whenever a change is made
- **Run on demand** - synchronization is performed only when executed manually from **Replication Monitor** in **SQL Server Management Studio**
- **Run on schedule** - synchronization is performed on a regular basis after a set interval

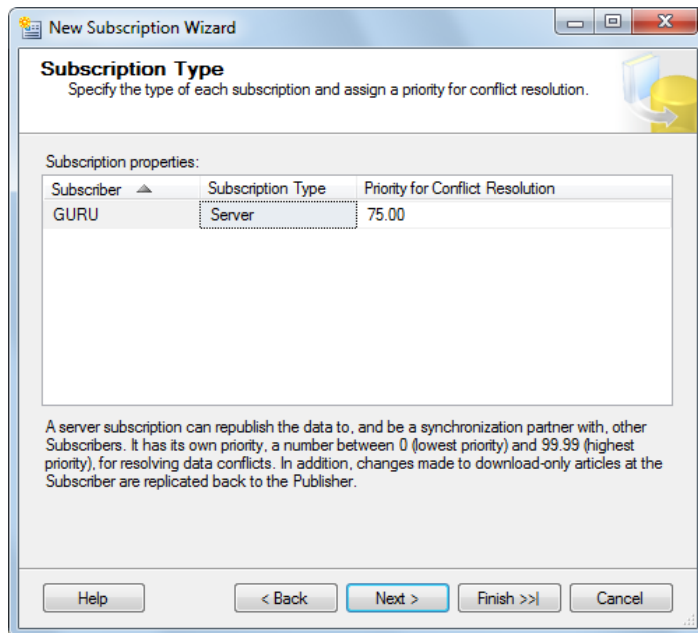
Select the required schedule and click **Next**.



8. This step lets you initialize the subscription, i.e. fill the subscription database with data from the publisher database snapshot. To perform this, the database snapshot needs to be already created. You can select from the following two options defining when will the synchronization be performed:



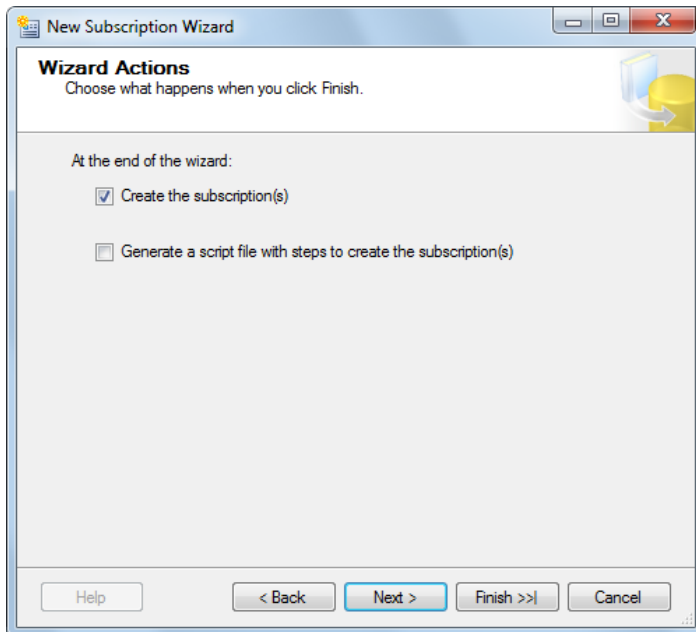
9. The **Subscription Type** step lets you decide if you want the subscription to be of the **Server** or **Client** type. For the purposes of our example, leave the default values (*Server* subscription with *75.00* priority) and click **Next**.



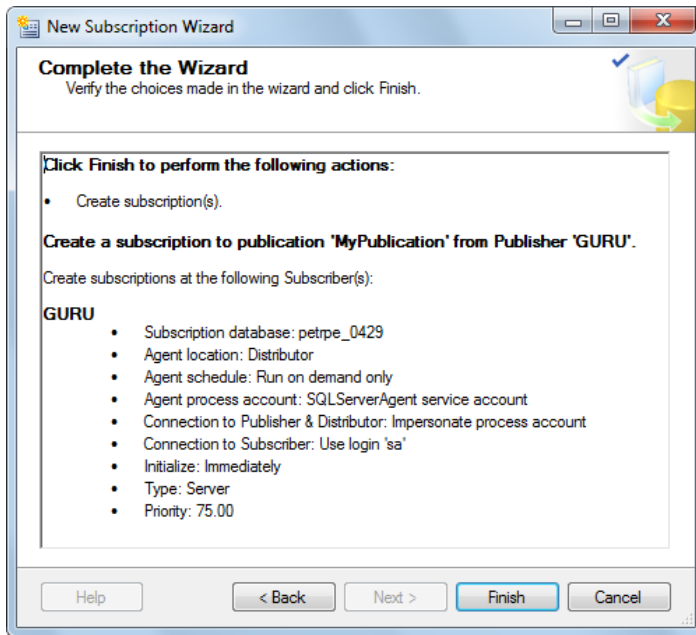
10. The **Wizard Actions** step lets you decide what happens when you finish the wizard. You have the following two options:

- **Create the subscription(s)** - if enabled, the subscription(s) will be created as defined throughout the wizard
- **Generate a script file with steps to create the subscription(s)** - if enabled, the wizard generates a script which, when executed, creates the subscription(s) as defined throughout the wizard

Click **Next**.



11. The final step is only informational. It gives you an overview of the options that you selected throughout the wizard. Click **Finish** to create the publication based on the listed options.



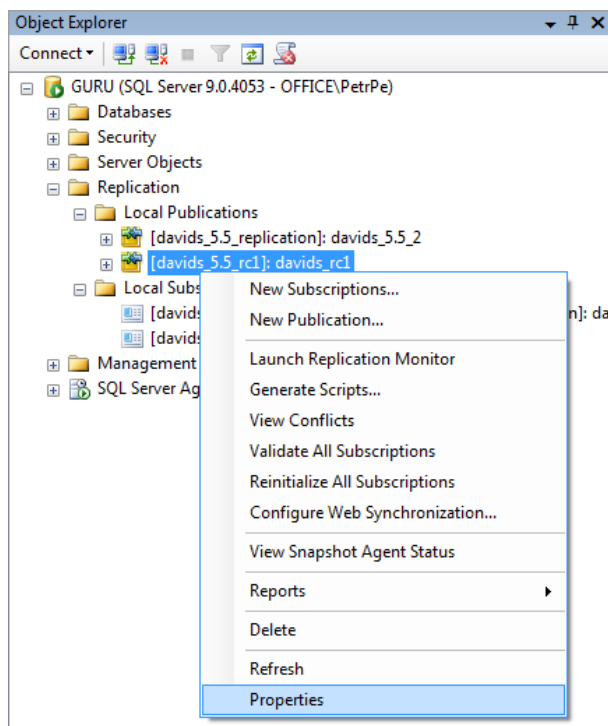
3.4.9.4 Modifying structure of a replicated DB

It is possible to make some changes to the DB structure even without disestablishing the existing replication.

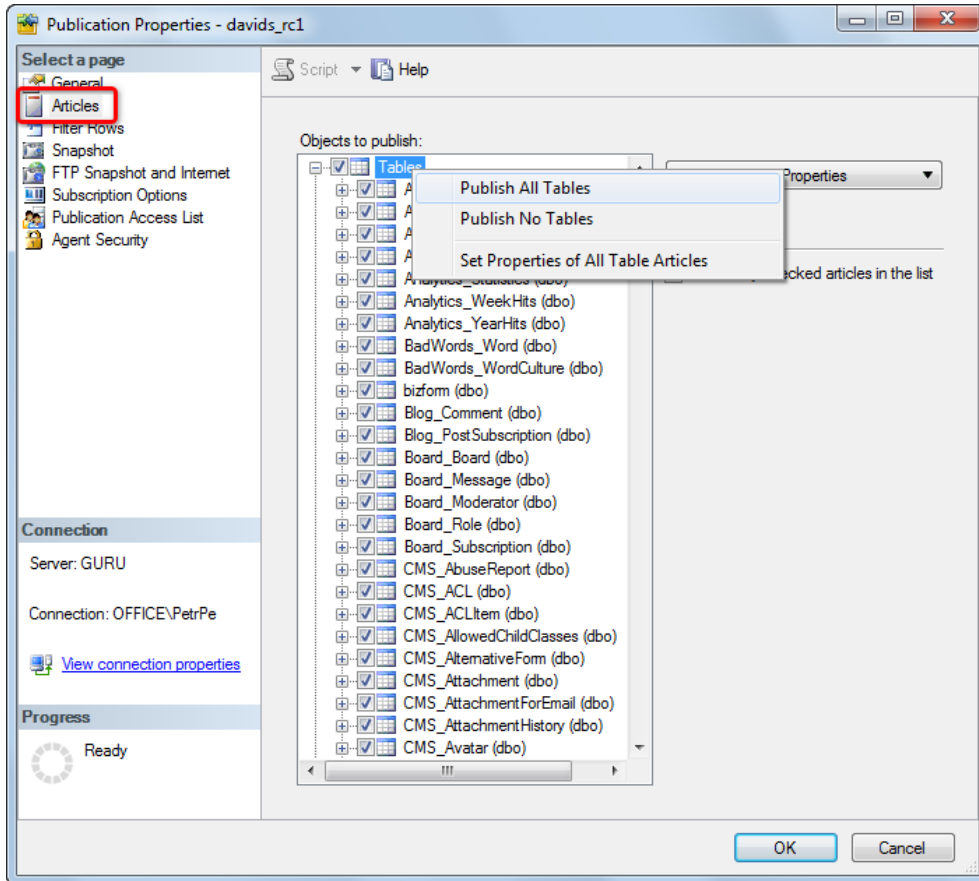
Adding BizForms, Custom tables or Document types

BizForms, Custom tables and Document types can be created even when database replication is established. You only need to follow the steps below to

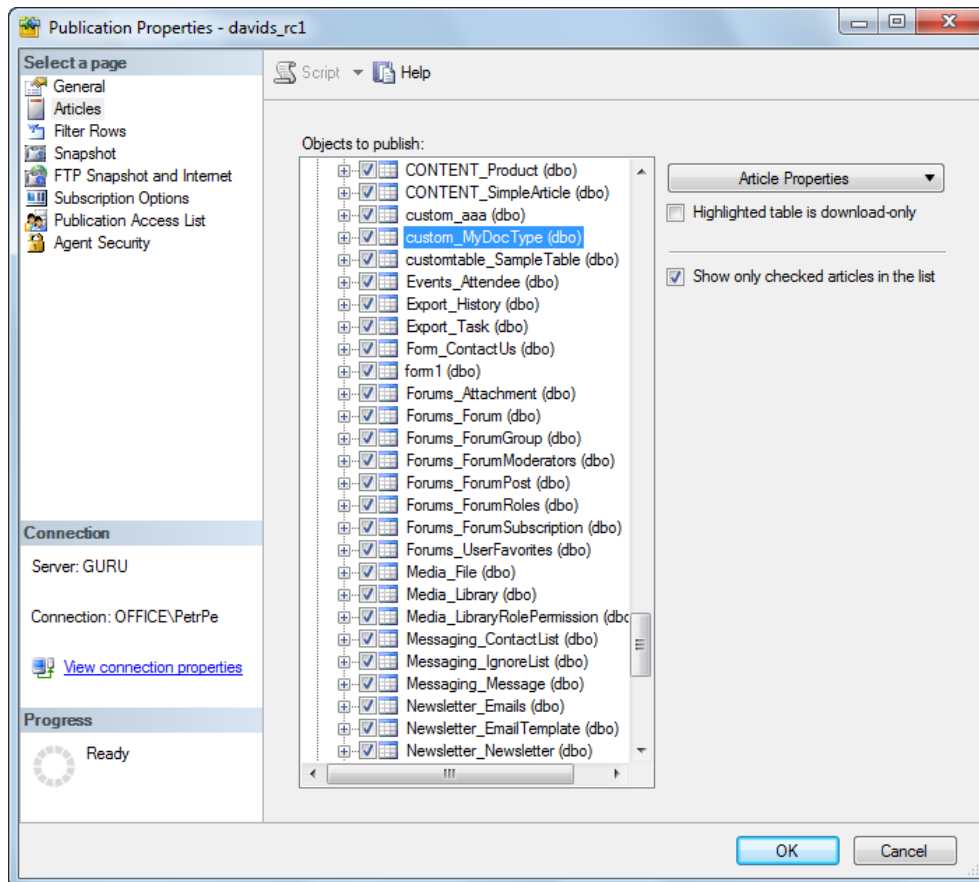
1. Create the BizForm, Custom table or Document type from within the publisher's Kentico CMS user interface.
2. Open **SQL Server Management Studio**. In **Object Explorer**, expand the **Replication -> Local publications** node, right-click your publication and choose **Properties** from the context menu.



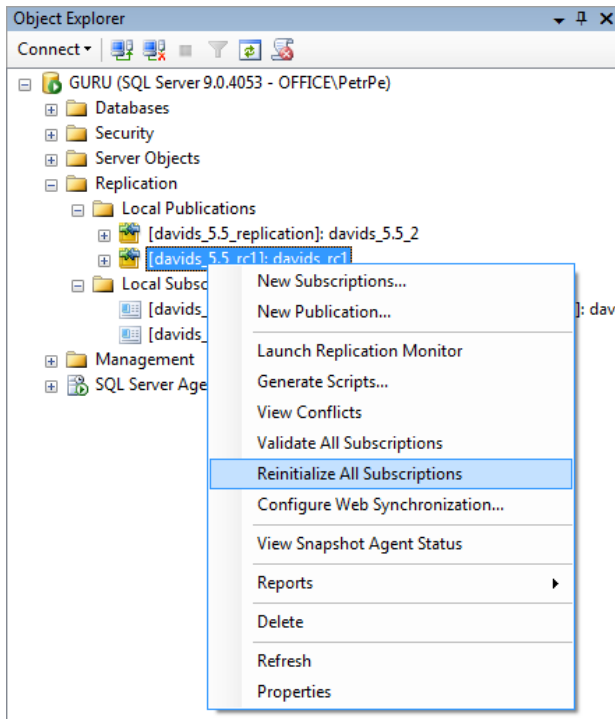
3. In **Publication Properties**, select **Articles** from the right menu. You will see a tree of database tables which are synchronized to the subscribers. You can verify that the new table created in step 1 is missing, i.e. it is not synchronized. Right-click **Tables** (the root of the tree) and click **Publish All Tables**.



4. In case that a new table is found, you are displayed with a confirmation window where you need to confirm that you really want to add the table (article) to the publication. Click **Yes**. The table will be added and you should be able to find it in the tree. Click **OK**.



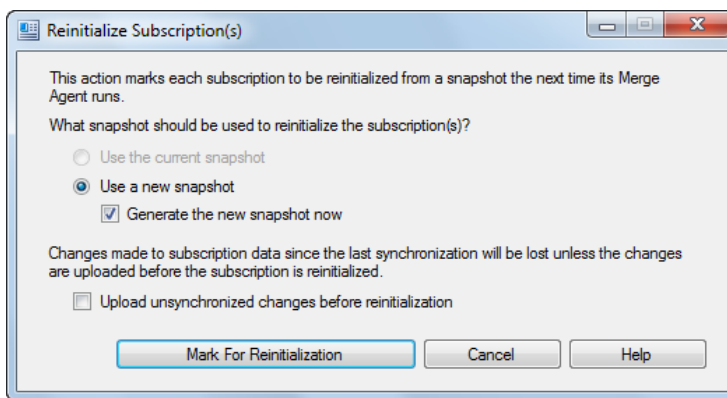
5. Now back in **Object Explorer**, right-click the publication again and choose **Reinitialize All Subscriptions** from the context menu.



6. A dialog window will be raised, telling you that all subscriptions need to be reinitialized from a snapshot the next time its Merge Agent runs. For the changes to be reflected, you need to reinitialize the subscriptions from a snapshot of the new database structure, i.e. from a snapshot which has been taken after steps 1-4 have been performed.

If you haven't created the snapshot since you finished step 4, choose **Use a new snapshot** and **Generate the new snapshot now**. If you already have the snapshot, choose **Use the current snapshot**.

Click **Mark For Reinitialization**. Next time the subscriptions' Merge Agent runs, the subscriptions will be reinitialized with the new database structure.

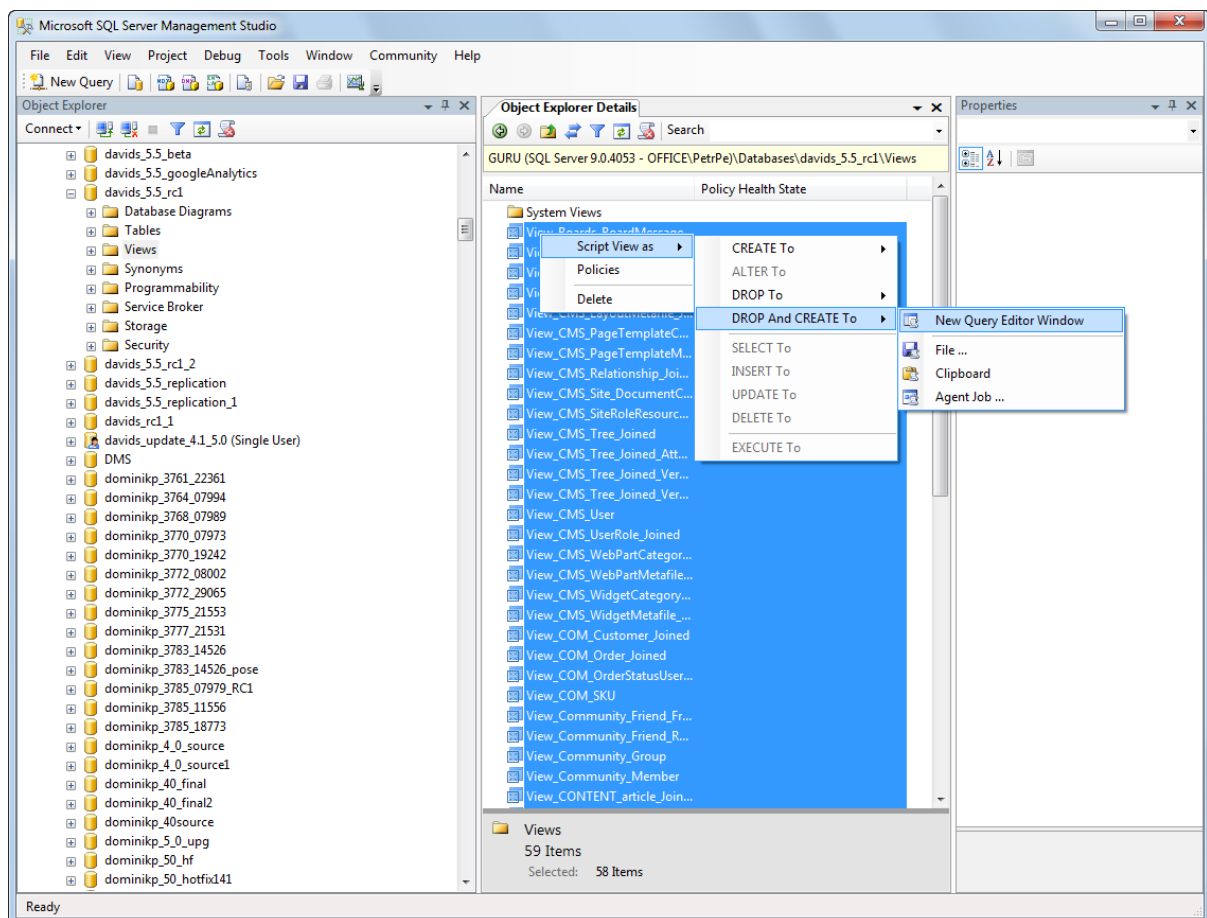


Field changes in System tables

It is also possible to make changes to the fields of System tables without disestablishing an existing replication. In this case, you need to replace all views on the subscription databases with views from the modified publisher database.

The easiest way to do this is to generate a DROP And CREATE script on the publication database and run it on the subscription databases.

1. Click **F7** to open **Object Explorer Details** view and select the **Views** folder of the publication database.
2. Select all listed views, right-click and select **Script View as -> DROP And CREATE To -> New Query Editor Window** from the context menu.
3. Execute the generated script on the subscription databases.



Field changes in Document types

Changes to document type fields can also be made without disestablishing an existing replication. The solution in this case is almost identical to the solution for system tables (described above). The only difference is that you don't need to DROP And CREATE all views, but only the view related to the

particular document type.

3.4.10 Configuration of full-text search in files

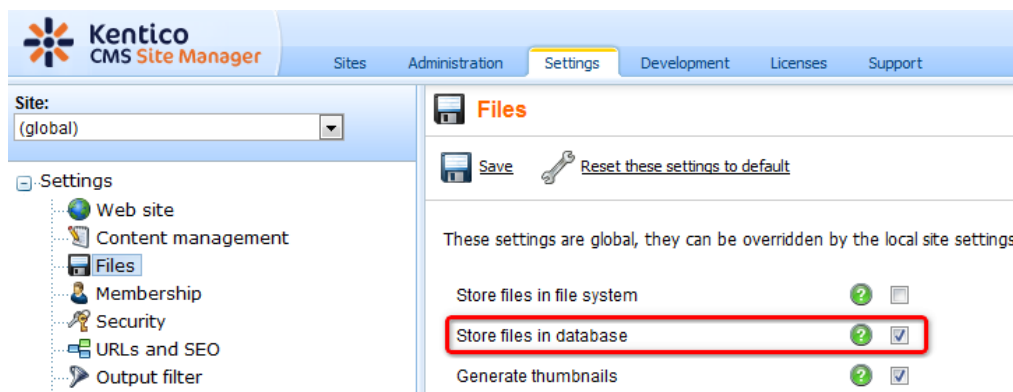
3.4.10.1 Overview

Kentico CMS allows you to full-text search files uploaded into database. It uses standard Microsoft SQL Server Search Engine that allows you to index a wide variety of files. This chapter explains how you can configure your installation of Kentico CMS for search in files.

Prerequisites - Important!

If you're using Microsoft SQL Server 2005, you need to ensure that full-text search support is installed on the server. The full-text search is available for all editions of Microsoft SQL Server 2005, including Express Edition with Advanced Services.

Generally, full-text search support must be installed on your SQL Server and your website must be configured for storing files in database (**Site Manager -> Settings -> Files -> Store files in database** must be enabled).



The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The 'Settings' tab is active, and the 'Files' sub-tab is selected. On the left, a tree view shows 'Settings' expanded with sub-items: 'Web site', 'Content management', 'Files' (highlighted), 'Membership', 'Security', 'URLs and SEO', and 'Output filter'. The main content area shows the 'Files' settings. At the top, there are 'Save' and 'Reset these settings to default' buttons. Below, a message states: 'These settings are global, they can be overridden by the local site settings.' The settings list includes: 'Store files in file system' (disabled), 'Store files in database' (checked and highlighted with a red box), and 'Generate thumbnails' (checked).

Now follow one of the following guides:

- [Configuration of full-text search on Microsoft SQL Server 2005](#)
- [Configuration of full-text search on Microsoft SQL Server 2005 Express Edition](#)



Supported file types

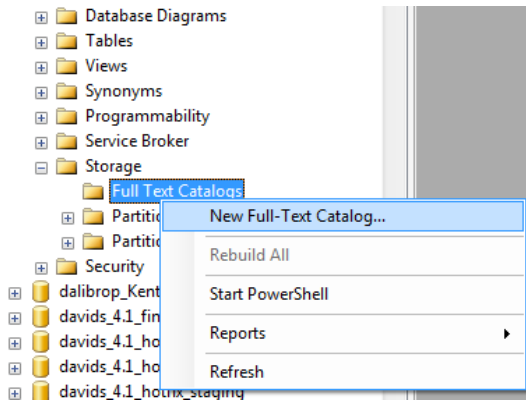
The standard full-text search engine delivered with Microsoft SQL Server can search TXT, HTML, DOC, XLS and PPT files.

You can install a free driver from Adobe for searching in PDF files as described in chapter [Searching PDF files](#).

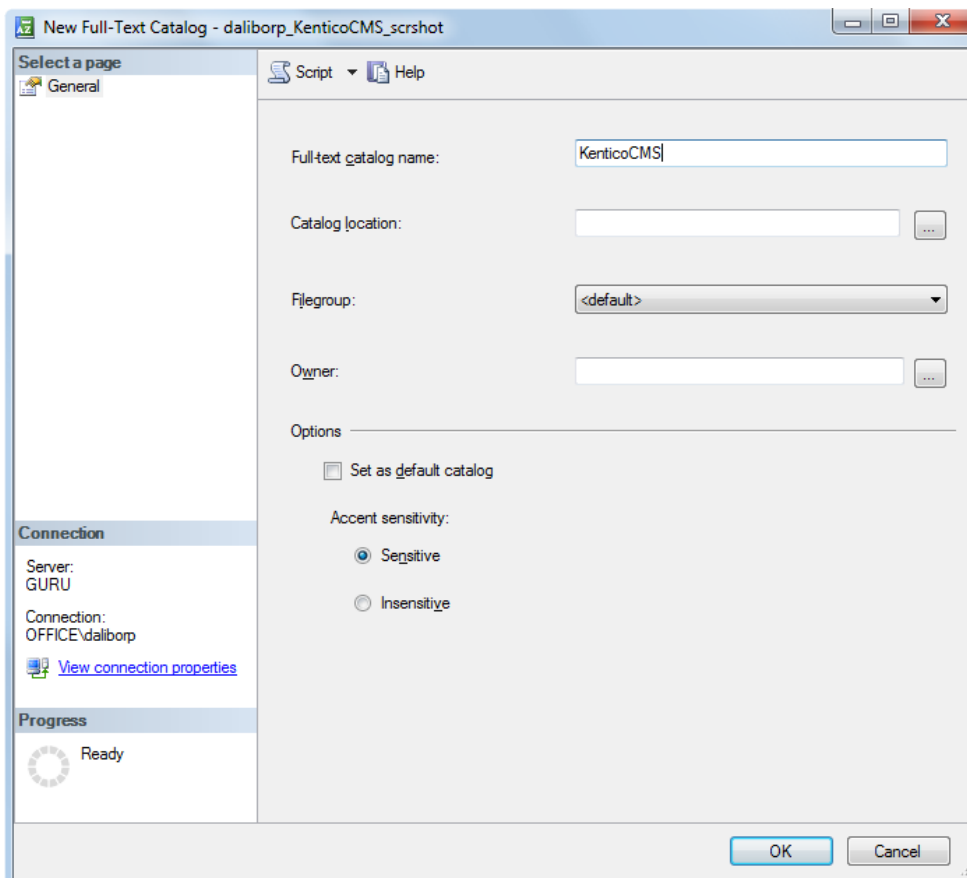
If you want to search other types of documents, you need an appropriate IFilter library. IFilter libraries can be purchased from third-party vendors (you can find them using Google).

3.4.10.2 Configuration on MSSQL 2005 and 2008

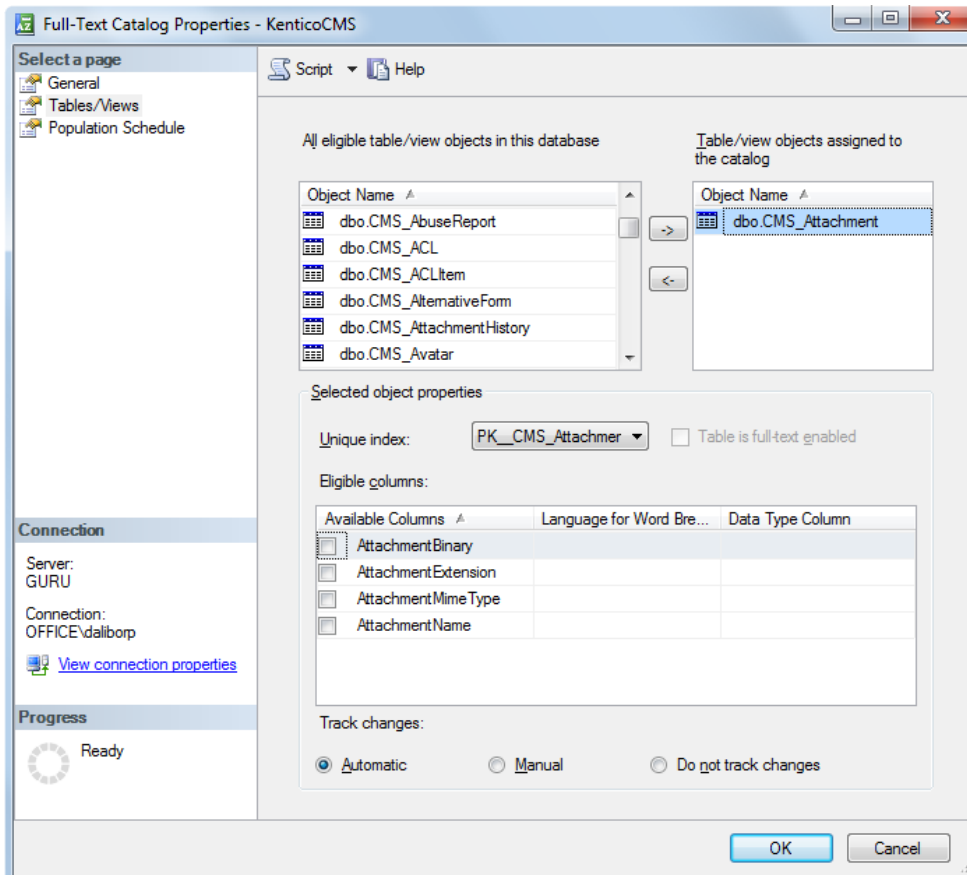
1. Start **Microsoft SQL Server Management Studio**.
2. Locate your database with Kentico CMS objects, unfold **Storage**, right-click **Full Text Catalogs** and choose **New Full-Text Catalog**.



3. On the **New Full-Text Catalog** dialog, enter Full-text catalog name *KenticoCMS* and click **OK**.



- Right-click the newly created KenticoCMS full-text catalog and choose **Properties**. On the Full-Text Catalog Properties dialog, choose the **Tables/Views** tab.
- Assign the *CMS_Attachment* table to the catalog, check the box next to the *AttachmentBinary* column, set the **Language for Word Breaker** to *English* or other value and set the **Data Type Column** to *AttachmentExtension* as shown on the following figure and click **OK**.



- Sign in as administrator and go to **Site Manager -> Development -> Document types -> Root** and edit the **searchattachments** query. Uncomment the following query:

```

SELECT view_cms_tree_joined.*, view_cms_tree_joined.NodeName AS SearchResultName
FROM cms_attachment
INNER JOIN view_cms_tree_joined on view_cms_tree_joined.DocumentID =
cms_attachment.AttachmentDocumentID
WHERE NodeAliasPath LIKE @NodeAliasPath
AND
([AttachmentName] Like N'%'+ @Expression + N'%') OR FREETEXT(attachmentbinary,
@expression)
AND @SiteName = SiteName AND (@DocumentCulture = DocumentCulture OR
@DefaultCulture = DocumentCulture )

```

Note: It is not necessary to uncomment the query if a **Smart search** web part is used for search. In that case the **Search in attachments** option in **Smart search dialog with results** has to be checked.

3.4.10.3 Configuration on MSSQL 2005 Express Edition

If you cannot use management console for full-text search configuration, you can use the following SQL commands:

```
-- Activate Full text Searching on PDF on Microsoft SQL 2005
sp_fulltext_service 'verify_signature', 0
sp_fulltext_service 'load_os_resources',1

-- Create Full Text catalog
sp_fulltext_catalog 'MyKenticoCMSCatalog','create'

-- Add Full Text catalog to table
sp_fulltext_table 'CMS_Attachment','create','MyKenticoCMSCatalog',
'PK_CMS_Attachment_02FC7413'

-- Add Index to table column
sp_fulltext_column 'CMS_Attachment','AttachmentBinary','add',NULL,
'AttachmentExtension'

-- Populate the catalog
sp_fulltext_table 'CMS_Attachment','start_full'
```

Please note: Similarly to [configuration on MSSQL 2005](#), you need to go to **Site Manager -> Development -> Document types -> Root -> <edit the searchattachments query>** and uncomment the following query to be able to run full-text search.

```
SELECT view_cms_tree_joined.*, view_cms_tree_joined.NodeName AS SearchResultName
FROM cms_attachment
INNER JOIN view_cms_tree_joined on view_cms_tree_joined.DocumentID =
cms_attachment.AttachmentDocumentID
WHERE NodeAliasPath LIKE @NodeAliasPath
AND
([AttachmentName] Like N'%'+ @Expression + N'%') OR FREETEXT(attachmentbinary,
@expression)
AND @SiteName = SiteName AND (@DocumentCulture = DocumentCulture OR
@DefaultCulture = DocumentCulture )
```

Note: It is not necessary to uncomment the query if a **Smart search** web part is used for search. In that case the **Search in attachments** option in **Smart search dialog with results** has to be checked.

3.4.10.4 Searching PDF files

Searching in PDF files is not supported in Kentico CMS by default. To enable it, you need to install the free **Adobe PDF iFilter** on your machine. Please note that Adobe PDF iFilter is not a product of Kentico Software and we can not guarantee its functionality.

The installation differs for 32-bit and 64-bit systems. Both are described in the text below.

Configuration on 32-bit platforms

The following procedure needs to be followed to enable search in PDF files on 32-bit platforms:

1. Download the free Adobe PDF iFilter 6.0 from the Adobe website: <http://www.adobe.com/support/downloads/detail.jsp?ftpID=2611>
2. Run the installer and follow the instructions.
3. After you finish the installation, rebuild the full-text search catalog that you created for Kentico CMS. Now you should be able to search PDF files.
4. If you're using MS SQL Server 2005, you may need to run the following SQL commands so that the server can load PDF IFilter libraries:

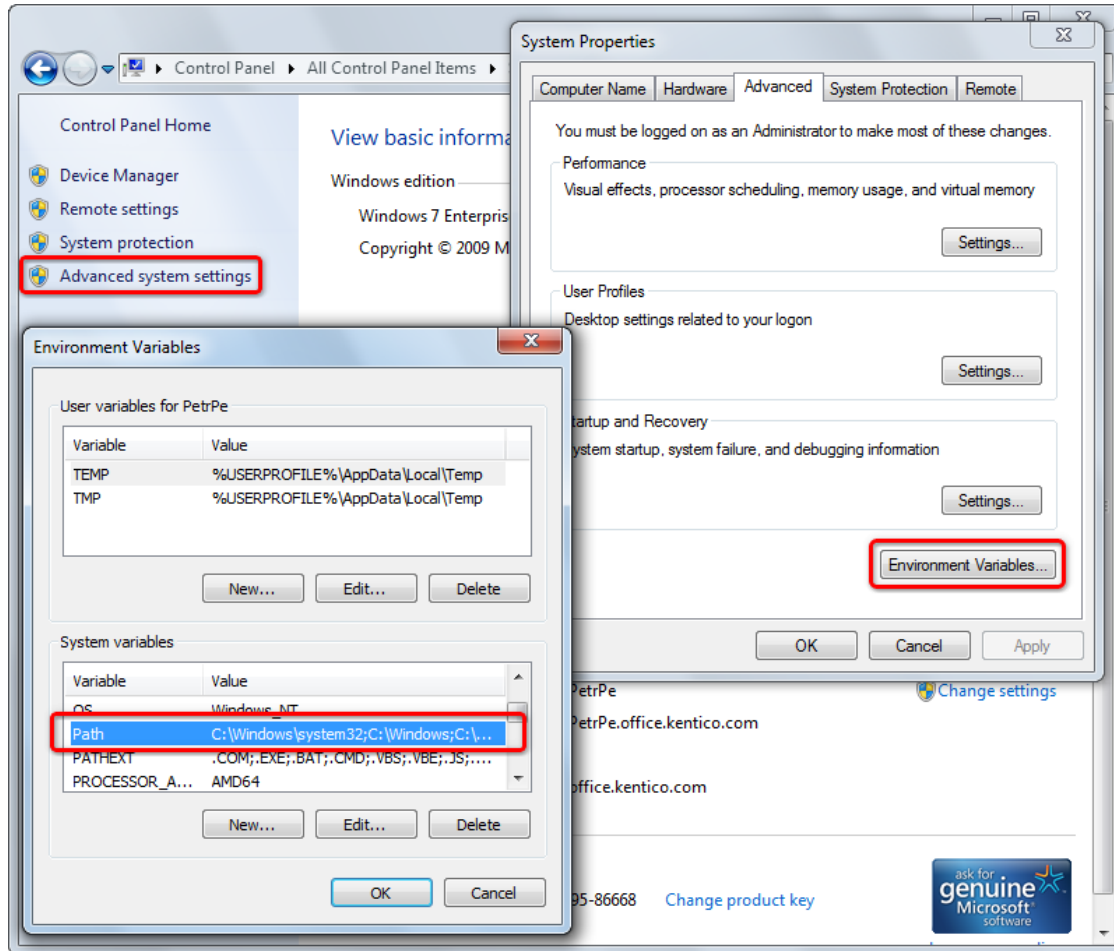
```
sp_fulltext_service 'verify_signature', 0
GO
sp_fulltext_service 'load_os_resources', 1
```

Configuration on 64-bit platforms

The following procedure needs to be followed to enable search in PDF files on 64-bit platforms:

1. Download Adobe PDF iFilter 9 for 64-bit platforms from the following location: <http://www.adobe.com/support/downloads/detail.jsp?ftpID=4025>
2. Make sure that no other version of iFilter is installed on your machine, run the installer and follow the instructions.

3. After installing the PDF iFilter, it is recommended to set your system **Path** environment variable to the **bin** folder of the IFilter installation. Go to **Control Panel -> System -> Advanced system settings -> Environment Variables** and append *C:\Program Files\Adobe\Adobe PDF iFilter 9 for 64-bit platforms\bin* to the value of the *Path* variable.



4. Restart the computer. When restarted, check whether Adobe iFilter is registered with the server - in a new query window type and execute the following:

```
SELECT * from sys.fulltext_document_types
```

You should see a list of installed filters in the output window. Verify if you see entry for **.pdf** with a correct path set.

5. If you do not see an entry for **.pdf**, you need to execute the following two lines:

```
EXEC sp_fulltext_service 'load_os_resources', 1
EXEC sp_fulltext_service 'verify_signature', 0
GO
```

6. Restart the SQL Server. Run the query from step 4 above again and verify that you see the entry for **.pdf**.

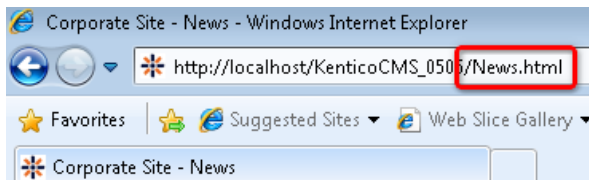
3.4.11 Custom URL extensions and extensionless URLs

3.4.11.1 Overview

This chapter describes how to configure the system for using custom URL extensions and extensionless URLs. Custom URL extensions let you have the extensions rendered with a different extension than the default *.aspx*, like *.html*, *.php*, *.xxx* and any other.

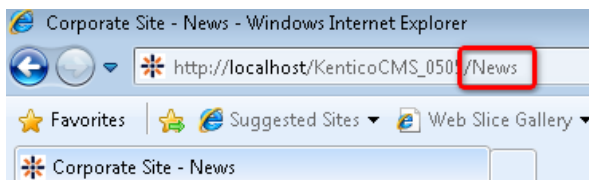
So for example, instead of the default *http://www.example.com/news.aspx*, you can have URLs ending with **.html**:

http://www.example.com/news.html



you can also configure an empty extension, which results in an **extension-less URL**:

http://www.example.com/news



To achieve this result you have to take the following two steps:

1. Adjust your web.config or IIS to handle the custom extensions. This step is different for [IIS 7 or higher](#) and [IIS 6](#).
2. Configure custom URL extensions in Kentico CMS. It is described in [this chapter](#).

3.4.11.2 IIS 7 and higher

If your instance of Kentico CMS is running on a server with IIS 7 or higher installed, the procedure is quite simple - it consists only of adding and modifying a few keys in your project's *web.config* file.

For it to work, you need to modify the *system.webServer* section of your *web.config* file by adding the first highlighted line and changing the opening *<modules>* tag to the second highlighted line in the code example below.

```
<system.webServer>
  ...
  <httpErrors existingResponse="PassThrough" />
  <modules runAllManagedModulesForAllRequests="true">
    ...
  </system.webServer>
```

With these modifications in your *web.config*, you can proceed to [configuring the extensions](#) in Kentico CMS administration interface. You can also perform some additional configuration as described below.

A custom page-not-found page for non-CMS pages can be configured by modifying the *customErrors* section, as in the following code sample:

```
<customErrors defaultRedirect="~/CMSMessages/error.aspx" mode="On">
  <error redirect="~/cmsmessages/pagenotfound.aspx" statusCode="404" />
</customErrors>
```

You can also add the following key to the *AppSettings* section, which ensures that URLs remain the same even after postback.

```
<add key="CMSUseExtensionOnPostback" value="false" />
```

If you are using trailing slashes (enabled by the **Use URLs with trailing slash** option in **Site Manager - > Settings -> URLs and SEO**), you can use the following extra key to have only extensionless URLs ending with the trailing slash. URLs ending with an extension are rendered without the slash when the key is used.

```
<add key="CMSUseTrailingSlashOnlyForExtensionLess" value="true" />
```

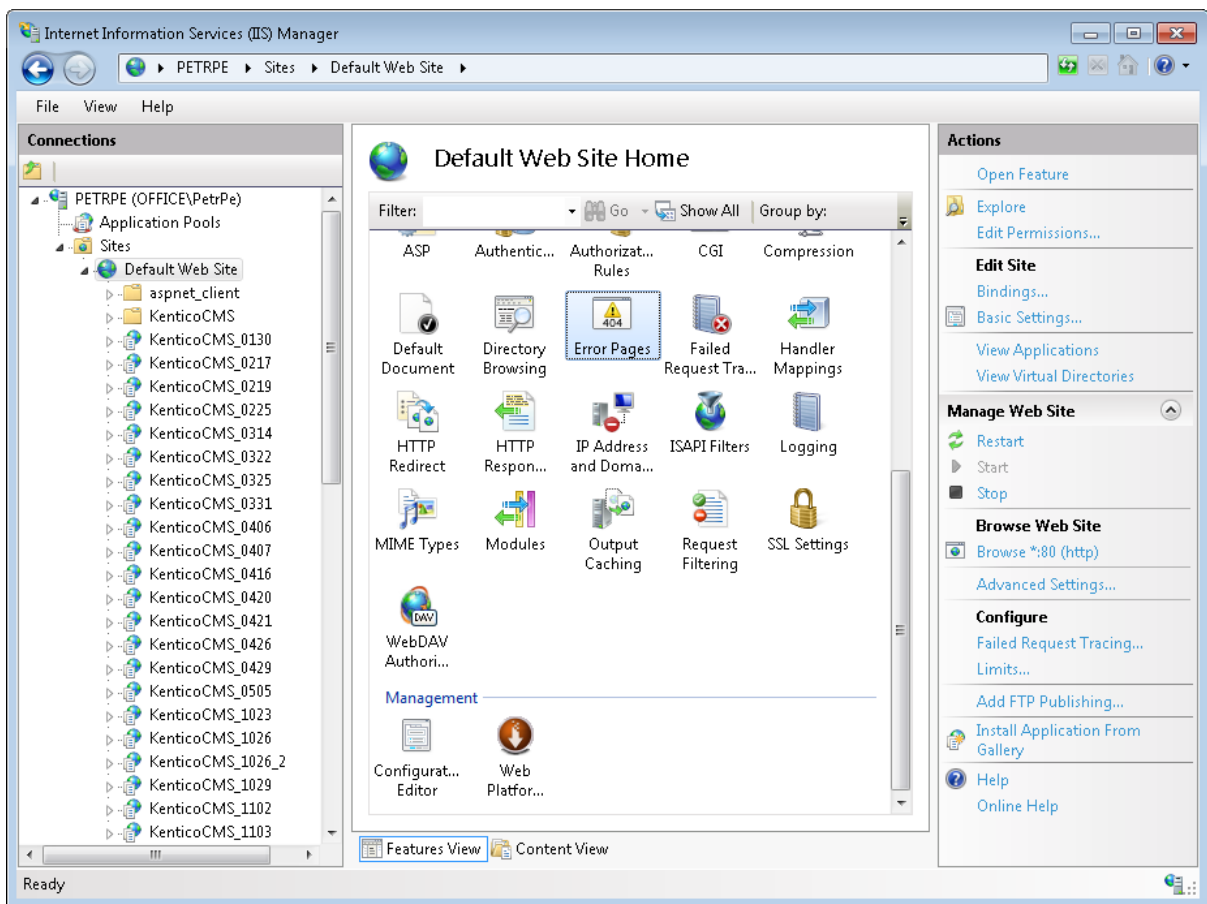
Using the cmspages/handler404.aspx special page (obsolete)

Due to backward compatibility, you can also enable custom URLs by configuring your IIS manually. It is not recommended now as it is obsolete.

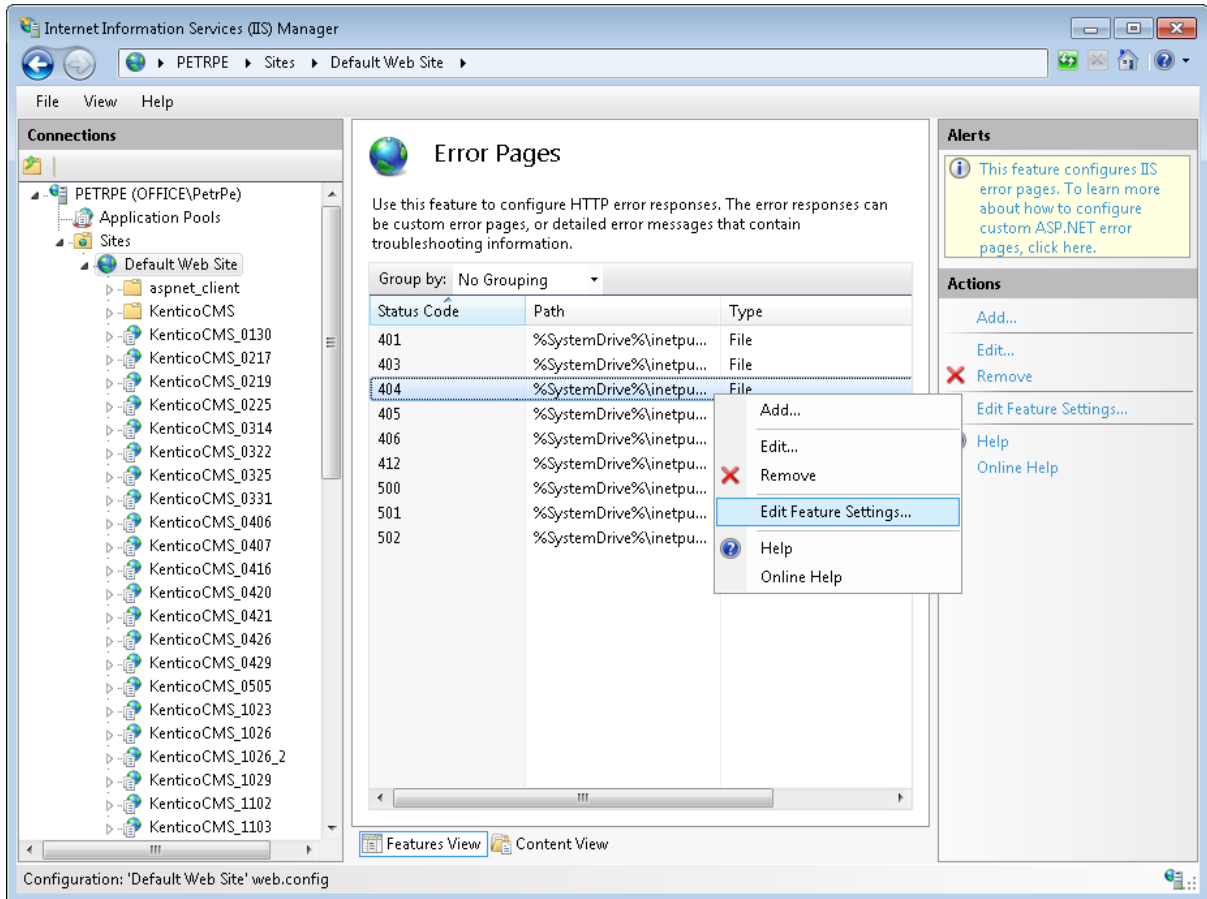
If you receive the **Lock violation error** during the procedure, try the solution described [here](#).

The setup procedure on IIS 7 is the following:

1. Open **Start -> Control Panel -> Administrative Tools -> Internet Information Services (IIS) Manager**.
2. Select your website from the tree on the left and open the **Error pages** section.



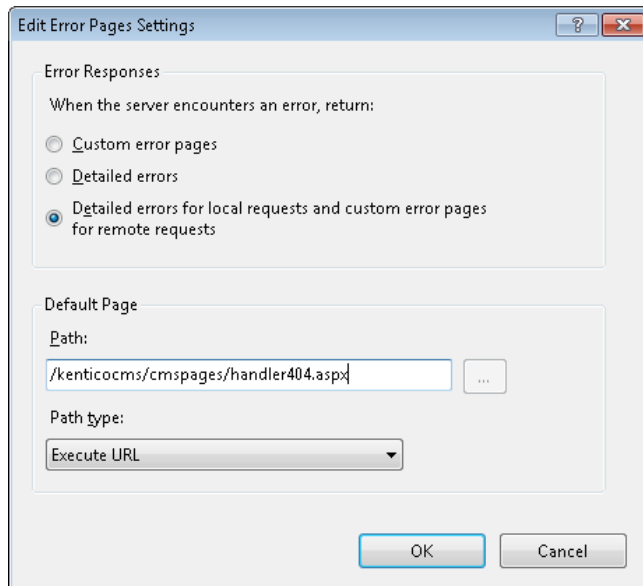
3. Right-click the **404** error and choose **Edit Feature Settings**.



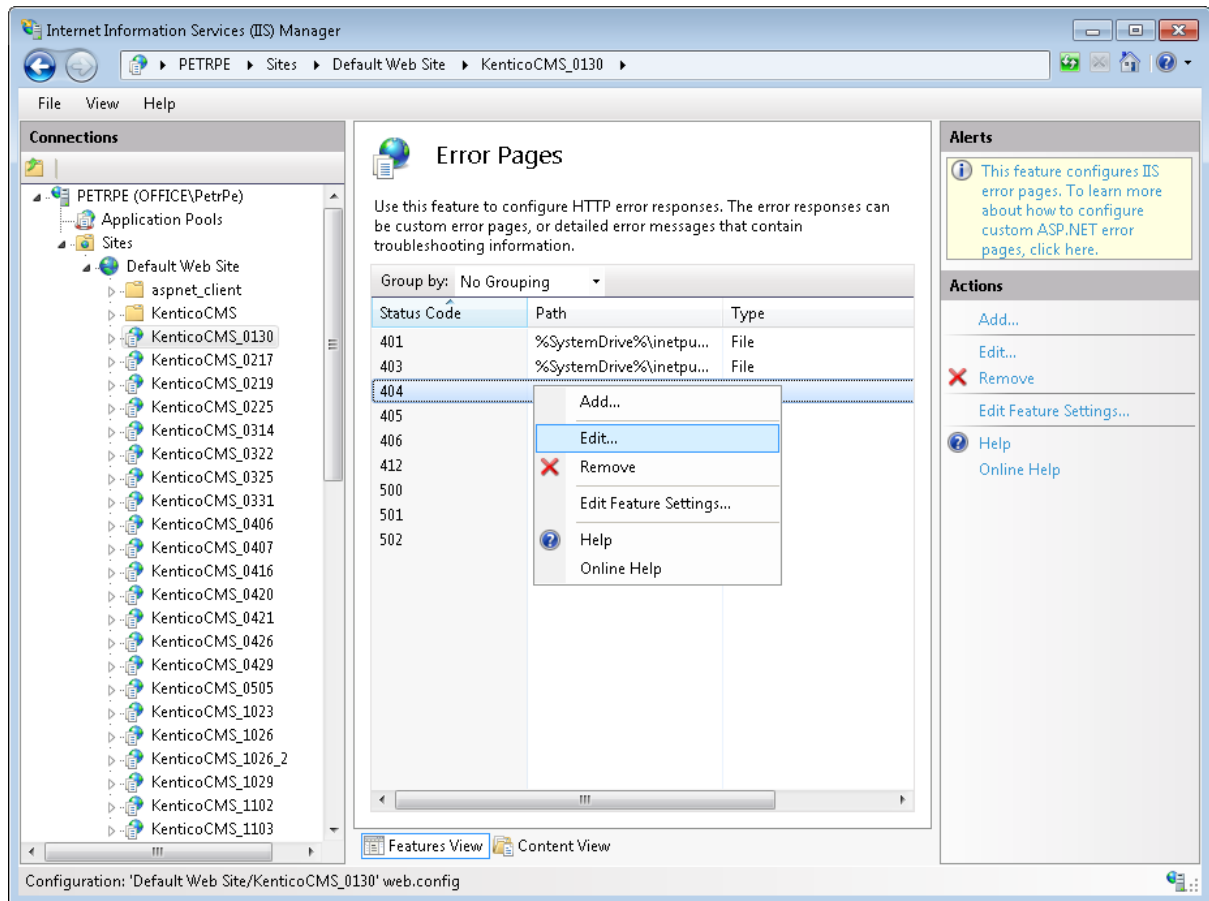
4. Enter the following values:

- **Path:** enter the URL of the **cmspages/handler404.aspx** page according to your application's URL.
Example: if you run your web project in virtual directory `/kenticocms`, you need to enter `/kenticocms/cmspages/handler404.aspx`
- **Path type:** Execute URL

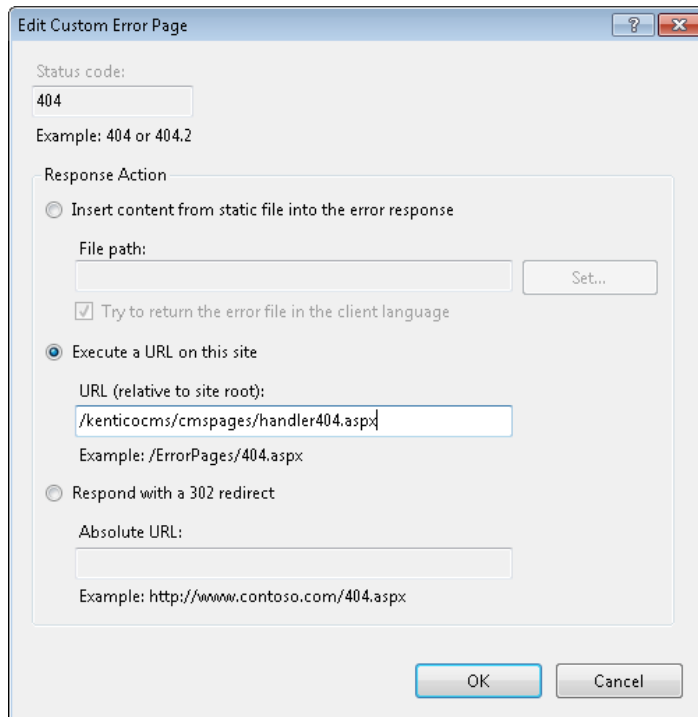
Click **OK**.



5. Now right-click the **404 error** again and choose **Edit** from the context menu.



6. Select **Execute a URL on this site** and enter the same URL that you entered in step 4. Click **OK**.



The screenshot shows a dialog box titled "Edit Custom Error Page". It has a "Status code:" field with the value "404" and an example "Example: 404 or 404.2". Below this is a "Response Action" section with three radio button options:

- Insert content from static file into the error response
 - File path: [empty text box] [Set... button]
 - Try to return the error file in the client language
- Execute a URL on this site
 - URL (relative to site root): [/kenticocms/cmspages/handler404.aspx]
 - Example: /ErrorPages/404.aspx
- Respond with a 302 redirect
 - Absolute URL: [empty text box]
 - Example: http://www.contoso.com/404.aspx

At the bottom of the dialog are "OK" and "Cancel" buttons.

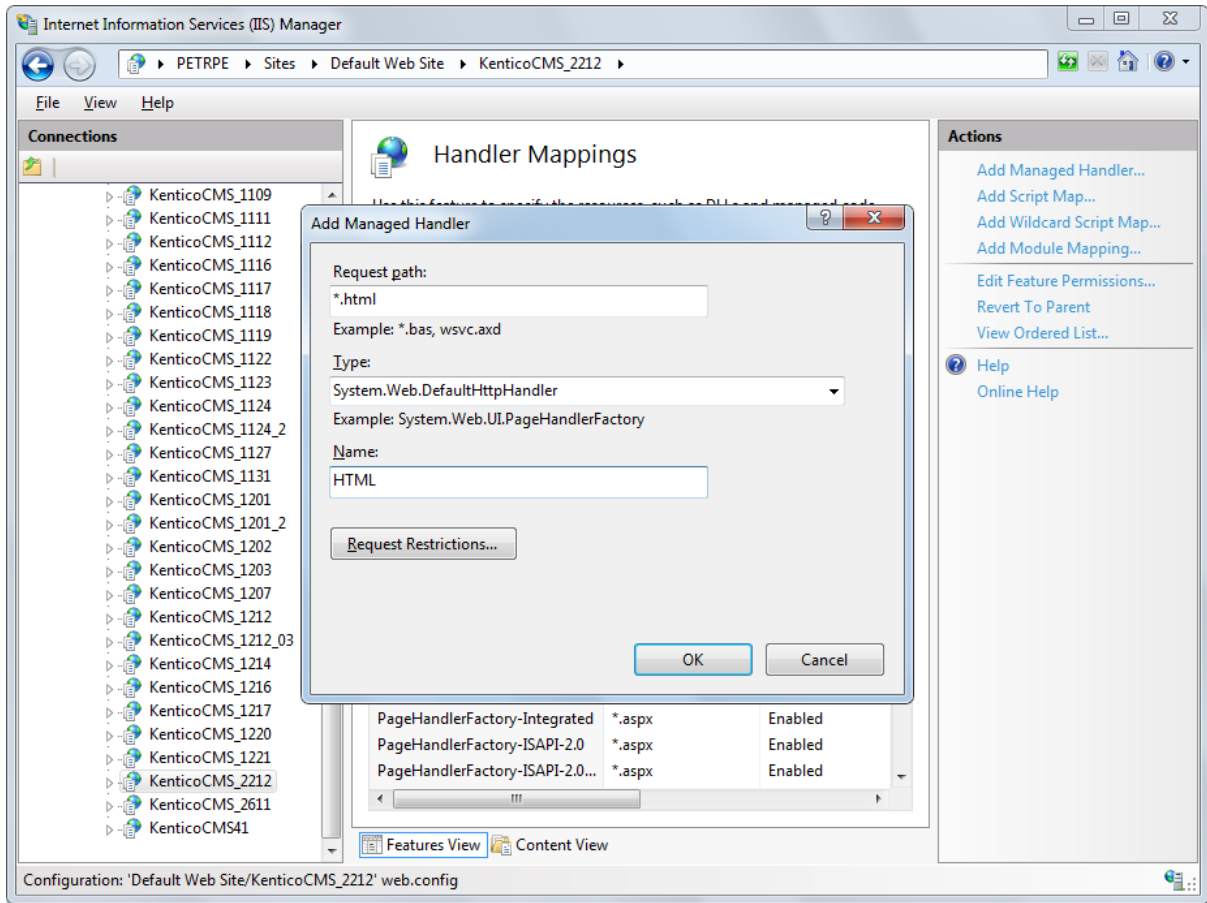
7. Go back to step 3 and repeat the same procedure for the **405 error**.
8. Click **OK** on all dialogs to save the changes. It's not necessary to restart the application.

Setting up the .html extension on IIS manually (obsolete)

The following approach is also possible, but not recommended and considered obsolete now. To use the **.html** extension, go through the following steps:

1. Run **IIS Manager** .
2. Select your web.
3. Open **Handler mappings**.
4. Click to **Add managed handler...** .
5. Enter the following values:
 - **Request path:** *.html
 - **Type:** System.Web.DefaultHttpHandler
 - **Name:** HTML

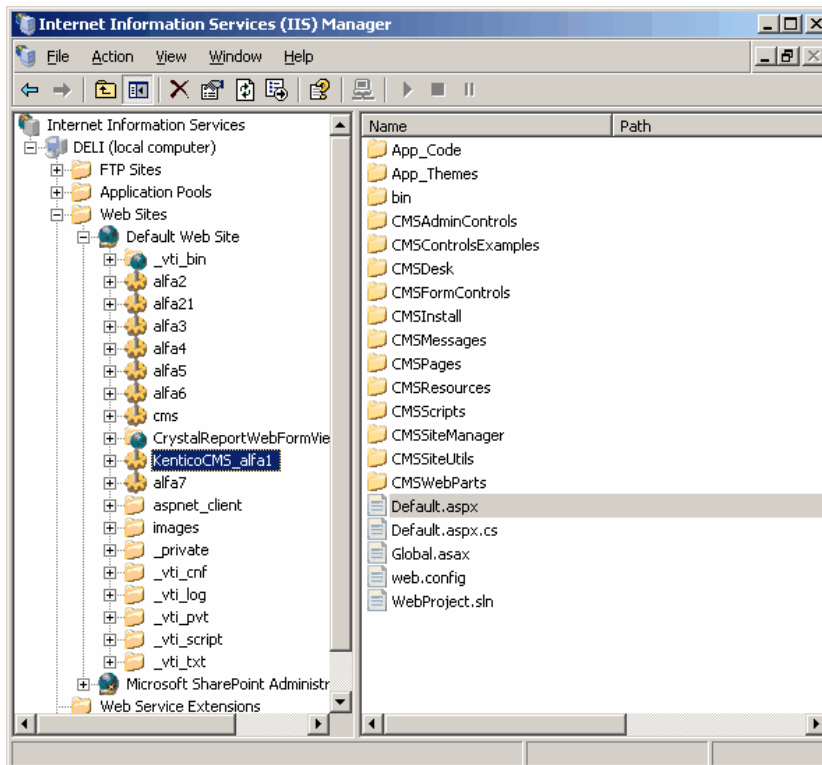
Click **OK**.



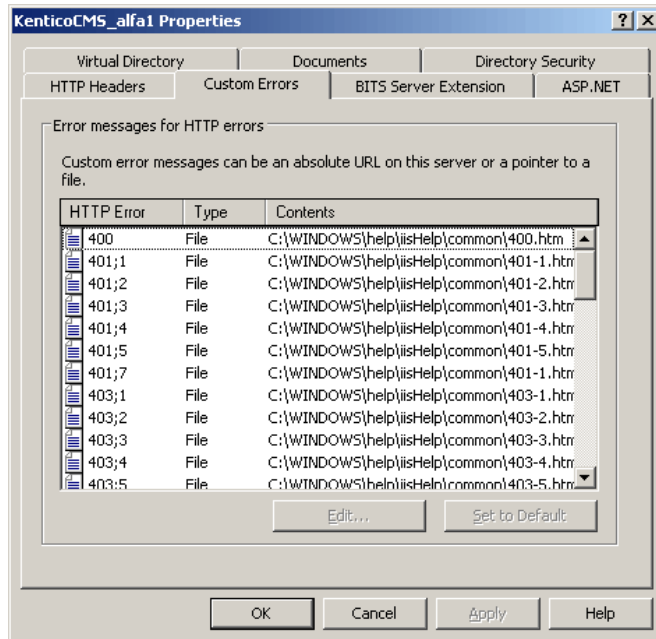
3.4.11.3 IIS 6

This procedure needs to be performed to configure IIS 6 to handle Kentico CMS's custom URL extensions. You can use this configuration on **Windows XP** and **Windows Server 2003** with Internet Information Services (IIS) 6 installed. It's not possible to use it with Visual Studio's built-in web server.

1. Go to **Start -> Control Panel -> Administrative Tools** and launch the **Internet Information Services (IIS) Manager**. Locate the appropriate website and virtual directory (if you installed Kentico CMS into the root, you will make this change on the website level only).

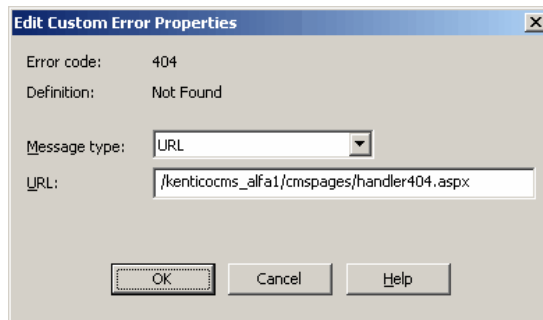


2. Right-click the directory (or website) and choose **Properties** and then click the **Custom Errors** tab:



3. Edit the 404 error and enter the following values:

- **Message type:** URL
- **URL:** enter the URL of the cmspages/handler404.aspx page according to your application's URL. E.g. if you run your web project in virtual directory /kenticocms, you need to enter /kenticocms/cmspages/handler404.aspx



4. Now repeat the same for the 405 error, using the same custom URL: /kenticocms/cmspages/handler404.aspx

Click **OK** on all dialogs to save the changes. It's not necessary to restart the application.

3.4.11.4 Configuration of custom URL extensions (.html or other)

When you have performed the required configuration for your version of IIS, you can proceed with entering the actual extensions.

This can be done in **Site Manager -> Settings -> URLs and SEO**. For example, try to set the **Friendly URL extensions** value to **.html** and click **Save**.

The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a tree view of settings categories, with 'URLs and SEO' selected. The main content area is titled 'URLs and SEO' and contains a list of settings. The 'Friendly URL extensions' setting is highlighted with a red box and has the value '.html' entered. Other settings include 'Forbidden URL characters', 'Forbidden characters replacement', 'Files friendly URL extension', 'Excluded URLs', 'Default URL path prefix', 'Use name path for URL path', 'Use permanent URLs', 'Remember original URLs when moving documents', 'Google sitemap URL', 'Allow permanent (301) redirection', 'Use URLs with trailing slash', 'Redirect document aliases to main URL', and 'Redirect invalid case URLs to their correct versions'.

Now when you go to the live website, you will see that all URLs in menus and listings are rendered with **.html** extensions. In some cases, you may need to update some static links which were created with the default **.aspx** extension.

The screenshot shows a Windows Internet Explorer browser window. The address bar contains the URL 'http://localhost/KenticoCMS_0506/News.html'. The '.html' extension is highlighted with a red box. The browser's Favorites, Suggested Sites, and Web Slice Gallery are visible below the address bar.

Using multiple extensions

You can enter multiple extensions into the **Friendly URL Extension** field mentioned above. The following format should be used:

.html;.htm;;.xxx;.abc

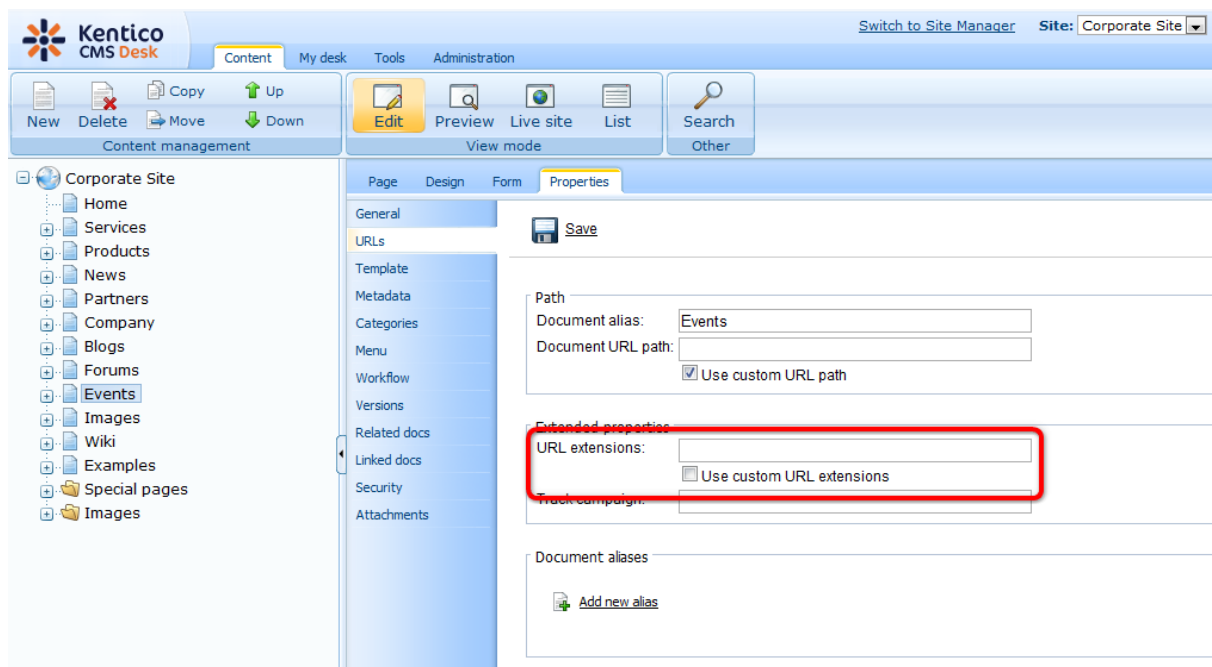
- The first extension is used as the default one and the links will be generated with it in the browser.
- Other extensions are entered divided by semicolons (;). Pages can be accessed through URLs ending with all entered extensions.
- If you use a semicolons without any extension in front of it, just as in the middle of the sample entry above, extension-less URLs can be achieved.

Document-level extensions settings

Apart from the global settings described above, document extensions under which the document can be accessed can also be set separately for each document. The default extension with which the pages are **rendered** in the browser is always taken from the **global** settings.

1. Select the document from the content tree.
2. Switch to its **Properties -> URLs** tab.
3. Enable the **Use custom URL extensions** check-box.
4. Enter the required extension(s) using the same rules as described above.

Please note: Even if the **Use custom URL extensions** option is disabled, files (**cms.file** documents) can be accessed under their physical extensions.

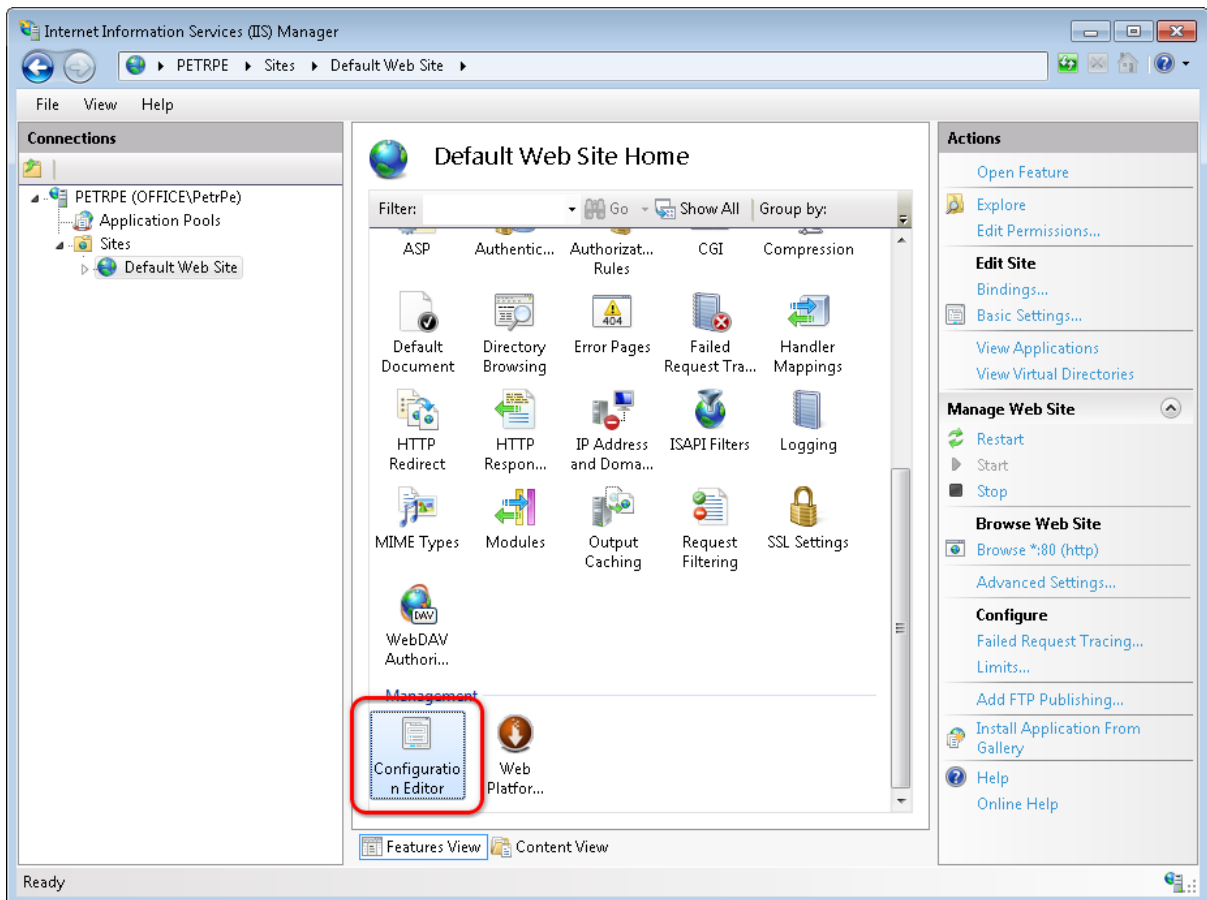


The screenshot displays the Kentico CMS Desk interface. On the left, a content tree shows the 'Events' document selected. The main area is divided into tabs: 'Page', 'Design', 'Form', and 'Properties'. The 'Properties' tab is active, and the 'URLs' sub-tab is selected. The 'URLs' section includes a 'Save' button and fields for 'Path', 'Document alias' (set to 'Events'), and 'Document URL path'. A checkbox labeled 'Use custom URL path' is checked. Below this, the 'Extended properties' section contains a 'URL extensions' field, which is highlighted with a red rectangular box. A checkbox labeled 'Use custom URL extensions' is also present and checked. The 'Document aliases' section at the bottom has an 'Add new alias' button.

3.4.11.5 Lock violation on IIS7

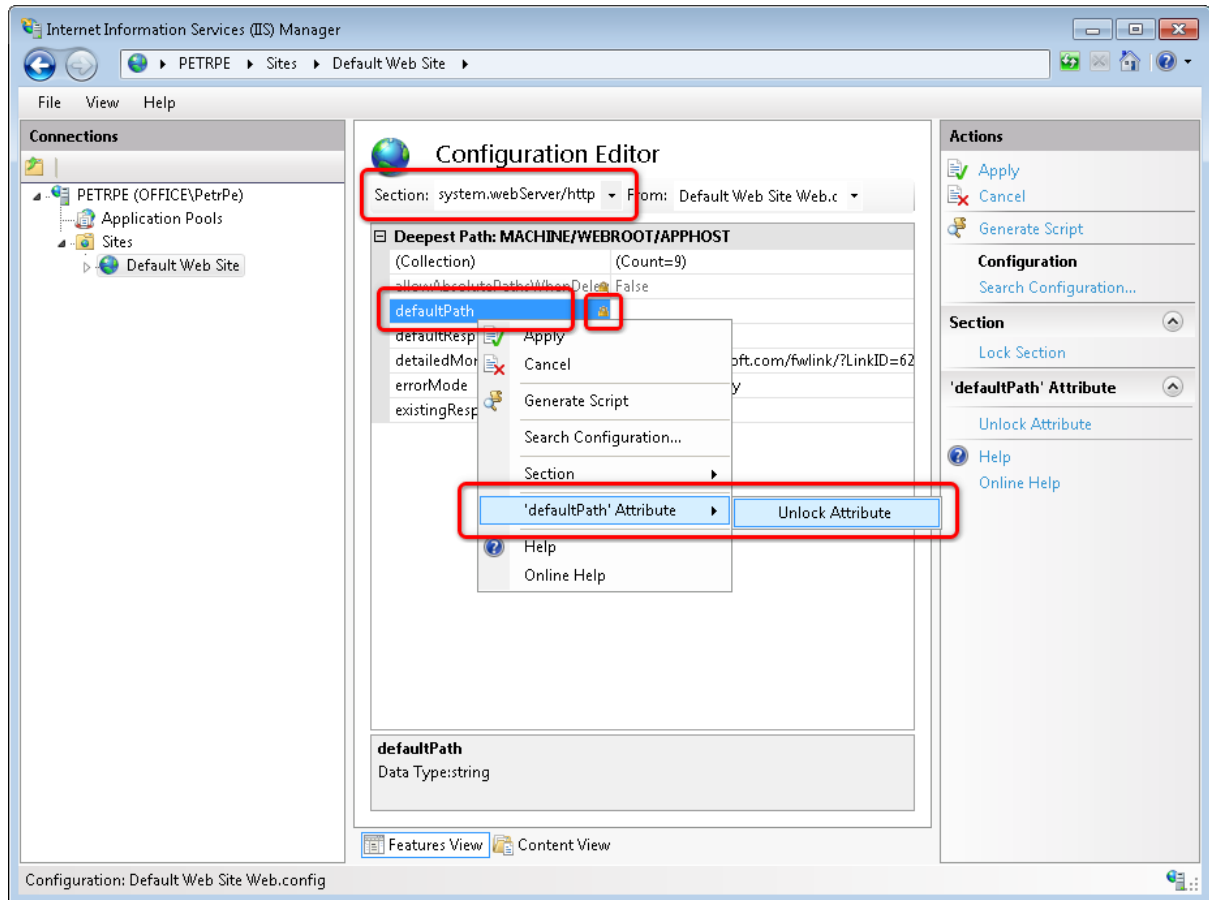
When configuring your IIS 7 (or later) to allow custom extensions or extension-less URLs, especially if you're running Kentico CMS in a virtual directory, you may receive the **Lock violation** error message. This typically doesn't allow you to specify the path settings in step 4 of the instructions for using `cmpages/handler404.aspx` described on [this page](#).

The reason is most probably a locked **defaultPath** attribute in the **httpErrors** section. You can check and unlock it in **IIS Manager**. Select your site (IIS site) and open **Configuration Editor** (it is included in the *Management* section in the standard installation of IIS 7.5; if you are using IIS 7, you can download and install it as a part of the [IIS7 Administration Pack](#)).



In Configuration Editor, choose **webServer/httpErrors** from the **Section** drop-down list.

If there is a **lock icon** next to the **defaultPath** attribute name, right-click on the attribute name and select the **'defaultPath' Attribute -> Unlock Attribute** action from the context menu. If the option is missing in the context menu, you will probably have to unlock it on a higher level in the IIS tree, i.e. on the parent site or on the root of the server.

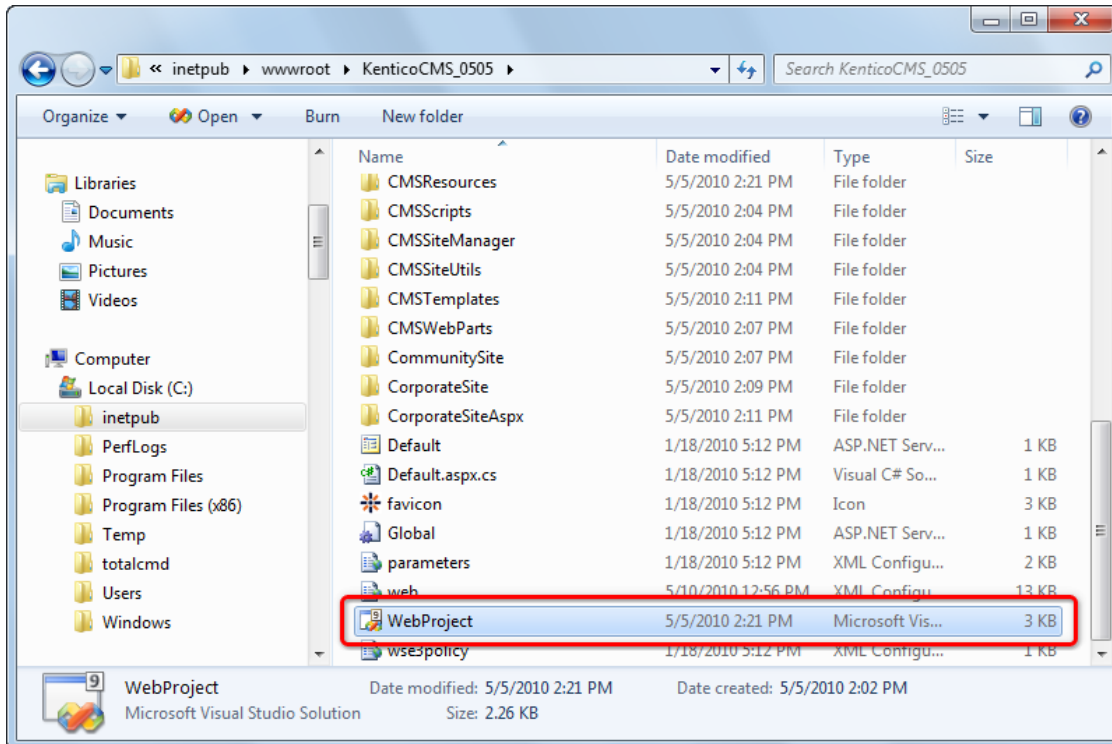


Click **Apply** to save the changes and from now, the *Lock violation* errors shouldn't appear.

3.5 Visual Studio integration

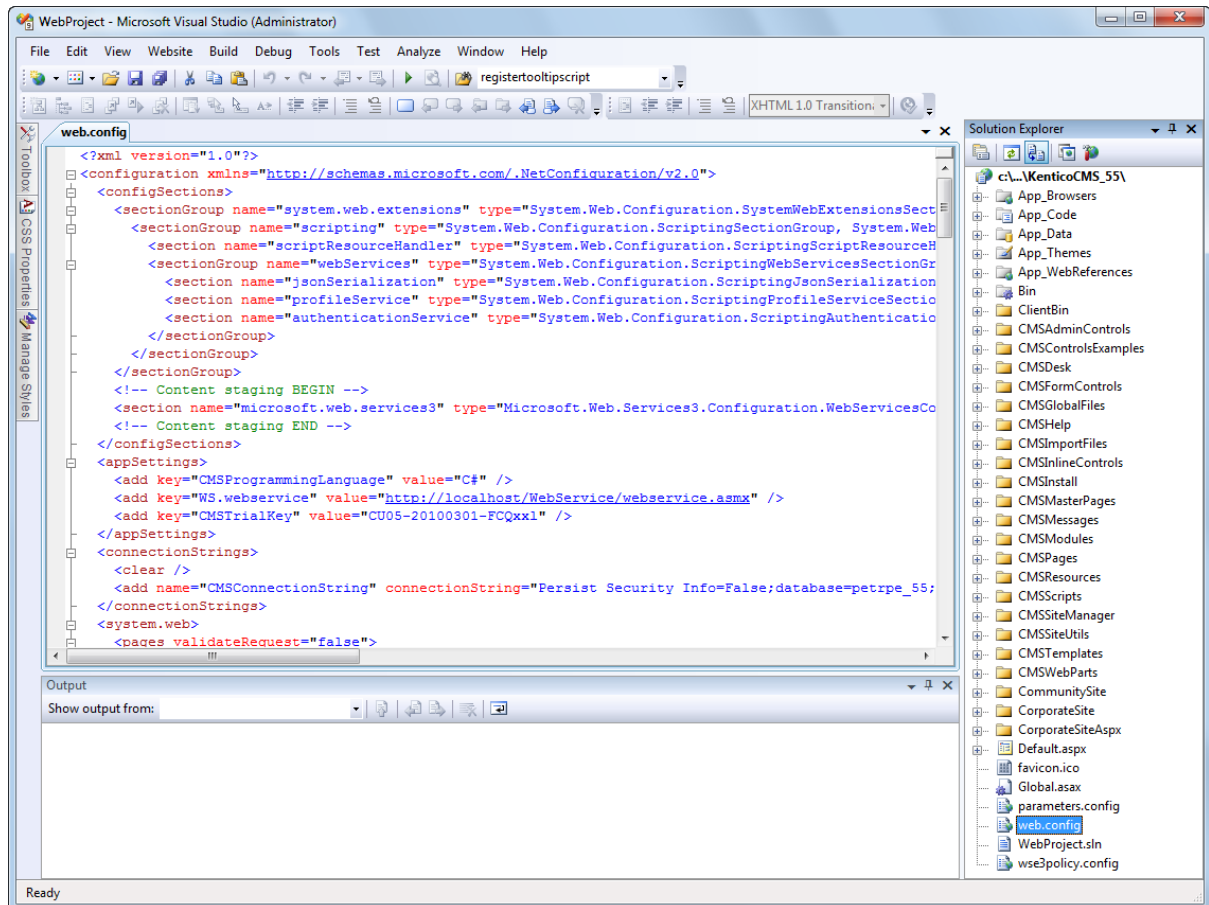
3.5.1 Opening the project

After you create a new Kentico CMS web project, you can open it in Visual Studio by double-clicking the `WebProject.sln` file in Windows Explorer:



If this option doesn't work, you can start **Visual Studio** and choose **File -> Open -> website** in the main menu and navigate to the folder which contains the `WebProject.sln` file.

The project looks like this:



Making modification to the standard code

Although Kentico CMS is delivered with source code of the administration interface (CMS Desk, CMS Site Manager), it's recommended that you do NOT modify the default files to avoid problems when upgrading to a higher version (your changes may be overwritten by new code).

If you need to modify some dialog, note down its name and merge your modifications with the new version during the upgrade to a higher version of Kentico CMS.

If you need to modify some web part, create its copy and then modify it.



Source Code Options

There are two levels of source code:

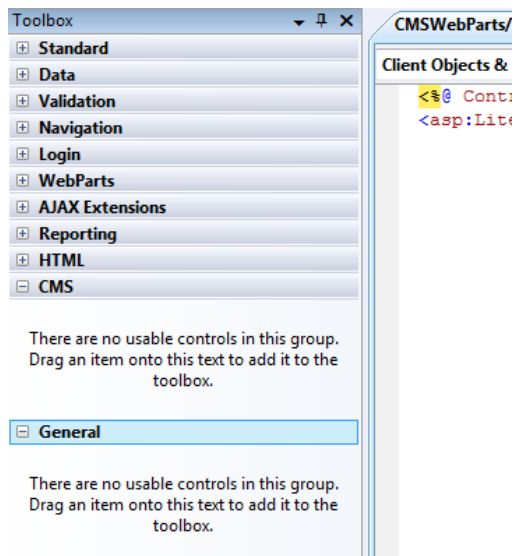
- the **source code of the website**, administration interface and web parts - this source code is delivered with every license (even in the trial version)
- the **full source code** of all libraries, including data layer, business layer and Kentico CMS Controls - this source code is only available as a part of the 1 website Ultimate or 1 Server Ultimate licence with Source Code.

You're allowed to modify the source code you receive (in both options) and deploy the modified version into production environment, provided you meet all other licensing conditions.

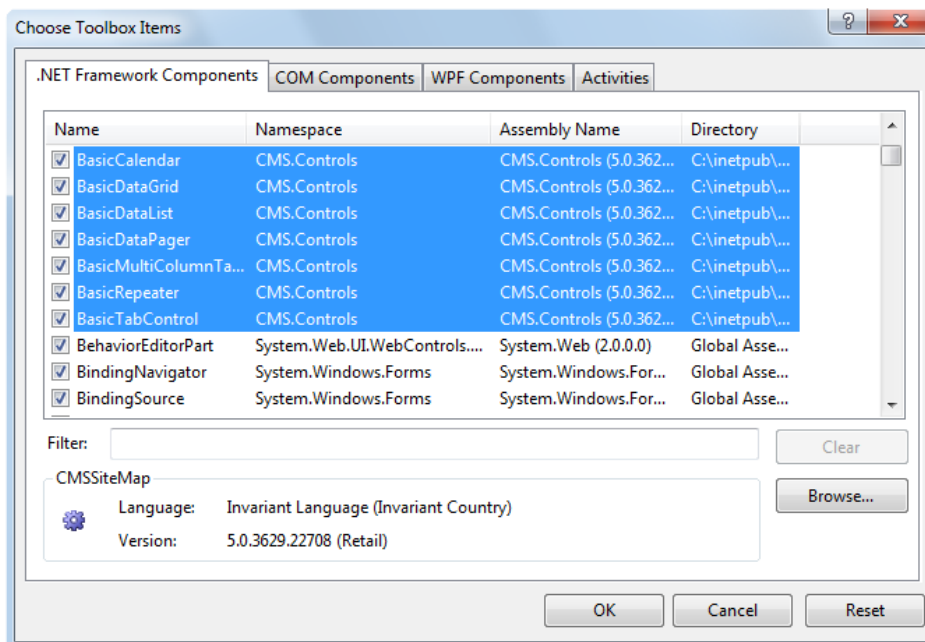
3.5.2 Adding Kentico CMS Controls to the Toolbox

Before you start using Kentico CMS Controls in your ASP.NET project, you need to add the controls to the **Toolbox**:

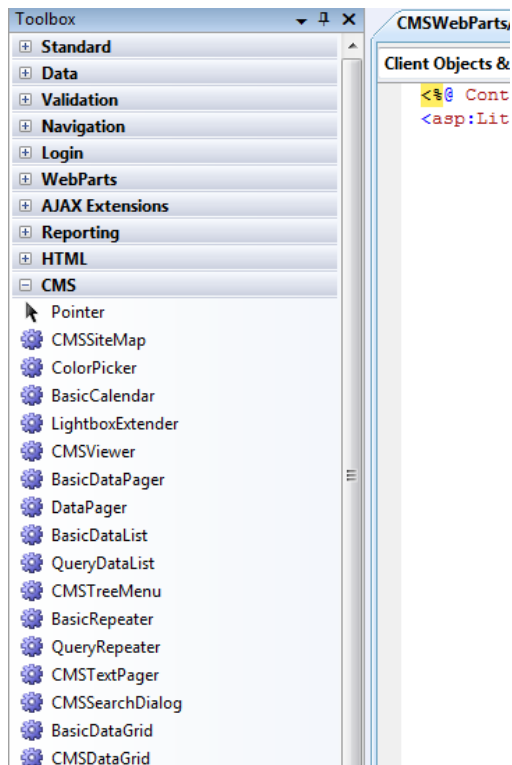
1. Open the website project in Visual Studio and open some ASPX page.
2. Right-click the **Toolbox** and choose **Add tab** from the context menu.
3. Type the name of the new tab (e.g. CMS) and press Enter:



4. Right-click the new tab and choose **Choose items...** from the context menu.
5. In the **Choose Toolbox Items** dialog, click **Browse** and locate the **CMS.Controls.DLL** library in the **bin** folder under your website. Click **Open** and then click **OK**.

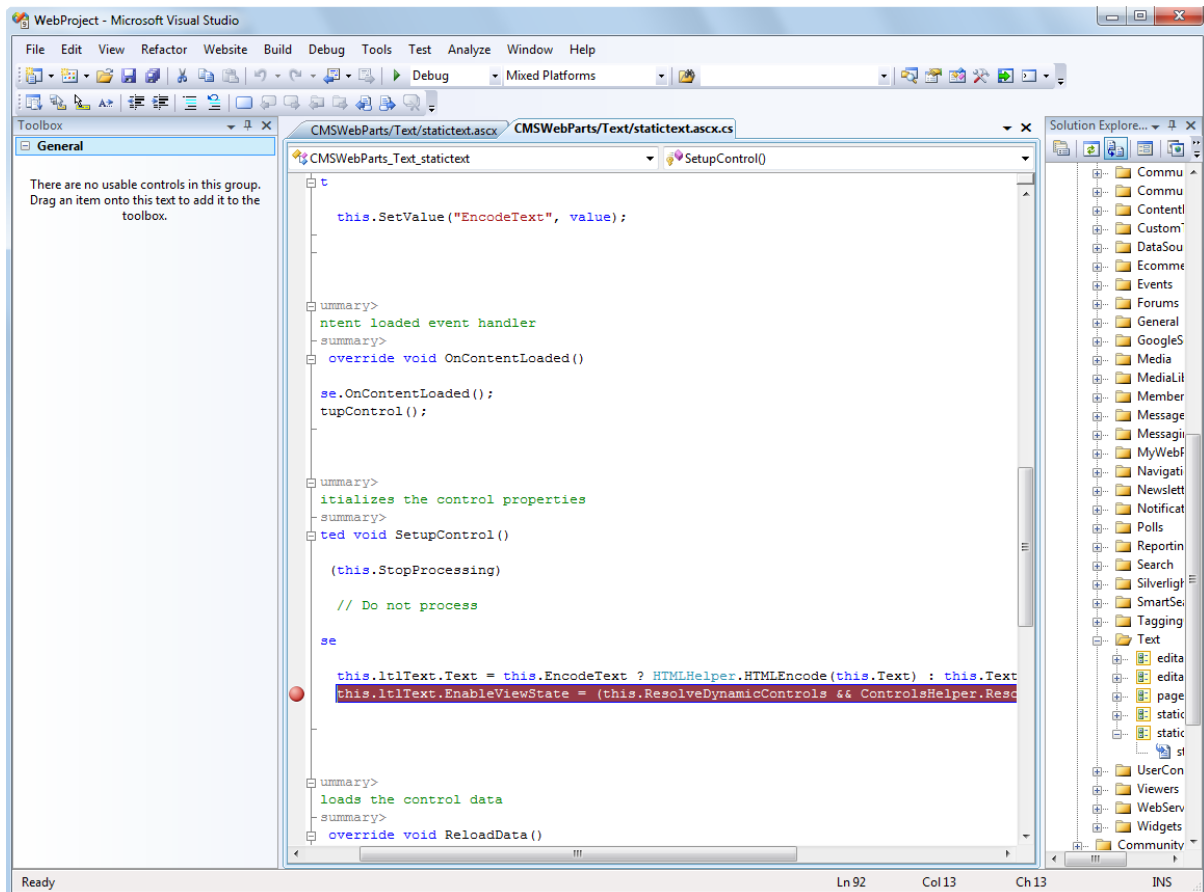


6. The controls are now added to the Toolbox, as you can see in the following screenshot. Now you can easily drag and drop the controls on your Web form.

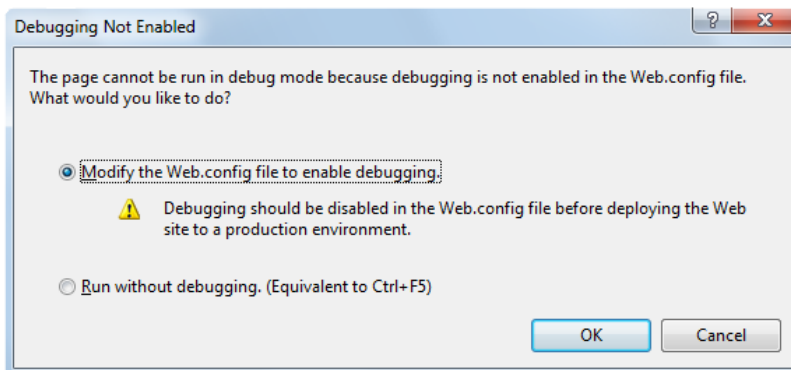


3.5.3 Debugging

If you're adding custom code using Visual Studio into Kentico CMS, you can easily debug it in Visual Studio as you're used to since Kentico CMS is a standard Visual Studio application. Simply click on the left next to your method or command and it will create a red breakpoint:



Now choose **Debug -> Start debugging** in the main menu or press **F5**. The website starts and you can track the code flow. You may get a message like this:



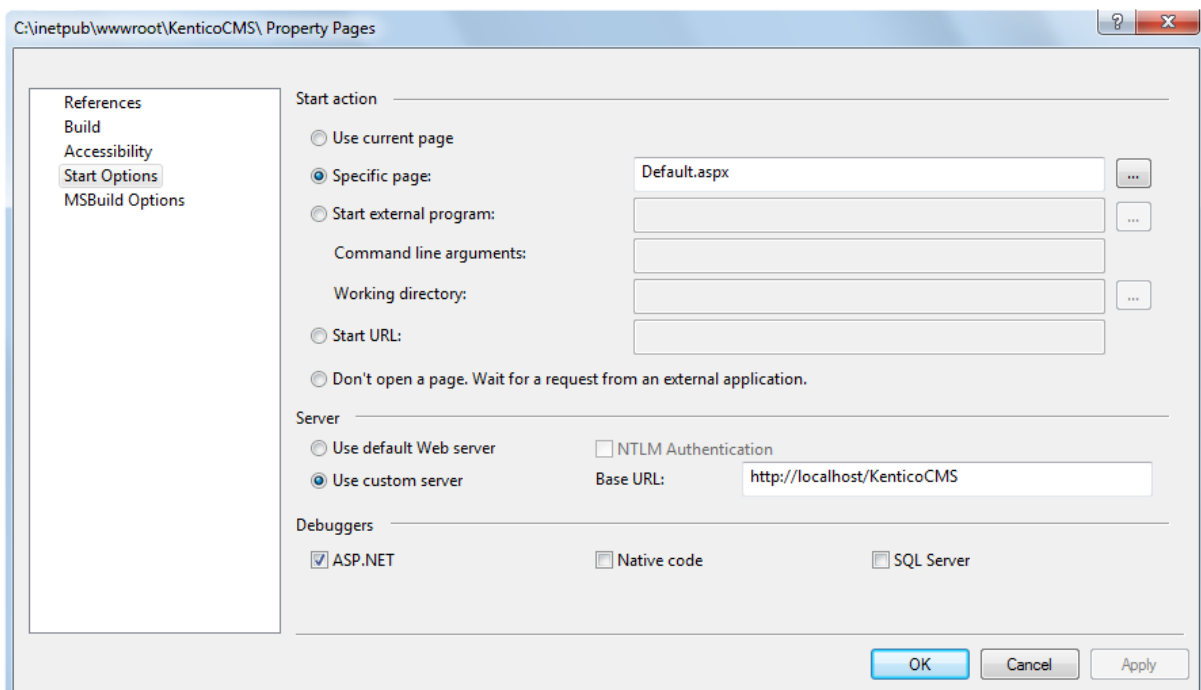
You will need to choose to **Modify the web.config file to enable debugging** and click **OK**. It's recommended that you disable debugging before deploying the website to a production environment by setting the value

```
<compilation debug="true" .... />
```

to **false** in your *web.config* file for better performance.

Debugging using IIS website

The debug mode starts in built-in web server by default. You can change this in the **website -> Start options** dialog by choosing the Use custom server option like this:



Please note that you need to be local administration and the website or virtual directory must be configured for both anonymous and Windows authentication (see [Additional configuration tasks -> Creating a virtual directory](#) for details).

Debugging from within Kentico CMS UI

Kentico CMS provides certain debugging possibilities directly from within its user interface in **Site Manager -> Administration -> System -> Debug**. Further information on this topic can be found in the [Development -> Debugging](#) chapter of this guide.

3.5.4 Pre-compilation (Publish function)

If you want to pre-compile the website before placing it on the live server, you can use Visual Studio's Publish function. It allows you to compile the source code into assemblies. This provides several advantages:

- faster application start (no compilation is required)
- intellectual property protection - if someone gets your website code, they will not be able to read the source code easily
- better security - the code cannot be easily modified by potential hacker

However, there's also a disadvantage: if you compile the website, you will not be able to use some of the Kentico CMS features:

- import of the website
- New site wizard.
- You cannot add code in the Code tab of web parts (the Code tab is an obsolete feature as of Kentico CMS 3.0, it is mentioned here due to backward compatibility reasons).

If you run a pre-compiled website, you will get the errors like:

The file '/CMSTransformations/cms/event/preview.ascx' does not exist.

This means that the system requires a virtual object, but the **VirtualPathProvider** is probably not running and cannot provide the system with that object.

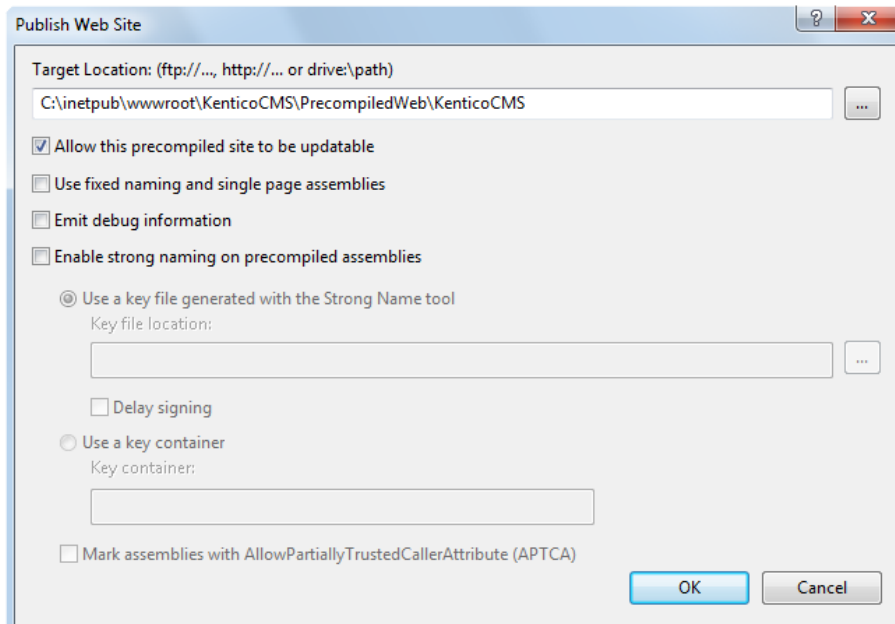
Pre-compiling the website

Please note that for building the pre-compiled website, you have to rename **Microsoft.Web.Services3.dll.rename** file to **Microsoft.Web.Services3.dll** in the `~\Bin` directory.

Since the virtual provider cannot run in a pre-compiled website, you need to store the physical files to the system before compilation. You can save all the virtual objects to the file system in **CMS Site Manager -> Administration -> System -> Deployment interface by clicking the button "Save all virtual objects to disk"**.

Please note that these files are just copies of the actual virtual object and will be used by the system only if the VirtualPathProvider cannot start. Also, the changes to the objects through the administration interface will not affect these files until you save all the objects to the disk again.

Then, you can use **Build -> Publish** item in **Visual Studio** main menu and pre-compile the website. You will see a dialog like this:



You need to enter the path outside your current web project where the compiled version will be placed. You can choose between two compilation modes using the **Allow this precompiled site to be updatable** checkbox:

- **Allow the site to be updatable (checked)** - the code behind and app_code classes are compiled, but ASPX files are stored in their original source code form.
- **Do not allow the site to be updatable (unchecked)** - the code behind and app_code, as well as ASPX files are compiled and the website contains only empty "stub" ASPX files without any code.

We generally recommend that you do not allow the site to be updatable, since it provides the best performance.



Limitations

In the precompiled website, the VirtualPathProvider is stopped automatically. When VirtualPathProvider is stopped, **you cannot edit transformations and layouts through the user interface** without saving them on the disk again.

You may need to copy the database to the server using the standard **backup/restore** operation since the compiled website cannot be used for SQL Server database installation. Other options are:

- to install a non-compiled website on the server first, go through the setup wizard and then replace the non-compiled files with compiled ones, while keeping the web.config file as is.
- to install Kentico CMS website locally and run the database setup against the remote SQL Server on the live server.

In the portal development model, you cannot use **custom web part code (Web part properties -> Code tab)**. If you need to add custom code on the Code tab and run the website in the compiled version, you need to create user controls, place web parts to the user controls and add your custom code to the web parts. Then, you can place the user controls to the page using the General/User control web part.



Testing the website before compilation

If you wish to check if your website runs without using **VirtualPathProvider** (to simulate the precompiled environment), you can disable the provider by adding the following key into the appSettings section of your web.config file:

```
<add key="CMSUseVirtualPathProvider" value="false" />
```

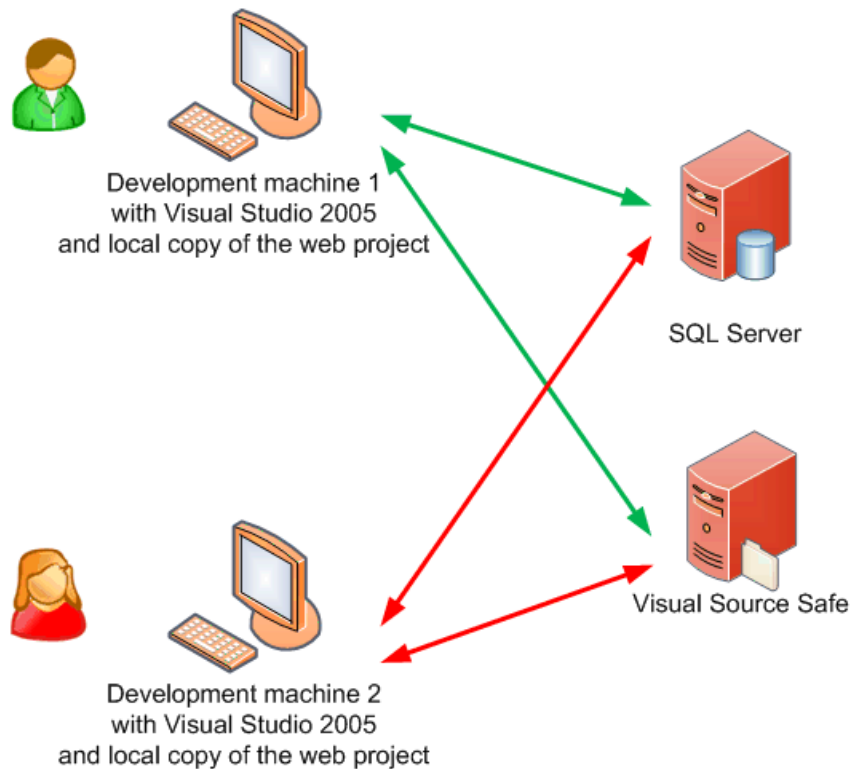
If your system runs with VirtualPathProvider disabled, you should be able to run it after the precompilation or deployment process.

Related topics: [Additional configuration tasks -> Configuration for Medium Trust environment](#), [Installation procedure -> Deployment to the live server](#), [Additional configuration tasks -> Installation on shared hosting server](#)

3.5.5 Visual Source Safe and Team Development

Kentico CMS can be used in team development environment as any other website project in Visual Studio. You can also use Microsoft Visual Source Safe (VSS) as you're used to: you simply add the website to VSS and then you need to check out/check in the files you want to modify.

In this case, all developers have their local copy of Kentico CMS installed, but they use the same VSS code and the same database as shown on the following picture:



Synchronization of memory objects between development machines

Kentico CMS caches some system objects (such as transformations, templates, etc.) in memory. It means that the memory on multiple development machines may not be synchronized and the developers may not see the latest version and they may even overwrite the work of other developers. That's why we recommend you to synchronize the memory objects between development machines using the [Web_farm synchronization module](#).

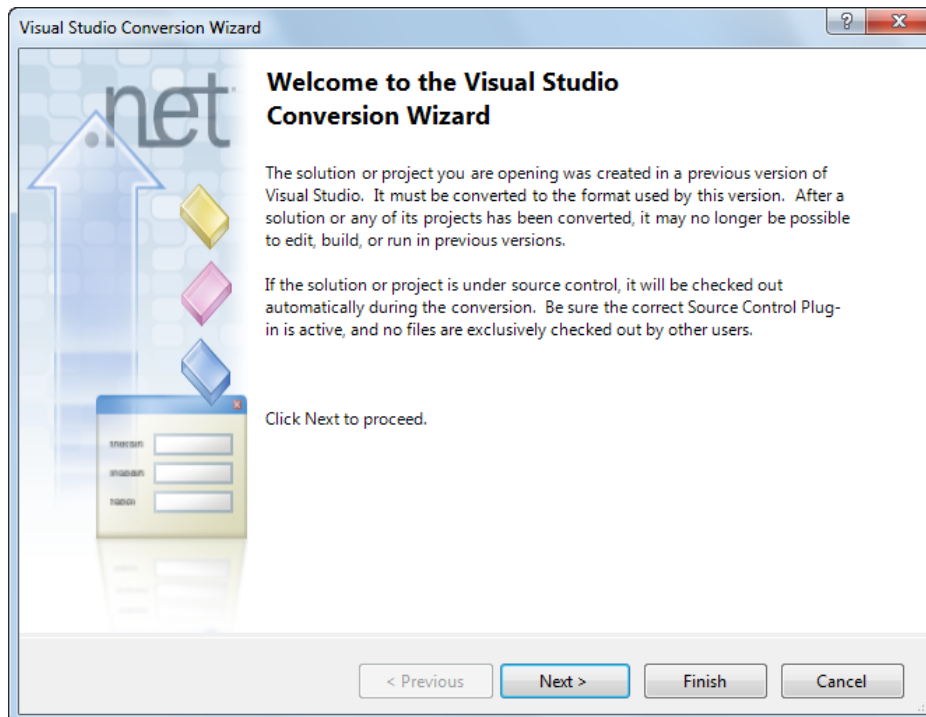
Team Development without Visual Studio

If the developers do not modify the source code and use the portal engine development model, they do not even need to have the local copies of the web project and they do not need to use VSS. In this case, they can install a single instance of Kentico CMS on their web server and develop the website through the browser-based interface.

3.5.6 Opening a VS2005 project in VS2008

If you were using Visual Studio 2005 for your web project and wish to convert to Visual Studio 2008, all you need to do is:

1. Start **Visual Studio 2008**.
2. Click **File -> Open website...**
3. Choose the folder with your web project on the disk and click **OK**.
4. If you're asked if you wish to upgrade the project to a newer version of .NET Framework and Visual Studio, click **Next** and go through the wizard.



Compilation error

You may receive a compilation error saying there are different versions of the **System.Web.Extensions.dll** library in the Global Assembly Cache (GAC) and a temporary folder. In this case, you need to locate the file **bin/System.Web.Extensions.dll** in your web project and delete it.

3.6 Troubleshooting installation issues

3.6.1 Overview

You may encounter various issues during the installation. The following chapters may help you sort them out.

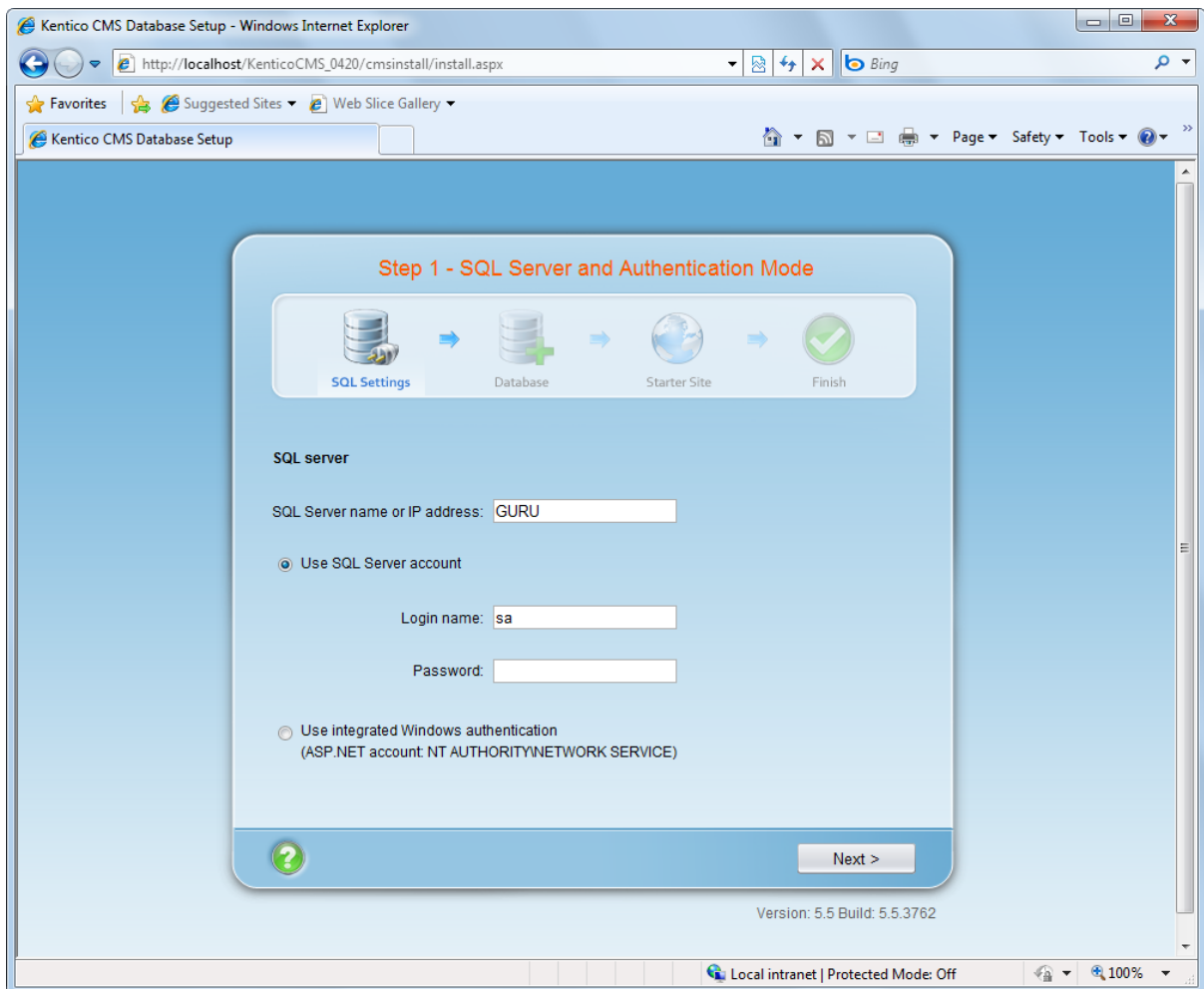
You may encounter problems in following areas:

- [SQL Server connection problems](#)
- [ASP.NET not working on Windows Server 2003](#)
- [Disk permissions problems](#)

Click one of the links to learn how to solve the issues.

3.6.2 SQL Server connection problems

You may encounter problems when entering the database connection details in the first step of database setup:



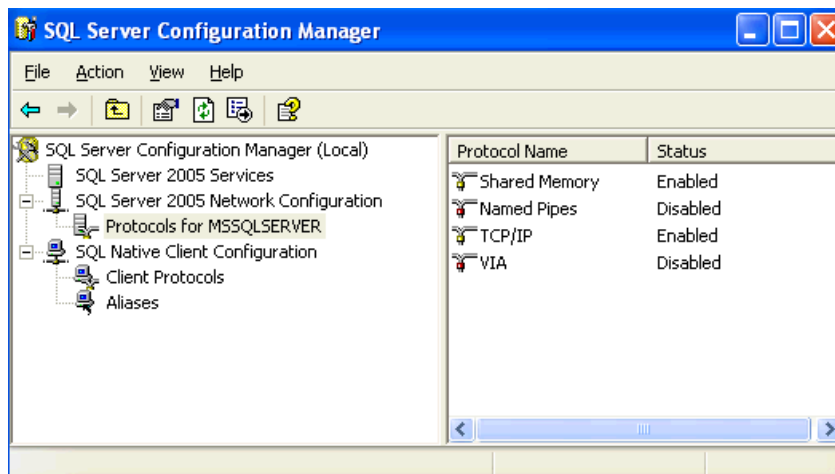
Error 1: Establishing connection to the server

Error message:

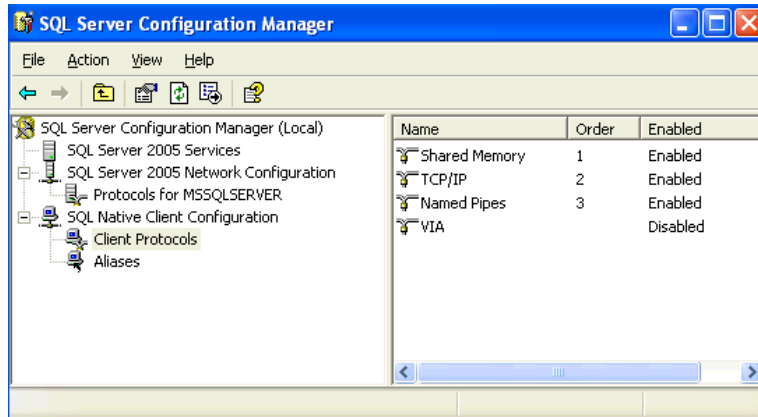
An error has occurred while establishing a connection to the server. When connecting to SQL Server 2005, this failure may be caused by the fact that under the default settings SQL Server does not allow remote connections. (provider: Named Pipes Provider, error: 40 - Could not open a connection to SQL Server)

Troubleshooting:

1. Make sure the SQL Server name or IP address is correct. In some cases, using one of the following values may help:
 - your computer name
 - localhost
 - 127.0.0.1
 - (local)
2. Make sure the server has Microsoft SQL Server 2005 or 2008 installed and running.
3. Make sure you are using the appropriate instance of the SQL Server in case you are using different instances of SQL Server. The instance name must be entered as myserver\myinstance (please note there's a backslash \).
4. If you're using Microsoft SQL Server Express 2005 with default installation settings, the correct server name is **.\sqlexpress** or **computername\sqlexpress**.
5. Make sure the access to the database server is not blocked by some firewall (the default port number for TCP/IP protocol is 1433).
6. If you're using **SQL Server 2005** (especially the Express Edition), some protocols are disabled by default. You may need to go to **Start menu -> All Programs -> Microsoft SQL Server 2005 -> Configuration Tools** on the computer where the SQL Server is installed and start **SQL Server Configuration Manager**. Then, go to SQL Server 2005 Network Configuration and enable the TCP/IP protocol:



7. You may also need to enable the TCP/IP protocol in the **SQL Native Client Configuration -> Client Protocols** section:



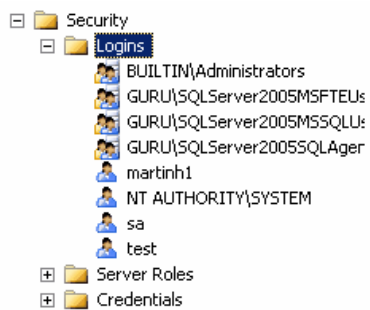
Error 2: Login failed for user 'xy'

Error message:

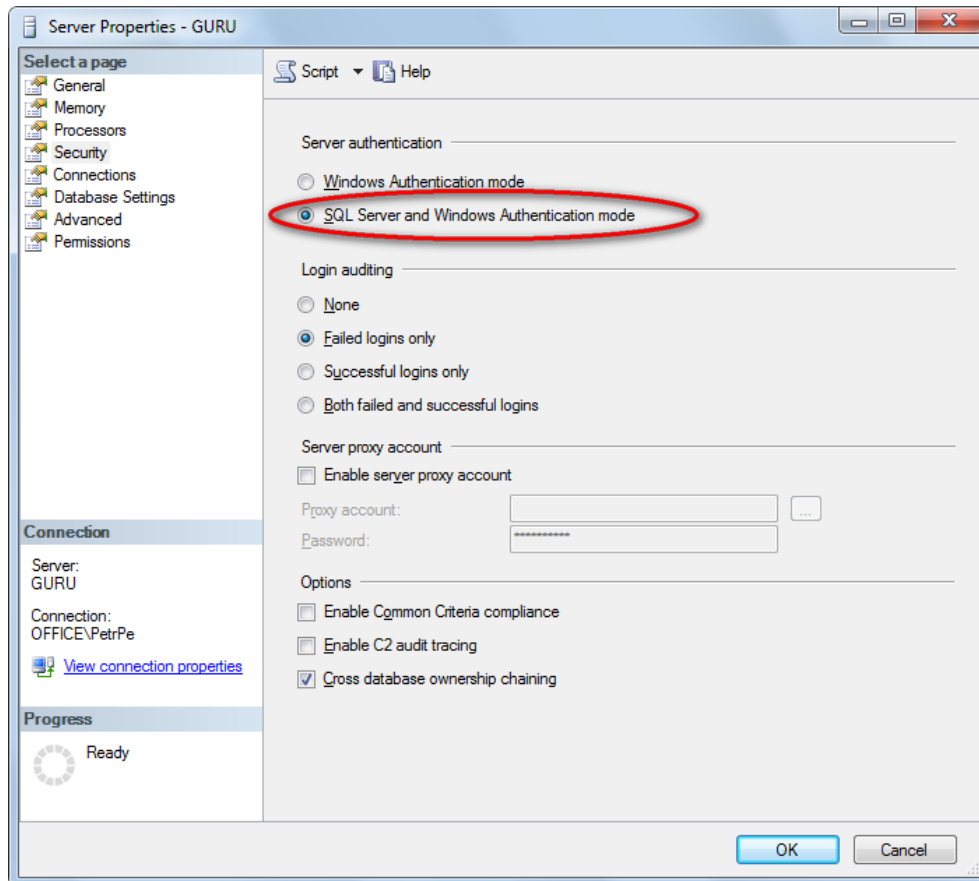
Login failed for user 'xy'

Troubleshooting for SQL Server account

If you're using SQL Server account with password, make sure you are using a valid user name and password. The login must be created on the server, it must be enabled and granted with permission to connect to the server. You can check the user account in Enterprise Manager/SQL Server Management Studio -> Server -> Security -> Logins:



Also, check the **Server Properties -> Security** dialog in Enterprise Manager/SQL Server Management Studio and make sure your server supports **SQL Server and Windows Authentication mode**:



Troubleshooting for Windows Authentication account

If you're using Windows Authentication account, the situation may be a little more complex and may require you to contact your network administrator. ASP.NET applications run under some particular local or domain account. This current account is displayed on the screen:

Use integrated Windows authentication (ASP.NET account: NT AUTHORITY\NETWORK SERVICE)

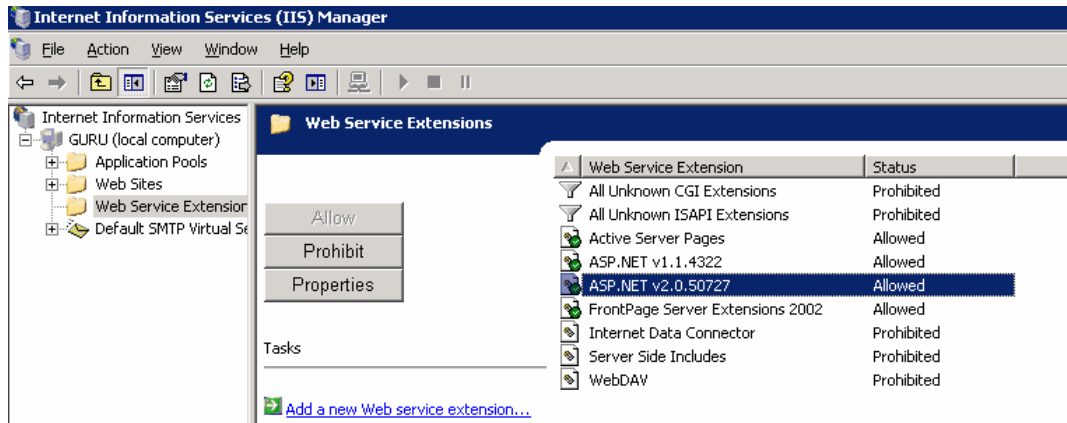
This account must have its own login with Windows authentication in the SQL Server. You can create the login in **Enterprise Manager\SQL Server Management Studio -> Security -> Logins** and grant it with appropriate permissions on the server. If your SQL Server is located on a different machine than your web server, you may need to configure your web application so that it runs under some domain account, rather than local account so that you can the login in the remote SQL Server.

If you do not succeed to configure Windows authentication, you may want to enable Windows and SQL Server Authentication on your SQL Server and use SQL Server account instead. You can learn more about SQL Server authentication in the **Troubleshooting for SQL Server account** section earlier in this chapter.

3.6.3 ASP.NET not working on Windows Server 2003

If you get the *404: Page not found* error or a similar error every time you request some ASPX page on your server and this is the first ASP.NET application installed and running on your server, it may be caused by configuration of Web Services Extensions on Windows Server 2003.

Go to **Control Panel -> Administrative tools -> Internet Information Services (IIS) Manager**, click **Web Services Extensions** and make sure that **ASP.NET 2.0** (or higher depending on the version you use) is **Allowed** as shown in the following screenshot:



3.6.4 Disk permissions problems

3.6.4.1 Disk permissions problems

Kentico CMS is able to perform most operations without writing to disk. However, there are situations when the web application needs to write to the disk for optimal operations or performance, such as importing/exporting a site or storing uploaded files in the files system (which is optional).

If you receive an error message from the system saying that the web application cannot write to disk, you need to grant the appropriate user account with **Modify** permissions on the whole website.

User account of the web application

The web application runs under user account that depends on your environment:

1. On [Windows 7](#), the user account is the local **IIS_USRS** account by default.
2. On [Windows Vista or Server 2008](#), the user account is the local **NETWORK SERVICE** account by default.
3. On [Windows XP](#), the user account is the local **ASPNET** account (aspnet_wp) by default.
4. On [Windows 2003](#), the user account is the local account **NT Authority\Network Service** by default.
5. If you're using **Visual Studio's** built-in web server, it is running under your account.

You can see the name of the user account under which the application runs in **Site Manager -> Administration -> System** dialog.

Choosing the component for directory operations

If you're running Kentico CMS under restricted trust level, you may need to use the managed component for directory operations (create/delete/rename directory). You can configure it by setting the following web.config parameter:

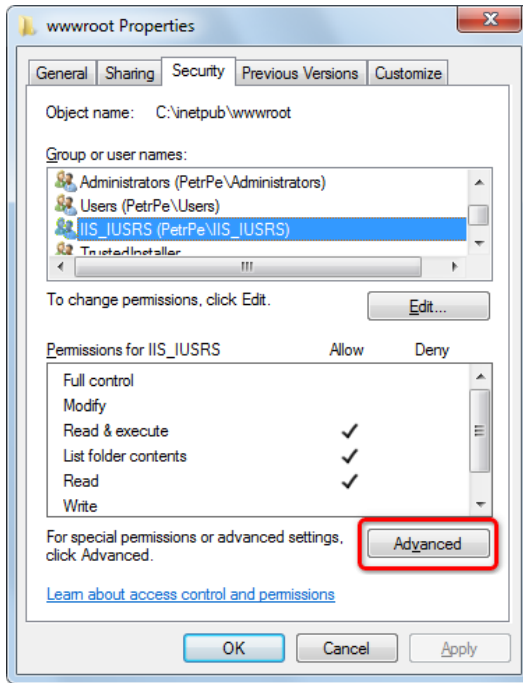
```
<add key="CMSDirectoryProviderAssembly" value="CMS.DirectoryProviderDotNet" />
```

If you're running Kentico CMS on a shared hosting server, some providers require that you use the non-managed methods for directory operations:

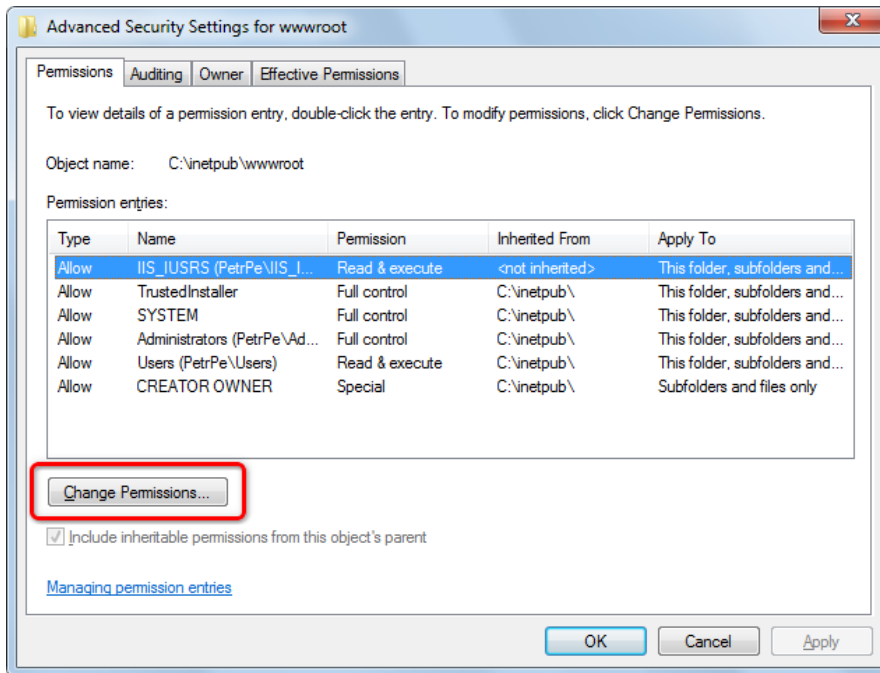
```
<add key="CMSDirectoryProviderAssembly" value="CMS.DirectoryProviderWin32" />
```


3.6.4.2 Solution on Windows 7

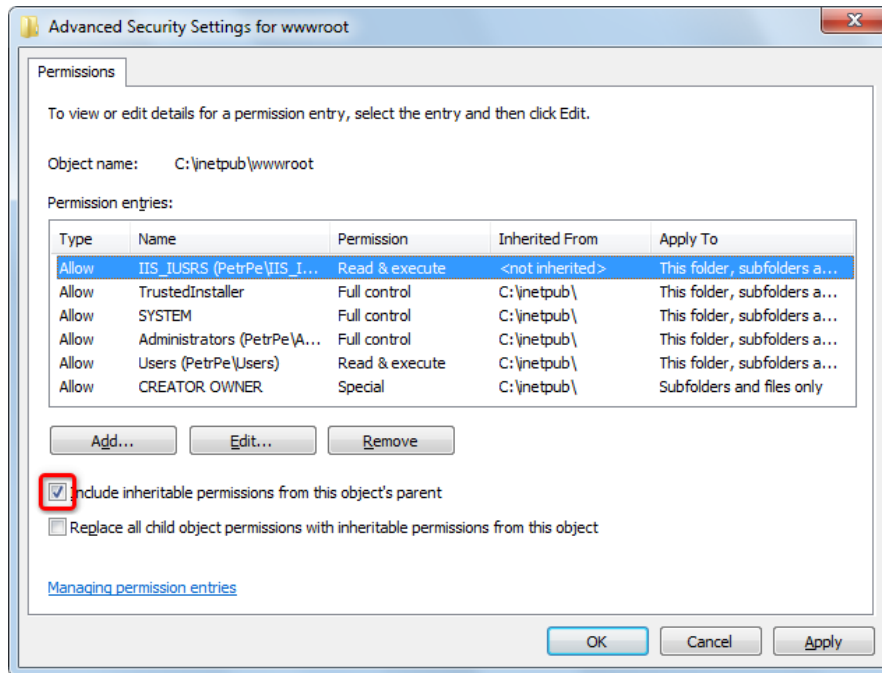
1. Open Windows Explorer, locate the folder with your website, right-click the folder and display its **Properties**. Choose the **Security** tab. Select **IIS_IUSRS** and click **Advanced**.



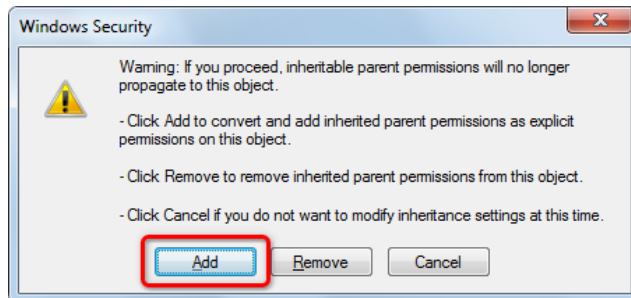
2. Select **NETWORK SERVICES** and click **Edit**.



3. Disable the **Include inheritable permissions from this object's parent** option.

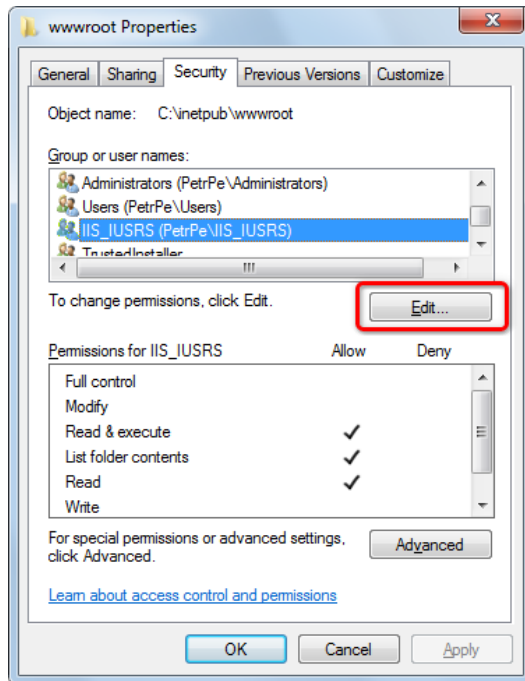


4. In the pop-up dialog, click **Add**.

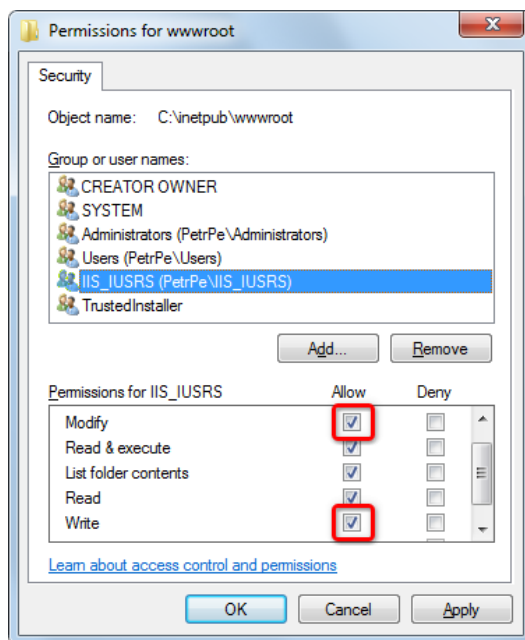


5. When the dialog closes, click **OK** to close the dialog under it. Click **OK** to close the dialog under the previous one.

You are back in the folder properties dialog now. Select **IIS_USRS** and click **Edit**.



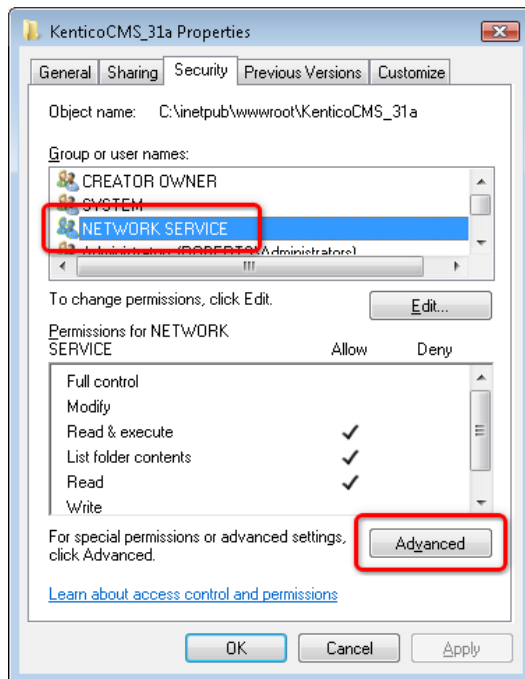
6. Check the **Allow** check-box for the **Write** and **Modify** permissions and click **OK**.



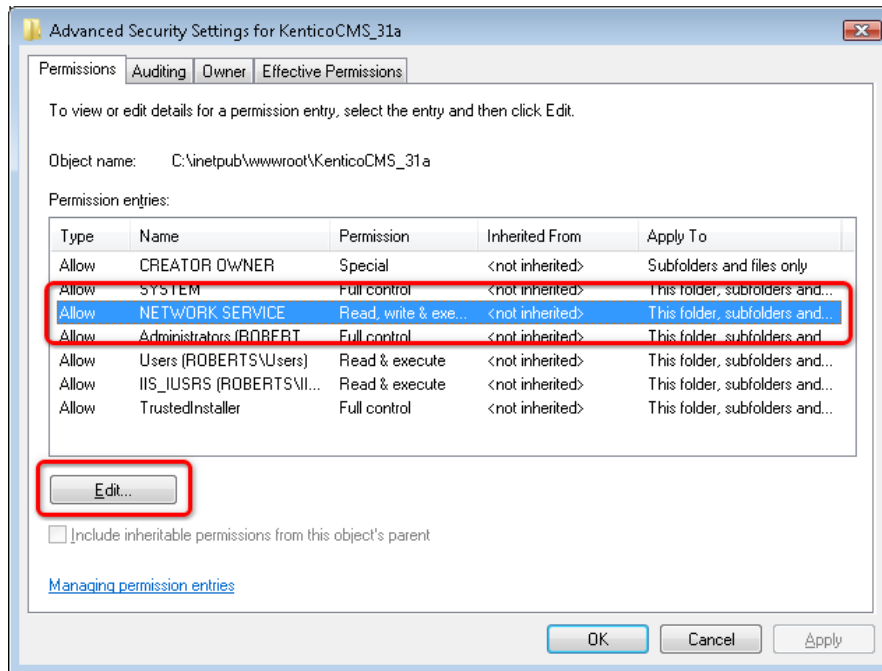
7. You have assigned the **IIS_USRS** account with the write permission. Kentico CMS should now be able to perform all disk write operations and therefore work correctly.

3.6.4.3 Solution on Windows Vista or Server 2008

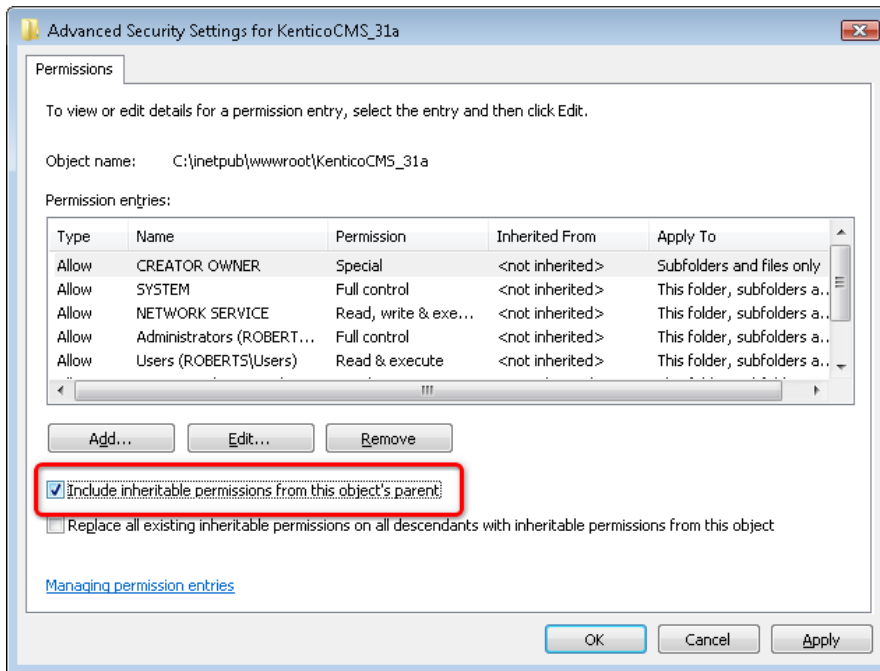
1. Open Windows Explorer, locate the folder with your website, right-click the folder and display its **Properties**. Choose the **Security** tab. Select **NETWORK SERVICE** and click **Advanced**.



2. Select **NETWORK SERVICES** and click **Edit**.



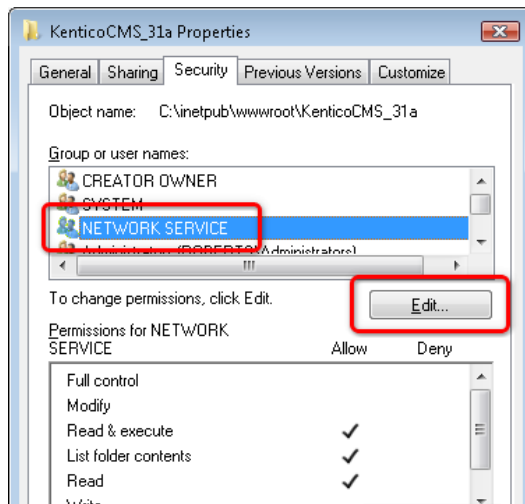
3. Disable the **Include inheritable permissions from this object's parent** option.



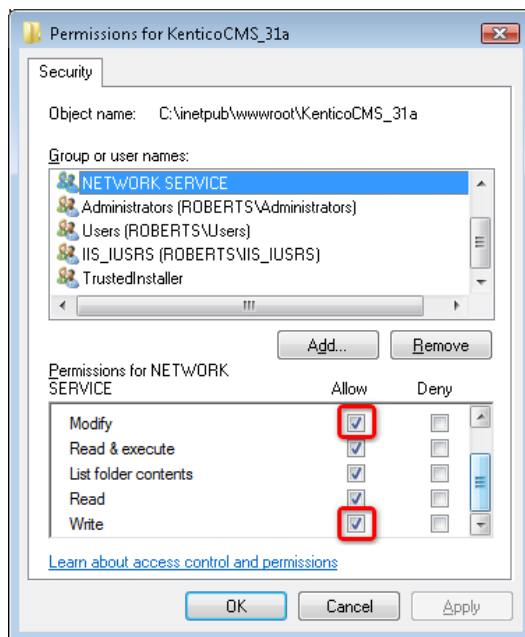
4. On the pop-up dialog, click **Copy**.



5. When the dialog closes, click **OK** to close the dialog under it. Click **OK** to close the dialog under the previous one. You are back in the folder properties dialog now. Select **NETWORK SERVICES** and click **Edit**.



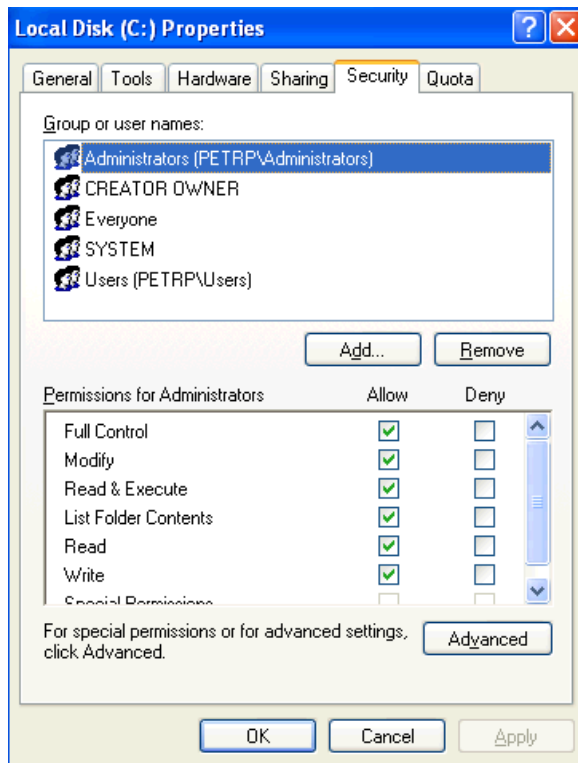
6. Check the **Allow** check-box for the **Write** and **Modify** permission and click **OK**.



7. You have assigned the NETWORK SERVICES account with the write permission. Kentico CMS should now be able to perform all disk write operations and therefore work correctly.

3.6.4.4 Solution on Windows XP

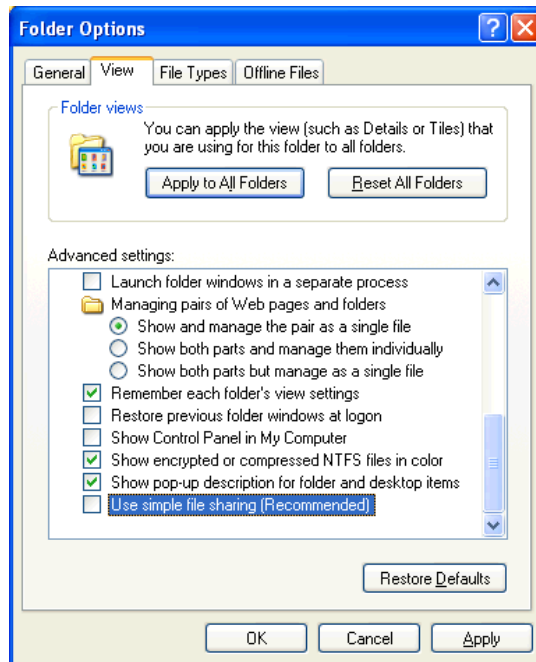
1. Open Windows Explorer, locate the folder with your website, right-click the folder and display its **Properties**. Choose the **Security** tab and click **Add...**



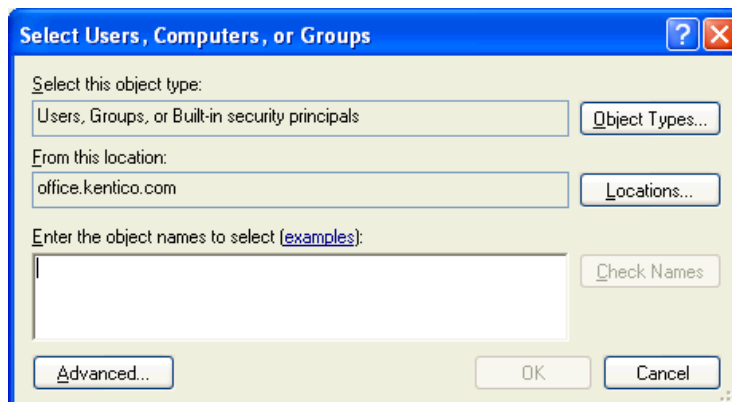


Missing Security tab in folder properties dialog

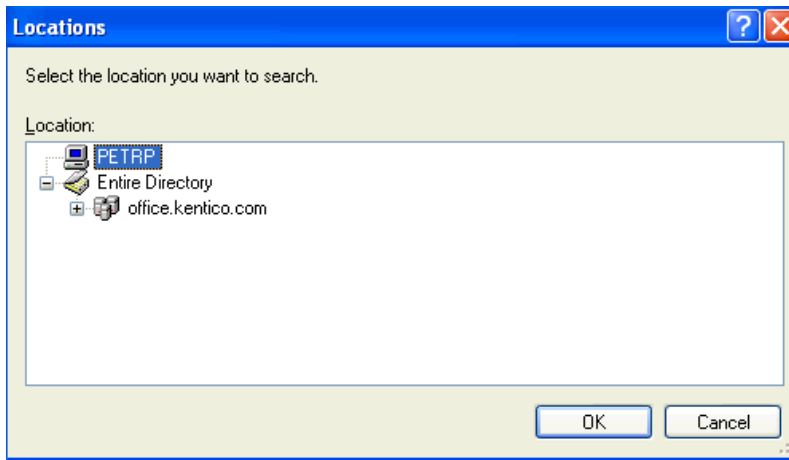
If you cannot see the Security tab, click **Tools -> Folder options** in the Windows Explorer main menu, choose the **View** tab and uncheck the **Use simple file sharing** box. Click OK. Now you should find the Security tab in the folder properties dialog.



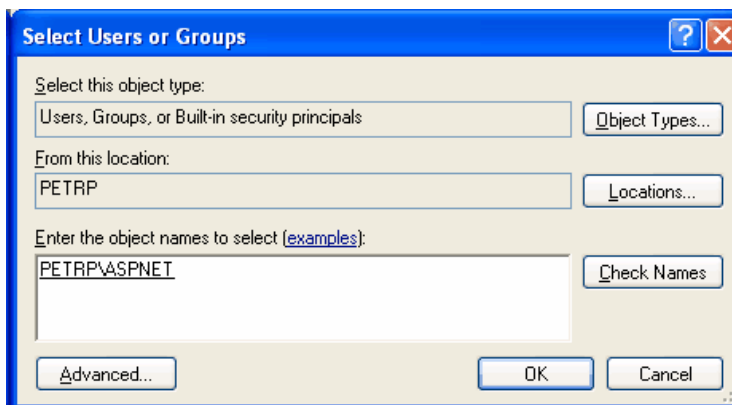
2. The **Select Users, Computers and Groups** dialog appears. Click **Locations...**



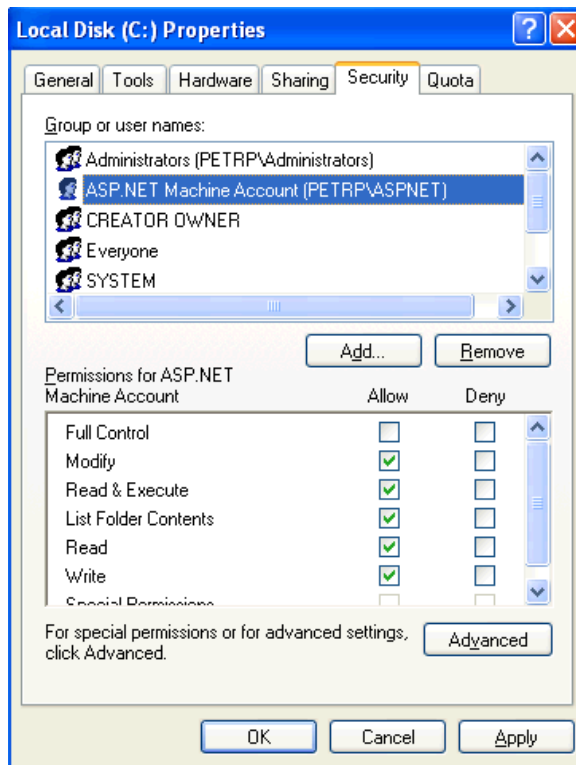
3. Choose your local computer in the pop-up window and click **OK**.



4. Enter **aspnet** into the box and click **Check Names**. The name should be resolved to **<your computer name>\ASPNET**. Click **OK**.

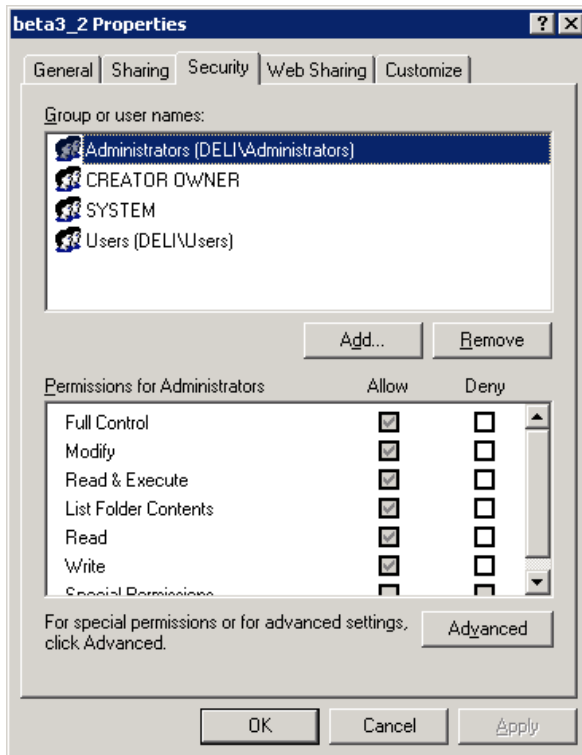


5. The account is added to the list of accounts. Grant the account with the **Modify** permission and click **OK**.

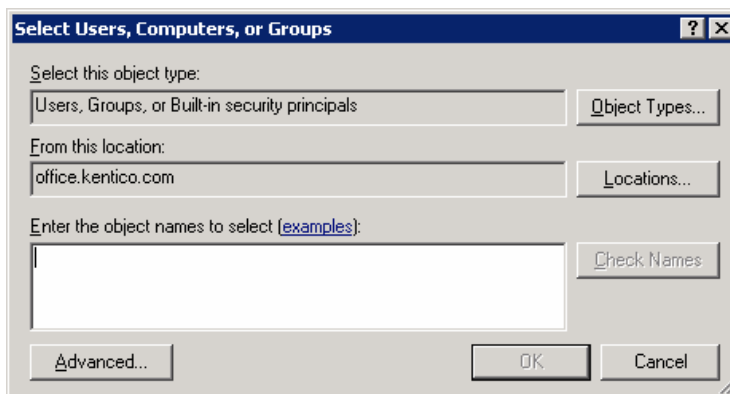


3.6.4.5 Solution on Windows 2003

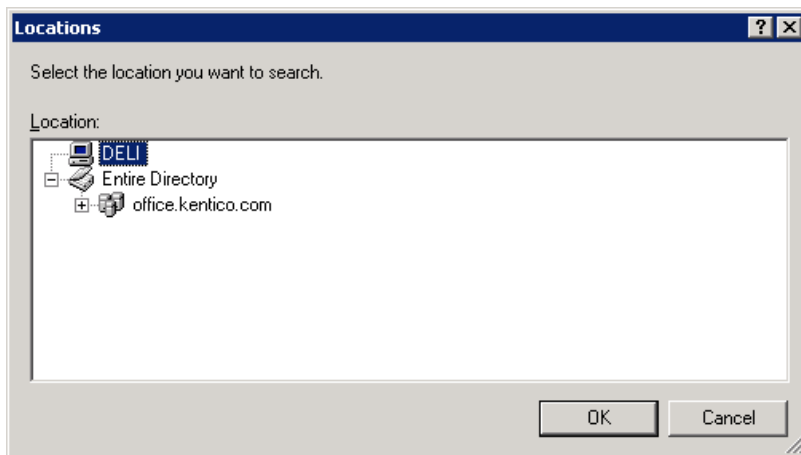
1. Open Windows Explorer, locate the folder with your website, right-click the folder and display its **Properties**. Choose the **Security** tab and click **Add...**



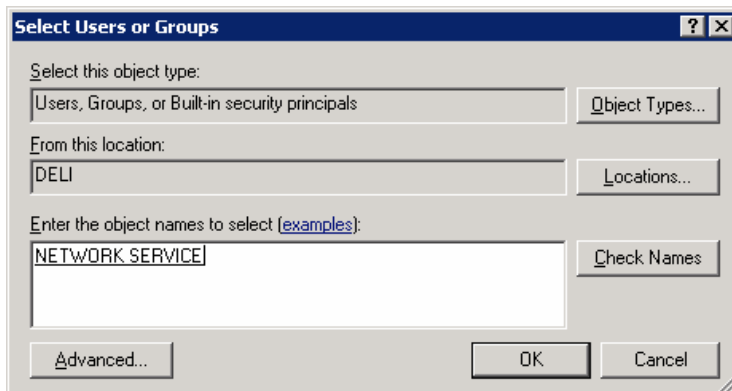
2. The **Select Users, Computers and Groups** dialog appears. Click **Locations...**



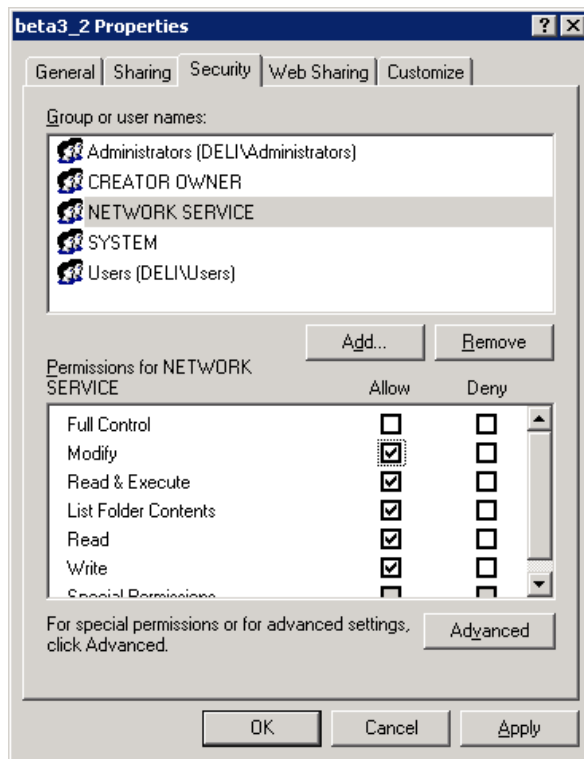
3. Choose your local computer and click **OK**.



4. Enter *network service* into the box and click **Check Names**. The name should be resolved to **NETWORK SERVICE**. Click **OK**.



5. The account is added to the list of accounts. Grant the account with **Modify** permissions and click **OK**.



3.7 System backup and recovery

Backup

To backup the data of Kentico CMS instance, you need to:

1. Backup the Kentico CMS database.
2. Backup the files of the Web application.

Recovery

To recover the system, you need to:

1. Recover the Kentico CMS database.
2. Recover the website files and create a virtual directory for it.

Part

IV

Content management

4 Content management

4.1 Overview

The content can be managed through a browser-based, WYSIWYG user interface. You need to sign in to Kentico CMS Desk using your user name and password and you need to have appropriate permissions.



Default user name and password

The default user name is **administrator**, the default password is blank.

It's highly recommended that you change the password after you finish the installation.

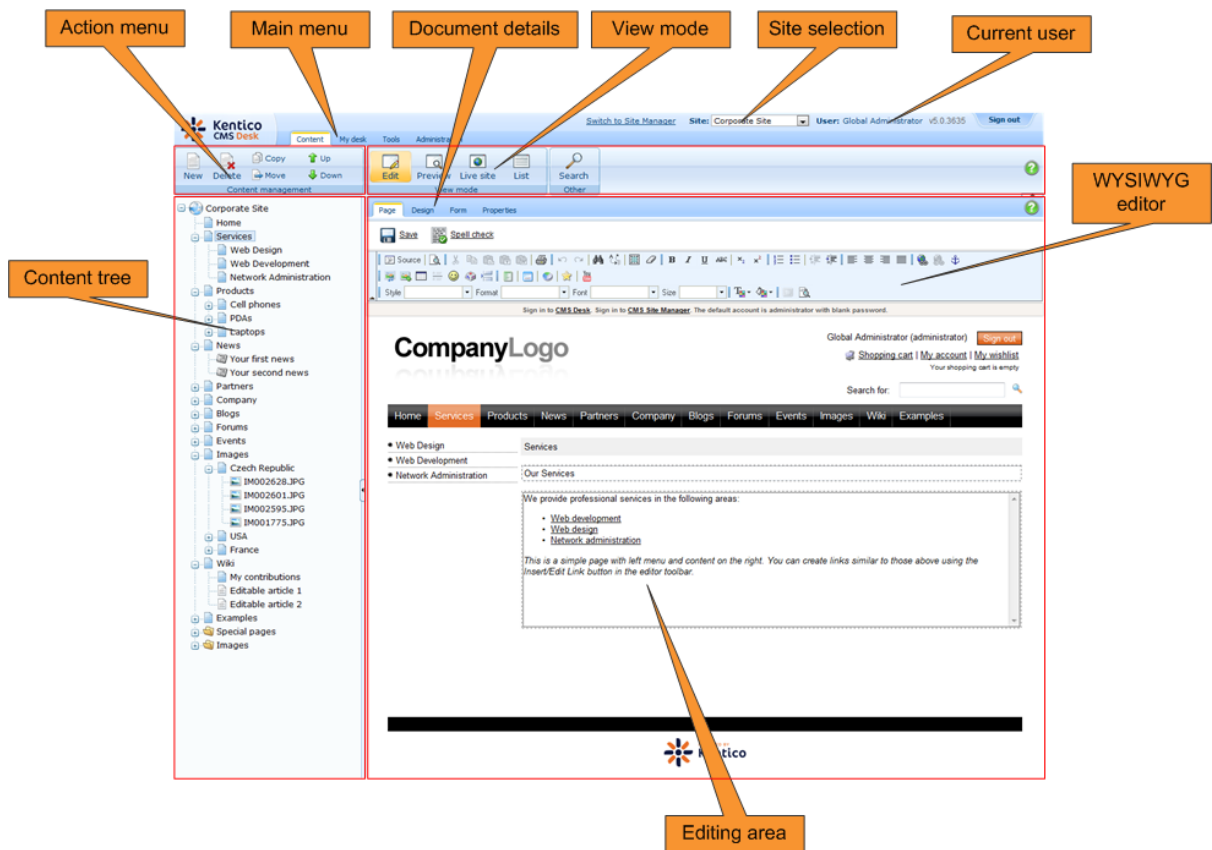
The default URL is <http://localhost/KenticoCMS>.

The default URL of CMS Desk is <http://localhost/KenticoCMS/CMSDesk>.

The default URL of Site Manager is <http://localhost/KenticoCMS/CMSSiteManager>.

Please note: the addresses may be different depending on your installation and domain name.

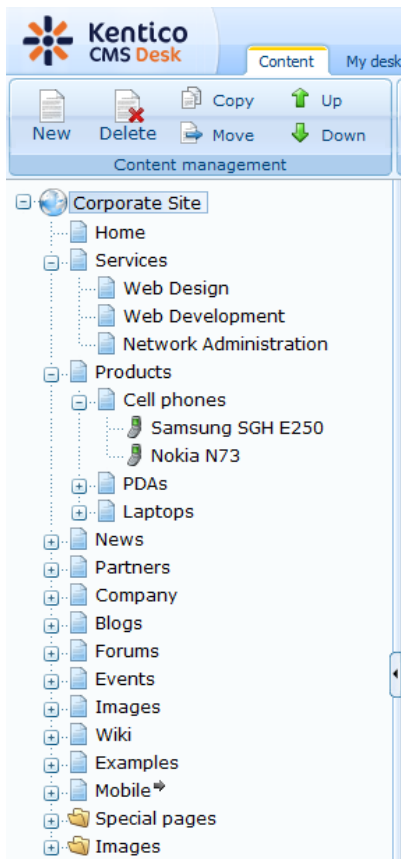
The following figure shows the CMS Desk user interface.



See also: [Kentico CMS overview -> Where is the content stored?](#), [Kentico CMS overview -> How do I edit content?](#)

4.2 Organizing pages, files and documents

All content in Kentico CMS is stored in a **tree hierarchy**. You can see the content tree on the left in **CMS Desk -> Content**:



The tree hierarchy provides many advantages:

- It organizes the page in a logical structure that represents the (dynamic) site map.
- It ensures easy-to-navigate information architecture.
- It provides a logical categorization of pages and documents.
- The content of sub-pages can be nested inside the parent pages.
- The position of the document is reflected in its URL that consists of the document path in the tree hierarchy, such as `/products/lcd-displays/nec-52vm.aspx`.
- The structure allows you to define permissions for a particular site section and inherit them to underlying items.

The following figure shows how the content tree defines the navigation and site map of the website:



Document types

Each document is of some type - it can be a page, a news item, an article, a product specification, etc. Each document type has its own:

- fields (data structure)
- editing form layout
- transformations (design)
- queries

and other settings.

Document types are fully customizable - you can add, modify and delete custom fields. The advantage of using custom document types is that you can define custom structure of documents and store content (data) separated from design. This can be done in **Site Manager -> Development -> Document types**.

More details can be found in the [Document types](#) chapter.

Pages and documents

All items in the content tree are basically documents. However, there's a special type of documents called **pages**. The pages (such as /Home, /Products/PDAs) display the content and they are displayed as menu items by default (this can be also customized).

Unlike pages, structured documents (such as news item /News/Your first news in the sample Corporate Site) contain structured data that can be displayed on the pages.

While pages usually contain unstructured content in the form of editable regions that can be edited on the **Page** tab, the structured documents contain structured and typed data stored in document type-

specific database tables and edited on the **Form** tab.

You will typically use **structured documents** when you need to display a **list of items**, such as list of news, list of products, etc.

Page versus Form

There are two types of content: content stored in editable regions on the page and content stored in forms. The following table compares both approaches:

	Editable regions on the page	Form
Content structure	Simple content structure, only text-based content.	Complex content structures, typed data, such as text, date-time, numbers, etc.
Validation	Only basic validation rules for minimum and maximum length.	Complex validation rules, including regular expressions and custom form controls with custom validation code.
Display	The content is displayed in the context of the page providing truly WYSIWYG editing.	The content is displayed using XSLT or ASCX transformations using special controls or web parts.
Storage	The content is stored in a single XML document in the document properties.	The content is stored in a separate database table. Each field has its own column. The data can be easily modified using SQL queries or API.
Examples of use.	<p>Home page, contact page.</p> <p>Generally: pages with simply structured or unstructured, text-only content.</p> <p>The editable regions are usually used only in connection with documents of type Page (menu item).</p>	<p>News, product specification, event details, job opening, etc.</p> <p>Generally: pages with structured content where you need to separate content from design and keep the content in its original data type.</p> <p>The form-based content is usually used in connection with documents of type News, Product, Article, etc.</p>

Organizing media files

There are two types of files you need to manage on the website:

- **website design files** - Images and Flash files that are used on the website design template, such as logo, background images, menu images, etc. These should be stored in the file system as a part of the application theme as explained in the [App themes](#) chapter.
- **Media files and document files** (images, Flash movies, Word documents, PDFs, etc.) that are published on the website and are part of the content editable by editors. These should be uploaded to the content tree as documents so that they can be managed by the content editors and so that you can apply all content-related features (permissions, workflow, versioning, multilingual support) to files as well.

You can find more details on files in chapter [File management](#).

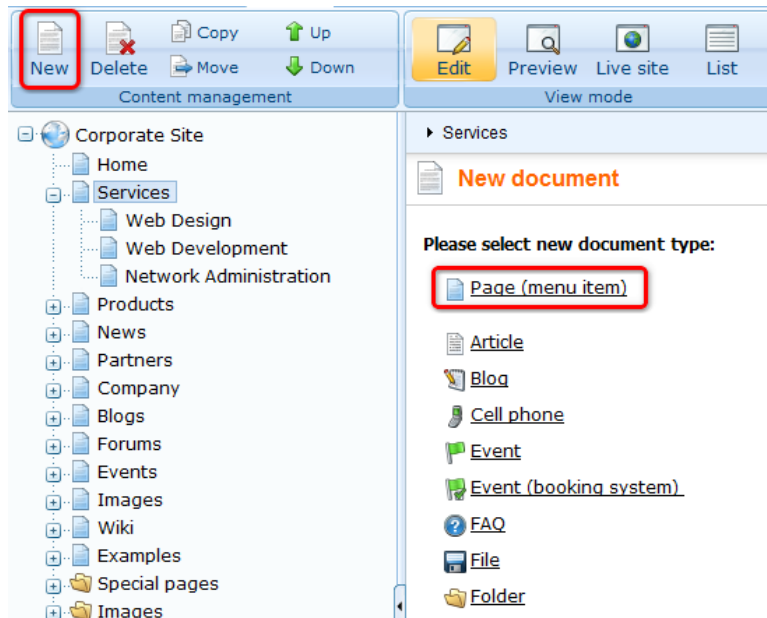
See also: [Where is the content stored?](#)

4.3 Editing content

4.3.1 Creating a new page

When you're creating a new page, you need to go through the following steps:

1. Click the **New** button in the main toolbar and choose to create a new document using the **Page (menu item)** document type.

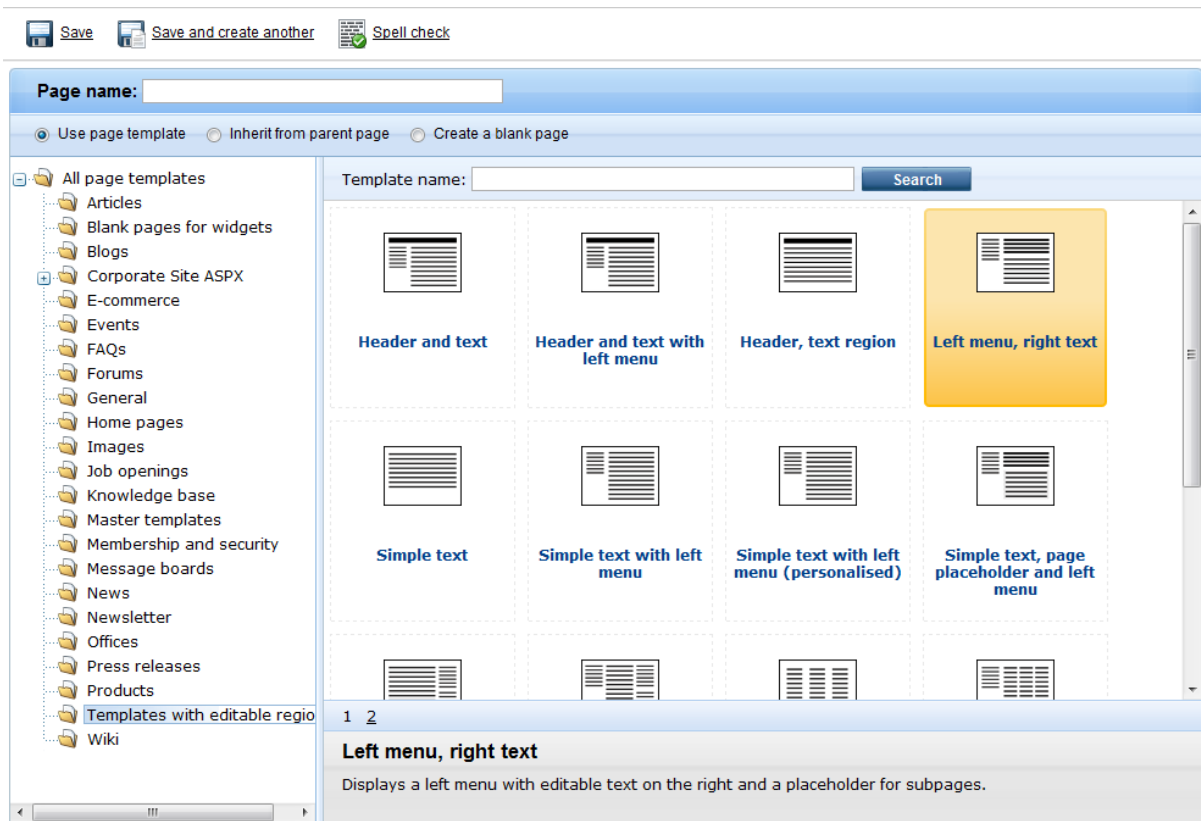


2. Enter the **page name** and select the **page template**. The page template defines the layout and design of the new page.

Alternatively, you can choose one of the following options when creating a new page:

- **Inherit from parent page** - use this option if you want the new page to use the same page template as the parent page.
- **Create a blank page using this layout** - this option is available only to site administrators/developers who can use it to create a new page that doesn't use any existing page template (it's a page with an ad-hoc page template). You can learn more in [Content tree and page templates](#).

Click **Save**.



3. You're redirected to the **Page** tab and you can enter some content. Click **Save** to save your content changes.

The screenshot displays a web application interface with a CMS editor toolbar at the top. The toolbar includes tabs for 'Page', 'Design', 'Form', and 'Properties', and buttons for 'Save' and 'Spell check'. Below the toolbar is a rich text editor with various icons for text formatting (bold, italic, underline, text color, background color), alignment, and other functions. A status bar below the editor indicates login options: 'Sign in to CMS Desk' and 'Sign in to CMS Site Manager. The default account is administrator with blank password.'

The main content area features a 'CompanyLogo' placeholder. In the top right corner, there is a user profile for 'Global Administrator (administrator)' with a 'Sign out' button. Below this are links for 'Shopping cart', 'My account', and 'My wishlist', with a note that 'Your shopping cart is empty'. A search bar is also present with the text 'Search for:' and a magnifying glass icon.

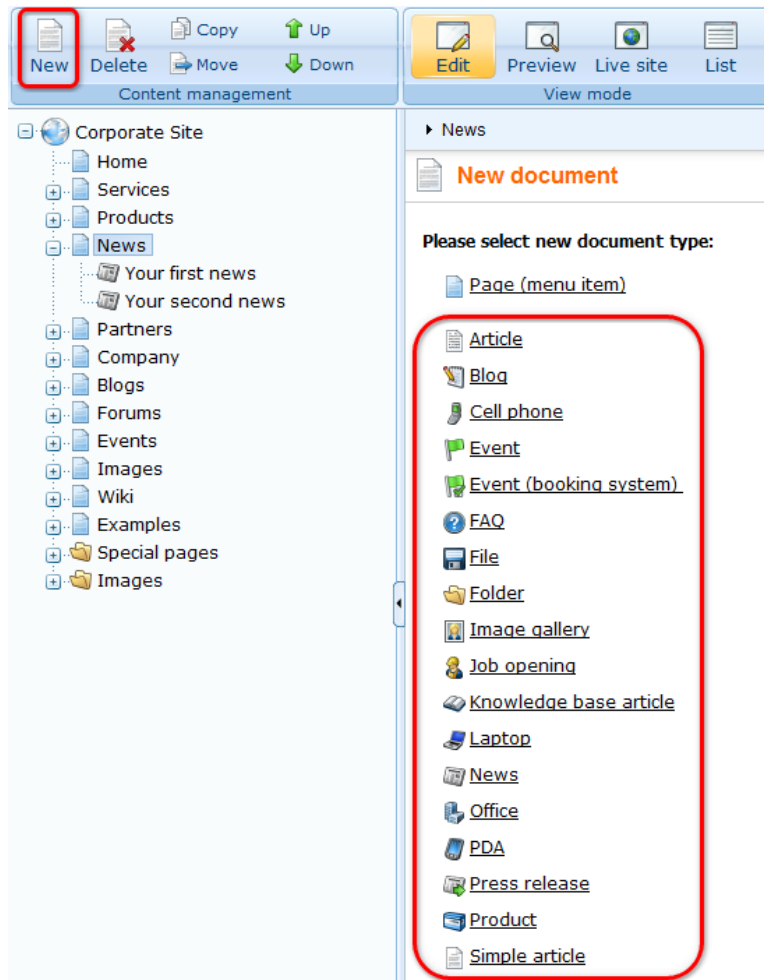
A navigation menu is located below the search bar, with 'Services' highlighted. The menu items are: Home, Services, Products, News, Partners, Company, Blogs, Forums, Events, Images, Wiki, and Examples.

On the left side, there is a sidebar menu with the following items: IT Training (selected), Web Design, Web Development, and Network Administration. The main content area is titled 'Services > IT Training' and contains a large, empty rectangular box with a dashed border, indicating a content placeholder.

4.3.2 Creating a new structured document

You can create new documents in **CMS Desk -> Content**.

1. Click the document under which the new item should be placed, click **New** and choose the required document type.



Available document types

The types of documents that can be created under the selected document depend on the type of the selected document. If the required document type is not available, the site administrator needs to add it in Site Manager -> Development -> Document types -> ... edit parent document type ... -> Child types.

2. You are then redirected to the appropriate editing form. For example, if you chose to create a new **News** document in the previous step, you would get an editing form like in the screenshot below. Enter some sample values like the following:

- **News title:** My testing news

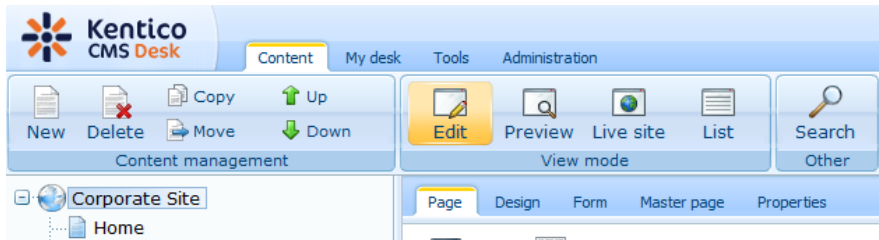
- **Released date:** 8/15/2007 (the release date displayed on the website)
- **News summary:** Some news summary.
- **News text:** Some news text.
- **Publish from:** <leave empty for now, it can be used to specify when the document goes live>
- **Publish to:** <leave empty for now, it can be used to specify when the document expires>

Now you can click **Save** to save the document and continue editing. You can also click **Save and create another** to save the news document and create another news document in the same location. The later option is useful if you need to create several documents of the same type in the same location at once.

The screenshot shows a web-based content management system interface. On the left is a navigation tree for a 'Corporate Site' with folders like Home, Services, Products, News, Partners, Company, Blogs, Forums, Events, Images, Wiki, Examples, Special pages, and Images. The 'News' folder is selected, showing sub-items 'Your first news' and 'Your second news'. The main editing area is titled 'News' and contains a toolbar with 'Save', 'Save and create another', and 'Spell check' buttons. Below the toolbar is a rich text editor with a menu (Style, Format, Font, Size) and various formatting icons. The form fields include: 'News Title:' with an empty text box; 'Release Date:' with an empty text box and a 'Now' button; 'News Summary:' with a large empty text area; and 'News Text:' with another large empty text area.

4.3.3 Previewing documents

When you open the page in CMS Desk -> Content section, the default mode is Edit:



The Edit mode allows you to edit the page content and properties.

You can also choose the following modes:

- **Preview** - this mode shows you the page as it will be published on the site, before it's published (if you're using workflow - see box below for details).
- **Live site** - this mode shows the page as it's currently displayed on the live site to site visitors.
- **List** - this mode shows the list of all documents under the currently selected document. It's useful if you have too many documents in a single site section and need to browse them effectively.



Preview mode and workflow

The preview mode works as expected **only if the displayed document uses workflow** (see [Workflow overview](#) for details). When you create a new document and want to preview it before you approve it in your step, click the document and click **Preview**. You will see the document as it will be displayed after it's published.

If you do not wish to use a real workflow, but you'd like to use the preview functionality, you can define a simple two-step workflow (Edit -> Publish) without any approval process. In this case, the editor can preview the content and publish it when it looks as required.

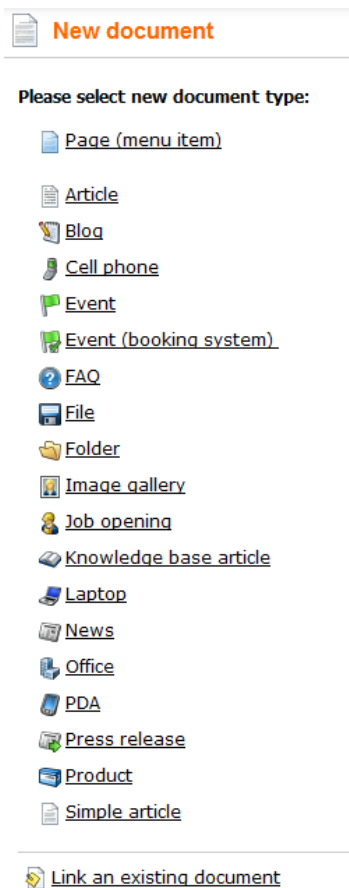
If you do not use workflow for the selected document, the **Preview mode** displays basically the same content as the **Live site** mode, the only difference may be caused by the fact that the preview mode doesn't use caching, so it may display also changes that are not visible on live site yet due to the caching.

4.3.4 Creating a linked document

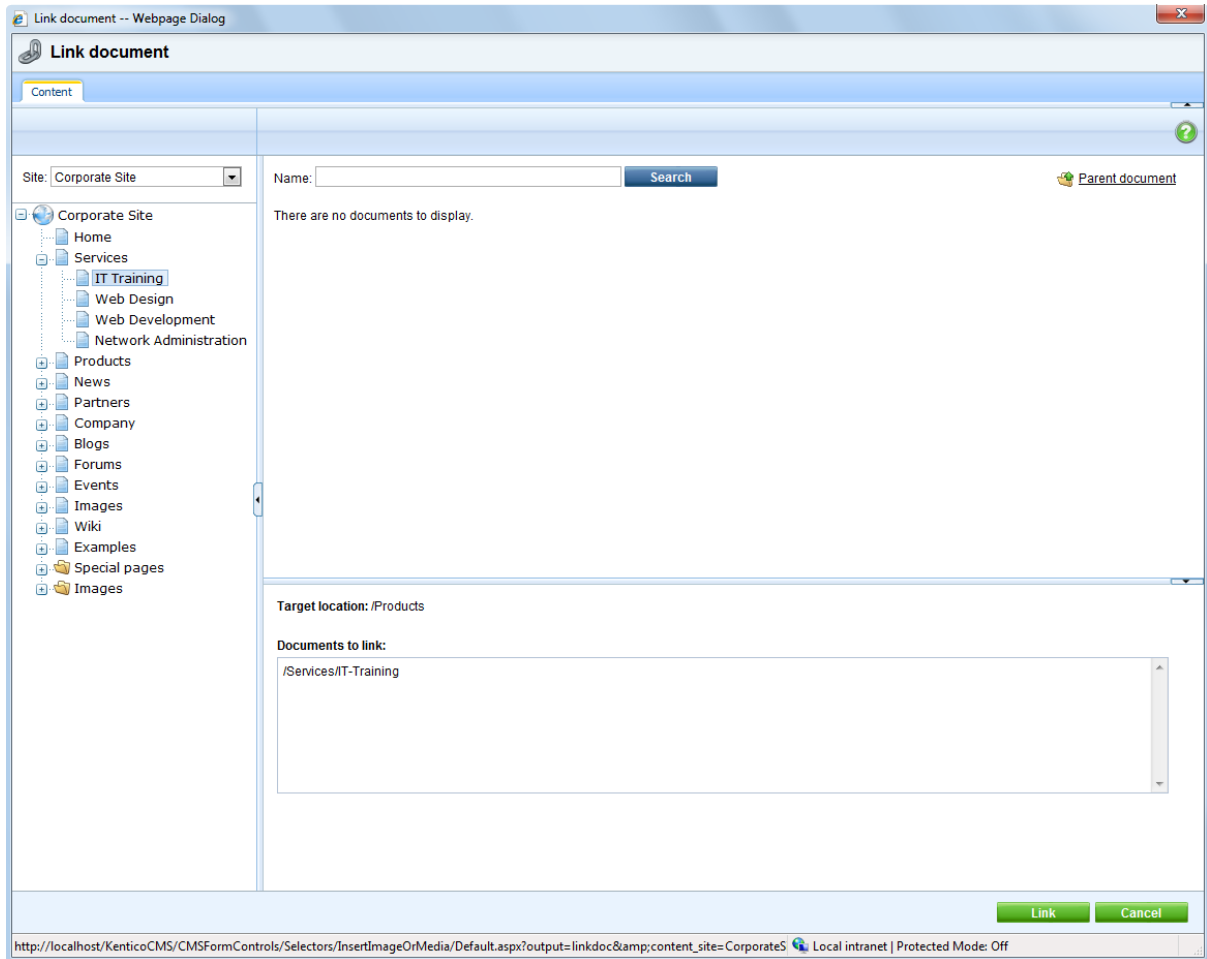
A linked document is a "stub" or "shortcut" of some existing document. It allows you to place a single document to multiple places in the content tree instead of creating its copies. Such a document is then displayed in the given part of the website, but when you edit it, you actually update the original document.

This feature is useful if you need to include a document (product) in multiple site sections (product categories), but keep only one instance of the document.

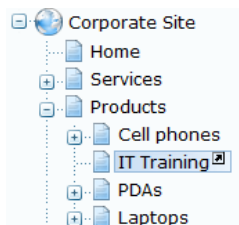
In order to create a linked document, click **New** and choose **Link an existing document** in the bottom of the screen:



Then, choose the document that should be linked to the current location:



Click **Save** to save the new link. The link to the document will appear with an arrow in the content tree:



You can see the list of all linked documents for the currently selected document in the [Properties -> Linked docs](#) dialog.

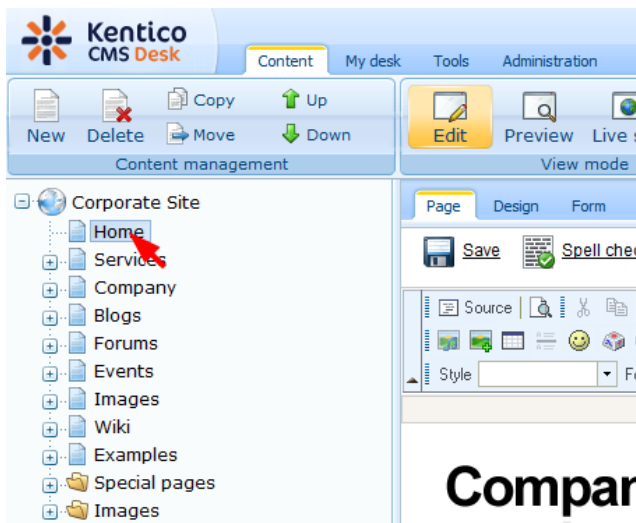
4.3.5 Drag-and-drop operations with documents

You can perform the following operations with documents quickly by dragging and dropping in the content tree.

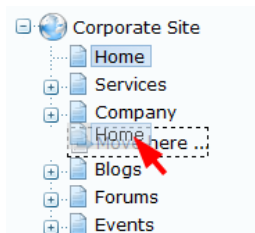
- **Move** - just drag and drop the document
- **Copy** - drag and drop while holding CTRL
- **Create linked document** - drag and drop while holding down CTRL+SHIFT

The following steps describe the process of dragging and dropping a document:

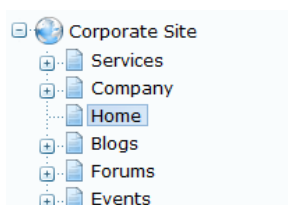
1. Select the document that you want to move.



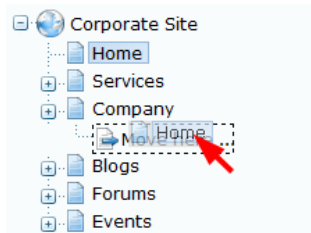
2. Move the mouse to the target location while still holding down the mouse button.



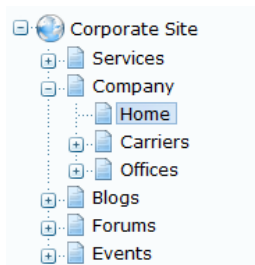
3. Release the mouse button. The document will be moved to the location where you dropped it.



4. If you drag the document a bit to the right ...



5. ... it will be placed under the document above it.



4.4 WYSIWYG editor

4.4.1 Overview

Kentico CMS comes with a built-in WYSIWYG editor. It is based on the [FCKeditor](#), which is one of the best browser-based editors available on the market. However, it is possible to integrate your custom WYSIWYG editor instead of the built-in one.

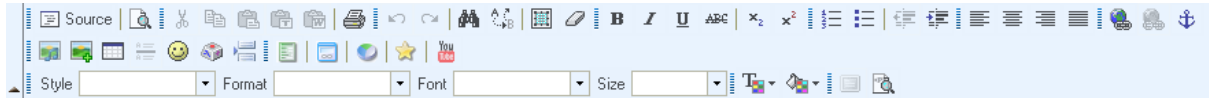
Where is the editor available

You can come across the WYSIWYG editor in many parts of the system. However, its main use is related to the **Editable text** web part, which enables content editors to enter page content via the **Page** tab.










Another example of usage of the WYSIWYG editor is the **HTML area** form control that can be displayed e.g. on a document's **Form** tab, as a part of a BizForm or in the web part properties dialog of some web parts (e.g. **Static HTML** or **Silverlight application**).

WYSIWYG editor toolbar

The default toolbar looks like this:



As you can see, it provides functionality similar to Microsoft Word. Still, there are several buttons that may require additional explanation:

	Paste as plain text - this command pastes the content of your clipboard while cleaning out all formatting.
	Paste from Word - this command allows you to clean-up content pasted from Microsoft Word. It cleans up the HTML code so that it doesn't contain extra code and so that it fits your website design. You can find more details in this chapter .
	Insert/Edit link - creates a link from the selected text or inserts link into the text. See this chapter for more details.
	Insert/Edit image or media - inserts an image or other media into the text. See the Insert image or media chapter for more details.
	Quickly insert image - inserts an image from your local disk in a quick way, without any additional settings when inserting. See this chapter for more details.
	Insert BizForm - inserts an on-line form into the text. You can find more details on BizForms in the Modules -> BizForms chapter.
	Insert inline control - inserts an inline control into the text. You can find more details on inline controls in the Inline controls chapter.
	Insert poll - inserts a poll into the text. You can find more details on polls in the Modules -> Polls chapter.
	Insert/Edit YouTube video - inserts YouTube video. Further details can be learned in this chapter .

4.4.2 Insert image or media

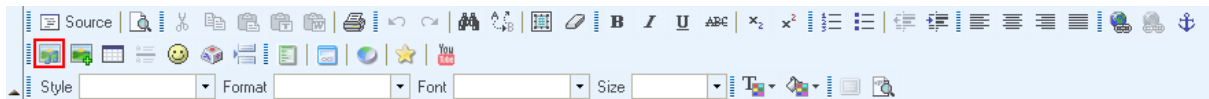
4.4.2.1 Overview

The Insert image dialog can be used to insert the following types of files:

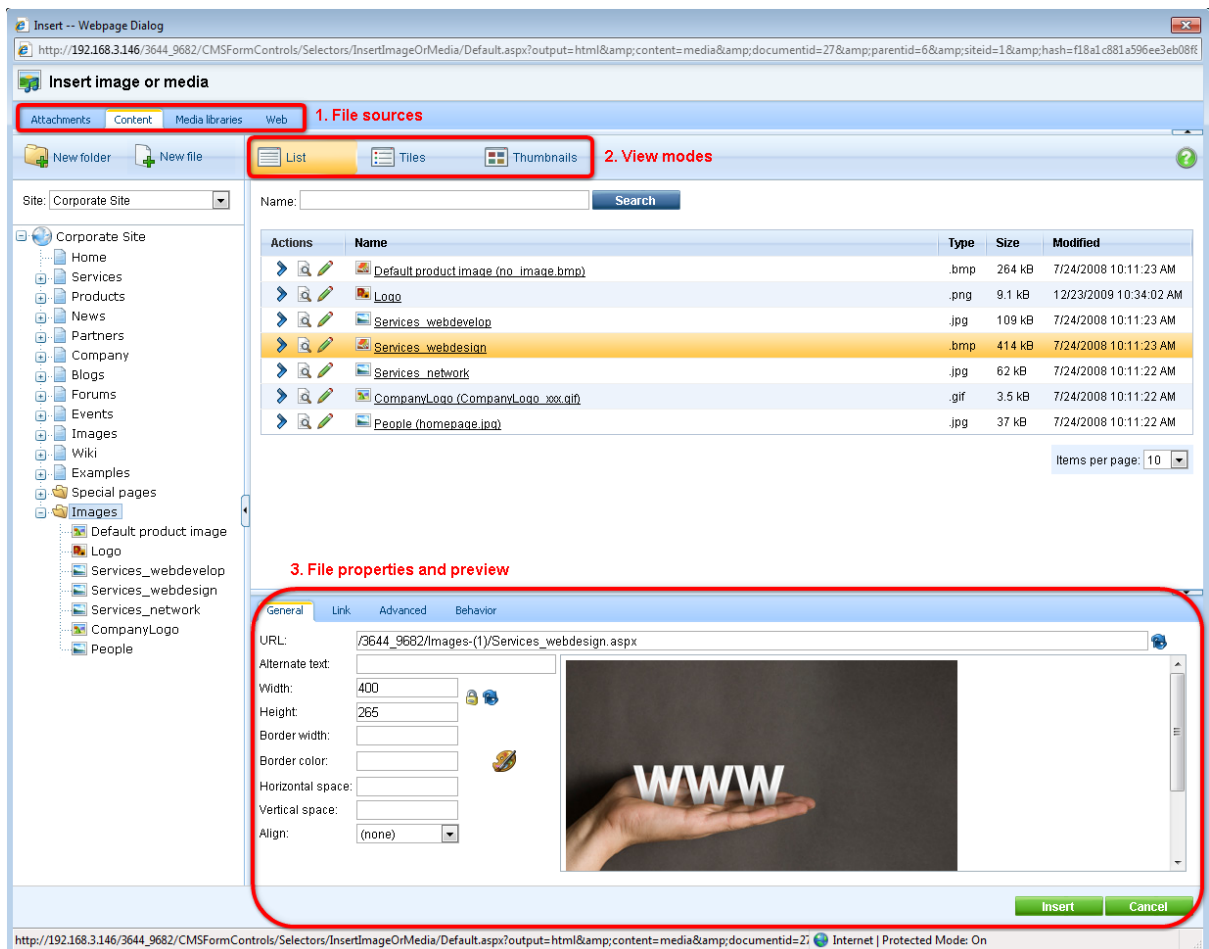
- **Images:** bmp, gif, ico, png, wmf, jpg, jpeg, tiff, tif
- **Audio:** wav, wma, mp2, mp3, mid, midi, mpga
- **Video:** avi, mp4, mpg, mpeg, wmv, qt, mov, rm
- **Flash:** swf

Custom types can be added as described in [this topic](#).

The **Insert image or media** dialog can be opened by clicking the  icon, as highlighted in the screenshot below.




After clicking the icon, the following dialog will be displayed:



The highlighted parts of the dialog have the following functions. Their position may vary based on the selected file source:

1. **File sources** - using these four tabs, you can select where the inserted files should be taken from; more info [here](#)
2. **View modes** - using these buttons, you can switch between different ways how listed files are displayed in the dialog; more info [here](#)
3. **File properties** - in this section, you can define properties of the file inserted into the text; the properties are different for [images](#), [audio/video](#) and [flash](#)

General process of inserting image or media

1. Place the cursor in the appropriate position in the WYSIWYG editor.
2. Click the **Insert image or media** () icon.
3. The dialog window opens. Select the appropriate file source tab according to where you want to add the file from.
4. Locate and select the file on the tab.
5. Appropriate properties according to the file type are displayed. Specify the required properties and click the **Insert** button.
6. The required code gets inserted into the WYSIWYG editor.

4.4.2.2 File sources

Using the four tabs at the top part of the dialog window, you can choose where the image or media should be inserted from. The following tabs are available:

Attachments

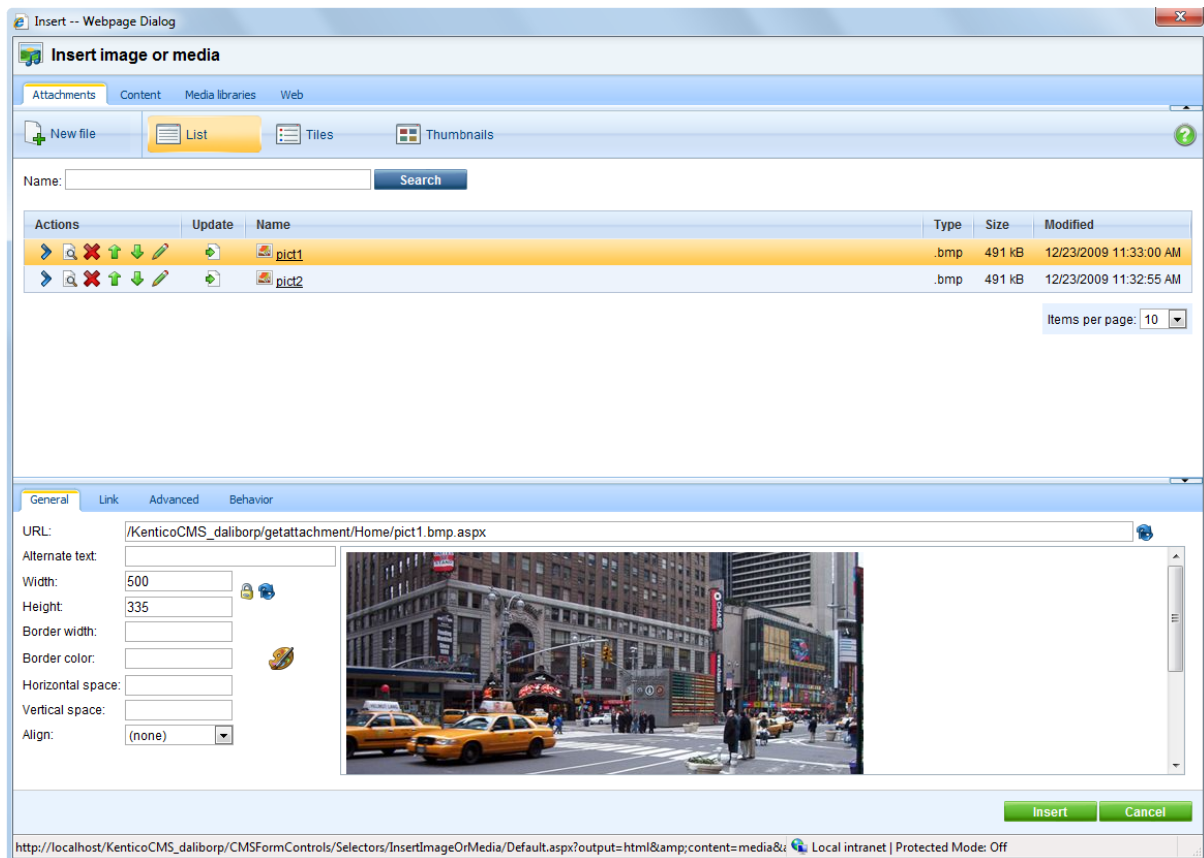
This tab is available only when the WYSIWYG editor is placed on some document (e.g. Form tab, user contributions, ...) so that the attachments of the current document can be offered. In other parts of the CMS, the tab is not displayed.

You can insert the document's unsorted attachments into the text from this tab. You can filter the listed attachments by **Name** using the filter above the list. For more information about document attachments, please refer to the [Document attachments](#) chapter of this guide.

You can select an attachment using the **Select** () icon or by simply clicking the appropriate line (or tile/thumbnail in the other view modes).

You can upload new attachments to the document via this dialog using the **New file** (📎) button. The following actions can be performed with the listed attachments:

- After clicking the **View** (🔍) icon, the attachment will be opened in a new window.
- Using the **Delete** (✖) icon, you can remove the attachment from the document.
- Using the **Move up** (⬆) and **Move down** (⬇) icons, you can re-order the attachments. This option is available only in the **List** view mode. The order is stored in the **AttachmentOrder** property of each attachment. You can enter AttachmentOrder into the ORDER BY expression property of a displaying web part to have the attachments ordered accordingly.
- Images have also the **Edit** (✎) icon available. Clicking this icon opens the image in the built-in image editor.
- Using the **Update** (🔄) icon, you can replace the original attachment with a new one.



Content

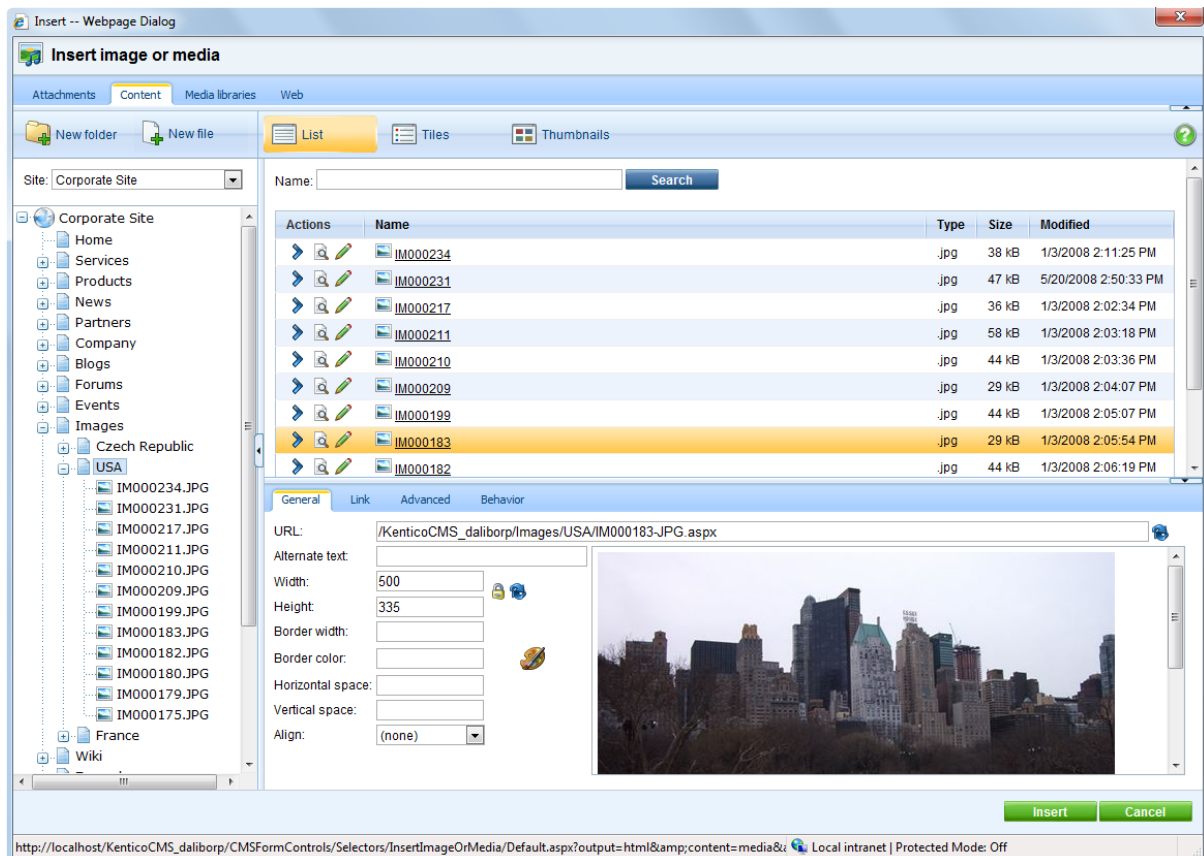
From this tab, you can insert files stored in the content tree of any of the sites running in the system. The site to insert from can be selected using the **Site** drop-down list, while its content tree will be displayed below. You can define which sites will be available and the starting alias path of the displayed content tree when defining the field in field editor, as described [here](#).

If you select a node of the content tree, all insertable files stored under it will be listed in the main area. You can filter the listed files by **Name** using the filter above the list.

You can select a file using the **Select** (👉) icon or by simply clicking the appropriate line (or tile/thumbnaill in the other view modes).

New folders (cms.folder documents) can be created in the content tree via this dialog using the **New folder** (📁) button. You can also upload new files (cms.file documents) into the content tree using the **New file** (📄) button. You can also perform the following actions with the listed files:

- After clicking the **View** (🔍) icon, the file will be opened in a new window.
- Images have also the **Edit** (✏️) icon available. Clicking this icon opens the image in the built-in image editor.



Media libraries

From this tab, you can insert files stored in a media library. Depending on the settings described [here](#), you can select a library using the set of three drop-down lists - **Site**, **Group** and **Library** - in the top right part of the dialog.

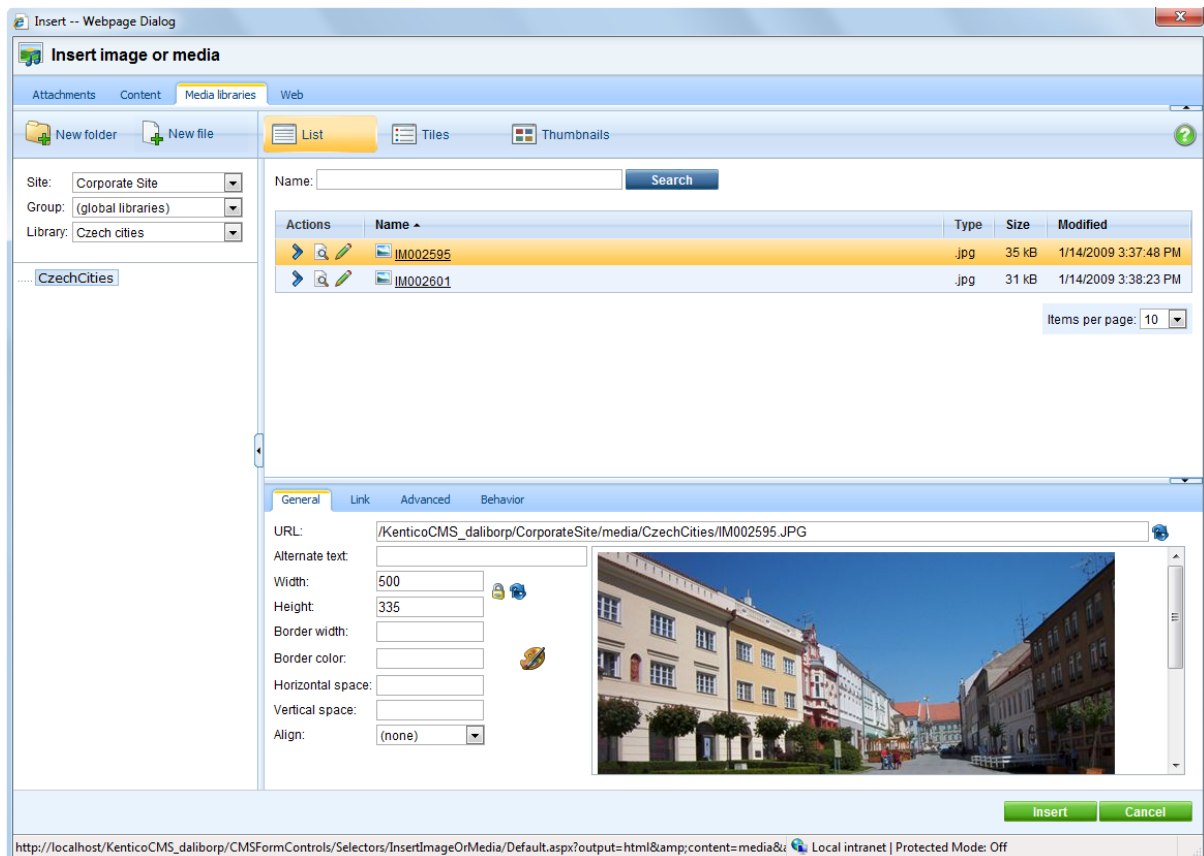
More information about Kentico CMS Media libraries can be found in [this chapter](#).

When the library is selected, its folder structure is displayed below the drop-downs. After selecting a folder, its content will be offered in the main area. You can filter the listed files by **Name** using the filter above the list.

You can select a file using the **Select** (➤) icon or by simply clicking the appropriate line (or tile/thumbnailed in the other view modes).

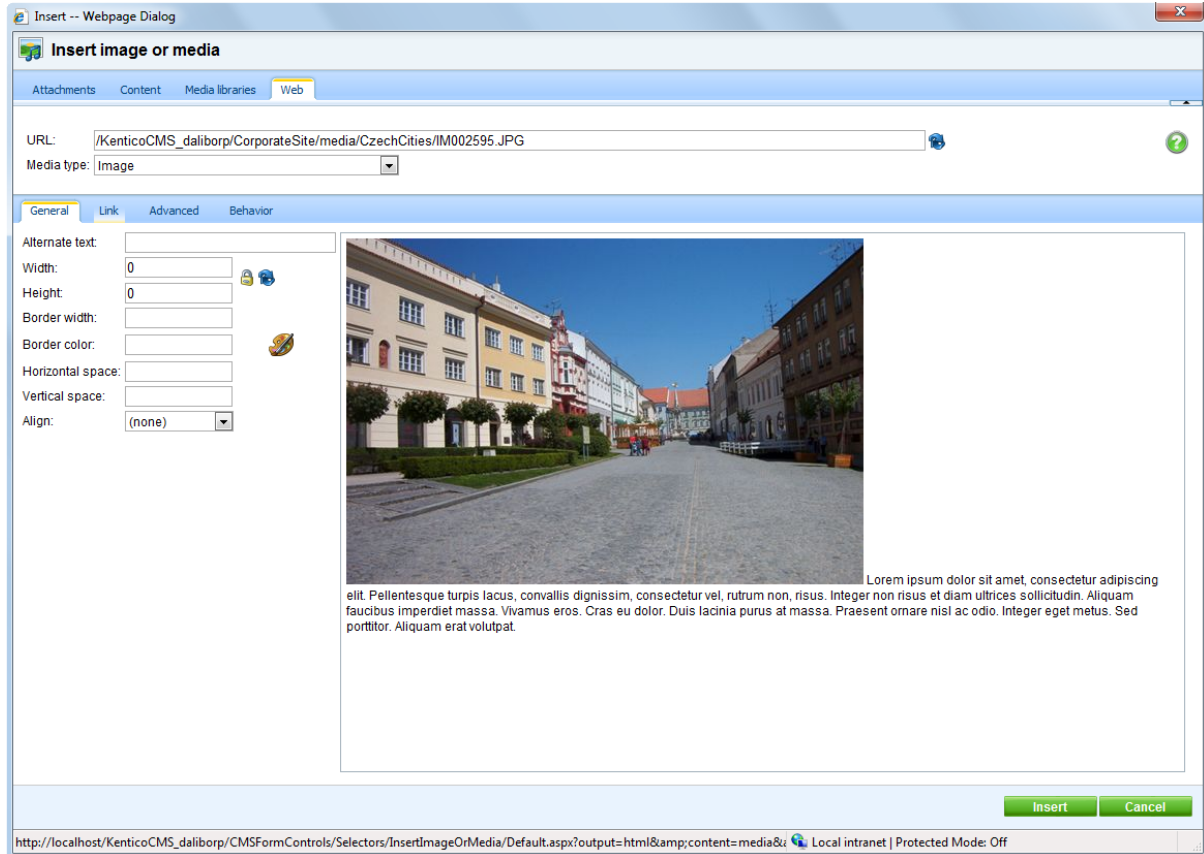
You can also perform the following actions with the listed files:

- After clicking the **View** (🔍) icon, the file will be opened in a new window.
- Images have also the **Edit** (✎) icon available. Clicking this icon opens the image in the built-in image editor.



Web

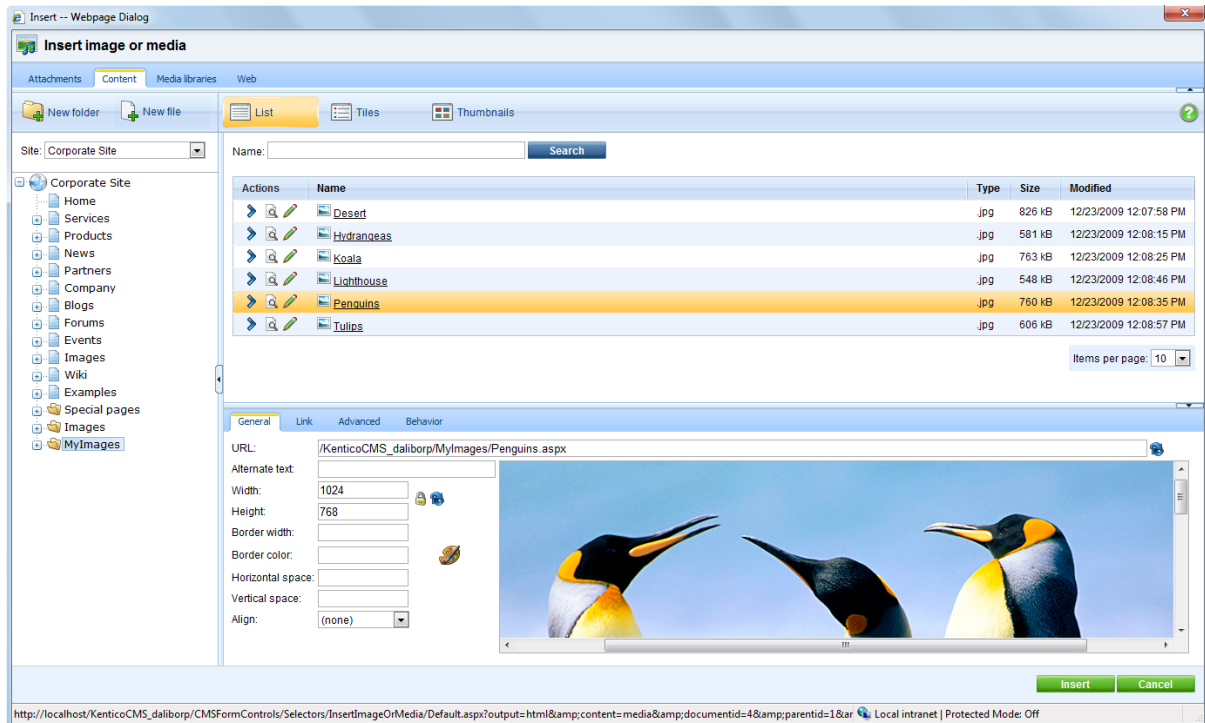
From this tab, you can enter an image, audio, video or flash from the Web by entering its URL. More information on how to use this tab can be found in [this chapter](#).



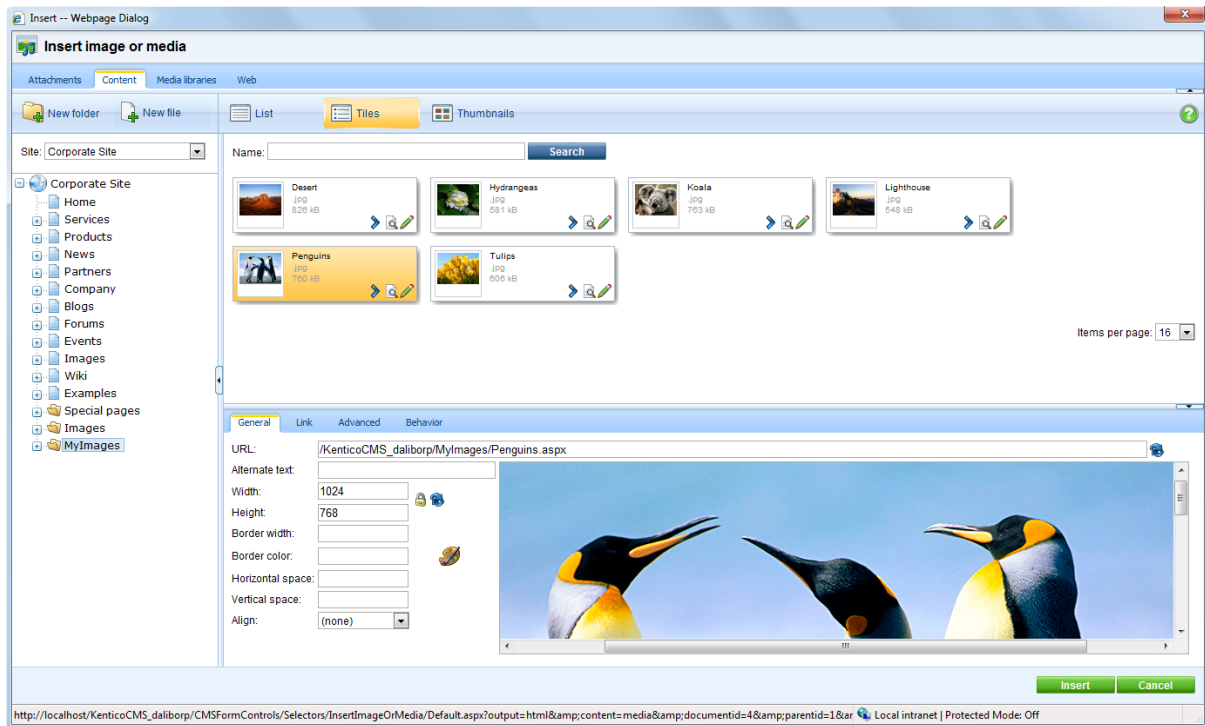
4.4.2.3 View modes

The following three view modes are available on the **Attachments**, **Content** and **Media libraries** tabs:

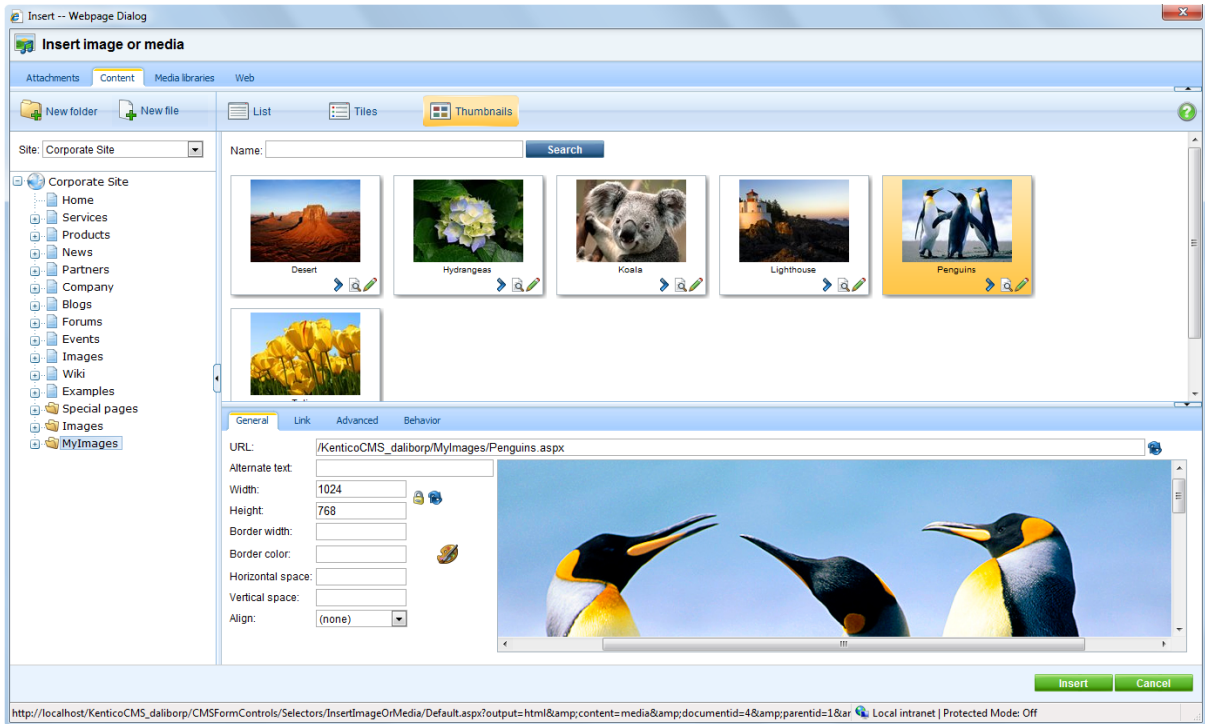
List



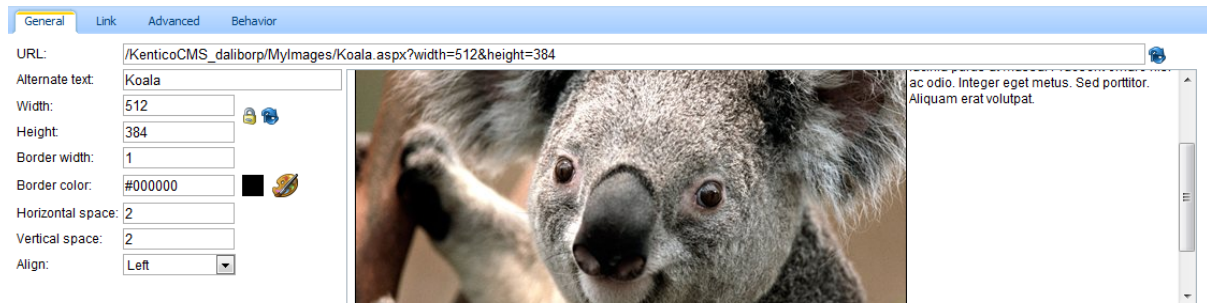
Tiles



Thumbnails



4.4.2.4 Inserting images



Inserting images via this dialog enables setting a number of properties of the image. If you want to insert an image from your disk in a quick way, without specifying any properties, you can use the **Quickly insert image** (📁) action as described [here](#).

When inserting an image, its properties can be set on the following four tabs:

General

- **Alternate text:** text displayed when the image is not loaded correctly
- **Width, Height:** width and height of the displayed image
 - aspect ratio can be locked (🔒), which makes the second dimension recalculated automatically when you change one dimension, while the ratio between the two dimensions is kept
 - if it is unlocked (🔓), dimensions can be entered manually into both fields, without the ratio being kept
 - you can also reload the default dimensions using the **Reset size** (🔄) icon
- **Border width:** width of the border around the displayed image
- **Border color:** color of the border around the image; has no effect when border width is not set
- **Horizontal space:** horizontal space between the image and the surrounding text
- **Vertical space:** vertical space between the image and the surrounding text
- **Align:** image alignment

Link tab

- **URL:** if set, the image will **become a link** to the resource defined by the entered URL. If set, **settings on the Behavior tab are overridden!**
- **Target:** destination where the linked resource should be displayed when the image is clicked

Advanced tab

- **ID:** identifier of the image HTML element
- **Tooltip:** text displayed when mouse cursor is placed over the image
- **Class:** image element CSS class
- **Style:** image element additional styles

Behavior tab

- **None**: image is inserted as standard image; when the image is clicked, no action is performed
- **Open full size in the same window**: image will become a link; when the image is clicked, its full size is displayed in the same window
- **Open full size in a new window**: image will become a link; when the image is clicked, its full size is displayed in a new window
- **Show larger size on mouse-over**: when the mouse cursor is placed over the image, the image is displayed in a "floating window" in the defined size; the image will be inserted as the **Image** inline control

6 ways how images can be inserted

1. Standard image

- **Behavior tab**: None
- **Link tab -> URL**: empty

The image is inserted as a standard image with no special behavior. No action is performed when the image is clicked or mouse-overed.

The output code looks like the following code sample:

```

```

2. Image with link

- **Behavior tab**: None
- **Link tab -> URL**: some URL is specified

The image functions as a link to the specified URL. When the image is clicked, user is redirected to the URL in the same browser window.

The output code looks like the following code sample:

```
<a href="www.kentico.com"></a>
```

3. Image with special behavior - full size in the same window

- **Behavior tab**: Open full size in the same window
- **Link tab -> URL**: empty

When the image is clicked, it is displayed in full size in the same browser window.

The output code looks like the following code sample:

```
<a target="_self" href="/KenticoCMS41/MyImages/Waterfall.aspx"></a>
```

4. Image with special behavior - full size in a new window

- **Behavior tab:** Open full size in a new window
- **Link tab -> URL:** empty

When the image is clicked, it is displayed in full size in a new browser window.

The output code looks like the following code sample:

```
<a target="_blank" href="/KenticoCMS41/MyImages/Waterfall.aspx"></a>
```

5. Image with special behavior - larger size on mouse-over

- **Behavior tab:** Show larger size on mouse-over; Height = xx; Width = yy
- **Link tab -> URL:** empty

When the image is mouse-overed, it is displayed in a new layer in a size defined on the Behavior tab as shown in the screenshot below.

In this case, the image is inserted as the **Image** inline control. The output code looks like the following code sample:

```
{^Image| (behavior)hover| (url)~/MyImages/Waterfall.aspx?width=200&height=150| (width)200| (height)150| (mouseoverwidth)400| (mouseoverheight)300^}
```



6. Image with special behavior - larger size on mouse-over with link

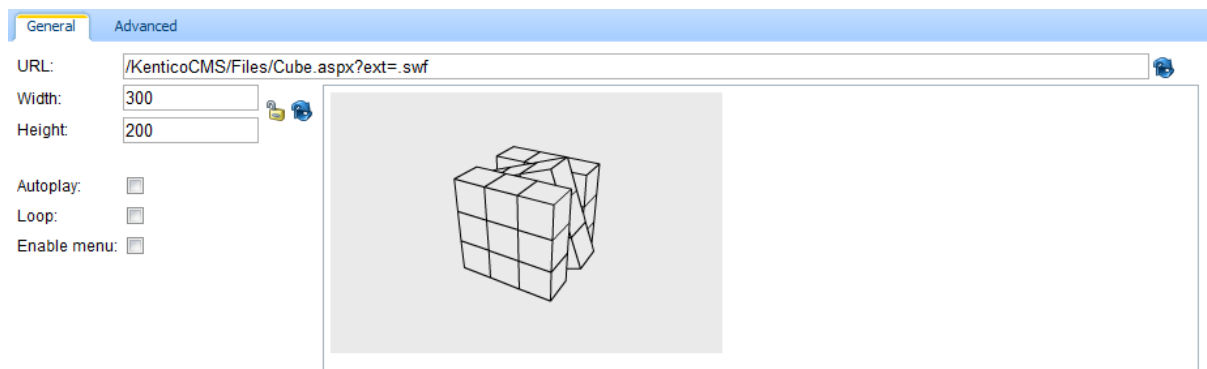
- **Behavior tab:** Show larger size on mouse-over; Height = xx; Width = yy
- **Link tab -> URL:** some URL is specified

When the image is mouse-overed, it is displayed in a new layer in a size defined on the Behavior tab as shown in the screenshot above. Furthermore, the image is clickable and when clicked, the user gets redirected to the specified URL in the same browser window.

In this case, the image is inserted as the **Image** inline control. The output code looks like the following code sample:

```
<a href="www.kentico.com">{^Image| (behavior)hover| (url)~/MyImages/Waterfall.aspx?width=200&height=150| (width)200| (height)150| (mouseoverwidth)400| (mouseoverheight)300^}</a>
```

4.4.2.5 Inserting flash



When inserting flash, its properties can be specified on the following two tabs:

General

- **Width, Height:** width and height of the flash player; 300x200px is used by default
 - aspect ratio can be locked (🔒), which makes the second dimension recalculated automatically when you change one dimension, while the ratio between the two dimensions is kept
 - if it is unlocked (🔓), dimensions can be entered manually into both fields, without the ratio being kept
 - you can also reload the default dimensions using the **Reset size** (🔄) icon
- **Autoplay:** indicates if the video will play automatically when the player loads
- **Loop:** indicates if the player plays the video repeatedly in a loop
- **Enables menu:** indicates if flash options are available in flash context menu; flash context menu is displayed on right click of the flash player

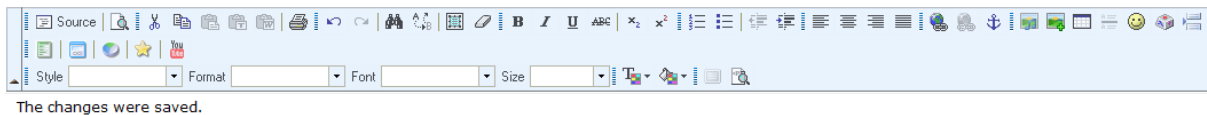
Advanced

- **Scale:** defines how the flash player stretches, shrinks or resizes when the browser window is resized
- **ID:** identifier of the flash HTML object
- **Advisory title:** text displayed when mouse cursor is placed over the flash player
- **Class:** flash element CSS class
- **Style:** flash element additional styles

Flash is inserted into the output code as the **Media** inline control. The following code sample shows what the output code looks like:

```
{^Media|(type)swf|(url)http://127.0.0.1/KenticoCMS41/Files/Cube.aspx?ext=.swf|
(width)300|(height)200^}
```

In the WYSIWYG editor, the flash is displayed only in the form of a box with the Flash logo, giving information about the size of the player:



A screenshot of the WYSIWYG editor showing a page layout. The page is titled 'Welcome to the Sample Corporate Site'. The main content area contains a large red 'FLASH' logo. The page is divided into several sections: 'Newsletter subscription' with input fields for 'First Name', 'Last Name', and 'E-mail', and a 'Subscribe' button; 'Polls' with the question 'Do you like our product?' and three radio button options: 'Yes, I do.' (28 votes), 'No, I don't.' (4 votes), and 'I don't know your product.' (5 votes); 'Latest news' with the title 'Your first news', date '1/10/2008', and a summary; and 'Featured product' with an image of a mobile phone and a price tag of '\$389.00'. The flash player is represented by a red 'FLASH' logo in the center of the main content area.

And this is the result on the live site:

The screenshot displays a sample corporate website with several widgets:

- Newsletter subscription:** A form with fields for First Name, Last Name, and E-mail, and a 'Subscribe' button.
- Polls:** A poll titled 'Do you like our product?' with three options: 'Yes, I do.' (28 votes), 'No, I don't.' (4 votes), and 'I don't know your product.' (5 votes). A 'Vote' button is at the bottom.
- Welcome to the Sample Corporate Site:** A central heading with a sub-heading 'This is a sample web site created with Kentico CMS for ASP.NET. You can use it as a starter kit for your own web site and to learn Kentico CMS.' Below it is a 3D wireframe cube.
- Latest news:** A section titled 'Your first news' dated 1/10/2008, with a text area for a news item summary.
- Featured product:** A section showing a mobile phone image and a price tag of '\$399.00'.

Default user name and password

4.4.2.6 Inserting audio/video

The screenshot shows the 'General' tab of the Kentico CMS interface for inserting audio/video. The properties are:

- URL:** /KenticoCMS_daliborp/Files/Sample_video.aspx
- Width:** 300
- Height:** 200
- Autoplay:**
- Loop:**
- Show controls:**

A video player preview is shown on the right, displaying a black screen with a standard video control bar at the bottom.

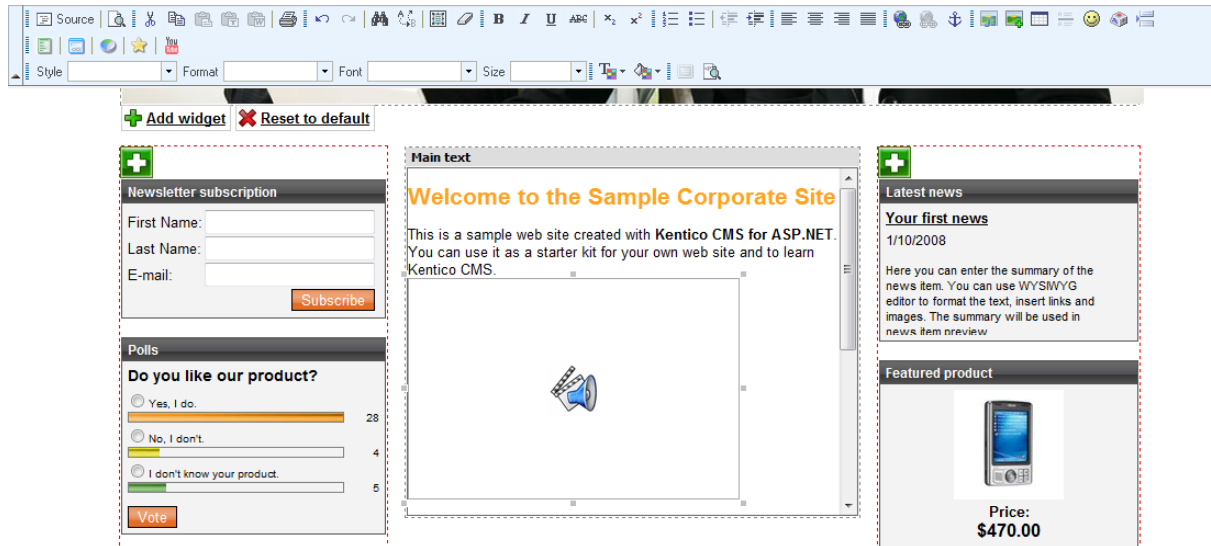
When inserting both audio or video, the following properties can be set:

- **Width, Height:** width and height of the media player; 300x200px is used by default
 - aspect ratio can be locked (🔒), which makes the second dimension recalculated automatically when you change one dimension, while the ratio between the two dimensions is kept
 - if it is unlocked (🔓), dimensions can be entered manually into both fields, without the ratio being kept
 - you can also reload the default dimensions using the **Reset size** (🔄) icon
- **Autoplay:** indicates if playback starts automatically when the page is loaded
- **Loop:** indicates if playback is performed repeatedly in a loop
- **Show controls:** indicates if playback controls (play, stop, fast forward, ...) are displayed; in some browsers, the controls may not be displayed if the player size is too small even when this option is enabled

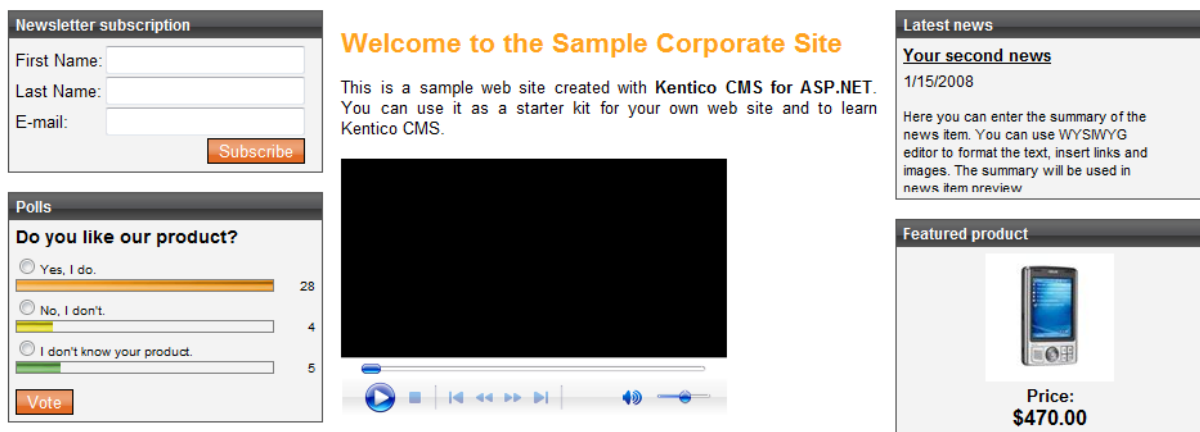
Audio and video is inserted to the output code as the **Media** inline control. The output code looks like the following code sample:

```
{^Media|(type)avi|(url)http://127.0.0.1/KenticoCMS_0713/Files/Sample_video.aspx|
(width)300|(height)200|(controls)1^}
```

In the WYSIWYG editor, the player is not displayed. Instead, only a box with audio/video icon is displayed, giving information about the size of the player on the live site:



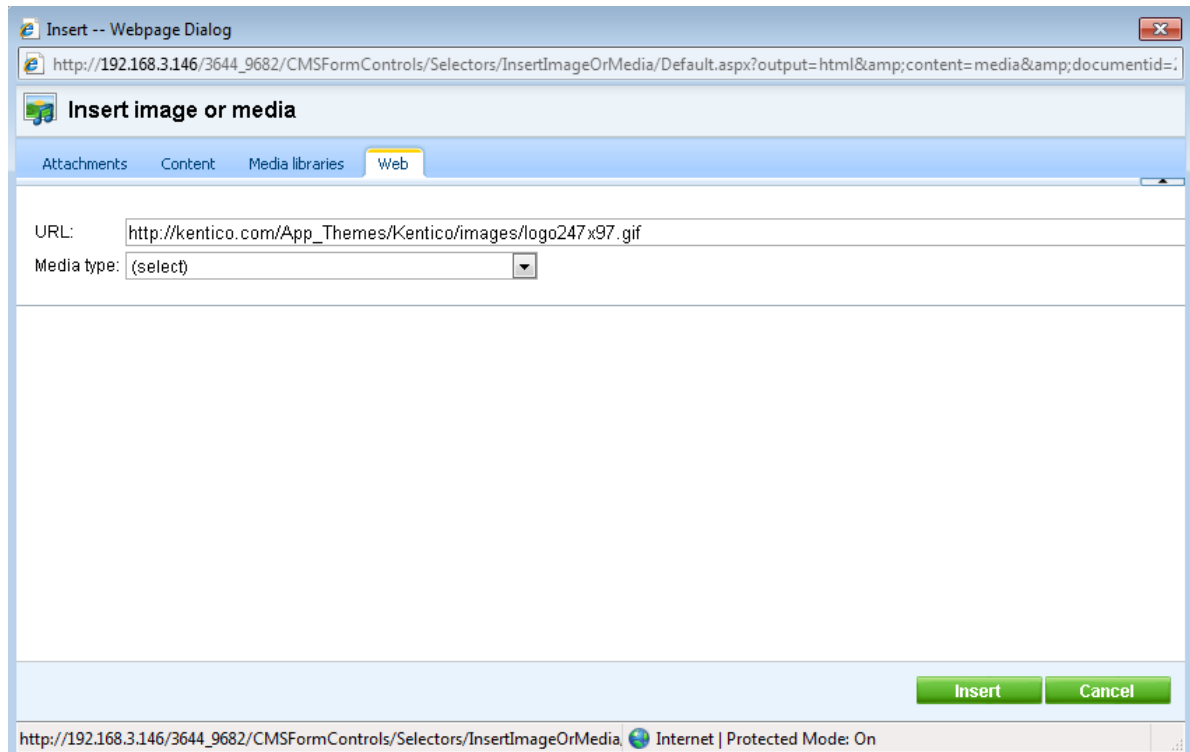
And this is how it looks on the live site:



4.4.2.7 Inserting image or media from Web

Via the Web tab, you can insert any of the file types enumerated in [this chapter](#) from web just by entering their URL. The generated code depends on the type of linked media and looks as the code samples mentioned in the previous three chapters.

The dialog initially looks as the following on the Web tab:




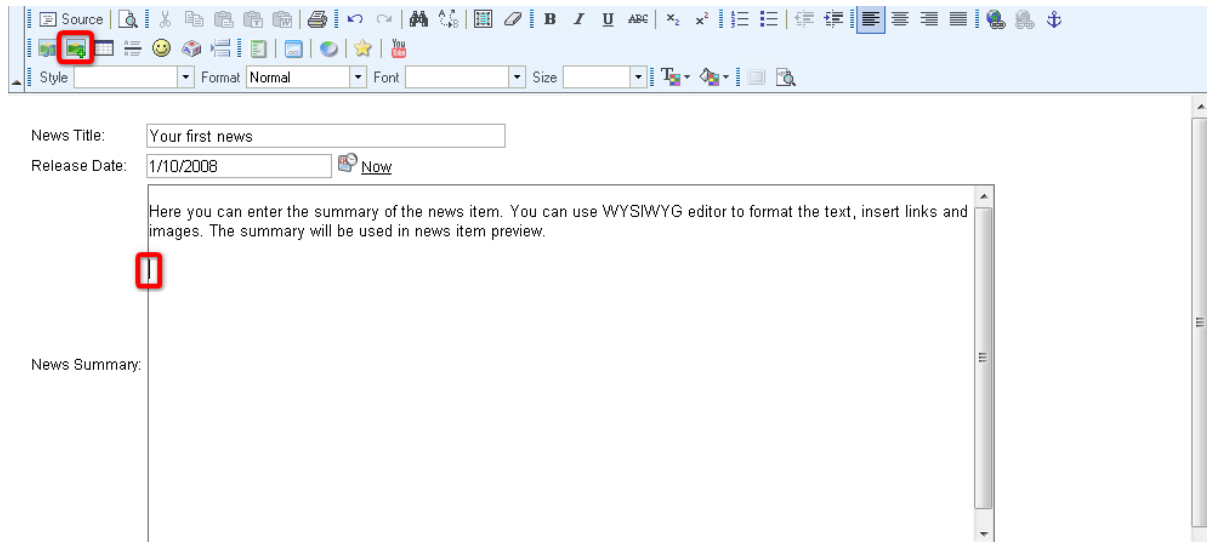
The general process of adding images or media from web is the following:

1. Enter the URL of the resource into the **URL** field.
2. Try automatic file type detection using the **Refresh** (🔄) icon. In case that the file type can not be detected, you can still choose it manually from the **Media type** drop-down list.
3. Based on the file type, properties will be loaded into the main area. The properties for particular file types are described in the [Inserting images](#), [Inserting flash](#) and [Inserting audio/video](#) chapters.
4. Enter the properties and click the **Insert** button. The image or media file is inserted into the text.

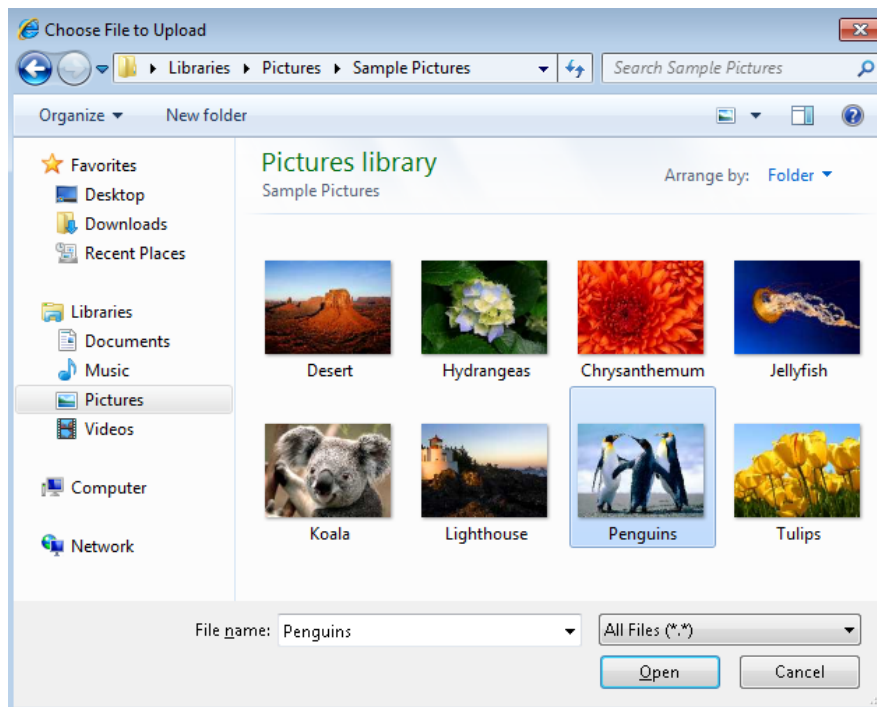
4.4.3 Quickly insert image

The Quickly insert image action can be used to insert an image from disk in a quick way. It takes just the following three steps to insert an image this quick way:

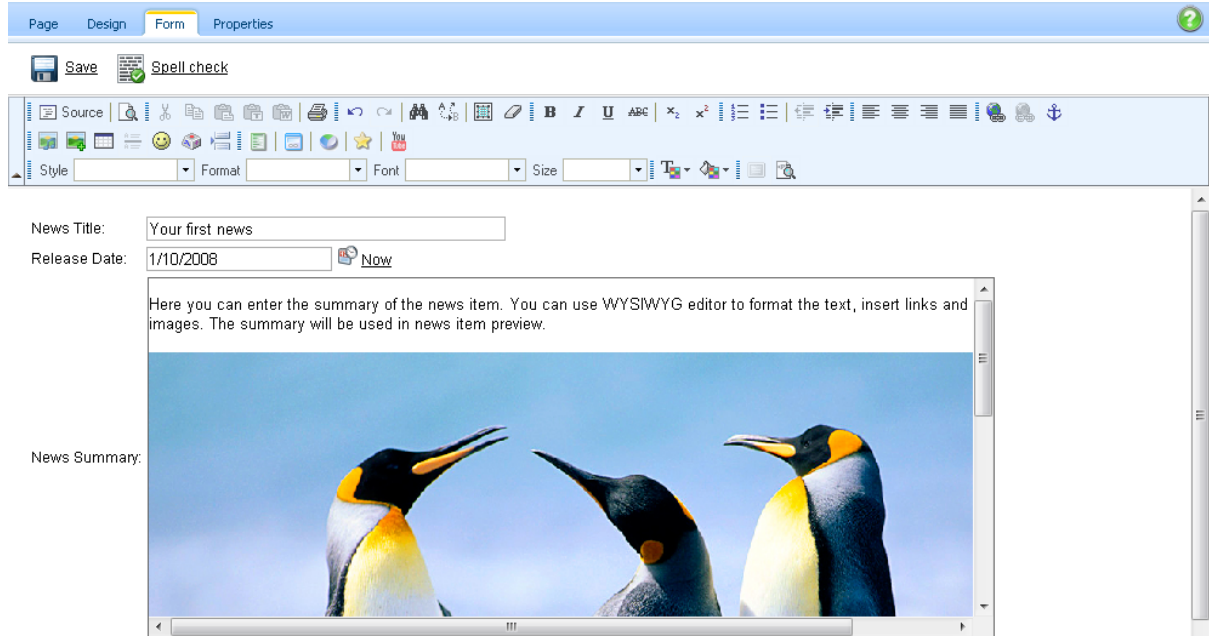
1. Place the cursor in the appropriate position and click the **Quickly insert image** () icon on the WYSIWYG editor toolbar.



2. Your browser's **Choose file** dialog opens. Locate the file on your disk and click **Open**.



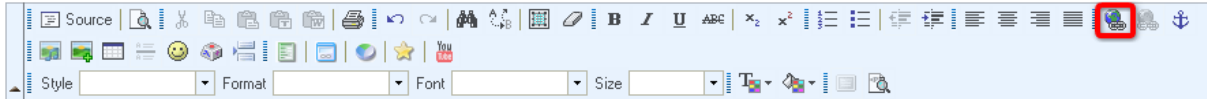
3. The image gets inserted into the text. At the same time, it is uploaded to the document as its [attachment](#). No properties are specified during the insertion process, so the image is inserted in full size with no special behavior. However, you can now edit the image just as images inserted via the **Insert image or media** dialog. For more information, please refer to the [Editing inserted items](#) chapter.



4.4.4 Insert link

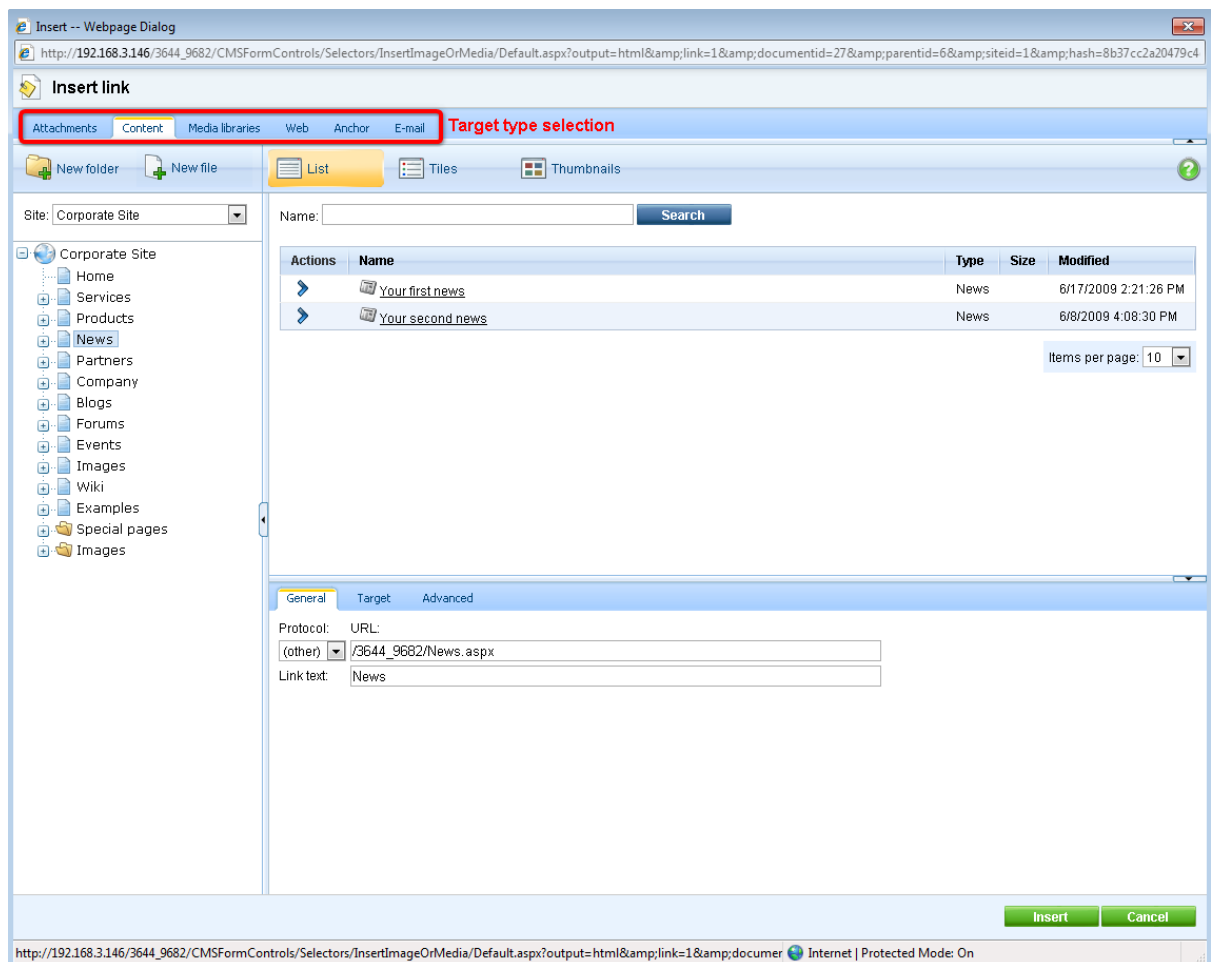
4.4.4.1 Overview

The Insert link dialog is accessible by clicking the **Insert link** (🔗) icon in the WYSIWYG editor toolbar:



All links are inserted using the `<a>` tags and the following types of targets can be linked:

- [Content within the CMS](#) - via the **Attachments**, **Content** and **Media libraries** tabs
- [Content anywhere on the Web](#) - via the **Web** tab
- [Anchors in documents](#) - via the **Anchor** tab
- [Mailto links](#) - via the **E-mail** tab



General process of inserting a link

1. Select the text that should become a link or place the cursor to the position where the link text should be inserted.
2. Click the **Insert link** (🔗) icon on the WYSIWYG editor toolbar.

3. Choose the appropriate tab and specify where the link should be leading.
4. Specify link properties and click the **Insert** button.
5. The link gets inserted in the text.

4.4.4.2 Link properties

On the **Attachments**, **Content**, **Media libraries** and **Web** tabs, you can see the following section for settings link properties:



General Target Advanced

Protocol: URL:

(other) /3644_9682/News.aspx

Link text: News

You can specify the following properties on the particular tabs:

General

- **Protocol + URL:** address of the linked resource
- **Link text:** text of the link that will appear in the text; this field is visible only when inserting link into an empty space in the text area, i.e. when no text or object is selected

Please note: On the Web tab, only the last two tabs are displayed and the general properties are displayed above them.

Target

- **Target:** using this drop-down list, you can define where will the link be opened
- **Frame name:** this option is displayed only when the Target property is set to (frame) and specified the name of the frame where the target should be displayed

Advanced

- **ID:** identifier of the link HTML element
- **Name:** name of the link HTML object
- **Tooltip:** text displayed when the mouse cursor is placed over the link
- **Class:** link element CSS class
- **Style:** additional link element styles

4.4.4.3 Links to content within the CMS

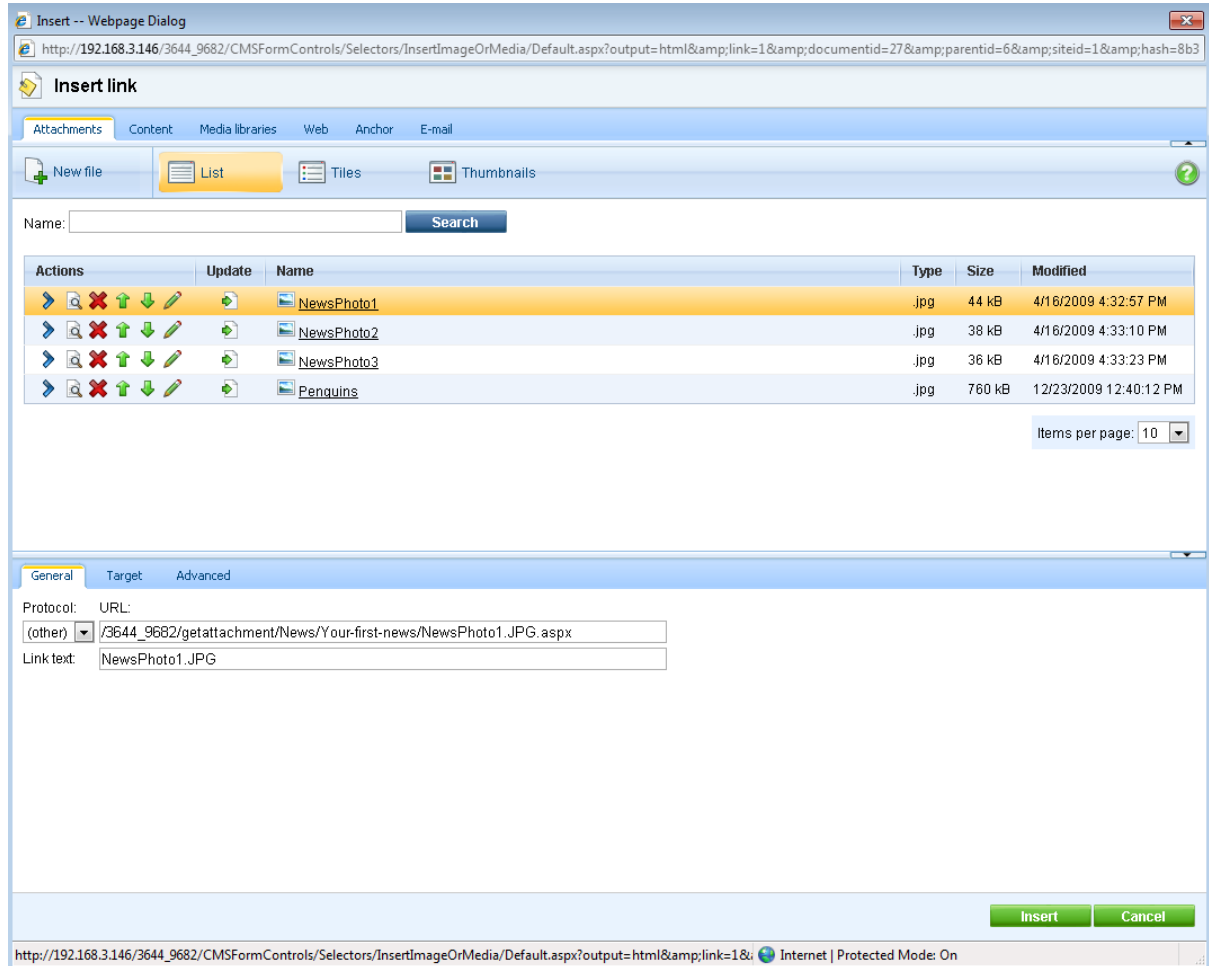
Links to content within the CMS can be inserted via the **Attachments**, **Content** and **Media libraries** tabs. Detailed descriptions of all possible actions that can be performed on the tabs can be found on [this page](#) of the **Inserting image or media** section.

Attachments

Via this tab, you can insert links to attachments of the current document. For more information about document attachments, please refer to the [Document attachments](#) chapter of this guide.

The following code sample shows what the output code looks like:

```
<a href="/3644_9682/getattachment/News/Your-first-news/NewsPhoto1.JPG.aspx">
NewsPhoto1.JPG</a>
```

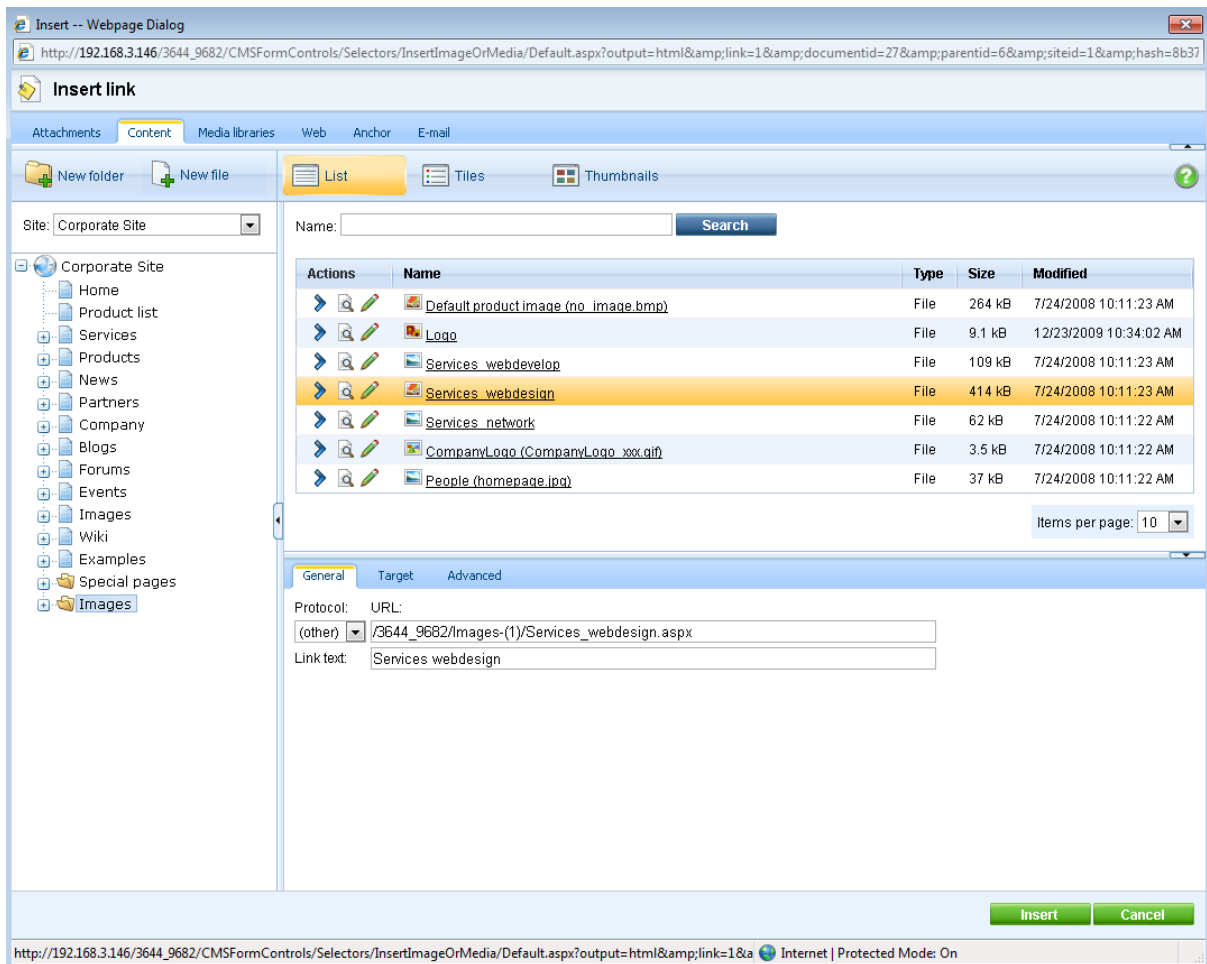


Content

Via this tab, you can insert links to any pages, documents or files within the content tree of a site. The site can be selected using the **Site** drop-down list, while its content tree will be displayed below. You can define which sites will be available and the starting alias path of the displayed content tree when defining the field in field editor, as described [here](#).

The following code sample shows what the output code looks like:

```
<a href="/3644_9682/Images-(1)/Services_webdesign.aspx">Services webdesign</a>
```

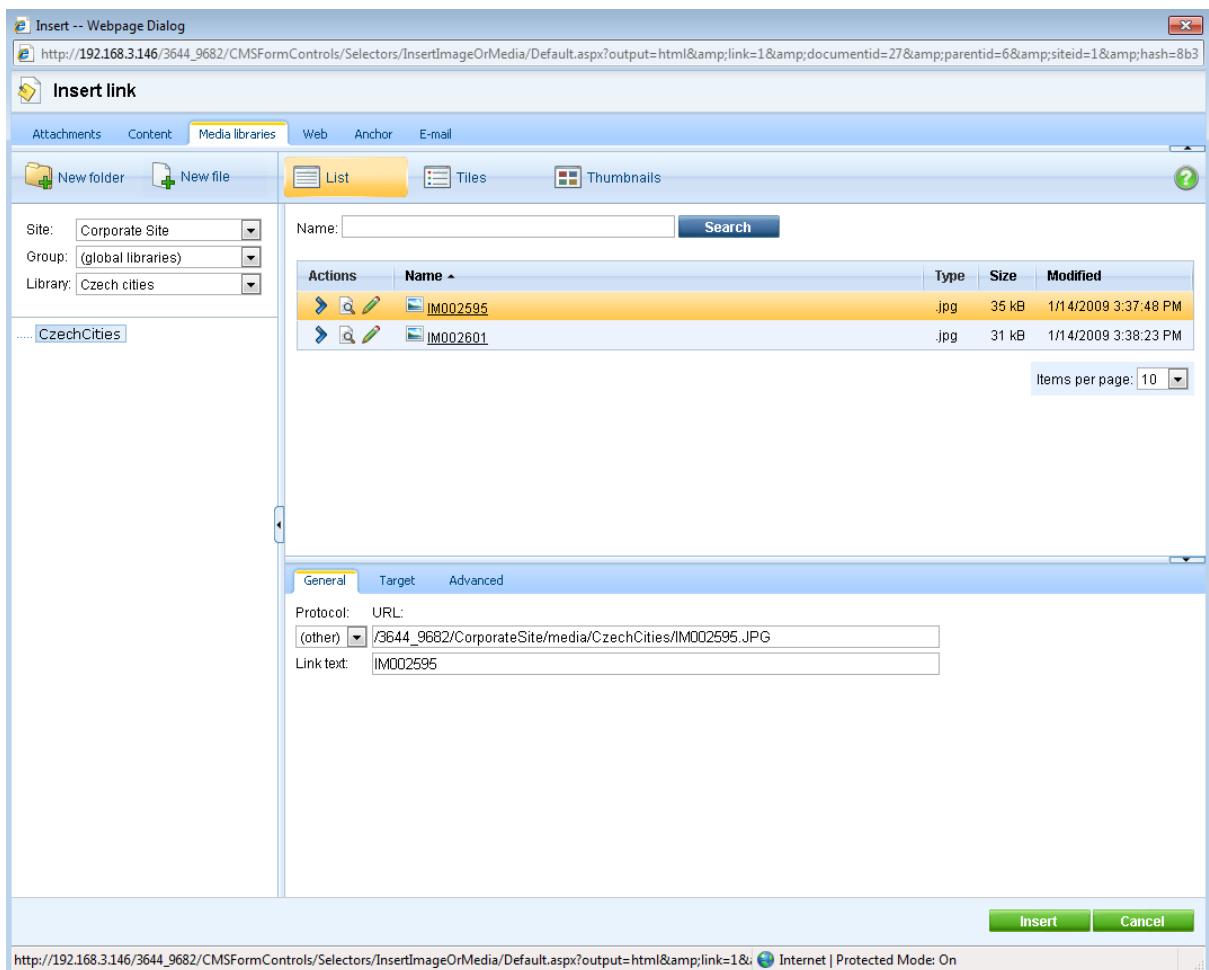


Media libraries

Via this tab, you can insert links to files stored within media libraries. Depending on the settings described [here](#), you can select the library using the set of three drop-down lists - **Site**, **Group** and **Library** - in the top right part of the dialog.

The following code sample shows what the output code looks like:

```
<a href="/3644_9682/CorporateSite/media/CzechCities/IM002595.JPG">IM002595</a>
```



4.4.4.4 Links to Web


On the Web tab, you can link any resource on the Web by entering its URL. The output code is generated as the `<a>` HTML element:

```
<a href="http://www.kentico.com">Kentico Software</a>
```

On this tab, you can specify the same properties as described [here](#), with the difference that the content of the **General** tab is displayed above the two other tabs.

The screenshot shows a dialog box titled "Insert -- Webpage Dialog" with a sub-title "Insert link". It features several tabs: "Attachments", "Content", "Media libraries", "Web", "Anchor", and "E-mail". The "Web" tab is selected and highlighted. Under the "Web" tab, there are two rows of input fields: "Protocol:" with a dropdown menu showing "http://" and "URL:" with a text box containing "www.kentico.com"; and "Link text:" with a text box containing "Kentico Software". Below these fields are two more tabs: "Target" and "Advanced". The "Target" tab is selected, showing a dropdown menu with the text "(not set)". At the bottom right of the dialog are two green buttons: "Insert" and "Cancel". The status bar at the bottom of the dialog shows the URL "http://localhost/KenticoCMS_daliborp/CMSFormControls/Selectors/Inse" and "Local intranet | Protected Mode: Off".

4.4.4.5 Links to anchors

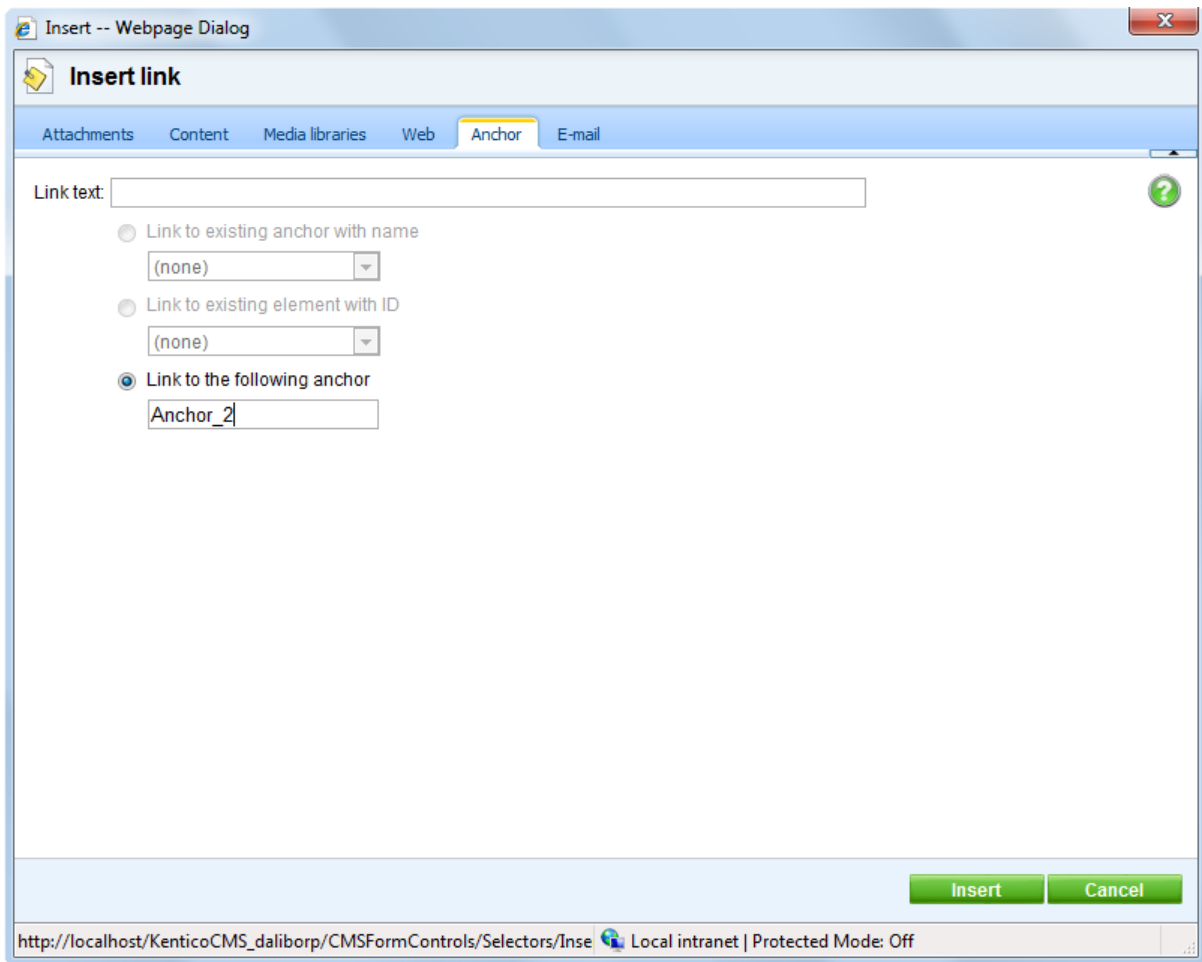
Via the Anchor tab, users can insert links to any anchor or any HTML element with specified ID attribute on the current page. Anchors are the `<a>` html elements with the **name** attribute specified. They can be inserted using the  icon on the WYSIWYG editor toolbar. If you link to an anchor, the page will scroll to the anchor after clicking the link.

You have the following options on this tab:

- **Link text:** text of the link that will appear in the text; this field is visible only when inserting link into an empty space in the text area, i.e. when no text or object is selected
- **Link to existing anchor with name:** if selected, you can choose an anchor from the drop-down list below as the target
- **Link to existing element with ID:** if selected, you can choose a HTML element from the drop-down list below as the target
- **Link to the following anchor:** if selected, you can type in the name of the target anchor or ID of the target element manually

The output code looks like the following code sample, while the text after **#** is the name of the anchor or the value of the ID attribute:

```
<a href="#Anchor_2">Second chapter</a>
```



4.4.4.6 Mailto links

Via the E-mail tab, you can insert standard "mailto" links. After clicking such a link, the new message window of the user's e-mail program (e.g. Outlook) is opened, while some details may be pre-filled based on what is specified in the following properties:

- **Link text:** text of the link that will appear in the text; this field is visible only when inserting link into an empty space in the text area, i.e. when no text or object is selected
- **To:** e-mail recipient's address; required field; multiple addresses can be entered divided by semicolons
- **Cc:** e-mail copy recipient's address; multiple addresses can be entered divided by semicolons
- **Bcc:** e-mail blind carbon copy recipient's address; multiple addresses can be entered divided by semicolons
- **Subject:** subject of the e-mail
- **Message body:** text of the e-mail

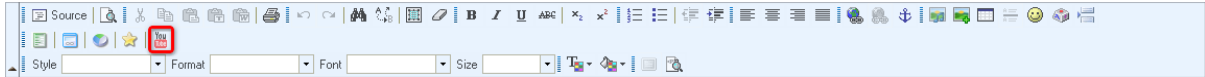
The output code looks as the following code sample:

```
<a href="mailto:support@kentico.com">Contact Kentico CMS Support</a>
```

The screenshot shows a web browser window with a dialog box titled "Insert -- Webpage Dialog". The dialog has a tabbed interface with "E-mail" selected. The "Link text" field contains "Contact Kentico CMS Support". The "To:" field contains "support@kentico.com". The "Cc:", "Bcc:", and "Subject:" fields are empty. The "Message body:" field is a large empty text area. At the bottom right of the dialog are "Insert" and "Cancel" buttons. The status bar at the bottom of the browser window shows the URL "http://localhost/KenticoCMS_daliborp/CMSFormControls/Selectors/Inse" and "Local intranet | Protected Mode: Off".

4.4.5 Insert YouTube video

Using this dialog, video from YouTube can be easily added to a page. The dialog can be opened using the **Insert YouTube video** (📺) button on the WYSIWYG editor toolbar, as you can see in the screenshot below:



Inserting YouTube video

The general process of inserting a YouTube video is the following:

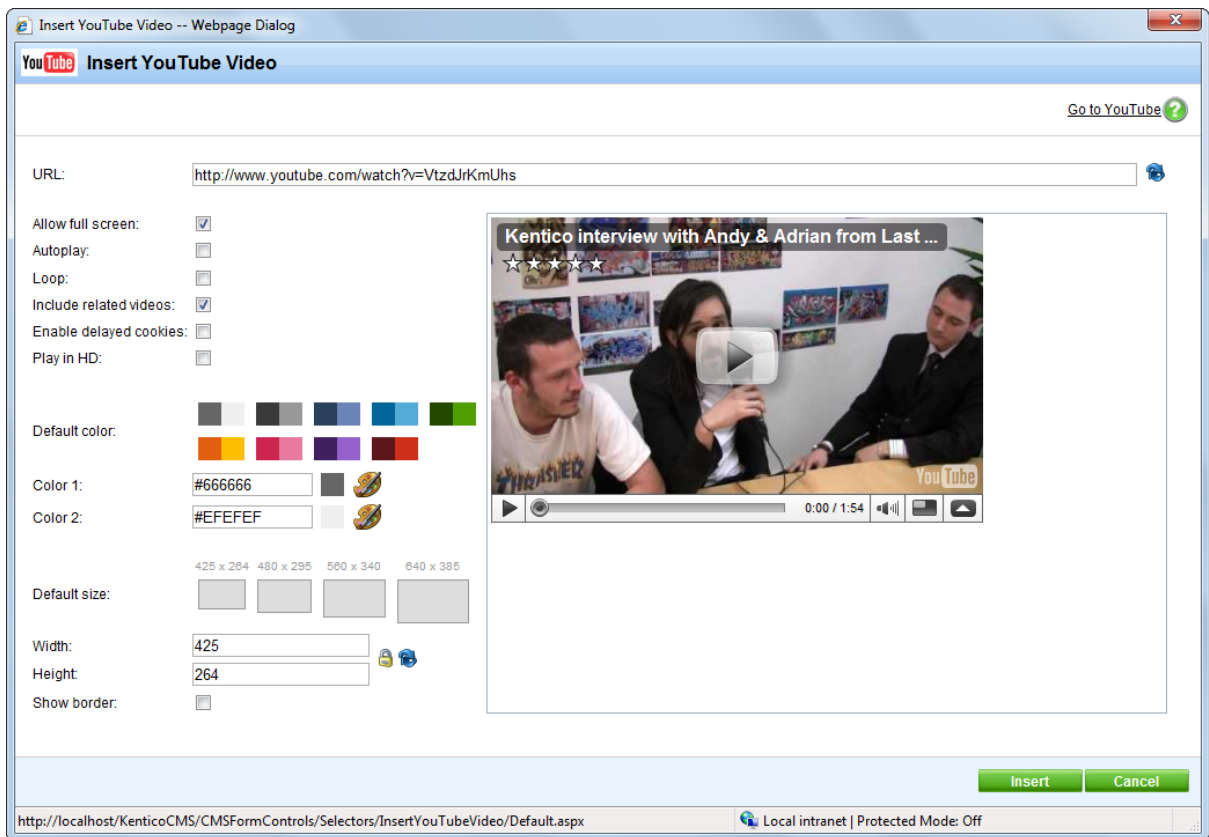
1. Place the cursor at the appropriate position in the text area and click the **Insert YouTube video** (📺) icon.
2. The dialog opens.
3. Insert the URL of the YouTube video into the **URL** field and click the 🌐 icon.
4. The entered URL gets checked and if it is valid, default properties will be loaded and preview displayed.
5. Specify the video's properties according to your needs. The changes you make are reflected in the preview in the right part of the dialog.
6. When you are finished with the properties, click the **Insert** button.
7. The video is inserted into the text area.

YouTube video properties

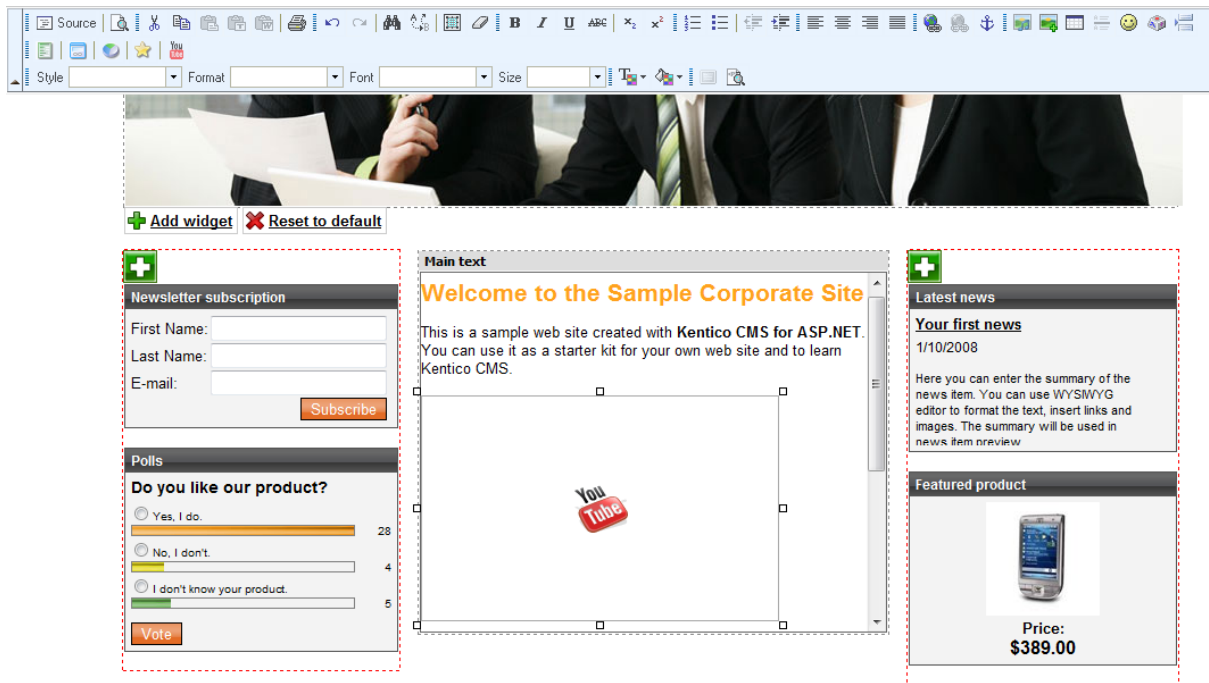
The following properties can be specified in the dialog:

- **URL:** URL of the YouTube video; you can copy&paste it from your browser's address line or from the URL field on the video's page
- **Allow full screen:** indicates if the control to switch playback to full screen will be available in the video toolbar
- **Autoplay:** indicates if playback starts automatically when the page is loaded
- **Loop:** indicates if playback is continuously repeated in a loop
- **Include related videos:** indicates if related videos will be displayed when playback finishes
- **Enable delayed cookies:** indicates if delayed cookies should be used, read [here](#) for more information
- **Play in HD:** allows to play the video in HD by default; the user can switch back to normal quality by pressing the HD button while playing the video
- **Default color:** you can choose one of the default color combinations which will be filled in the **Color 1** and **Color 2** properties
- **Color 1:** color of the border around the player, relevant only if the Show border property is enabled
- **Color 2:** color of the player toolbar
- **Default size:** you can choose one of the default sizes of the video player which will be filled in the **Width** and **Height** properties
- **Width:** width of the video player
- **Height:** height of the video player
- **Show border:** indicates if border should be shown around the player; enabling this option adds 20px to both width and height of the player

This is what the dialog window looks like when a video is loaded:



In the WYSIWYG editor, the video itself is not displayed. You can only see a box with the YouTube logo in the middle to give you information about the player size:



YouTube video is generated as the **YouTubeVideo inline control**, as you can see in the code sample below:

```
{^YouTubeVideo| (url)http://www.youtube.com/watch?v=VtzdJrKmUhs | (width)320 | (height)198 | (fs)true | (autoplay>false | (loop>false | (rel>true | (cookies>false | (border>false | (color1)#3A3A3A | (color2)#999999^}
```

On the live site, the video is displayed in the player:

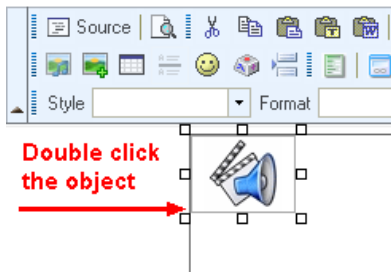


Default user name and password

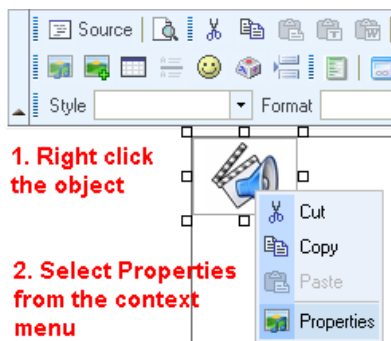
4.4.6 Editing inserted items

Properties of the images, audio, video, flash, links and YouTube video that are already inserted in the WYSIWYG editor can be edited. The same dialog that was displayed when you inserted the items can be opened again the following three ways:

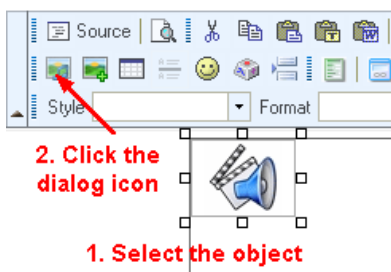
1. Double-click the item



2. Right-click the item and choose Properties from the context menu



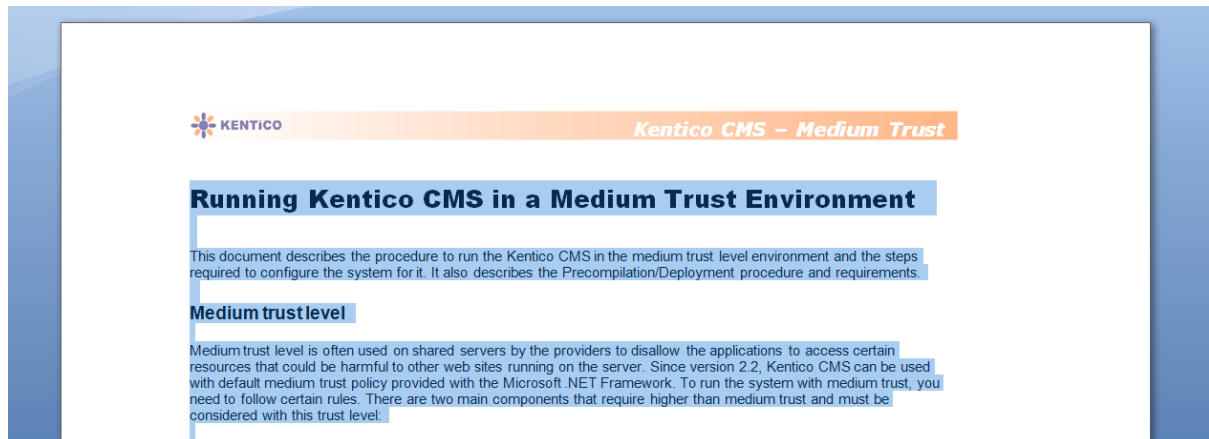
3. Select the item and click the appropriate button in the WYSIWYG editor toolbar



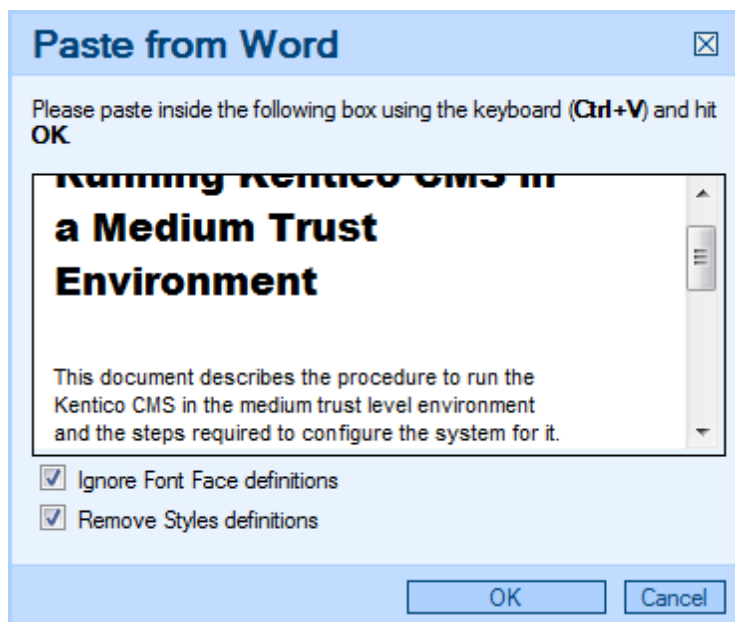
4.4.7 Copy & Paste from Microsoft Word

When, copying text from Microsoft Word, the text is encapsulated with lots of unnecessary tags that may break your web page design. Thus, the editor allows you to clean the pasted text so that it contains only basic formatting.

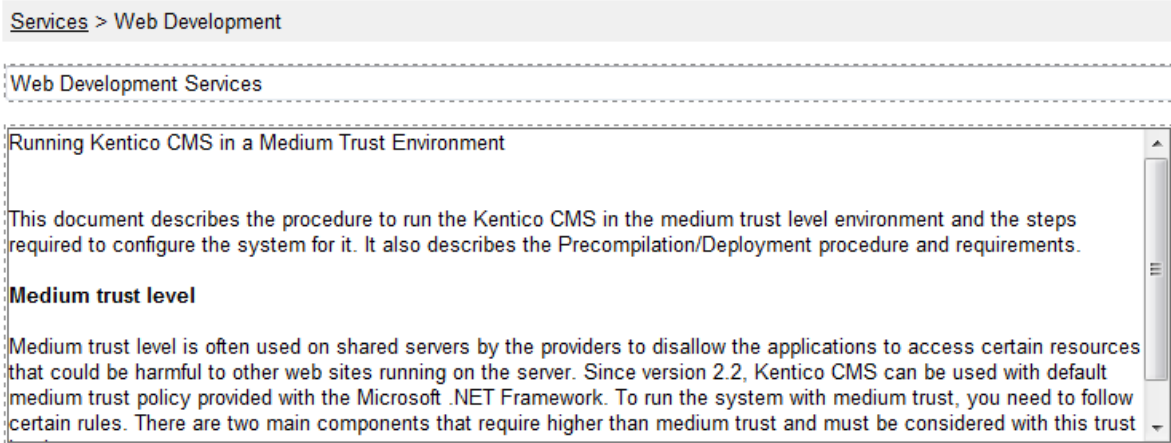
Select the text in Microsoft Word document and copy it to the clipboard (**CTRL+C**):



Place the cursor into the text in Kentico CMS editor and click Paste from Word. The **Paste from Word** dialog opens. Paste the text into the box using **CTRL+V** and check both boxes:



Click **OK** to paste the text. The pasted text looks like this:



As you can see, the style follows your website design. However, since Word doesn't provide appropriate tagging information, some formatting may not be preserved and you may need to apply the design manually - e.g. the header in the sample text.

Click **Save** to save the changes.

4.4.8 Defining custom toolbars

The toolbar of the WYSIWYG editor can be customized so that the content editors cannot use all the formatting features. It helps to keep the website design consistent and clean.

Defining the toolbar sets

You can define toolbar sets in `<web project>\CMSAdminControls\FCKeditor\fckconfig.js`.

You can define your own toolbar set by adding a command like this to the `fckconfig.js` file:

```
FCKConfig.ToolbarSets["Default"] = [
    ['Source', '-', 'Preview'],
    ['Cut', 'Copy', 'Paste', 'PasteText', 'PasteWord', '-', 'Print'],
    ['Undo', 'Redo', '-', 'Find', 'Replace', '-', 'SelectAll', 'RemoveFormat'],
    ['Bold', 'Italic', 'Underline', 'StrikeThrough', '-', 'Subscript',
    'Superscript'],
    ['OrderedList', 'UnorderedList', '-', 'Outdent', 'Indent'/*, 'Blockquote'*/
],
    ['JustifyLeft', 'JustifyCenter', 'JustifyRight', 'JustifyFull'],
    ['InsertLink', 'Unlink', 'Anchor'],
    ['InsertImageOrMedia', 'QuicklyInsertImage', 'Table', 'Rule', 'Smiley',
    'SpecialChar', 'PageBreak'],
    ['InsertBizForms', '-', 'InsertInlineControls', '-', 'InsertPolls', '-',
    'InsertRating', '-', 'InsertYouTubeVideo'],
    '',
    '/',
    ['Style', 'FontFormat', 'FontName', 'FontSize'],
    ['TextColor', 'BGColor'],
    //['AutoSave'],
    ['FitWindow', 'ShowBlocks'] // No comma for the last row.
];
```

As you can see, the toolbar set definition consists of several arrays, such as `['Source', '-', 'Preview']`. This array displays a group of two icons: Source and Preview, separated with a vertical line (defined by the '-' string).

You can insert a line break between the icon groups using the `'/'` string.

The code example above is the default toolbar set and contains all possible icons. You can create your custom toolbar sets by modifying it or using the icon names from it.

Save the changes you made to the `fckconfig.js`. Then, you need to clear the browser cache so that the file is updated in your browser.



Changes to the fckconfig.js file require clearing browser cache!

Every time you modify the fckconfig.js file (or any other file that is used for the WYSIWYG editor), you need to clear your browser cache so that the changes are applied. In Internet Explorer 7.0, you need to click **Tools -> Delete browsing history...** and click **Delete files...**

Then, you need to configure the page or document type so that it uses your new toolbar as described in the next paragraph.

Assigning the toolbar set to the page

If you want to assign the toolbar set to some **page with editable regions** (edited on the Page tab), you need to configure the web parts of type "Editable region" on the page template and set their Toolbar set property to the name of your toolbar set (in the example above, it's Default).

Toolbar set used for structured documents

If you want to modify the toolbar set used for **structured documents** (edited on the Form tab), you need to set the value of the Toolbar set property of the custom field. If you share the toolbar between multiple fields, the first field's toolbar set will be used.



Standard toolbar sets

Kentico CMS uses some standard toolbar sets that are used by Kentico CMS modules:

- **Default** - used for structured documents
- **BizForm** - used for BizForm forms
- **Forum** - used for the WYSIWYG editor in forums (if enabled)

4.4.9 Defining styles

The WYSIWYG editor allows you to apply a chosen style to the text using the Style drop-down list in the editor toolbar:



The styles offered in the list are defined in file `<web project>\CMSAdminControls\FCKeditor\fckstyles.xml`. The structure of the file looks like this:

```
<Styles>
  <Style name="Image on Left" element="img">
    <Attribute name="style" value="padding: 5px; margin-right: 5px" />
    <Attribute name="border" value="2" />
    <Attribute name="align" value="left" />
  </Style>
  <Style name="Image on Right" element="img">
    <Attribute name="style" value="padding: 5px; margin-left: 5px" />
    <Attribute name="border" value="2" />
    <Attribute name="align" value="right" />
  </Style>
  <Style name="Bold text" element="span">
    <Attribute name="style" value="font-weight: bold;" />
  </Style>
  <Style name="Red text" element="span">
    <Attribute name="style" value="color: red;" />
  </Style>
  <Style name="Large text" element="span">
    <Attribute name="style" value="font-size: large;" />
  </Style>
</Styles>
```

Every style has some name and element it is used for. The styles are offered in the drop-down list based on the current position of the cursor. If you select some image, the styles for element `img` will be offered. If you select some text, the styles for element `span` or `div` will be offered.

If you choose to apply e.g. the **Red text** style to the following HTML code:

```
We provide web development services.
```

the result will be this:

```
<span style="color: red">We provide web development services.</span>
```

As you can see, the text was encapsulated with a **SPAN** element with attribute **STYLE** set to **color: red**.

You may want to apply CSS class names instead of hard-coded styles. In this case, your style definition will look like this:

```
<Style name="Green text" element="div">
  <Attribute name="class" value="GreenText" />
</Style>
```

and the result will be:

```
<div class="GreenText">We provide web development services.</div>
```

In your CSS stylesheet, you need to define the GreenText class name like this:

```
.GreenText { color: green; }
```



Changes to the fckstyles.xml file require clearing browser cache!

Every time you modify the fckstyles.xml file (or any other file that is used for the WYSIWYG editor), you need to clear your browser cache so that the changes apply. In Internet Explorer 7.0, you need to click **Tools -> Delete browsing history...** and click **Delete files...**

4.4.10 Dialogs configuration

When defining a new **HTML area (Formatted Text)** field, you can display advanced dialog settings by clicking the **Field advanced settings: Configure** link.

The following properties can be set, while they are organized in categories related to the particular tabs in the dialogs:

Content tab

- **Display tab:** indicates if the Content tab is displayed in the **Insert image or media** and **Insert link** dialogs
- **Available sites:** defines which sites' content trees will be available in the dialogs
- **Starting path:** alias path from where the content tree should be displayed; if not relevant for the selected site, its whole content tree will be displayed

Media tab

- **Display tab:** indicates if the Media libraries tab should be displayed in the **Insert image or media** and **Insert link** dialogs
- **Available sites:** defines which sites can the media libraries be selected from
- **Available site libraries:** defines which media libraries from the above selected site can be used
- **Available site groups:** defines which groups can be the media libraries selected from
- **Available group libraries:** defines which group libraries can be selected
- **Starting path:** path within the library from where the content should be offered; if not relevant for the selected library, the whole library will be offered

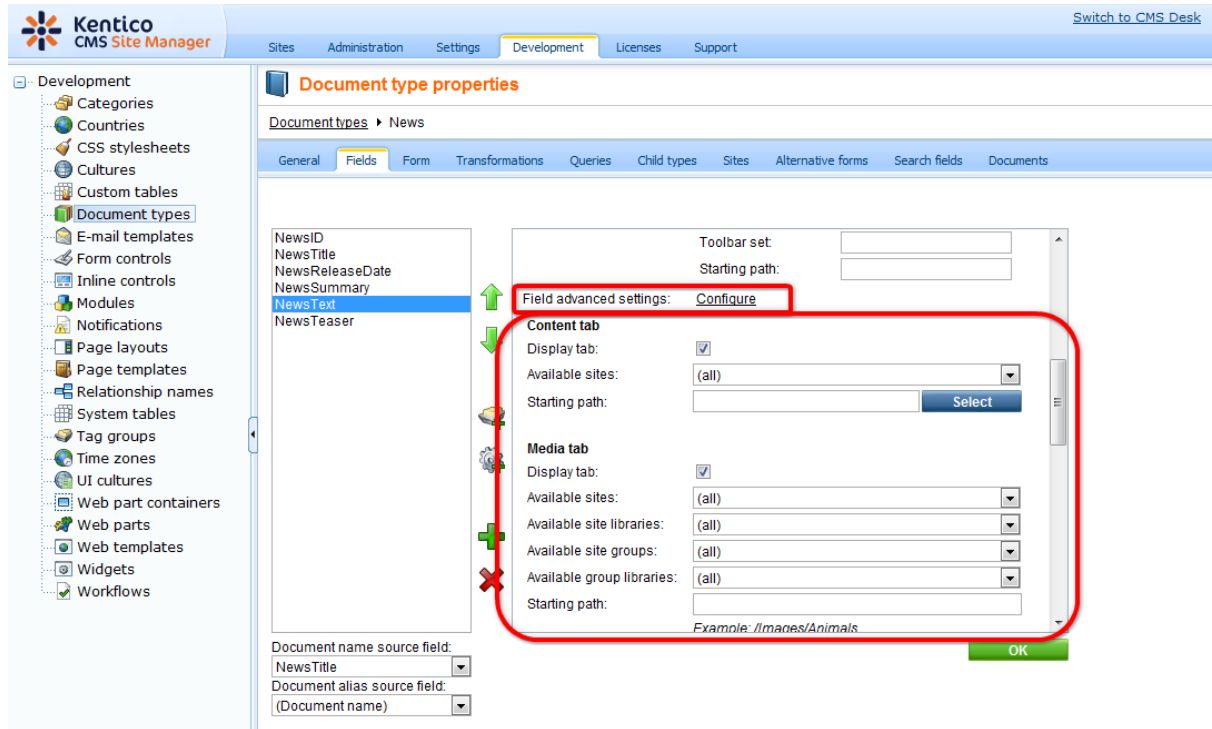
Other tabs

- **Display Attachments tab:** indicates if the Attachments tab should be displayed in the **Insert image or media** and **Insert link** dialogs
- **Display E-mail tab:** indicates if the E-mail tab should be displayed in the **Insert link** dialog
- **Display Anchor tab:** indicates if the Anchor tab should be displayed in the **Insert link** dialog
- **Display Web tab:** indicates if the Web tab should be displayed in the **Insert image or media** and **Insert link** dialogs

Automatic image resize on upload

- **(do not resize):** if selected, images will not be resized and will be pasted in full size
- **(use site settings):** if selected, images will be resized according to settings made in **Site Manager - > Settings -> Files**
- **(use custom settings):** if selected, the settings specified in the three properties below will be used; the settings have the same effects as described [here](#)

Some of the properties have the **(current)** values (e.g. current site, current library, ...). This means that the current value from the page's context will be taken - e.g. if you are on a page belonging to some group and have the **Available group libraries** set to **(current group)**, the group to which the page belongs will be used.



Setup on last insertion

The dialog remembers the selection setup on last insertion for each user. This means that when a user opens the **Insert image or media** or **Insert link** dialog, all of the following are in the same state as on last insertion:

- selected tab
- selected view mode

Content tab only:

- selected site
- selected path in the content tree

Media libraries tab only

- selected site
- selected group
- selected media library
- selected path within the library

Dialogs-related settings

The following settings in the categories under **Site Manager -> Settings** are related to WYSIWYG editor dialogs:

- **URLs -> Use permanent URLs** - if enabled, URLs of documents and document attachments will be generated in permanent format; if disabled, friendly URLs will be used
- **Media libraries -> Use permanent URLs** - indicates if links in permanent format should be used for files stored in media libraries
- **Files -> Automatic image resize on upload** - read [here](#) for more information on image resizing

4.4.11 Dialogs security

The following tables show which permissions are required to perform the listed actions on particular tabs.

Media libraries tab

In this table, you can see that three types of permissions may enable users to perform the required action:

[Media library module permissions](#) and [Groups module permissions](#) are those permissions that can be set in the permission matrices in Site Manager -> Administration -> Permissions.

[Media library permissions](#) are those permissions that can be set on the Security tab when editing a particular media library in CMS Desk -> Tools -> Media libraries.

Action/Permission	Media library module permissions		Groups module permissions			Media library permissions							
	Read	Manage	Read	Manage		File			Folder			See content	
						Create	Delete	Modify	Create	Delete	Modify		
Global administrator in group/global media library													
Creating new media file	No permissions are required												
Creating new media folder	No permissions are required												
See media library content in dialogs	No permissions are required												
Group admin in group media library													
Creating new media file	No permissions are required												
Creating new media folder	No permissions are required												
See media library content in dialogs	No permissions are required												
Any other user in global media library													
Creating new media file		X			or	X							
Creating new media folder		X			or				X				
See media library content in dialogs	X												X
Any other user in group media library													
Creating new media file				X	or	X							
Creating new media folder				X	or				X				
See media library content in dialogs			X		or								X

Attachments tab - document already exists

To perform the following actions on the Attachments tab, the user needs to have the appropriate [document permissions](#) for the particular document.

Action/Permission	Document permissions			
	Read	Create Manage	Modify	Delete
Creating new attachment (New file)			X	
Replacing source file of the attachment (Update)			X	
Deleting attachment (Delete)			X	
Moving attachment up or down (Move up/Move down)			X	
See attachments of the specified document	X			

Attachments tab - document doesn't exist yet

To perform the following actions on the Attachments tab, the user needs to have the appropriate [document permissions](#) for the particular document.

Action/Permission	Document permissions			
	Read	Create Manage	Modify	Delete
Creating new attachment		X		
Replacing attachment		X		
Deleting attachment		X		
Moving attachment up or down		X		
See attachments of the specified document		X		

Content tab

To perform the following actions on the Content tab, the user needs to have the appropriate [document permissions](#) and the listed document types (CMS.File and CMS.Folder) need to be allowed to be created in the location.

The last two columns indicate if **cms.file** and **cms.folder** document types are **allowed child types** of the document under which it should be created. This can be set separately for each document type in Site Manager -> Development -> Document types -> edit the particular document type -> Child types tab.

Action/Permission	Document permissions					
	Browse tree	Create	Modify	Delete	CMS. File is allowed	CMS. Folder is allowed
		Manage				
Creating new cms.file		X			X	
Creating new folder		X				X
See child documents of the specified document	X					

4.5 Document properties

4.5.1 Overview

You can edit document properties in **CMS Desk -> Content**, after you click the document and click the **Properties** tab in the **Edit** mode:

The screenshot displays the 'Properties' tab in the CMS Desk interface. On the left is a tree view of the 'Corporate Site' structure, with 'Web Design' selected. The main area shows the 'Properties' configuration for this document.

Design

- Design: (default) [Edit]
- CSS stylesheet: Inherit

Other properties

- Document name: Web Design
- Type: Page (menu item)
- Created by: Global Administrator
- Created: 10/30/2007 8:54:33 AM
- Last modified by: Global Administrator
- Last modified: 7/7/2009 1:53:36 PM
- Rating: ☆☆☆☆☆☆☆☆☆ [Reset]
- Node ID: 29
- Node GUID: 1caadf28-b617-473a-ab18-0e83051210c7
- Alias path: /Services/Web-design
- Culture: English - United States
- Name path: /Services/Web Design
- Live URL: /KenticoCMS_daliborp/Services/Web-design.aspx
- Published: Yes

Owner

- Owner: Global Administrator [Select] [Clear]

4.5.2 General

General tab fields:

CSS Stylesheet	The CSS stylesheet used for the particular page. You can choose some particular stylesheet or use the default site stylesheet. You can also choose to inherit the stylesheet from the parent document.
Owner	<p>Document owner is the user responsible for its editing.</p> <p>This feature doesn't imply any special permissions for the owner, but it allows for easier orientation in documents. The owner can see all their documents in My Desk -> My Documents section.</p> <p>The owner is by default set to the user who created the document. The owner can be changed only by users with "Modify permissions" permission.</p>
Owned by group	This field shows which group is the owner of the document (this is particularly the case of group pages). This field is mainly informative, but in some special situations, you might find it useful to change the group that the document belongs to by using the Change button.
Rating	Rating of the document's content posted evaluated by site visitors; you can reset the value using the Reset button; see the Modules -> Content rating chapter for more details.
Cache	This option allows you to specify if the page content should be cached in memory (full-page caching). You can choose to inherit the settings from the parent document or to set a different value or to disable full-page caching.
Cache minutes	Determines how long should the content of this page be cached if caching is enabled.

4.5.3 URLs

URLs tab fields:

Document alias	<p>The unique name of the document in the given section of the website. This name doesn't change when you modify the document name and it's used:</p> <ol style="list-style-type: none"> 1. To define the AliasPath, which is the unique path to the document. The developers typically use the AliasPath in the Path property of the web parts and controls. 2. For the URL of the document. The URL of the document is like <code>www.kentico.com/products/cms.aspx</code> where <code>/products/cms</code> is the alias path of the document. <p>Forbidden characters</p> <p>Some characters are forbidden in URLs and thus they are replaced with a safe character (by default, it's dash -). You can specify the forbidden characters and the replacement character in Site Manager -> Settings -> URLs, in values "Forbidden characters replacement" and "Forbidden URL characters".</p>
----------------	--

Document URL path	<p>If you want to use a specific URL for a given document that doesn't depend on the document AliasPath, you need to check the box Use custom URL path and enter the value, such as: /cms-for-asp-net</p> <p>The URL path must always start with /. Then, the document is accessible through two URLs: www.kentico.com/products/cms.aspx www.kentico.com/cms-for-asp-net.aspx</p> <p>The URL path is useful if you need to define a short URL of some page or if you need to optimize the URL for search engines.</p> <p>The URL path is, unlike the alias path, culture-specific. It means if you use URL paths: /product (for English version) /produkt (for German version)</p> <p>then when the user comes to /produkt.aspx, the language of the website is automatically switched to German.</p>
URL extensions	<p>Default URL extensions are defined in Site Manager -> Settings -> URLs -> Friendly URL extensions. If you check the Use custom URL extensions check box, you can define other extensions under which the document can be accessed.</p> <p>In case that the option is disabled, physical file extensions can also be used for cms.file documents.</p> <p>Multiple extensions can be entered divided by a semicolon. If you enter a semicolon without any extension, extensionless URLs will be allowed.</p> <p><u>Example:</u> entering '.htm;,' for a document with URL path set to '/test' will cause that both <site path>/test.htm and <site path>/test will lead to the same page.</p> <p>For this to work, you also need to set up your IIS for handling the 404 and 405 errors the same way as described here.</p>
Track campaign	<p>A web analytics campaign with the same name as entered here will be created on the first access to the page through the entered URL.</p>
Document aliases	<p>This section displays a list of other document aliases under which the document can be accessed. One document can have an unlimited number of aliases. You can edit (✎) and delete (✖) aliases in the list or create a new alias using the 'Add new alias' link.</p>

4.5.4 Template

In the Template dialog, you can specify the page template that will be used for the current document.

General properties

The page can be based on some specified page template or inherit the page template from the parent document.

Template	Current template name. Different template can be chosen after clicking the Select button.
Save as new template...	Saves the current template appearance as a new re-usable page template.
Inherit template	Indicates if page template should be inherited from the parent page.
Clone as ad-hoc template	Creates a new ad-hoc template based on the current page template. In many cases, you may want to re-use the ad-hoc page template for other pages. In this case, you need to save the ad-hoc template as a new re-usable template.
Edit template properties	Displays a new window with the template properties and settings.

Inherit content

This option allows you (developer) specify if and how the content should be inherited from the parent page(s). It overrides the content inheritance settings of the page template.

Inherit all	Document inherits all the content from all parent pages.
Do not inherit any content	Document does not inherit any content from the parent page.
Inherit only master page	Document inherits content from the first master page above the page in the content tree, i.e. if there are more master pages, it inherits only from the one which is the closest above.
Select inherited levels	Using this option, you can specify from which particular levels should the content be inherited.

4.5.5 Metadata

Here you can manage the information describing the page. You can choose to inherit the values from the parent document or enter document-specific values.

Page title	Title of the browser window (<title> element inner text).
Page description	Page description used for meta tags of the page and for searching content of the website.
Page keywords	Keywords used for meta tags of the page and for searching content of the website.
Page tag group	Tag group that will be used for tagging this document using the Page tags

	parameter below.
Page tags	<p>Enter the tags that you want to tag the document with.</p> <p>When entering more than one tag into the Page tags field, the tags should be separated with a comma or a blank space. A combination of both in a single entry is also valid. The following examples are all valid entries for adding three tags - <i>tag1</i>, <i>tag2</i> and <i>tag3</i>:</p> <p><i>tag1, tag2, tag3</i> <i>tag1 tag2 tag3</i> <i>tag1, tag2 tag3</i></p> <p>In case that you are entering a tag consisting of more than one word, you should enclose it within quotation marks. Multiple long tags can also be entered and can be also divided by both blank spaces and commas:</p> <p><i>"long tag1", tag, "long tag2"</i> <i>"long tag1" tag "long tag2"</i></p> <p>Quotation marks can also be used for tags containing special characters that couldn't be used otherwise:</p> <p><i>"tag@1", "tag#2", "long, strange: tag@#"</i></p> <p>The page tags field has also an insinuation function implemented. This functions offers you tags from the selected tag group while you are writing.</p>



Global Settings

You can configure prefix of the page title, description and keywords for all documents on the website using the Site Manager -> Settings -> website dialog. Here you can configure the prefixes and also the standard format of the page title.

The default page title format is: {`%prefix%`} - {`%pagetitle_orelse_name%`}



It means that the format consists of the prefix followed by the page title value. If the page title value is not set, the document name is used.

Macro expressions in metadata


You can use macros in format {`%ColumnName%`} to insert the values of the current document into the title or other metadata fields. See [Appendix A - Macro expressions](#) for a list of possible macro expressions.

4.5.6 Categories

Categories are topic-related groups of documents. On this page, you can assign the selected document to an unlimited number of categories. There are two lists of categories:

- **My categories** - this list shows the current user's custom categories. Each of the categories can be edited () or deleted (). By clicking the **New category** link, you can create your own category. The following details will be required:

Display name	Display name of the category.
Description	Text describing the category.

- **Global categories** - this list shows global categories that can be defined in **Site Manager -> Development -> Categories**. These categories can only be edited () from this page.

In case that you want to assign the selected document to some of the categories, check the category's **Select** check-box in the list and click **Save**.

See the [Modules -> Categories](#) chapter for more details.

4.5.7 Menu

This dialog allows you to specify how the current document is displayed in the navigation.

General properties

Menu caption	The name of the document as it's displayed in navigation. It may be different to the document name. If no value is entered, the document name is used.
Show in navigation	<p>Indicates if the document should be displayed in the navigation (in the menus).</p> <p>Please note: the document is displayed in the navigation if all of the following conditions are met:</p> <ol style="list-style-type: none"> 1. The Show in navigation box is checked. 2. The document is published. 3. The type of the document matches the document types configured in the appropriate navigation control (web part) - by default, only Page (menu item) documents are displayed in navigation. 4. If you turn on the Check permissions property of the menu control, the user must be allowed to read the given document so that it appears in the navigation controls.
Show in site map	<p>Indicates if the document should be displayed by the Site map web part (in the dynamic site map).</p> <p>Please note: the document is displayed in the navigation if all of the following conditions are met:</p> <ol style="list-style-type: none"> 1. The Show in site map box is checked. 2. The document is published. 3. The type of the document matches the document types configured in the Site map control (web part) - by default, only Page (menu item) documents are displayed in navigation. 4. If you turn on the Check permissions property of the menu control, the user must be allowed to read the given document so that it appears in the navigation controls.

Menu action

You can choose from the following menu item behavior options:

Standard behavior	The menu item redirects the user to the page as expected.
Inactive menu item.	The menu item click doesn't raise any action - the item is disabled. This option is useful if you need to create a menu item for the main section in the drop-down menu that cannot be clicked, but the sub-items can be clicked.
Javascript command	If you enter some JavaScript command, it will be run when this menu item is clicked. Example: <code>alert('hello');return false;</code>
URL redirection	The user is redirected to the target location when the menu item of this document is clicked. Example: <code>http://www.domain.com</code> or <code>~/products.aspx</code>

Menu item design properties

The menu item design properties are available in three alternatives:

- standard design
- mouse-over design - when you mouse-over the menu item
- highlighted design - style of the selected document

These values override the settings of the menu control (web part) and the CSS styles defined in the CSS stylesheet.

Please note: some of the following properties may not be applied to the menu control depending on the menu control you are using.

Menu item style	Style definition of the menu item. Values can be entered the same way as when defining a CSS class in a stylesheet. <u>Sample value:</u> <code>color: orange; font-size: 140%</code>
Menu item CSS class	CSS class defined in the website's stylesheet. <u>Sample value:</u> <code>h1</code>
Menu item left image	Image that will be displayed next to the menu caption on the left side. Sample values as below.
Menu item image	Image that will be displayed in the menu instead of the menu caption. You can enter either an absolute URL or a relative path in the content tree. <u>Sample values:</u> <code>http://www.domain.com/image.gif</code> <code>~/Images-(1)/icon.aspx</code>
Menu item right image	Image that will be displayed next to the menu caption on the right side. Sample values as above.

4.5.8 Workflow

On this tab, you can approve or reject document if it uses **workflow** and you're authorized to approve/reject given document in the given workflow step. See the [Workflow and versioning](#) chapter for more

details.

Approve section

- **Comment** - you can add a comment which will be added to the e-mail message to the editor whose work you are approving
- **Send e-mail** - if the box is checked, a message can be sent to the editor whose work is currently being approved; if not, no message is sent to the editor



Workflow steps


This table displays the workflow steps of the current document's workflow, while pointing out the current step

Workflow history

This list displays the current document's workflow steps history.

4.5.9 Versions

On this tab, you can view the previous versions of the document if it uses a workflow. You can also roll back to a previous version of the document by clicking the  icon, delete () the older versions or destroy the whole document history.

When you click on the  icon, you can preview the particular document version.

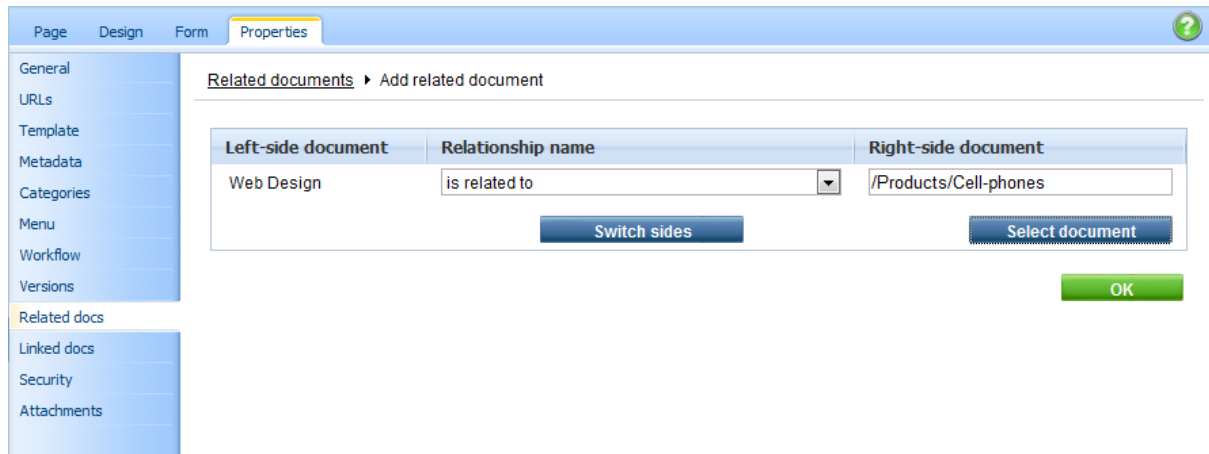
See chapter [Workflow and versioning](#) for more details.

4.5.10 Related docs

This dialog allows you to specify documents that are related to the selected document. Click **Add related document**.

Now you can:

- select the related document using the Select button
- switch the sides of the relationship
- select the type of the relationship



The screenshot shows the 'Properties' tab of the Kentico CMS interface. On the left is a navigation menu with options: General, URLs, Template, Metadata, Categories, Menu, Workflow, Versions, Related docs (highlighted), Linked docs, Security, and Attachments. The main area is titled 'Related documents' and contains a sub-section 'Add related document'. This section features a table with three columns: 'Left-side document', 'Relationship name', and 'Right-side document'. The 'Left-side document' field contains 'Web Design'. The 'Relationship name' field is a dropdown menu currently showing 'is related to'. The 'Right-side document' field contains '/Products/Cell-phones'. Below the table are two buttons: 'Switch sides' and 'Select document'. At the bottom right of the dialog is a green 'OK' button.

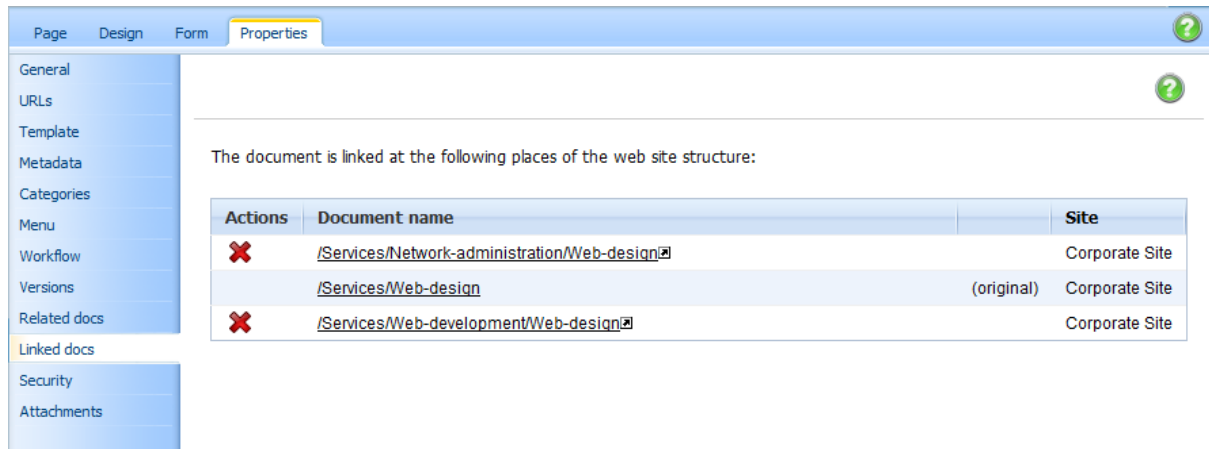
The related documents need to be displayed by a control (web part) that is configured for displaying related documents. If you're a developer, please see the **Kentico CMS Web parts and Controls reference -> Displaying related documents** for more details.

The relationship names need to be defined in **Site Manager -> Development -> Relationship names**. Only relationship names enabled for the current website are available in the drop-down list.

4.5.11 Linked docs

This dialog displays the linked documents (see [Creating a linked document](#) for explanation of the concept of linked documents).

You can delete the linked documents using the **Delete** (✖) icon or navigate to other linked documents or to the original document by clicking the link:



4.5.12 Security

This dialog is divided into two independent sections - **Permissions** and **Access**

Permissions

Here you can specify the document-level permissions for the given document. Please see the [Authorization \(permissions\)](#) chapter for more details.



Local and global permissions

Please remember that the local permissions are combined with global permissions defined for roles in the **CMS Desk -> Administration -> Permissions** dialog as described in the [Authorization \(permissions\)](#) chapter.

Access

Here you can configure if the page is accessible by public (anonymous) visitors or if it's only available to users who sign in with their user name and password. If you choose the option **Inherits**, the value is inherited from the parent document.

Please read the [Secured website areas](#) chapter for more details.

You can also specify if the give page or website section **requires SSL** (HTTPS) protocol. If you set it to Yes, the CMS automatically redirects the user to the URL with `https://` protocol.

Requires authentication

- **Yes** - authentication is required to access the page
- **No** - authentication is not required to access the page
- **Inherits** - value of the setting is required from the parent page

Requires SSL




- **Yes** - users trying to access the page will be redirected to the HTTPS URL of the page
- **No** - users trying to access the page will access the page via the protocol from that they are coming (i.e. they will not be explicitly redirected to the secured URL, but if they are coming from a secured URL, they will access the page via secured URL)
- **Inherits** - settings of the parent page will be used
- **Never** - users trying to access the page will be explicitly redirected to the non-secured version of the page

4.5.13 Attachments

On this tab, files can be attached to the document.

On this page, you can see a list of the currently selected document's unsorted attachments. Grouped attachments can be added to the document on the Form tab in case that the appropriate field(s) are defined for the particular document type.



You can upload new attachment using the **New attachment** () link. You can also perform the following actions with the attachments in the list:

- Using the **Delete** () icon, you can remove the attachment from the document.
- Using the **Move up** () and **Move down** () icons, you can re-order the attachments. The order is stored in the **AttachmentOrder** property of each attachment. You can enter AttachmentOrder into the ORDER BY expression property of a displaying web part to have the attachments ordered accordingly.



Please note

The order of attachments is **not versioned** with documents' workflow. This means that if you change the order of attachments in one version of a document, the order is changed in all other versions too.

- Images have also the **Edit** () icon available. This icon opens the image in the built-in image editor.
- Using the **Update** () icon, you can replace the original attachment with a new one.
- After clicking an attachment's name, the attachment will be opened.

For more information on the Attachments module, please refer to the [Document attachments](#) chapter of this guide.



4.5.14 Languages

This tab is displayed only for multilingual sites with Translation management enabled. See the [Multilingual and international support -> Translation management](#) chapter for more details.

On this tab, you can view the language versions of the selected document. The language versions can have the following statuses:

The colors indicate the following translation statuses:

- **Translated** - the document is translated and up-to-date
- **Outdated** - the document is translated but outdated, which means that the default language version has been modified (or published when using workflow) more recently than the translated version
- **Not available** - the document's version in the language does not exist

By clicking the **Edit culture version**  icon, you can be redirected to the **Edit -> Page** mode of the selected culture version. By clicking the **Add new culture version**  icon of a not-available version, you can proceed to creating the new culture version of the document.

4.6 File Management

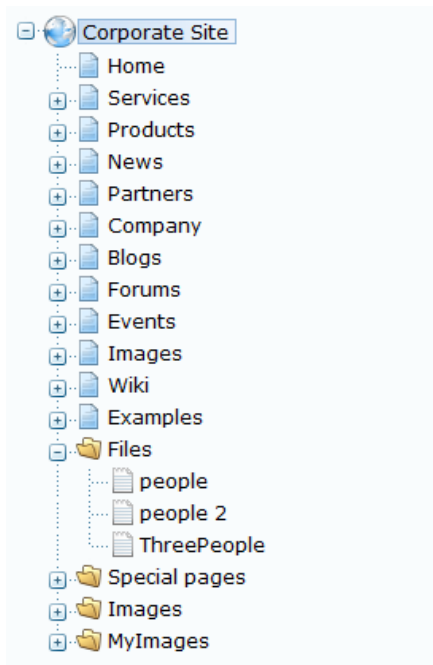
4.6.1 File management overview

Kentico CMS allows you to upload files (such as GIF, JPG, SWF, PDF, XLS, DOC, etc.) to the Kentico CMS database or file system and manage them as any other content.

File management approaches

There are four types of media files from the file management perspective:

- **CMS.File documents** - these files are uploaded by the content editors as new *CMS.File* documents into the content tree. You will typically use this type for files that are used as part of unstructured documents, such as document links or images inserted into the editable regions of the page. It is advisable to have files stored within folders (*CMS.Folder* document type). You can also use the [File import](#) module when uploading multiple files.



- **Document attachments** - these files are stored as a part of a structured document and their life cycle is also bound with the document (including workflow and versioning). You can have an unlimited number of files attached to a document. A detailed description of the whole concept and examples of typical usage can be found in [this chapter](#).
- **Media Libraries** - the Media Libraries module allows storage of large amounts of files, while large file sizes are supported; the whole module and its typical usage is described in [this chapter](#).
- **Unmanaged files** - these files are part of the website theme and they should be stored in the `<web project>\app_themes\<theme>\images` folder on the disk. They usually include images and Flash animations used throughout the site. These files are not managed by the CMS system.

4.6.2 Document Attachments

4.6.2.1 Overview

Document Attachments are a concept of attaching files to documents in Kentico CMS. This concept greatly simplifies the way you work with files. Each document can have any number of attached files, which is a great step forward compared to the previous use of the [File field](#), which allowed only one uploaded file per one defined File field.

Attachments are directly bound to a document's life cycle. So if a document gets published, its attachments get published too. If you delete a document, its attachments will also be deleted.

You can find a live example of document attachments on the sample **Corporate Site**. If you enter the **News** section and display some of the news items, you can see the images at the bottom of the page, as highlighted in the screenshot below. These are the attachments of the news document displayed by the **Attachment image gallery** web part.

Home Services Products **News** Partners Company Blogs Forums Events Images Wiki Examples

[News](#) > Your second news

Your second news

1/15/2008

Here you can enter the summary of the news item. You can use WYSIWYG editor to format the text, insert links and images. The summary will be used in news item preview.

This is the news text. It's displayed in combination with news title and summary. Depending on transformation chosen by the web developer, the news item may be displayed in various formats, with or without teaser image.

RSS

[Site map](#) | [Disclaimer](#)

There are two types of attachments:

- **Unsorted** - added via the Properties -> Attachments tab; using this approach, you can easily add attachments to any document; all attachments added this way are taken as **one group** and displayed together using the web parts
- **Grouped** - added by defining a 'Document attachments' field for a document type and then uploading a file on a document's **Form** tab; for each Document attachments field, you can have an unlimited number of files attached; you can also define more fields of this type to have several groups of attachments which can be displayed separately on the live site
- **File field** - another type of field that can be used for file upload via the **Form** tab; the difference from Grouped attachments is that only one file can be uploaded into one File field

The attachments can be displayed with the document using one of the following web parts:

- **Attachment image gallery** - using the default transformation, the web part displays thumbnails of document's image attachments; after clicking a thumbnail, lightbox will open, displaying the attachment in a full size; for non-image attachments, file type icon will be displayed instead, while after clicking it, users are able to download the file; of course, you can modify this behaviour by defining your own transformation
- **Document attachments** - displays a list of document's attachments; after clicking an attachment, it is opened in a new window or offered for download in case that it is not an image
- **Attachments data source** - data source web part for providing attachments to a connected displaying web part; see also [Using DataSource web parts](#)

More information about the web parts can be found in [this chapter](#).

You can also display document's unsorted attachments using the following two inline controls that can be added via the Editable text web part:

- **Attachment image gallery** - displays the document's unsorted attachments' thumbnails; after clicking the thumbnail, the attachment will be displayed in a lightbox
- **Document attachments** - displays the document's unsorted attachments; after clicking the thumbnail, image attachment will be displayed on a new page and non-image attachments will be offered for download

More information about the inline controls can be found in [this chapter](#).

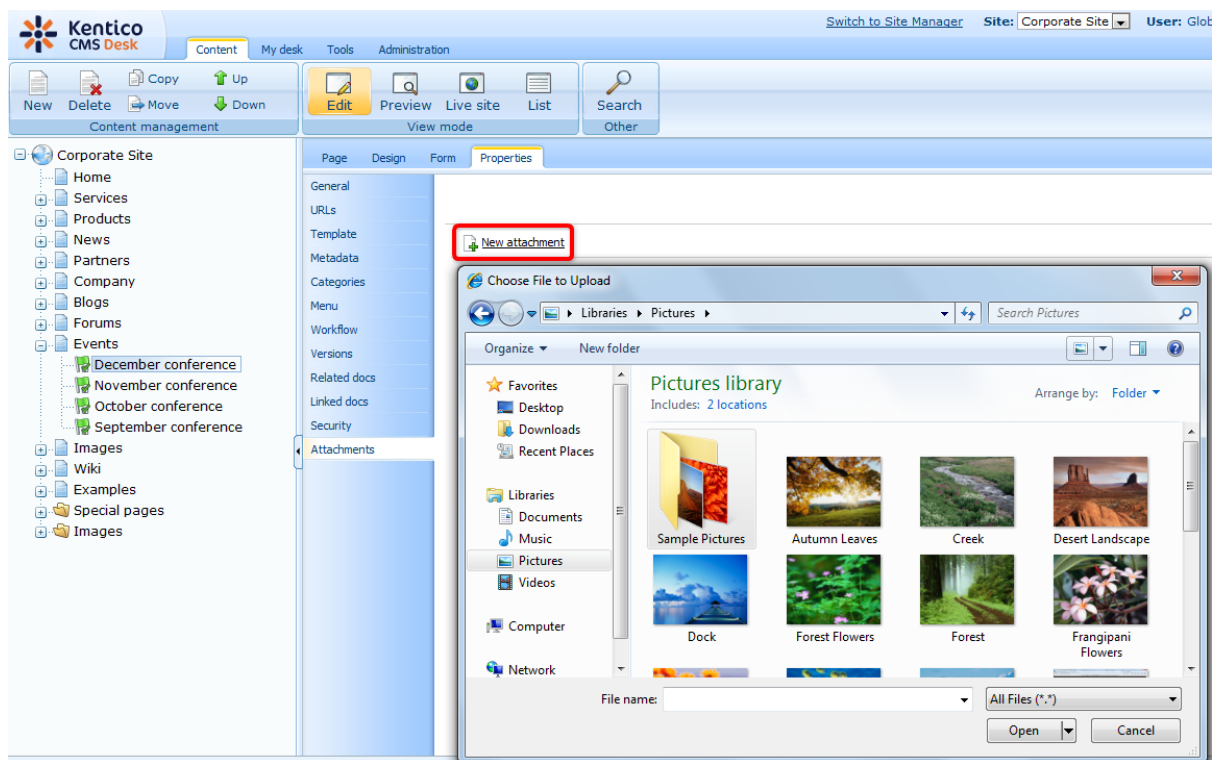
4.6.2.2 Example: Unsorted attachments

In the following example, you will learn how to add attachments to a document via the **Properties -> Attachments** tab and display them on the live site. We will use the **Events** section of the sample **Corporate Site**. First, we will upload the attachments to some of the events in the section. Then we will add the **Attachments image gallery** web part to the **Events** page, which will display the attachments for each displayed event.

You can make some settings related to unsorted attachments' upload. These settings are described in [this topic](#).

1. Adding attachments to a document this way is quite simple. First, you need to select a document from the content tree and switch to its **Properties -> Attachments** tab.
2. On the tab, click the **New attachment** (📎) link. The familiar **Choose file** dialog will be displayed. Choose any file from your local drive and click the **Open** button.

Please note: The mouse pointer doesn't change when you hover the **New attachment** (📎) link. This is by design and you needn't be worried about it.



3. Repeat the same procedure so that you have a few files attached to at least one document. Preferably, include some images among them. The document's attachments tab should look similarly to the screenshot below after the attachments' upload. Note that if you hover an image in the list, its thumbnail is displayed as in the screenshot.

In the list of attachments, you can do several things with each attachment:

- Using the **Delete** (✖) icon, you can remove the attachment from the document.
- Using the **Move up** (↑) and **Move down** (↓) icons, you can re-order the attachments. The order is stored in the **AttachmentOrder** property of each attachment. You can enter AttachmentOrder into the ORDER BY expression property of a displaying web part to have the attachments ordered accordingly.



Please note

The order of attachments is **not versioned** with documents' workflow. This means that if you change the order of attachments in one version of a document, the order is changed in all other versions too.

- Images have also the **Edit** (✎) icon available. This icon opens the image in the [built-in image editor](#).
- Using the **Update** (↻) icon, you can replace the original attachment with a new one.
- After clicking an attachment's name, the attachment will be opened.

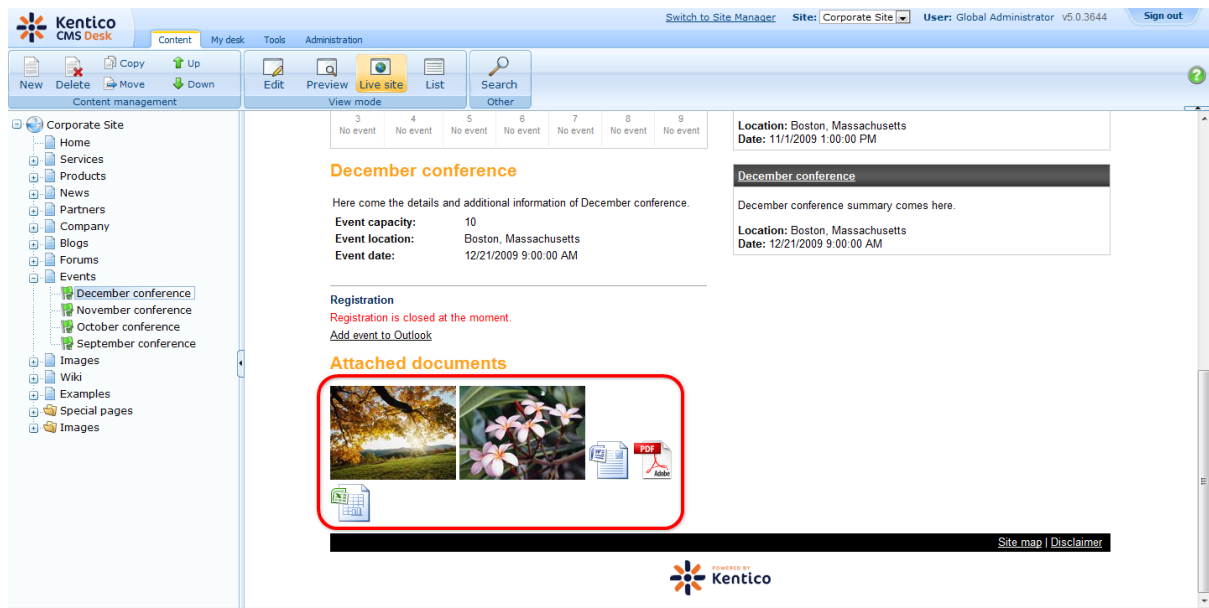
Actions	Update	Name	Size
✎ ✖ ↑ ↓ ↻	↻	Autumn-Leaves.jpg	270 kB
✎ ✖ ↑ ↓ ↻	↻	Frangipani-Flowers.jpg	106 kB
✎ ✖ ↑ ↓ ↻	↻	Sample-document-1.doc	9.7 kB
✎ ✖ ↑ ↓ ↻	↻	Sample-document-2.doc	27 kB
✎ ✖ ↑ ↓ ↻	↻	Sample-document-3.doc	8.9 kB

4. Now that we have the attachments uploaded, we can display them on the live site. The events are displayed by a repeater on the **Events** page, so we will have to add the **Document attachments** web part to this page.

Select the **Events** page from the content tree and switch to the **Design** tab. Click the **Add web part** (+) icon of **zoneLeft** web part zone and choose the **Attachments -> Attachments image gallery** web part. You do not need to set any web part properties in order for the web part to display the attachments. However, you can add some heading via the Content before property:

- **Content before:** <h1>Attached documents</h1>

Click **OK**. If you switch to the live site now, you should see its attachments' thumbnails as in the screenshot below.



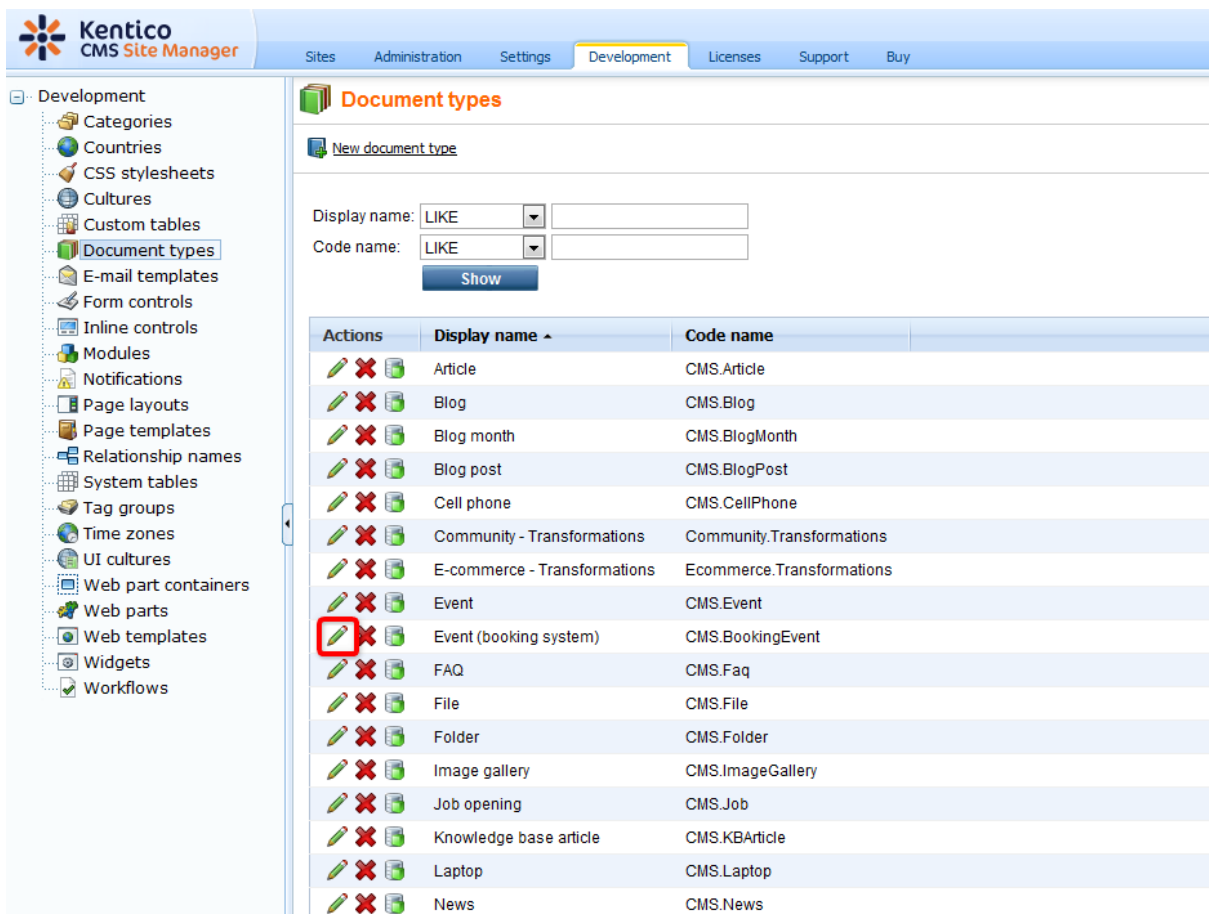
The screenshot displays the Kentico CMS Desk interface. The top navigation bar includes 'Switch to Site Manager', 'Site: Corporate Site', 'User: Global Administrator v5.0.3644', and 'Sign out'. The main toolbar contains 'New', 'Delete', 'Copy', 'Up', 'Move', 'Down', 'Edit', 'Preview', 'Live site', 'List', and 'Search'. The left sidebar shows the content tree with 'Events' expanded to 'December conference'. The main content area shows a calendar for December 2009 with 'No event' for all days. Below the calendar is the 'December conference' section, which includes event details: 'Event capacity: 10', 'Event location: Boston, Massachusetts', and 'Event date: 12/21/2009 9:00:00 AM'. A 'Registration' section states 'Registration is closed at the moment.' and provides a link to 'Add event to Outlook'. The 'Attached documents' web part is highlighted with a red box and displays four thumbnails: a landscape photo, a photo of pink flowers, a document icon, and a PDF icon. The footer contains 'Site map | Disclaimer' and the Kentico logo.

4.6.2.3 Example: Grouped attachments

In the [previous example](#), you learned how to add attachments to a document via the **Properties -> Attachments** tab. This is the easier approach, however, in some situations, you may want to have more groups of attachments.

In this example, you will learn how to add two **Document attachments** fields to a document type and how to use them on the live site. Again, we will use the **Events** section of the sample **Corporate Site**. So if you completed the previous example right before, please delete the **Document image gallery** web part from **zoneLeft** in order to get the page to the original appearance.

1. The events' document type is **CMS.BookingEvent**. We will need to add the fields to it. Go to **Site Manager -> Development -> Document types** and choose to **Edit** (✎) the **CMS.BookingEvent** document type.



The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a navigation menu with 'Document types' selected. The main content area is titled 'Document types' and features a 'New document type' button and two input fields for 'Display name' and 'Code name', both currently set to 'LIKE'. Below these fields is a 'Show' button. A table lists various document types with their respective icons and code names. The 'Event (booking system)' row is highlighted, and its edit icon (a pencil) is circled in red.

Actions	Display name ^	Code name
	Article	CMS.Article
	Blog	CMS.Blog
	Blog month	CMS.BlogMonth
	Blog post	CMS.BlogPost
	Cell phone	CMS.CellPhone
	Community - Transformations	Community.Transformations
	E-commerce - Transformations	Ecommerce.Transformations
	Event	CMS.Event
	Event (booking system)	CMS.BookingEvent
	FAQ	CMS.Faq
	File	CMS.File
	Folder	CMS.Folder
	Image gallery	CMS.ImageGallery
	Job opening	CMS.Job
	Knowledge base article	CMS.KBArticle
	Laptop	CMS.Laptop
	News	CMS.News

2. Switch to the **Fields** tab. Use the **New attribute** (+) icon to add the following two attributes. For each attribute, set only the following values and leave the default values for the rest.

- **Attribute name:** AttachedImages
 - **Attribute type:** Document attachments
 - **Field caption:** Attached images
 - **Field type:** Document attachments control
-
- **Attribute name:** AttachedDocuments
 - **Attribute type:** Document attachments
 - **Field caption:** Attached documents
 - **Field type:** Document attachments control

Finally, use the **Move up** (↑) and **Move down** (↓) arrows to move the two attributes to the bottom of the list so that they will be displayed at the bottom of the **Form** tab.

The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a tree view of the site structure, with 'Document types' expanded and 'AttachedDocuments' and 'AttachedImages' selected. The main area displays the 'Document type properties' dialog for the 'Event (booking system)' document type. The 'Fields' tab is active, and the 'AttachedDocuments' and 'AttachedImages' attributes are highlighted in the list on the left. The 'Database' and 'Field' sections of the dialog are highlighted with red boxes, showing the configuration for the 'AttachedDocuments' attribute: Attribute name: AttachedDocuments, Attribute type: Document attachments, Allow empty value: checked, Attribute default value: (empty), Display attribute in the editing form: checked, Field caption: Attached documents, Field type: Document attachments control. The 'AttachedImages' attribute is also visible in the list below it.

3. Optionally, you can set the following specific properties of the field:

- **Allow change order** - indicates if attachments can be re-ordered
- **Allow paging** - indicates if paging should be enabled for the list of attachments
- **Page size** - page size applied if paging is allowed
- **Allowed extensions** - allowed extensions of files to be uploaded; files with other extensions will not be uploaded; check Inherit from settings to use values specified in Site Manager -> Settings -> Files -> Upload extensions
- **Automatic image resize on upload:**
 - **(do not resize)** - uploaded images will not be resized
 - **(use site settings)** - uploaded images will be resized according to site settings in Site Manager -> Settings -> Files -> Automatic image resize on upload
 - **(use custom settings)** - uploaded images will be resized according to the Width, Height and Max side size values set below

Depending on which values you fill in the **Width**, **Height** and **Max side size** fields, the functionality is the following:

- **Only width or only height** - images will be resized so that the width/height matches the entered value; the other dimension is also resized so that the aspect ratio is kept
- **Both width and height** - images will be resized so that both dimensions match the entered values; the aspect ratio needn't be kept in this case
- **Max side size** - if one of the image's sides is larger than this value, the image will be resized so that its larger side's dimension matches the entered value; the aspect ratio is kept and width and height settings are not applied


The screenshot displays the Kentico CMS Site Manager interface. The main window is titled 'Document type properties' and is focused on the 'AttachedDocuments' field. The interface includes a navigation menu on the left with categories like 'Development', 'Categories', 'Countries', etc. The main content area shows the 'Fields' tab for the 'AttachedDocuments' field. The configuration options are as follows:

- Field type:** Document attachments control
- Document attachment configuration:**
 - Allow change order:
 - Allow paging:
 - Page size: 10
 - Inherit from settings
 - Allowed extensions: pdf, doc, docx, ppt, pptx, xls; Example: jpg, gif, png
- Automatic image resize on upload:** (do not resize)
 - Width (px):
 - Height (px):
 - Max side size (px):




At the bottom, there are dropdown menus for 'Document name source field' (set to 'EventName') and 'Document alias source field' (set to '(Document name)'). An 'OK' button is visible at the bottom right of the configuration panel.

4. Now that we have the two fields defined, we can upload some attachments to the existing events on the site. Switch to **CMS Desk** and select the **Events -> December conference** from the content tree. Switch to its **Properties -> Form** tab. If you scroll down the page, you should see the two fields defined in the previous step.

The screenshot displays the Kentico CMS Desk interface. The top navigation bar includes 'Content', 'My desk', 'Tools', and 'Administration'. The left sidebar shows a content tree with 'Events' expanded to 'December conference'. The main area is in the 'Form' tab, showing the event details for 'December conference'. The 'Event location' field contains 'Boston, Massachusetts'. Other fields include 'Event date' (12/21/2009 09:00:00), 'Capacity' (10), 'Open from', and 'Open to'. The 'Attached documents' and 'Attached images' fields are highlighted with a red box, each containing a 'New attachment' button. The 'Publish from' and 'Publish to' fields are also visible at the bottom.

5. Use the **New attachment** () link to add attachments into both fields. According to the name of the field, upload some documents into the first one and some images into the second one.



Just as on the **Properties -> Attachments** tab, you can perform the following actions with the attachments in the lists:

- Using the **Delete** () icon, you can remove the attachment from the document.
- Using the **Move up** () and **Move down** () icons, you can re-order the attachments. The order is stored in the **AttachmentOrder** property of each attachment. You can enter AttachmentOrder into the ORDER BY expression property of a displaying web part to have the attachments ordered accordingly.

































Please note

The order of attachments is **not versioned** with documents' workflow. This means that if you change the order of attachments in one version of a document, the order is changed in all other versions too.

- Images have also the **Edit** () icon available. This icon opens the image in the [built-in image editor](#).
- Using the **Update** () icon, you can replace the original attachment with a new one.
- After clicking an attachment's name, the attachment will be opened.

The screenshot shows the Kentico CMS 5.5 interface. The top navigation bar includes 'Content', 'My desk', 'Tools', and 'Administration'. The main content area is titled 'Attachments' and contains two tables:

Attached documents			
Actions	Update	Name	Size
   		Sample-document.docx	9.7 kB
   		Sample-document.pdf	27 kB
   		Sample-document.xls	8.9 kB

Attached images			
Actions	Update	Name	Size
   		Desert-Landscape.jpg	223 kB
   		Forest.jpg	649 kB
   		Tree.jpg	752 kB

6. Now that we have the attachments uploaded, it's time to have them displayed on the live site. The events are displayed by a repeater on the Events page, so we will have to add the displaying web parts to this page. First, we will add the **Document attachments** web part. We will configure it so that it will display attachments from **Attached documents** field.

Select the **Events** page and switch to the **Design** tab. Click the **Add web part (+)** icon of **zoneLeft** web part zone and choose the **Attachments -> Document attachments** web part. Set the following properties of the web part, leave the rest at the default values.

- **Show for document types:** CMS.BookingEvent
- **Attachment group:** Event (booking system) -> Attached documents
- **Content before:** <h2>Attached documents</h2>

Click **OK**.

7. Below the documents, we will want the attached images to be displayed. For the images, it will be better to use the **Attachment image gallery** web part. Click the **Add web part (+)** icon of **zoneLeft** web part zone and choose the **Attachments -> Attachment image gallery** web part. Set the following properties of the web part, leave the rest at the default values.

- **Show for document types:** CMS.BookingEvent
- **Attachment group:** Event (booking system) -> Attached images
- **Content before:** <h2>Attached images</h2>

Click **OK**.

8. If you switch to the live site now, you should see the two web parts displaying the attachments, each web part one group defined earlier in this example. If you add attachments to any other event, they would be displayed with the event too.

The screenshot shows the Kentico CMS Desk interface. The top navigation bar includes 'Switch to Site Manager', 'Site: Corporate Site', 'User: Global Administrator v5.0.3644', and 'Sign out'. The main toolbar contains 'New', 'Delete', 'Move', 'Copy', 'Up', 'Down', 'Edit', 'Preview', 'Live site', 'List', and 'Search'. The left sidebar shows a tree view of the site structure, with 'December conference' selected under 'Events'. The main content area displays the following information:

December conference

Here come the details and additional information of December conference.

Event capacity: 10
Event location: Boston, Massachusetts
Event date: 12/21/2009 9:00:00 AM

Registration
Registration is closed at the moment.
[Add event to Outlook](#)

Attached documents

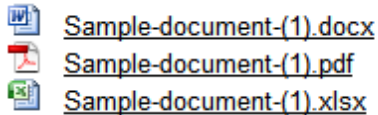
- Sample-document.docx
- Sample-document.pdf
- Sample-document.xlsx

Attached images

4.6.2.4 Available web parts

In this chapter, you can see an overview of the web parts that can be used to display document attachments. Only the most important web part properties are explained here. For a complete list of web part properties, please refer to [Kentico CMS Web Parts](#) reference guide or click the **Documentation** link at the top right corner of the web part properties window.

Document attachments



The web part is located in the **Attachments** web part category. This web part displays a list of files attached to a document. After clicking an attachment, it is opened in a new window.

The following properties of the web part are the most important:

- **Path:** alias path of the document whose attachments should be displayed; if blank, the currently displayed document's attachments will be displayed
- **Attachment group:** specifies the field from which the attachments should be displayed; if blank, ungrouped attachments from the Properties -> Attachments tab will be used
- **Transformation:** transformation used for displaying the attachments; the default transformation is *CMS.Root.AttachmentList*

Attachments image gallery



The web part is located the **Attachments** web part category. The web part is particularly useful for image attachments. It displays thumbnails of images attached to the document. After clicking a thumbnail, the clicked image is displayed in its full size by a **lightbox**. For non-image attachments, its file type icon is displayed. After clicking such an icon, the file is offered for download.

The following properties are the most important:

- **Path:** alias path of the document whose attachments should be displayed; if blank, the currently displayed document's attachments will be displayed
- **Attachment group:** specifies the field from which the attachments should be displayed; if blank, ungrouped attachments from the Properties -> Attachments tab will be used
- **Transformation:** transformation used for displaying the attachments; the default transformation is *CMS.Root.AttachmentLightbox*
- **Selected item transformation:** transformation used to display the selected item; the default transformation is *CMS.Root.AttachmentLightboxDetail*
- **LightBox Configuration:** the properties in this section can be used to customize the used LightBox

Attachments Data Source

This is a special web part - a data source. It is not visible on the live site. It only provides data to another connected web part (e.g. Basic Repeater), which will display the provided data. More information on data source web parts can be found in [this chapter](#).

4.6.2.5 Available inline controls

There are two inline controls that can be used for displaying documents' unsorted attachments. The inline controls can be added to a page via the **Editable text** web part, using the WYSIWYG editor on the **Page** tab. To add the control to the page, just place the cursor in the appropriate position and click the **Insert Inline Control** (📌) icon. You can choose one of the following two controls for displaying attachments:

Attachment image gallery

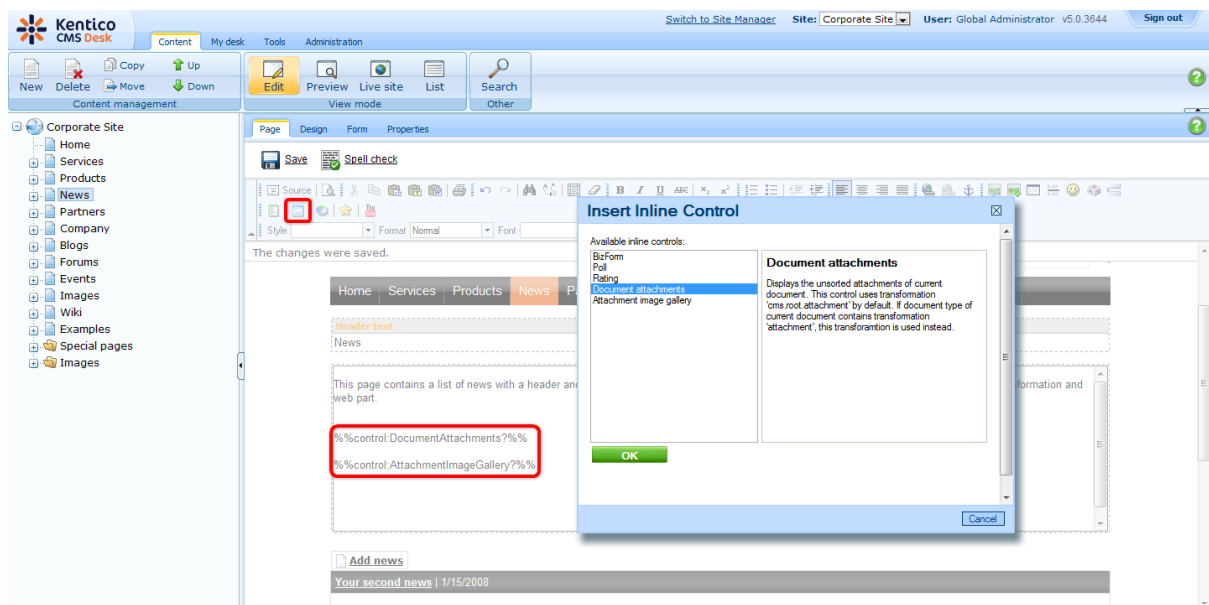
Displays the document's unsorted attachments' thumbnails based on the **cms.root.attachmentLightbox** transformation. After clicking the thumbnail, the attachment is displayed in a lightbox based on the **cms.root.attachmentLightboxDetail** transformation.

In the Editable text's text area, the control is represented by the following string: `%%control: AttachmentImageGallery?%%`

Document attachments

Displays the document's unsorted attachments' thumbnails based on the **cms.root.attachment** transformation. After clicking the thumbnail, image attachment is displayed on a new page and non-image attachments are offered for download.

In the Editable text's text area, the control is represented by the following string: `%%control: DocumentAttachments?%%`



4.6.2.6 Handling attachments in transformations

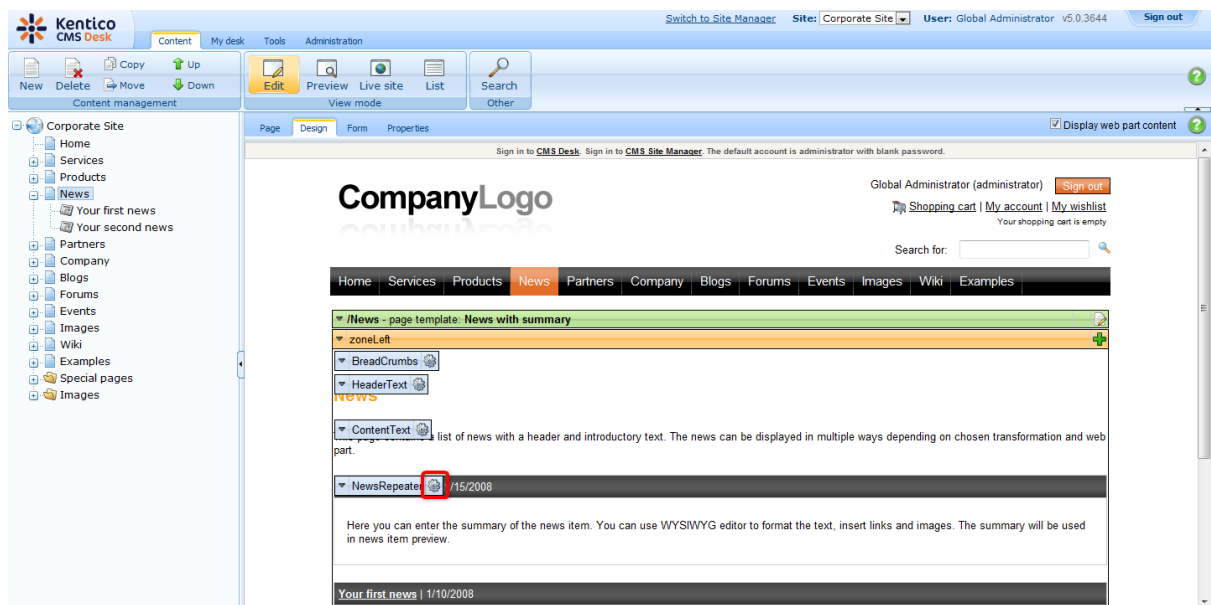
You can display document's unsorted attachments by adding one of the following two controls directly into the transformations:

- `~/CMSAdminControls/Attachments/DocumentAttachments.ascx`
- `~/CMSAdminControls/Attachments/AttachmentLightboxGallery.ascx`

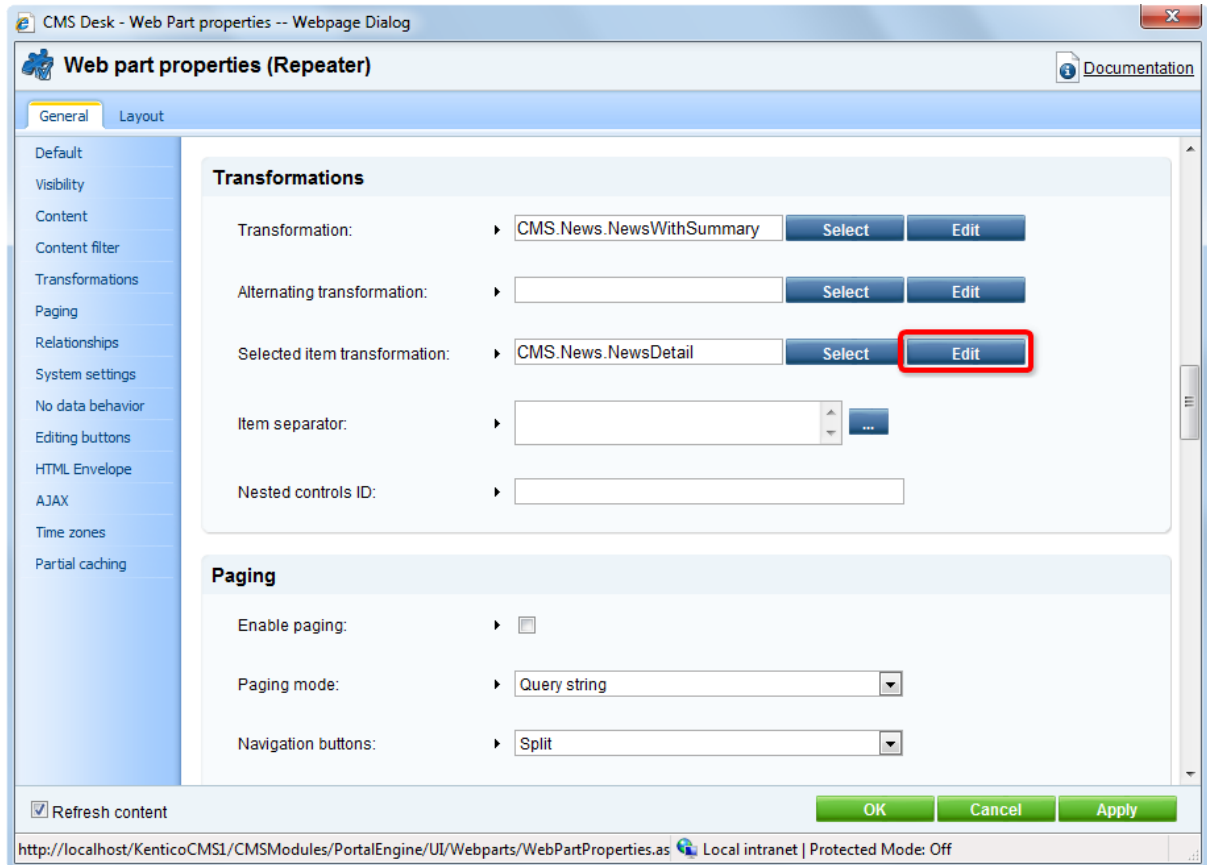
In the following example, you will learn how to use these controls in transformations. The news in the **News** section of the sample **Corporate Site** have some images attached by default. In [this example](#), you have learned how to display these attachments using a web part. Another way of displaying the attachments is by modifying the particular transformation for the document type.

The news are displayed on the News page using a **Repeater**. Detail view of each news item is displayed using the `CMS.News.NewsDetail` transformation. We will modify this transformation so that it displays the attachments along with the news summary and text.

1. Go to **CMS Desk** and select the **News** page from the content tree. Switch to **Design** tab and choose to **Configure** (⚙️) the **NewsRepeater** web part.



2. In the web part properties window, choose to **Edit** the **Selected item** transformation.



3. Replace the original transformation with the following code, which is the original transformation with the highlighted parts added.

```
<%@ Register Src="~/CMSInlineControls/DocumentAttachments.ascx" TagName
="DocumentAttachments" TagPrefix="cms" %>

<div class="newsItemDetail">
<h1><%# Eval("NewsTitle") %></h1>
<div class="NewsSummary">
  <%# IfEmpty(Eval("NewsTeaser"), "", GetImage("NewsTeaser")) %>
  <div class="NewsContent">
    <div class="Date"><%# GetDateTime("NewsReleaseDate", "d") %></div>
    <%# Eval("NewsSummary") %>
  </div>
  <div class="Clearer">&nbsp;</div>
</div>
<div class="NewsBody">
  <%# Eval("NewsText") %>
</div>

<div class="NewsBody">
<cms:DocumentAttachments ID="ucDocAttachments" runat="server" TransformationName
="cms.root.attachment" Path='<%# Eval("NodeAliasPath") %>' />
</div>

</div>
```

Click **Save**. Click **OK** in the web part properties window.

4. If you go to the live site now and view some of the news, you should see the attachments displayed below the news text, just as in the screenshot below.

Your second news



1/15/2008

Here you can enter the summary of the news item. You can use WYSIWYG editor to format the text, insert links and images. The summary will be used in news item preview.

This is the news text. It's displayed in combination with news title and summary. Depending on transformation chosen by the web developer, the news item may be displayed in various formats, with or without teaser image.



NewsPhoto1.jpg



5. Let's try the other control now. Choose to **Configure** (⚙️) the **NewsRepeater** again and choose to **Edit** its **Selected item transformation**. Replace the transformation with the code below. Again, it is the original transformation with the highlighted parts added.

```
<%@ Register Src="~/CMSInlineControls/AttachmentLightboxGallery.ascx" TagName
="AttachmentLightboxGallery" TagPrefix="cms" %>

<div class="newsItemDetail">
<h1><%# Eval("NewsTitle") %></h1>
<div class="NewsSummary">
  <%# IfEmpty(Eval("NewsTeaser"), "", GetImage("NewsTeaser")) %>
  <div class="NewsContent">
    <div class="Date"><%# GetDateTime("NewsReleaseDate", "d") %></div>
    <%# Eval("NewsSummary") %>
  </div>
  <div class="Clearer">&nbsp;</div>
</div>
<div class="NewsBody">
  <%# Eval("NewsText") %>
</div>



<div class="NewsBody">
<cms:AttachmentLightboxGallery ID="ucDocAttachments" runat="server"
TransformationName="cms.root.attachmentLightbox" SelectedItemTransformationName
="cms.root.attachmentLightboxDetail" Path='<%# Eval("NodeAliasPath") %>' />
</div>

</div>
```

Click **Save**. Click **OK** in the web part properties window.

6. If you go to the live site now, you should see the result as in the screenshot below. After clicking one of the images, it will be displayed in the lightbox.

Your second news

	1/15/2008 Here you can enter the summary of the news item. You can use WYSIWYG editor to format the text, insert links and images. The summary will be used in news item preview.
This is the news text. It's displayed in combination with news title and summary. Depending on transformation chosen by the web developer, the news item may be displayed in various formats, with or without teaser image.	
	

Please note: the appearance shown in this example is based on the controls' default transformations. You can fully customize the appearance by modifying the default transformations or creating your own transformations and specifying them in the **TransformationName** and **SelectedItemTransformationName** properties of the controls.

4.6.2.7 Using the File field

In the overview, we mentioned the **File** field used in the previous versions. Use of this field is still possible and could be particularly useful if you want to have a field where only one file can be uploaded.

If you want to define a new **File** field, choose **File** from the **Attribute types** drop-down when defining a new field.

The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a tree view of development tools, with 'Document types' selected. The main area displays the 'Document type properties' dialog for the 'Event (booking system)' document type. The 'Fields' tab is active, and a 'File' field is being configured. The 'Database' section shows the following configuration:

Property	Value
Attribute name:	File
Attribute type:	File
Attribute size:	
Allow empty value:	<input type="checkbox"/>
Attribute default value:	

The 'Field' section shows the following configuration:

Property	Value
Field caption:	File
Field type:	Direct uploader

The 'Display attribute in the editing form' checkbox is checked. The 'OK' button is visible at the bottom right.

As you can see in the screenshot above, using the **Field type** drop-down, you can choose between two available controls for file upload which will be displayed on the **Form** tab:

- **Upload file**

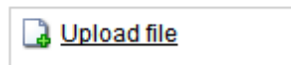
This is the original control which was used in the previous versions.







- **Direct uploader**

This is the same control that is used for uploading attachments via the **Form** tab. The only difference is that it allows only one file to be uploaded.

This is how it looks like when no file is uploaded:



And here is the control after file upload:

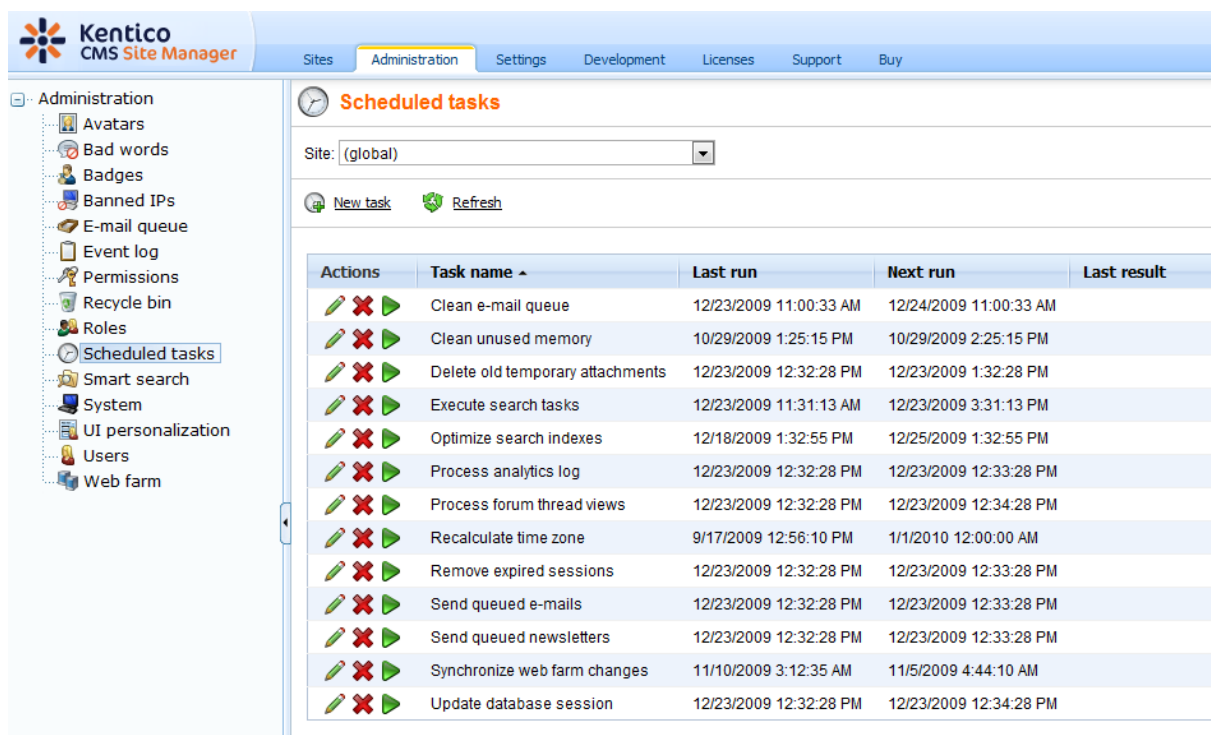
Actions	Update	Name	Size
 		 Garden.jpg	504 kB

4.6.2.8 Temporary attachments handling

If you create a new document and start attaching files to it, temporary attachments are created. When the document is saved, the temporary attachment becomes a real attachment. If the document is not saved, the temporary attachments remain on the disk or in the database. To handle the unused files, there is a scheduled task pre-defined.

In **Site Manager -> Administration -> Scheduled tasks**, you can find the **Delete old temporary attachments** scheduled task. By default, this task is performed on a daily basis and deletes all temporary attachments older than 24 hours.

You can customize the interval by adding the `<add key="CMSDeleteTemporaryAttachmentsOlderThan" value="1"/>` key into the `<appSettings>` section of your site's `web.config` file. The value specifies the interval in hours.



The screenshot shows the Kentico CMS Site Manager Administration interface. The left sidebar contains a tree view with 'Scheduled tasks' selected. The main content area is titled 'Scheduled tasks' and shows a list of tasks for the '(global)' site. The tasks are listed in a table with columns for Actions, Task name, Last run, Next run, and Last result.

Actions	Task name	Last run	Next run	Last result
	Clean e-mail queue	12/23/2009 11:00:33 AM	12/24/2009 11:00:33 AM	
	Clean unused memory	10/29/2009 1:25:15 PM	10/29/2009 2:25:15 PM	
	Delete old temporary attachments	12/23/2009 12:32:28 PM	12/23/2009 1:32:28 PM	
	Execute search tasks	12/23/2009 11:31:13 AM	12/23/2009 3:31:13 PM	
	Optimize search indexes	12/18/2009 1:32:55 PM	12/25/2009 1:32:55 PM	
	Process analytics log	12/23/2009 12:32:28 PM	12/23/2009 12:33:28 PM	
	Process forum thread views	12/23/2009 12:32:28 PM	12/23/2009 12:34:28 PM	
	Recalculate time zone	9/17/2009 12:56:10 PM	1/1/2010 12:00:00 AM	
	Remove expired sessions	12/23/2009 12:32:28 PM	12/23/2009 12:33:28 PM	
	Send queued e-mails	12/23/2009 12:32:28 PM	12/23/2009 12:33:28 PM	
	Send queued newsletters	12/23/2009 12:32:28 PM	12/23/2009 12:33:28 PM	
	Synchronize web farm changes	11/10/2009 3:12:35 AM	11/5/2009 4:44:10 AM	
	Update database session	12/23/2009 12:32:28 PM	12/23/2009 12:34:28 PM	

4.6.2.9 Attachment names

Attachment names are unique for a document (or its version). If you try to upload an attachment that has the same name as some already existing attachment of the particular document, the new attachment gets a number in the **-(1)** format attached to its name.

This happens for the attachments to be accessible via friendly URLs in the following format:

- `~/getattachment/<node_alias_path>/<safe_filename>.<extension>`

4.6.2.10 Settings

Settings related to document attachments can be found in **Site Manager -> Settings -> Files**.

- **Upload extensions** - only files with the extensions entered here can be uploaded as unsorted attachments; the extensions are entered without dots, separated by semicolons; if no extension is entered, all extensions are allowed
- **Automatic image resize on upload** - these settings affect how images are resized on upload; the settings are common also for document attachments, media library files and others and is described in [this topic](#)

The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The 'Settings' page is active, and the 'Files' sub-section is selected. The left sidebar shows a tree view of settings categories, with 'Files' expanded. The main content area displays the 'Files' settings, which are global. The 'Upload extensions' field is highlighted with a red box and contains the text 'pdf;doc;docx;ppt;pptx;xls;xlsx;htm;html+xml;bmp;g'. Below it, the 'Automatic image resize on upload' section is also highlighted with a red box, containing three input fields for width, height, and max side size. The 'Export these settings' link is visible at the bottom of the settings area.

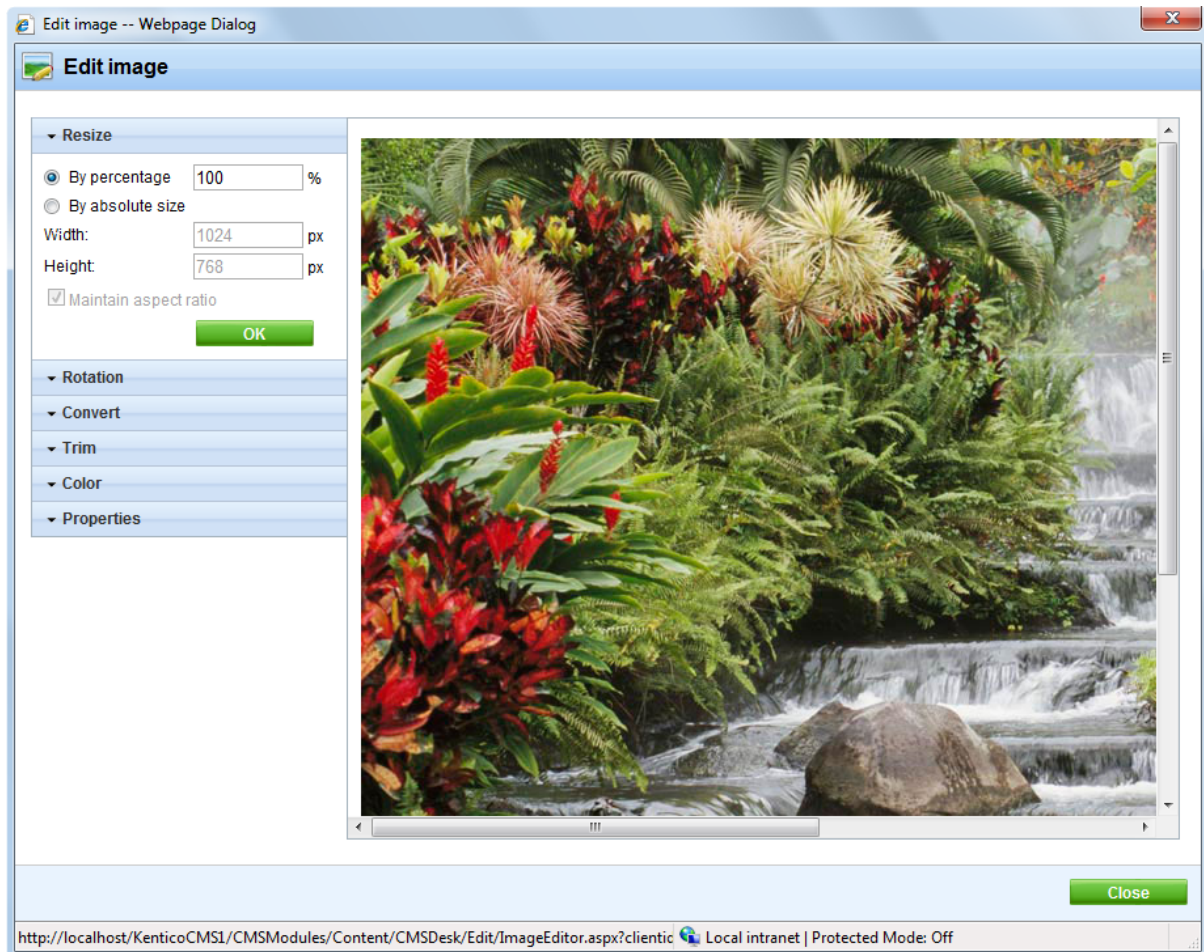
4.6.3 Handling images

4.6.3.1 Image editor

The image editor can be accessed throughout the whole system, everywhere the **Edit** (✎) icon is available for a listed image, just like:

- document's **Form** tab
- **media libraries**
- **document attachments**
- **etc.**

The image editor looks as in the following screenshot:



You can see the image's current appearance on the right, while the following modifications can be done with the image on the particular tabs:

Resize

- **By percentage** - resizes the image to the entered percentage of side size
- **By absolute size** - resizes the image to the size specified in the **Width** and **Height** fields
 - **Maintain aspect ratio** - if enabled, the second dimension is recalculated automatically when one dimension is specified above

Rotation

- Rotate 90° left
- Rotate 90° right
- Flip horizontally
- Flip vertically

Convert

- **From** - current format of the image
- **To** - target format of the conversion; **.bmp**, **.gif**, **.jpg**, **.png**
- **Quality** - quality of compression; applicable only for **.jpg** conversion

Trim

This action reduces the image's size by removing the borders of the image.

- **Width** - trimmed image's width
- **Height** - trimmed image's height

Select the position of the trimmed extract in the original image and click the **Trim** button.

Color

- **Convert to grayscale** - if clicked, the image gets converted from color to greyscale

Properties

You can rename the file using the **File name** field and see the file's **Extension**, **Size**, **Width** and **Height** on this tab.

4.6.3.2 Resizing images on upload

You can set global image resizing values in **Site Manager -> Settings -> Files** by entering the following values:

- **Automatic image resize on upload (width, height, max side size)** - depending on which values you fill in, the functionality is the following when uploading images:
 - **No values are entered** - images will not be resized
 - **Only width or only height** - images will be resized so that the width/height matches the entered value; the other dimension is also resized so that the aspect ratio is kept
 - **Both width and height** - images will be resized so that both dimensions match the entered values; the aspect ratio is not kept in this case
 - **Max side size** - if one of the image's sides is larger than this value, the image will be resized so that its larger side's dimension matches the entered value; the aspect ratio is kept and width and height settings are not applied

The screenshot shows the Kentico CMS Site Manager interface. The 'Files' settings page is displayed, with the 'Automatic image resize on upload' settings highlighted by a red box. The settings are as follows:

Setting	Value
Automatic image resize on upload (width)	640
Automatic image resize on upload (height)	480
Automatic image resize on upload (max side size)	

These settings are applied by default when uploading images as:

- **Document attachments**
- **Media library files**
- **CMS.File documents**
- **Editable text web part** - uploading images via WYSIWYG editor dialogs
- **Editable image web part** - uploading an image using the Select image dialog
- **Field editor fields** - uploading images using the following field types e.g. in BizForms, Document type field editor, etc.
 - **File** attribute type -> **Upload file** and **Direct uploader** field types
 - **Text** attribute type -> **HTML Area(Formatted Fext)**, **BBcode editor**, **Image selection**, **Media**

selection and File selection field types

The default settings defined here can be **overridden by local settings** in the particular parts of the user interface (e.g. web part properties, field editor, WYSIWYG editor dialogs, etc.).

4.6.4 Using the Media selection control

The Media selection form control can be used to enable users to select any types of files on a document's **Form** tab.

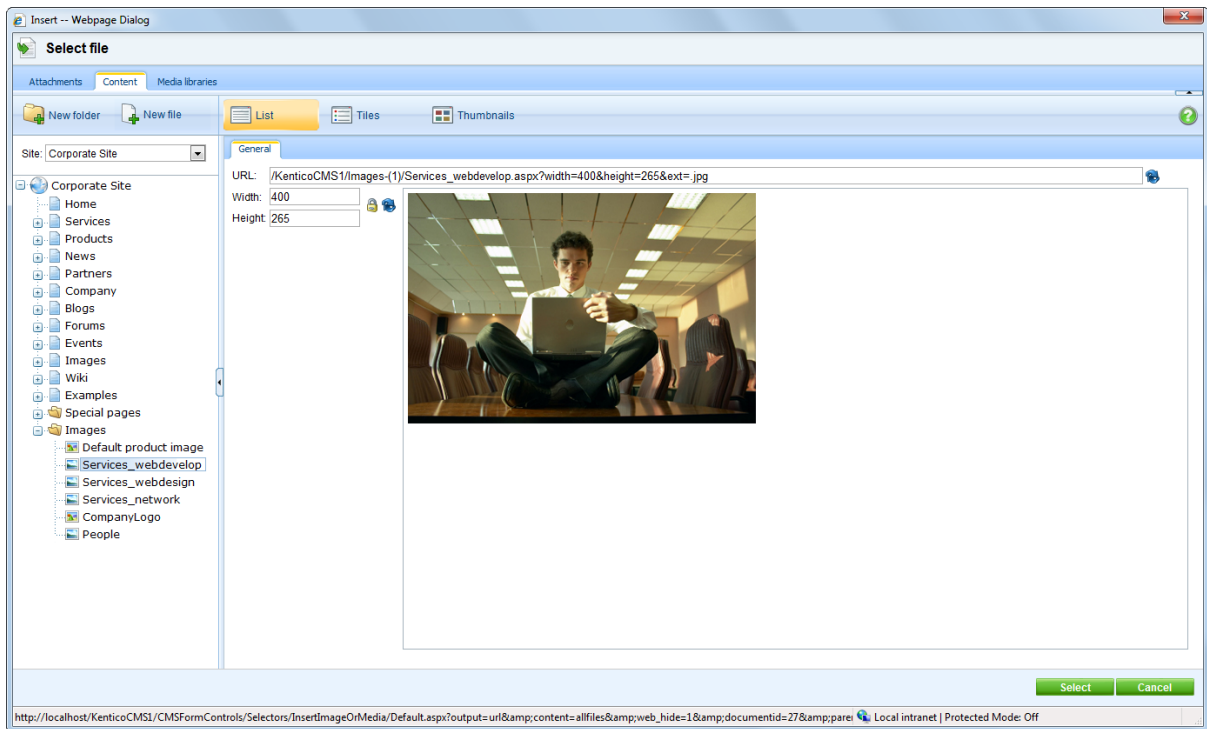
When defining the field in field editor, you need to choose:

- **Attribute type:** Text
- **Field type:** Media selection

In the screenshot below, you can see the default appearance of the control on the **Form** tab. Notice that a preview of the currently selected image is displayed below the selection controls:

When the **Select...** button is clicked, the **Select file** dialog opens.

The dialog is similar to the [Insert image or media](#) dialog used in the WYSIWYG editor, while only the **Attachments**, **Content** and **Media libraries** tabs are available here. Description of the tabs can be found in the alike named parts of [this page](#).



When you select a file, relative URL of the selected file is inserted into the field, with the with the **width**, **height** and **ext** parameters appended.

```
/KenticoCMS_0729/Images-(1)/Services_webdevelop.aspx?width=200&height=132&ext=.jpg
```

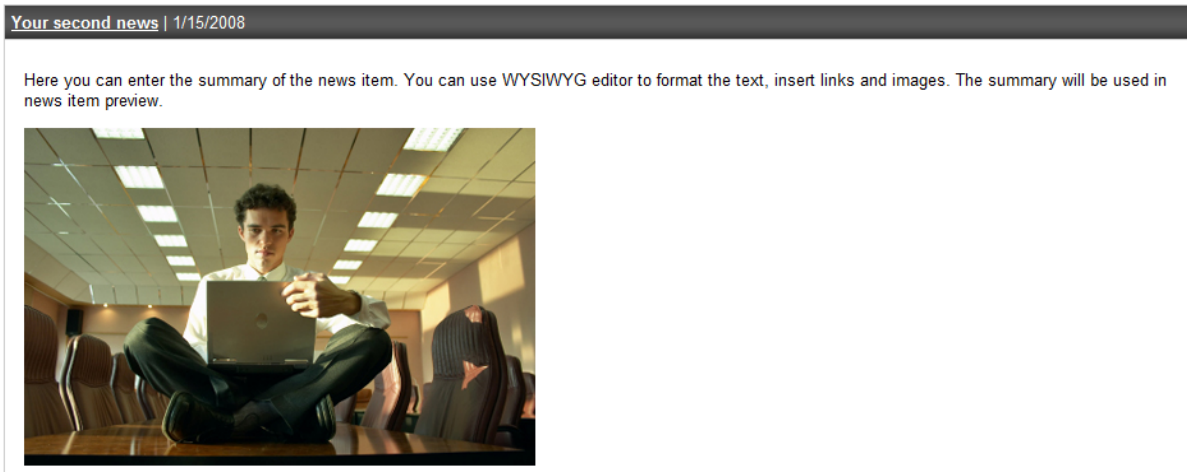
Displaying selected items in transformations

In transformations, items selected in the Media selection field can be displayed using the `~/CMSInlineControls/MediaControl.ascx` inline control. When displaying the items in transformations, the `ext` parameter (extension of the file) defines what needs to be displayed (image, video player, flash player, ...).

The following code sample is a modified `CMS.News.NewsWithSummary` transformation with the control added (highlighted code). As you can see, you only need to register the `MediaControl` and then use it in the transformation just by providing it the URL. In this case, the URL is got

```
<%@ Register Src="~/CMSInlineControls/MediaControl.ascx" TagName="Media"
TagPrefix="cms" %>
<div class="NewsPTitle"><a href="<# GetDocumentUrl() %>">
  <# Eval("NewsTitle") %></a>&nbsp;|&nbsp;&nbsp;&nbsp;<# GetDateTime("NewsReleaseDate",
"d") %>
</div>
<div class="NewsPBody">
  <# Eval("NewsSummary") %>
  <cms:Media id="mediaElem1" runat="server" Url='<# Eval<string>("File")%>' />
</div>
```

And this is the result rendered on the live site:



4.6.5 Where the files are stored

Document attachments and CMS.File documents can be physically stored in the file system, in the database or in both. You can define this in **Site Manager -> Settings -> Files**, using the **Store files in file system** and **Store files in database** options.

The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a tree view of settings categories, with 'Files' selected. The main content area is titled 'Files' and contains a list of settings. The 'Store files in file system' setting is checked and highlighted with a red box. The 'Store files in database' setting is unchecked. Other settings include 'Generate thumbnails' (checked), 'Files folder', 'BizForm files folder', 'Maximum file size to cache' (200), 'Redirect files to disk' (unchecked), 'Upload extensions' (pdf, doc, docx, ppt, pptx, xls, xlsx, htm, html, xml, bmp, g), 'Check if files are published' (checked), 'Check files permissions' (checked), 'File import folder', 'Automatic image resize on upload (width)' (640), 'Automatic image resize on upload (height)' (480), and 'Automatic image resize on upload (max side size)'. There are also 'Save' and 'Reset these settings to default' buttons at the top of the settings area.

The following three combination can be achieved using the settings:

- **File system** - the files are stored in the configured folder on your disk. This option provides the best performance, however, your web application must be granted with the Modify permissions on the disk which is not always possible. The process of granting the Modify permission is described in [this chapter](#).
- **Database** - the files are stored in the database. This option provides worse performance, but it allows you to use full-text search in uploaded files. It also doesn't require the Modify permission on the disk and it allows you to easily backup the uploaded files as a part of your database backup.
- **Both - Database and file system** - this option combines the advantages of both options. It provides the same performance as the file system-only option since the files are stored on the file system. At the same time, you can use the full-text search because you the database is also available.

Physical files location

When the **Store files in file system** option is enabled, uploaded files (except of media library and BizForm files) are stored in the file system under `~/<site code name>/files`. The location of the folder can be customized in **Site Manager -> Settings -> Files -> Files folder**.

BizForm files location

Files uploaded by site users into [BizForms](#) are always stored in the file system. The default location is `~/<site code name>/BizFormFiles`. You can customize the location in **Site Manager -> Settings -> Files -> BizForm files folder**.

Media library files location

Files stored in [media libraries](#) are always stored in the file system. The default location is `~/<site code name>/media`, while the location of the folder can be customized in **Site Manager -> Settings -> Media libraries -> Media libraries folder**, as described [here](#).

4.6.6 Files-related settings

You can configure the file storage in **Site Manager -> Settings -> Files**.

The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings' (selected), 'Development', 'Licenses', and 'Support'. The user is logged in as 'Global Admin'. The left sidebar shows a tree view of settings categories, with 'Files' selected. The main content area is titled 'Files' and contains the following settings:

Setting	Value
Store files in file system	<input type="checkbox"/>
Store files in database	<input checked="" type="checkbox"/>
Generate thumbnails	<input checked="" type="checkbox"/>
Files folder	<input type="text"/>
BizForm files folder	<input type="text"/>
Maximum file size to cache	<input type="text" value="200"/>
Redirect files to disk	<input type="checkbox"/>
Upload extensions	<input type="text" value="pdf,doc;docx;ppt;pptx;xls;xlsx;htm;html+xml;bmp;g"/>
Check if files are published	<input checked="" type="checkbox"/>
Check files permissions	<input checked="" type="checkbox"/>
File import folder	<input type="text"/>
Automatic image resize on upload (width)	<input type="text"/>
Automatic image resize on upload (height)	<input type="text"/>
Automatic image resize on upload (max side size)	<input type="text"/>

At the bottom of the settings list, there is a link: [Export these settings](#).

The following options can be set on the page:

Store files in file system	Indicates if files should be stored in the file system. Read here for more details.
Store files in database	Indicates if files should be stored in the database. Read here for more details.
Generate thumbnails	Indicates if the CMS generates image thumbnails on the disk when a resized version of the image is displayed. This option only applies if files are stored in the file system. It improves site performance .
Files folder	The folder on the disk where the files are stored. You can use either <ul style="list-style-type: none"> • physical disk path - e.g. c:\myfiles\mysite • virtual path - ~/UploadedFiles <p>If you do not specify any value, the files are stored in folder ~/<site code name>/files.</p>
BizForm files folder	Folder on the disk where files uploaded via a BizForm are stored. Applicable only if files are stored in the file system. Both virtual and physical path can be entered as described above. If no value is entered, the files are stored in ~/<site code name>/BizFormFiles.
Maximum file size to cache	Specifies the maximum size of a file in kilobytes that is allowed to be cached.
Redirect files to disk	Indicates if the user should be redirected to the file on the disk. This option provides the best performance. It requires that the Store files in file system box is checked.
Upload extensions	Allowed file extensions for the uploaded files. You can restrict the types of uploaded documents to e.g.: gif;jpg;doc;pdf It allows you to block users from uploading potentially dangerous files, such as ASPX scripts.
Check if files are published	If checked, only files that are in the Published workflow step can be accessed from the live site when a workflow is applied to the document.
Check files permissions	If checked, document permissions are applied to the files.
File import folder	Path to folder used for storing files to be imported by the File import module.
Automatic image resize on upload	Defines how images are resized on upload. More info here .



4.7 Document listing

On the **CMS Desk -> Content -> List** tab, you can see an **overview of documents placed under the currently selected document** in the content tree. You can filter the displayed pages using the filter above the list.


The **Name** column displays names of the documents in the currently edited culture. If the document's version in this culture **does not exist**, the column displays the name from the **default culture** with the default culture code appended in brackets.

The **Languages** column displays the translation statuses of the documents' particular language versions. More information about translation statuses can be found [here](#).

The following operations can be performed with particular documents:

-  **Edit** - by clicking the icon, you get redirected to the document's **Edit -> Page** tab in the currently selected culture
-  **Delete** - deletes the document
- by clicking a document's name, the list tab will display the documents found under the clicked document

You can also perform **bulk actions** with the listed documents using the two drop-down lists at the bottom. First, you need to select from the following two options in the first drop-down list:

- **Selected documents** - performs the action only with the documents selected by the check-boxes ()
- **All documents** - performs the action with all listed documents

Then you need to choose the action:

- **Move** - moves the documents to the location specified in a raised pop-up dialog
- **Copy** - copies the documents to the location specified in a raised pop-up dialog
- **Link** - creates a linked document in the location specified in a raised pop-up dialog
- **Delete** - deletes the documents
 - **Delete documents and their history (documents can not be restored)** - deletes the document permanently, i.e. without storing it in the recycle bin
 - **Delete all culture version of the specified documents** - only for multilingual sites; if enabled, all culture versions of the documents will be deleted; if disabled, only the versions in the currently edited culture will be deleted
- **Publish/Archive** - this option is available only for global administrators and publishes/archives the selected documents; before performed, a dialog gets displayed, listing the selected documents and offering the following extra options:
 - **Publish/Archive all culture versions of specified documents** - if enabled, all culture versions of the documents will be published/archived
 - **Publish/Archive also all child documents** - if enabled, all documents located under the selected documents will be published/archived too
 - **Perform undo checkout for checked out documents** - this option is displayed only if you want to perform the operation for a document which is checked out (currently edited by some user); if you enable this options, such documents will be published/archived too

and click **OK** to perform the action.

The screenshot shows the Kentico CMS 5.5 interface. The top navigation bar includes 'Content', 'My desk', 'Tools', and 'Administration'. The 'Content' tab is active, showing a toolbar with 'New', 'Delete', 'Move', 'Down', 'Up', 'Copy', 'Edit', 'Preview', 'Live site', 'List', 'Language' (English, French), and 'Search'.

The left sidebar shows a tree view of the 'Corporate Site' structure, including Home, Services, Products, News, Partners, Company, Blogs, Forums, Events, Images, Wiki, Examples, Special pages, and Images.

The main content area is titled 'Document listing' and contains search filters:

- Document name: LIKE
- Document type: LIKE
- Language: Translated to (any culture)

 A 'Show' button is located below the filters.

Below the filters is a table of documents:

Actions	Document name	Document type	Modified	Published	Version	Languages
	Home	Page (menu item)	12/14/2009 10:11:56 AM	Yes	-	
	Services	Page (menu item)	12/20/2009 7:19:04 PM	Yes	-	
	Products	Page (menu item)	7/3/2009 11:44:32 AM	Yes	-	
	News	Page (menu item)	9/29/2008 1:59:20 PM	Yes	-	
	Partners	Page (menu item)	8/6/2009 12:50:42 PM	Yes	-	
	Company	Page (menu item)	11/25/2008 5:37:23 PM	Yes	-	
	Blogs	Page (menu item)	4/21/2008 3:15:44 PM	Yes	-	
	Forums	Page (menu item)	4/21/2008 3:19:08 PM	Yes	-	
	Events	Page (menu item)	4/21/2008 3:19:44 PM	Yes	-	
	Images	Page (menu item)	4/21/2008 3:20:27 PM	Yes	-	
	Wiki	Page (menu item)	5/21/2009 8:39:40 AM	Yes	-	
	Examples	Page (menu item)	9/4/2008 4:16:42 PM	Yes	-	
	Special pages	Folder	12/13/2007 11:42:41 AM	Yes	-	
	Images	Folder	11/12/2009 4:29:51 PM	Yes	-	

At the bottom of the table, there is a 'Selected documents' dropdown, a '(select some action)' dropdown, and an 'OK' button. The 'Items per page' is set to 25.

4.8 Content search

The interface for searching the documents in the content tree can be accessed by clicking the **Search** (🔍) icon in **CMS Desk -> Content**.

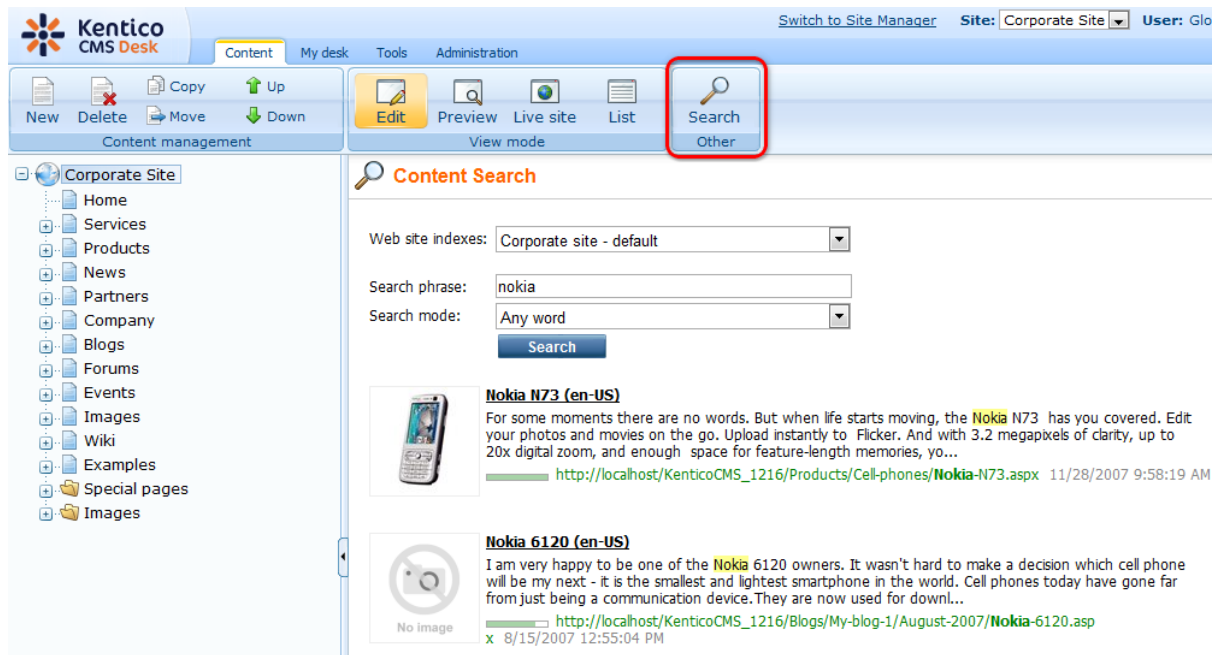
1. First, you need to decide if you want to perform the search using [Smart search](#) or [SQL search](#). This depends on the selection made in the **website indexes** drop-down:

- **SQL search** - you need to select (*SQL Search - default*); slower, but supports search in both published and unpublished documents
- **Smart search** - you need to select a particular smart search index; fast, but does not support search in unpublished documents

2. Then you need to specify the following criteria:

- **Search phrase:** the text that you are looking for; if you are searching using a Smart search index, you can use the syntax described [here](#); if you are searching using SQL search, standard SQL syntax can be used
- **Search mode:** specifies how the search phrase will be used:
 - *Exact phrase* - returns documents where the search phrase is found exactly as entered
 - *Any word* - returns documents where at least one word of the search phrase is found
 - *All words* - returns documents where all words of the search phrase are found, regardless of their position or order in the text

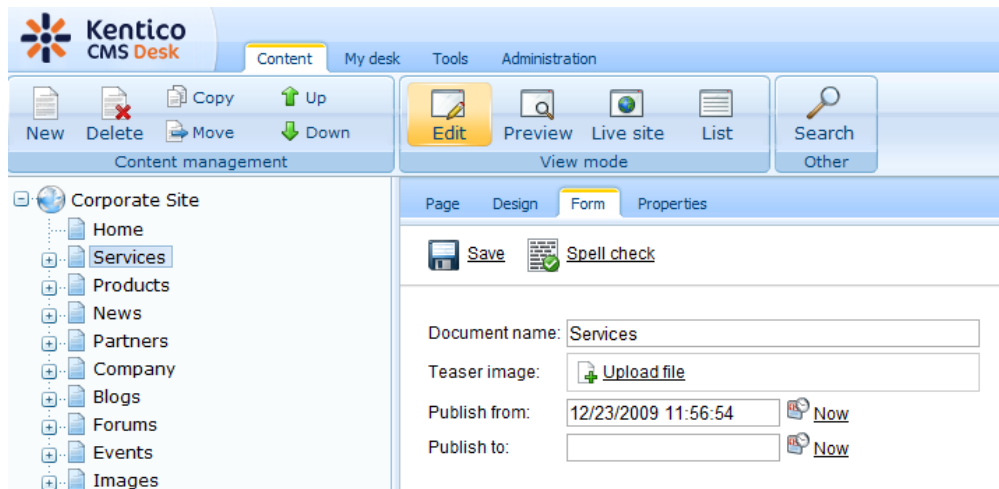
Click **Search**. Found documents will be listed as in the screenshot below.



The screenshot shows the Kentico CMS Desk interface. The top navigation bar includes 'Content', 'My desk', 'Tools', and 'Administration'. The 'Search' button is highlighted with a red box. The main content area displays the 'Content Search' tool with a search bar containing 'nokia' and a 'Search' button. Below the search bar, two search results are shown: 'Nokia N73 (en-US)' and 'Nokia 6120 (en-US)'. Each result includes a small image and a brief description.

4.9 Content scheduling

Kentico CMS allows you to specify when the document will be published. When you edit the document form, you can typically find the Publish from/Publish to fields at the end of the form:



The screenshot shows the Kentico CMS Desk interface with the 'Form' tab selected. The 'Publish from' field is set to '12/23/2009 11:56:54' and the 'Publish to' field is set to 'Now'. The 'Document name' field is set to 'Services'.

When you set these values, the document will be displayed on the website only in the given time period.

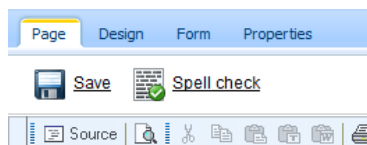
If you do not set the **Publish from** value, the document will be displayed on the live site immediately. If you do not set the **Publish to** value, the document will never expire.

Content scheduling and workflow/versioning

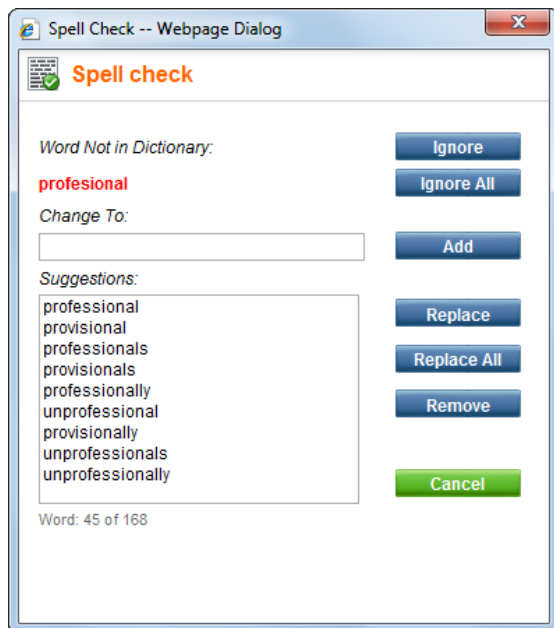
If you set publish from/to values to documents that use workflow, they will not be published before they are approved. However, the publishing time may not be exact since the publishing is ensured by a scheduled process that is executed every minute by default. You can check the status of this process in **CMS Desk -> Administration -> Scheduled tasks ->** choose the website and search for the **Content scheduling** task.

4.10 Using the built-in spell-checker

You can spell-check all the content on the **Page** and **Form** tabs using the built-in spell-checker:



When you click the **Spell check** button, the spell-checker reads all text fields and checks their content. If it finds any typo, it shows the dialog like this:



You can then ignore the word, add it to the dictionary or replace it with suggested word.

Please note: If you add a new word to dictionary it's only saved in the current session. The next time you sign in to Kentico CMS, the added words will be lost.

Dictionaries

The dictionary is used based on the currently chosen content culture. If no dictionary is available for the current content culture, the default dictionary is used. The default dictionary is specified in the **CMSDefaultSpellCheckerCulture** configuration key in the **appSettings** section of the **web.config** file. By default, it's set to en-US.

Adding additional dictionaries

The dictionaries are stored in folder **<web project>\App_Data\Dictionaries**. If you need some additional dictionaries, you can download them from the following URLs:

- AR-ae: <http://www.kentico.com/Downloads/SpellChecker/ar-AE.zip>
- CS-cz: <http://www.kentico.com/Downloads/SpellChecker/cs-cz.zip>
- DE-de: <http://www.kentico.com/Downloads/SpellChecker/de-de.zip>
- EL-gr: <http://www.kentico.com/Downloads/SpellChecker/el-gr.zip>
- EN-au: <http://www.kentico.com/Downloads/SpellChecker/en-au.zip>
- EN-ca: <http://www.kentico.com/Downloads/SpellChecker/en-ca.zip>
- EN-gb: <http://www.kentico.com/Downloads/SpellChecker/en-gb.zip>
- EN-us: <http://www.kentico.com/Downloads/SpellChecker/en-us.zip>
- ES-es: <http://www.kentico.com/Downloads/SpellChecker/es-es.zip>
- ES-mx: <http://www.kentico.com/Downloads/SpellChecker/es-mx.zip>
- FR-fr: <http://www.kentico.com/Downloads/SpellChecker/fr-fr.zip>
- HE-il: <http://www.kentico.com/Downloads/SpellChecker/he-il.zip>
- IT-it: <http://www.kentico.com/Downloads/SpellChecker/it-it.zip>
- NB-no: <http://www.kentico.com/Downloads/SpellChecker/nb-no.zip>
- NL-nl: <http://www.kentico.com/Downloads/SpellChecker/nl-nl.zip>
- NN-no: <http://www.kentico.com/Downloads/SpellChecker/nn-no.zip>
- PL-pl: <http://www.kentico.com/Downloads/SpellChecker/pl-pl.zip>
- PT-pt: <http://www.kentico.com/Downloads/SpellChecker/pt-pt.zip>
- RO-ro: <http://www.kentico.com/Downloads/SpellChecker/ro-ro.zip>
- RU-ru: <http://www.kentico.com/Downloads/SpellChecker/ru-ru.zip>
- TH-th: <http://www.kentico.com/Downloads/SpellChecker/th-th.zip>

and unpack them to the dic folder. Then, you should restart the website using **Site Manager -> Administration -> System dialog -> click Restart application**. The file name of the dictionary must match the culture code of the currently edited content - e.g. fr-fr.

4.11 Accessing content using .NET code (API)

You can make all changes to the content programmatically using Kentico CMS API. It allows you to script any actions (create a new document, update document, etc.) using .NET code.

You can find more details and examples in chapter [Content management internals](#).

4.12 Permissions and security

Kentico CMS allows you to configure permissions for particular site sections or even particular documents. You can find more details in the [Membership and security](#) chapter.

4.13 FAQ

This chapter provides most often issues and their solutions. If you do not find the answer here, please contact our technical support.

Q: The CMS Desk doesn't display the content tree or the WYSIWYG editor doesn't open.

A: Please check that you use one of the [supported browsers](#) and that you have JavaScript enabled. You should also unblock the pop-up blocker or any similar blocker for the website with Kentico CMS.

Q: I have modified the document, but the changes are not displayed on the live site.

A: This may be caused by several reasons:

1. **Caching** - if caching is used, the changes may not be displayed on the website immediately.
2. **Workflow** - if you use workflow, the changes are published on the live website only after the document has been approved in all workflow steps.

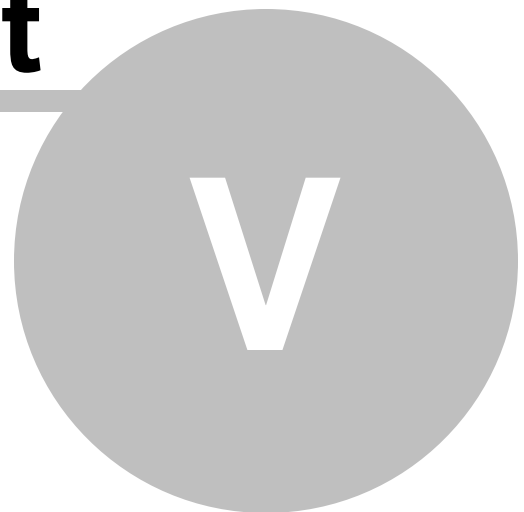
Q: I have defined related documents, but they are not displayed anywhere on the page.

A: You (your developer) need to add some web part/control that will display the related documents - e.g. the **Listings and viewers/Related documents** web part or **Repeater** web part.

Q: I need to add custom field to the document. Is it possible?

A: Yes, every structured document type can be customized with your own fields. See [Document types](#) for details.

Part

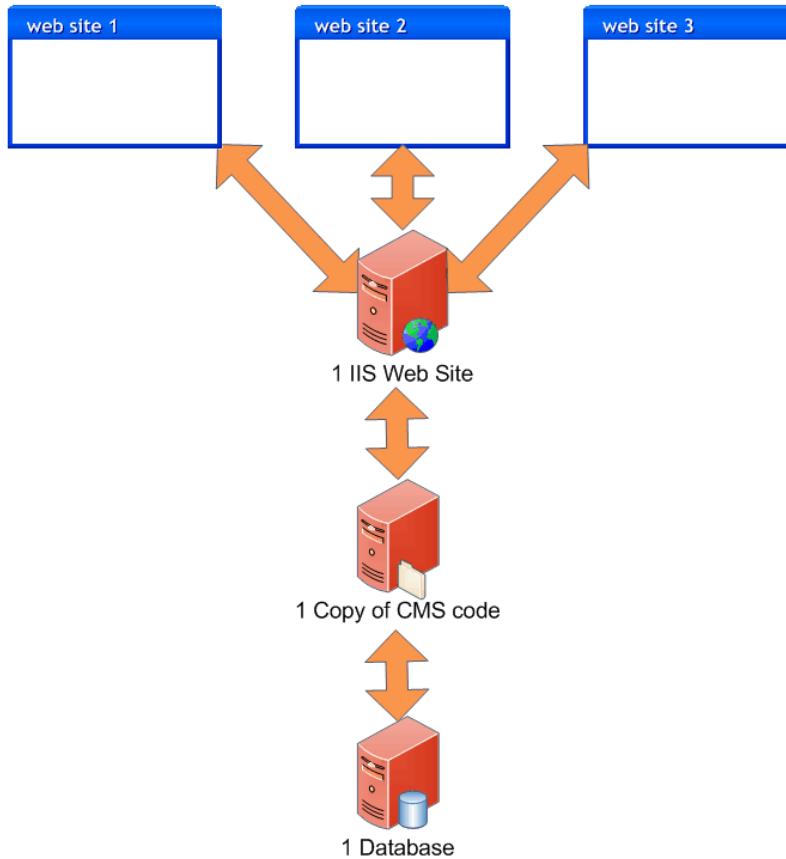


Managing sites

5 Managing sites

5.1 Site Management Overview

Kentico CMS allows you to manage multiple sites in a single installation. The database contains data for all websites and the websites are managed using a single administration interface (single copy of code). The following figure shows the multi-site configuration where one database and one copy of CMS code are used for multiple websites.



When you use multi-site configuration, you can share:

- documents
- users
- global settings and system tables
- document types
- page templates
- web parts

This feature is useful if you need to create multiple websites for a single company and share users/ documents/settings between them.





When to choose separate installations

There are situations in which we recommend running separate instances of Kentico CMS for every website:

- You build websites with **many documents** and performance is critical for you.
- Your customers have very **different requirements** and you need to customize some common parts of the system, such as administration interface or structure of shared tables.
- Your customers are very sensitive to **security** and you do not want to risk that some other client will get access to other websites by administrator's mistake.

5.2 Managing sites

You can manage the websites in **Site Manager** -> **Sites** dialog.

Creating a new website

Please see [New site wizard](#) for more details on creating a new website.

General tab

Site display name	The name of the site displayed to the users.
Site code name	The name of the site used in the code.
Site domain name	<p>The main domain of the website. Use domain name without http:// protocol and without www. If you use other port than 80, specify it as well.</p> <p>Correct: mycompany.com partners.mycompany.com mycompany.com:8080</p> <p>Incorrect: http://mycompany.com www.mycompany.com</p>
Default content culture	Default culture of the site content. It can be changed using the Change button.
Default visitor culture	The content culture that should be set to site visitors if they don't have any cookie with preferred culture set. (Automatic) means the culture is decided based on the browser preferences. If none the preferred languages is supported by the current site, the default culture is used.
Site CSS stylesheet	Default CSS style sheet used for all pages unless they override the value with their own CSS stylesheet.
Editor CSS stylesheet	CSS style sheet used for the WYSIWYG editor content.
Site description	Optional description of the website for internal use.

Domain aliases tab

Here you can add domain aliases that point to this website.



Example of domain aliases

If your website uses **mycompany.com** domain as the primary domain and you also use **my-company.co.uk** domain name that points to the same website, you need to add **my-company.co.uk** alias to the list of domain aliases.

Culture tab

Here you can choose in which languages the website content is available. You will use this tab to configure website that provides content in multiple languages.

5.3 Starting and stopping sites

You can run and stop websites using the **Start site** and **Stop site** buttons in the **Sites** dialog.



Switching between Sites on a Single Domain

If you try to run a site that uses the **same domain name (or alias)** as another site that is already running, you will get an error message and the site will not be started.

If you need to test **several websites on a single domain**, such as `http://localhost`, you need to specify the domain (`localhost`) for multiple websites and start only one of them.

If you cannot use your own domain names, you can use several alternatives that point to the same computer with different host name `http://localhost`, `http://127.0.0.1` or `http://mycomputer`.

You can find more details on how to configure the websites in chapter [Configuring multiple websites](#).

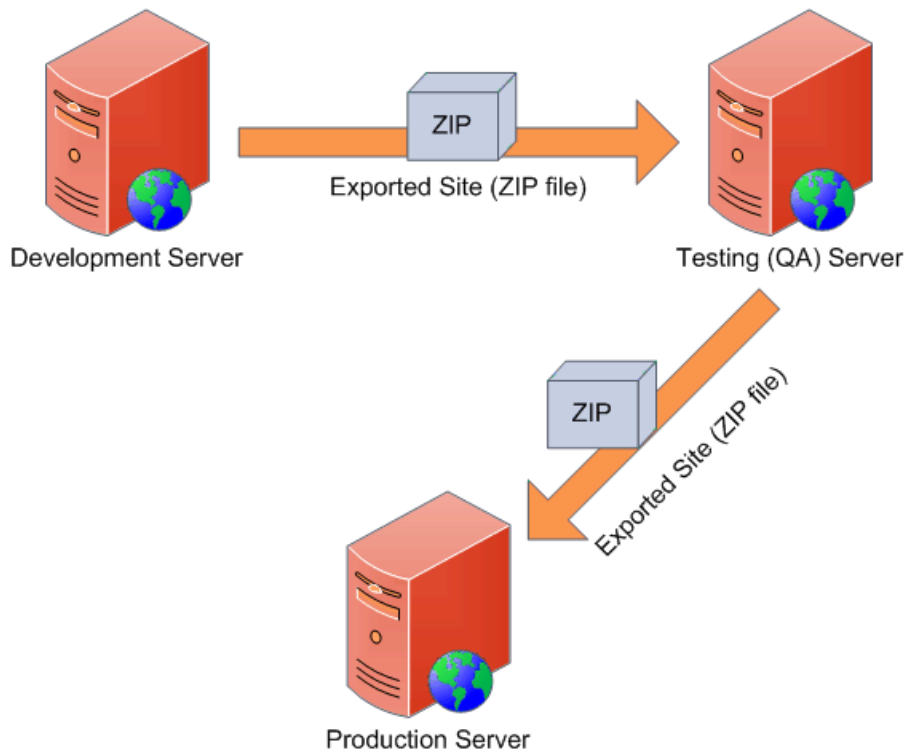
5.4 Creating a new site

Please see [New site wizard](#).

5.5 Export and import

5.5.1 Overview

You can export and import website content and settings from one Kentico CMS instance to another. You can use this feature to move website or chosen objects between development, testing (QA) and production (live) server as illustrated in the figure below:

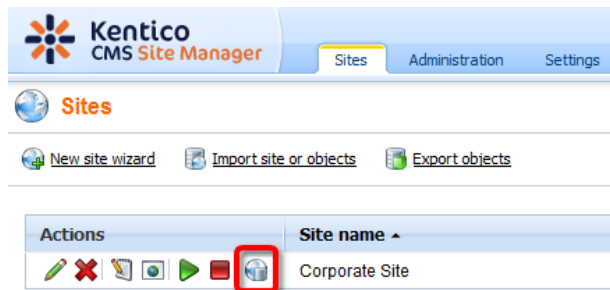


5.5.2 Exporting a site

Kentico CMS allows you to export whole website including its settings and related objects (such as document types, workflows, web parts, page templates, etc.) into a single file that can be imported on the same or different Kentico CMS instance.

Exporting a site

Go to **Site Manager -> Sites** and click the **Export site** icon next to the site you want to export. This will start the export wizard.



In the first step of the wizard, you have to fill in the name of the export package and choose type of objects pre-selection:

File name - name of the export package; a default name will be pre-filled and the package will be stored in `<web project>\CMSSiteUtils\Export`.

- **Preselect all objects** - all site objects will be preselected in the next step
- **Preselect objects changed after specific date** - only objects changed after the specified date will be selected in the next step
- **Use previous export settings** - settings used in a previous export selected from the list below will be used

Select the option that suits your purposes and click the **Next** button.


Step 1 | **Export type**
Please enter export details and select type of the export.

File name:

Site:

Preselect all objects

Preselect objects changed after specific date



Use previous export settings (preselect the same objects)

12/17/2009 10:02:53 AM - export_20091217_1002.zip

In **Step 2**, you can select which objects will be exported. The tree on the left represents object categories. These reflect the sections of the administration interface under that the objects can be found. The **Site** category contains objects related to the selected website. The **Global objects** category contains global objects that can be used by all sites. By selecting a category, a set of check boxes appears in the right part of the screen, letting you select which objects will be exported. If you select the root of the tree (All objects), you will be offered with the following options:

Global selection

- **Load default selection** - objects will be selected based on the pre-selection choice made in Step 1
- **Select all objects** - all objects will be selected
- **Deselect all objects** - no objects will be selected

Export settings

- **Export files** - some objects in the database are linked with physical files in the file system; if you check this check-box, these files will be exported along with the database objects
- **Export global folders** - if checked, global files under the folders listed below will be exported
 - *<web project>\App_Code\Global*
 - *<web project>\CMSGlobalFiles*
- **Export site folders** - if checked, files under the folders listed below will be exported
 - *<web project>\App_Code\<site code name>*
 - *<web project>\<site code name>*
- **Export ASPX templates folder** - if checked, folder with ASPX page templates will be exported
 - *<web project>\CMSTemplates*
- **Export forum custom layouts folder** - if checked, folder with custom forum layouts will be exported
 - *<web project>\CMSModules\Forums\Controls\Layouts\Custom*
- **Export tasks** - if checked, delete tasks (incremental deployment) will be included in the package

Step 2

Objects selection

Please select objects which should be exported.

All objects

- Web site
 - Documents
 - Tools
 - Administration
 - Settings
 - Development
 - E-commerce
- Global objects
 - Tools
 - Administration
 - Settings
 - Development
 - License keys
 - E-commerce

Export objects ?

Please select the object type from the tree if you wish to change the default selection. Click **Next** to start the export of selected objects.

Global selection

[Load default selection](#)
 [Select all objects](#)
 [Deselect all objects](#)

Export settings

- Export files
- Export global folders
- Export site folders
- Export ASPX templates folder
- Export forum custom layouts folder
- Export tasks

< Previous
Next >

The following categories contain extra options to be set:

Documents

- **Export documents** - if checked, documents will be exported
- **Export document histories** - if checked, histories of all exported documents will be exported
- **Export document relationships** - if checked, relationships of all exported documents will be exported
- **Export document level permissions** - if checked, document security settings made in CMS Desk will be exported
- **Export blog comments** - if checked, blog comments will be exported
- **Export event attendees** - if checked, event attendees will be exported for all exported events

BizForms

- **Export BizForms data** - if checked, stored BizForms' data will be exported together with the exported BizForms

Forums

- **Export forum posts** - if checked, forum posts will be exported together with the exported forums

Message boards

- **Export board messages** - if checked, board messages will be exported together with particular

message boards

Media libraries

- **Export media files** - if checked, media files stored in the database will be exported
- **Export physical files** - if checked, physical media files stored in the file system will be exported; this option is not selected by default as it may cause the package size grow extremely large; instead, it is recommended to export these files manually

If you have the "**Log export tasks**" option enabled in **Site Manager -> Settings -> Content Staging**, a list of object deletion tasks may also be displayed at the bottom of the list. This happens when some objects have been deleted (just as the two Web part containers in the screenshot below). If you leave the check-boxes checked, the objects will be deleted after importing the package on the target server.

Step 2 | **Objects selection**
Please select objects which should be exported.

Export | **Display name**

<input checked="" type="checkbox"/>	Black box
<input checked="" type="checkbox"/>	Breadcrumbs Box
<input checked="" type="checkbox"/>	Content padding
<input checked="" type="checkbox"/>	Div element
<input checked="" type="checkbox"/>	Search box

Tasks

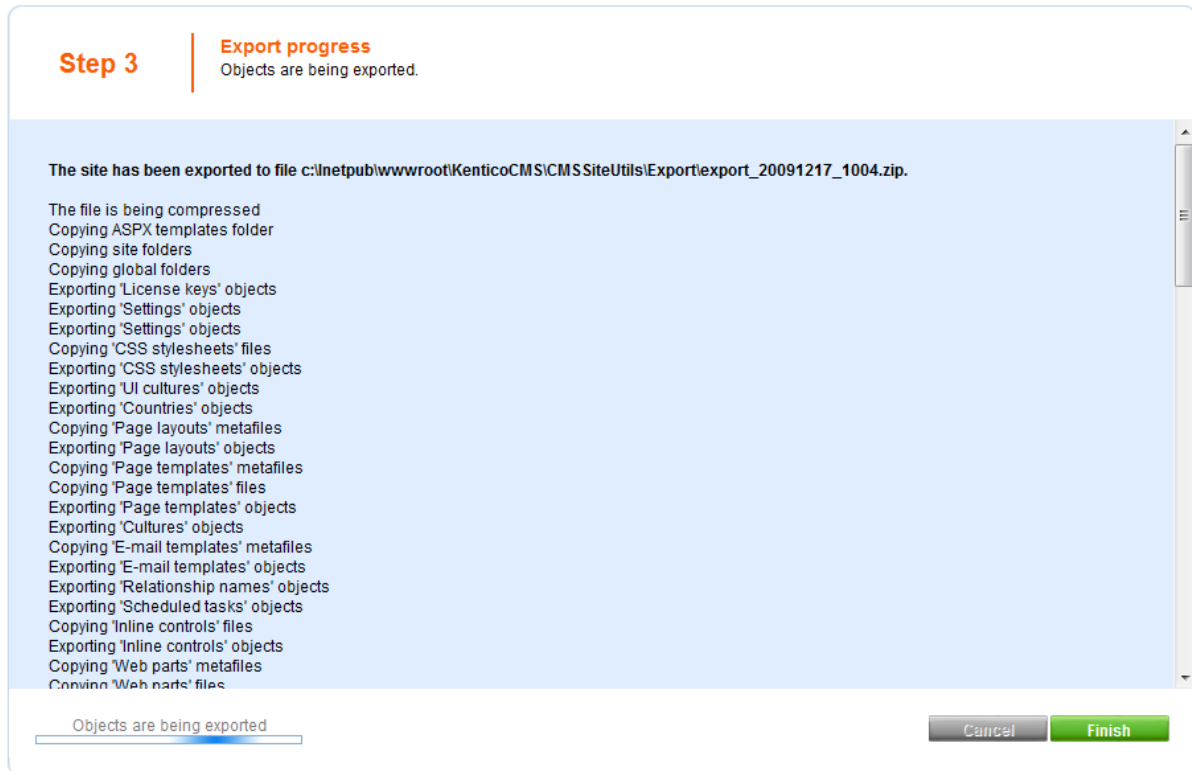
All **None**

Export	Task title	Type	Task time
<input checked="" type="checkbox"/>	Delete Web part container 'Orange box'	DELETEOBJ	12/17/2009 10:02:02 AM
<input checked="" type="checkbox"/>	Delete Web part container 'Gray box'	DELETEOBJ	12/17/2009 10:01:32 AM

< Previous Next >

After making all required selections, click **Next** to proceed to the next step.

A log appears, showing you the progress of exporting. You can abort exporting by clicking the **Cancel** button at any time. When exporting finishes, a message appears at the top of the log, telling you the full path to the exported file. Click the **Finish** button. You will be redirected back to **Site manager** -> **Sites**.



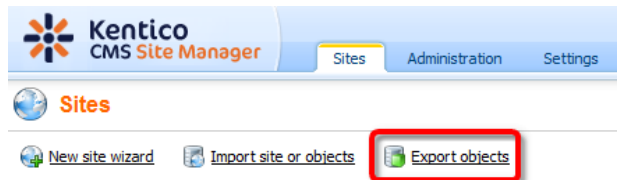
Now you can import the site on some other machine using the **Import site wizard** described in chapter [Importing a site or objects](#).

5.5.3 Exporting objects

Besides exporting the whole website, you can also choose to export only selected objects (web parts, document types, page templates, etc.). This is useful when you update some object on the development machine and want to copy the updated object to the staging or production server.

Exporting selected objects

Go to **Site Manager -> Sites** and click **Export objects**. The Export objects wizard starts.



In the first step of the wizard, you have to fill in the name of the export package and choose type of objects pre-selection:

- **File name** - name of the export package; a default name will be pre-filled and the package will be stored in `<web project>\CMSSiteUtils\Export`.
- **Do not preselect any objects** - no objects will be preselected in the next step
- **Preselect all objects** - all objects will be preselected in the next step
- **Preselect objects changed after specific date** - only objects changed after the specified date will be preselected in the next step
- **Use previous export settings** - settings used in a previous export selected from the list below will be used

Select the option that suits your purposes and click the **Next** button.

Step 1 | **Export type**
Please enter export details and select type of the export.

File name:

Site:

Do not preselect any objects

Preselect all objects

Preselect objects changed after specific date

Use previous export settings (preselect the same objects)

12/17/2009 10:06:50 AM - export_20091217_1006.zip

In **Step 2**, you can select which objects will be exported. The tree on the left represents object categories. These reflect the sections of the administration interface under that the objects can be found. The **Site** category contains objects related to the selected website. The **Global objects** category contains global objects that can be used by all sites. By selecting a category, a set of check boxes appears in the right part of the screen, letting you select which objects will be exported. If you select the root of the tree (All objects), you will be offered with the following options:

Global selection

- **Load default selection** - objects will be selected based on the pre-selection choice made in Step 1
- **Select all objects** - all objects will be selected
- **Deselect all objects** - no objects will be selected

Export settings

- **Export files** - some objects in the database are linked with physical files in the file system; if you check this check-box, these files will be exported along with the database objects
- **Export global folders** - if checked, global files under the folders listed below will be exported
 - <web project>\App_Code\Global
 - <web project>\CMSGlobalFiles
- **Export ASPX templates folder** - if checked, folder with ASPX page templates will be exported
 - <web project>\CMSTemplates
- **Export forum custom layouts folder** - if checked, folder with custom forum layouts will be exported
 - <web project>\CMSModules\Forums\Controls\Layouts\Custom
- **Export tasks** - if checked, delete tasks (incremental deployment) will be included in the package

Step 2 | **Objects selection**
Please select objects which should be exported.

All objects

- Global objects
 - Tools
 - Administration
 - Settings
 - Development
 - License keys
 - E-commerce

Export objects ?

Please select the object type from the tree if you wish to change the default selection. Click **Next** to start the export of selected objects.

Global selection

[Load default selection](#) [Select all objects](#) [Deselect all objects](#)

Export settings

- Export files
- Export global folders
- Export ASPX templates folder
- Export forum custom layouts folder
- Export tasks

< Previous Next >

If you have the "Log export tasks" option enabled in **Site Manager -> Settings -> Content Staging**, a list of object deletion tasks may also be displayed at the bottom of the list. This happens when some objects have been deleted (just as the two Web part containers in the screenshot below). If you leave the check-boxes checked, the objects will be deleted after importing the package on the target server.

Step 2 | **Objects selection**
Please select objects which should be exported.

- Cultures
- Custom tables
- Document types
- E-mail templates
- Form controls
- Inline controls
- Modules
- Notifications
- Page layouts
- Page templates
- Relationship names
- System tables
- Time zones
- UI cultures
- Web part containers**
- Web parts
- Widgets
- Workflows
- License keys
- E-commerce

All		None		Default	
Export	Display name				
<input type="checkbox"/>	Black box				
<input checked="" type="checkbox"/>	Breadcrumbs Box				
<input checked="" type="checkbox"/>	Content padding				
<input checked="" type="checkbox"/>	Div element				
<input checked="" type="checkbox"/>	Search box				

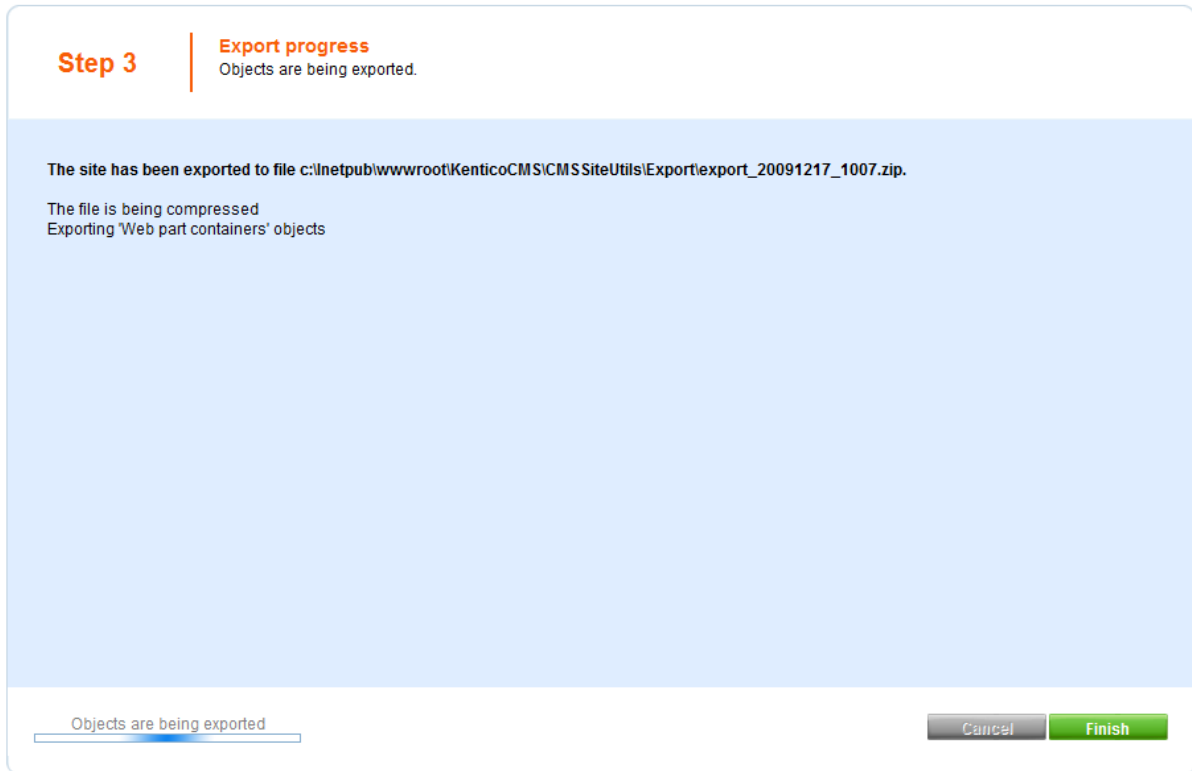
Tasks

All		None	
Export	Task title	Type	Task time
<input checked="" type="checkbox"/>	Delete Web part container 'Orange box'	DELETEOBJ	12/17/2009 10:02:02 AM
<input checked="" type="checkbox"/>	Delete Web part container 'Gray box'	DELETEOBJ	12/17/2009 10:01:32 AM

< Previous Next >

After making all required selections, click **Next** to proceed to the next step.

A log appears, showing you the progress of exporting. You can abort exporting by clicking the **Cancel** button at any time. When exporting finishes, a message appears at the top of the log, telling you the full path to the exported file. Click the **Finish** button. You will be redirected back to **Site manager** -> **Sites**.



The screenshot shows a dialog box titled "Step 3" with a sub-header "Export progress" and the text "Objects are being exported." The main content area is light blue and contains the following text:

The site has been exported to file c:\inetpub\wwwroot\KenticoCMS\CMSSiteUtils\Export\export_20091217_1007.zip.

The file is being compressed
Exporting 'Web part containers' objects

At the bottom, there is a progress bar labeled "Objects are being exported" and two buttons: "Cancel" and "Finish".










Now you can copy the exported file to the target installation of Kentico CMS, into the **<web project>\CMSiteUtils\Import** folder and use the **Import site or objects** wizard described in the following chapter.

5.5.4 Exporting single objects

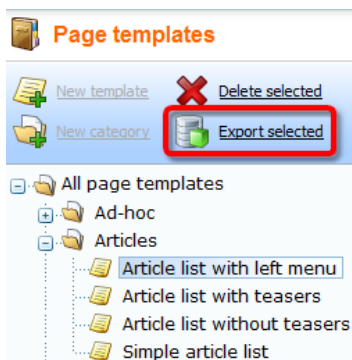
Some objects can also be exported separately as single object packages. This is useful when you want to quickly export only one or few objects apart from the rest of all other objects.

Single object export is supported for: CSS stylesheets, Document types, E-mail templates, Form controls, Inline controls, Page layouts, Page templates, Web part containers, Web parts, Workflow schemas.

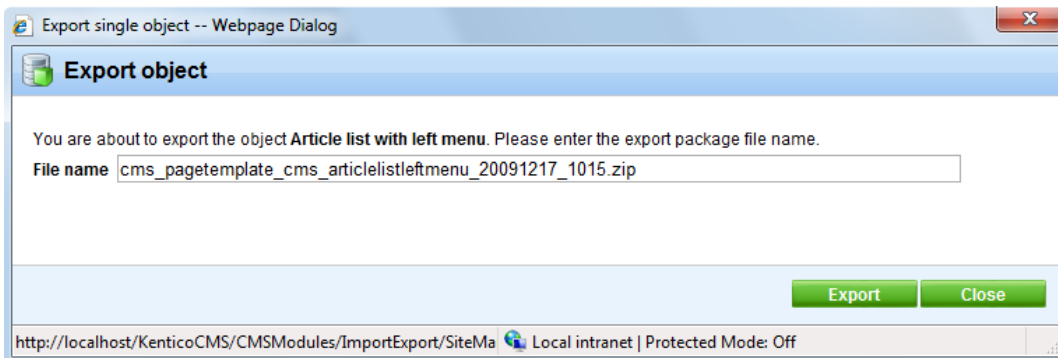
These objects can be found in the corresponding sections in **Site manager -> Development**. You can export an object by clicking the **Export object** (📄) icon.

Actions	Display name ^	Code name
  	Article	CMS.Article
  	Blog	CMS.Blog
  	Blog month	CMS.BlogMonth

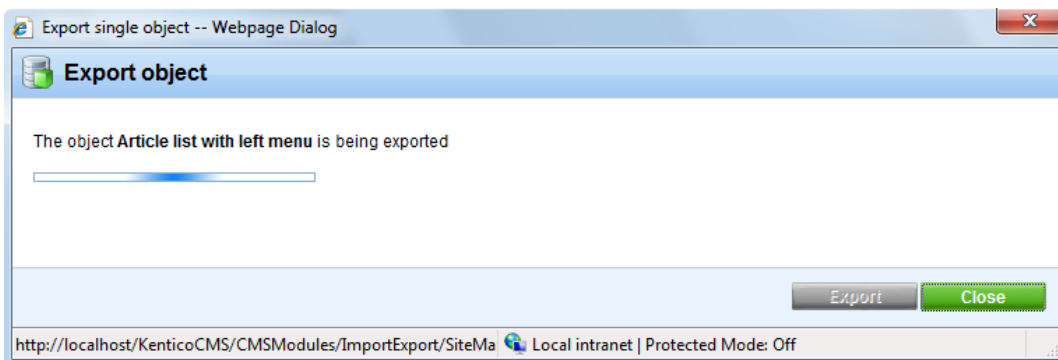
Or the **Export selected** link in case of Page templates and Web parts.



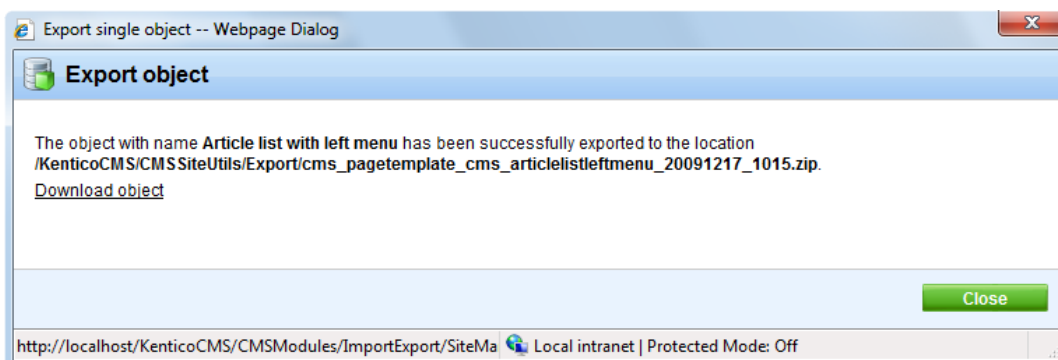
The following window will appear. Enter the name of the export file (default name will be pre-entered) and click **OK**.



Now wait while the object is being exported.



When the exporting is successfully finished, the following message with path to the exported file will be displayed. The **Download object** link below can be used for storing the file into a different location. Click it to open the typical file download dialog of your web browser.



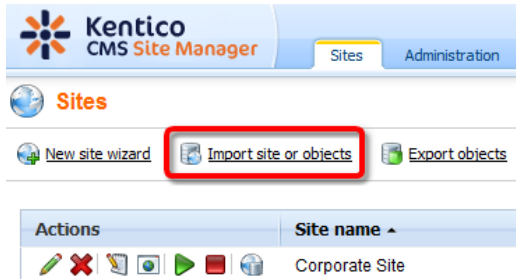
Finally, close the window by clicking the **Close** button.

5.5.5 Importing a site or objects

After you export some site or objects using the **Export site wizard** or **Export objects wizard**, you can import it using the **Import site or objects wizard**. Before you start the wizard, you need to copy your exported packages into the `<web project>\CMSSiteUtils\Import` folder.

Importing a site

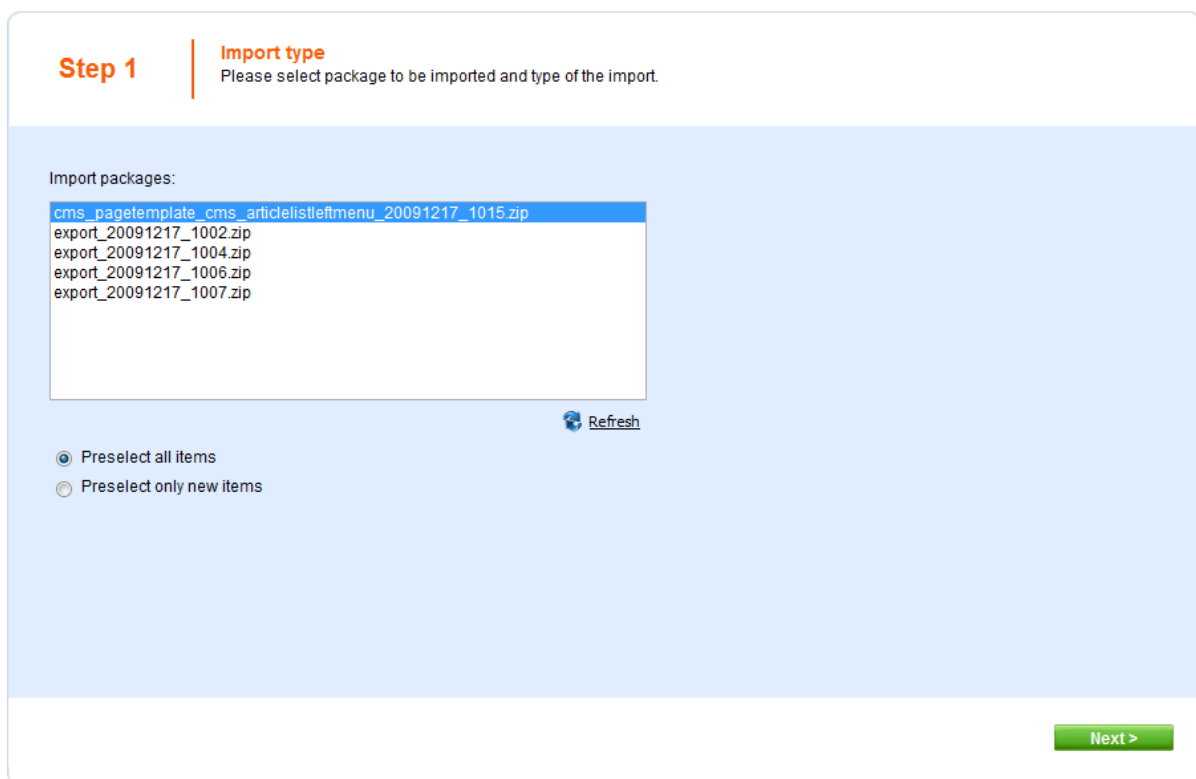
Go to **Site Manager** -> **Sites** and click **Import site or objects**.



In the first step, a list of **Import packages** located in `<web project>\CMSiteUtils\Import` is displayed. If you want to add an import package to the folder, do it and click the **Refresh** (🔄) link. The new package will be displayed in the list.

Using the two radio buttons below, you can determine if duplicate items will also be preselected or if only new items will be selected for import in the next step.

Choose to import the appropriate package and click the **Next** button.



Step 2 will be displayed only when you are importing a site package. In case that you are importing a package containing only global objects, Step 3 will be displayed instead.

You have the following two options in Step 2:

- **Import a new site** - when chosen, a new site will be created based on the contents of the package; you have to enter the site's display name, code name and domain name
- **Import objects into an existing site** - when chosen, contents of the package will be imported into the site chosen by the check-box below

Click the **Next** button to proceed to the next step.

Step 2 | **Site details**
Please enter the site code name, display name and domain or select existing site.

Import a new site

Site display name:

Site code name:

Domain name:

Import objects into an existing site

Select site:

In **Step 3**, you can select which of the objects from the package will be imported. The tree on the left represents object categories. These reflect the sections of the administration interface under that the objects can be found. By selecting a category, a set of check boxes appears in the right part of the screen, letting you select which objects will be imported. Objects that already exist on the target server are marked with *. If you leave the check-box of such object checked, this existing object will be overwritten with the newly imported one.

If you select the root of the tree (**Import objects**), a number of global choices will be offered to you. The **Global selection** section allows you to select all, only new or no objects at all. You can also load the default selection, so that all selection changes you've done will be rolled back. The Import settings section contains other basic import settings:

- **Update site definition** - displayed only when importing to an existing site; if enabled, all settings stored as a part of the site object will be updated with those contained in the package; these settings are contained in the **Site\cms_site.xml** file inside the export package
- **Assign all objects to the imported site (recommended)** - if checked, all imported site-related objects will be assigned to the imported site
- **Run the site after import** - if checked, the imported site will be run after the import process finishes
- **Delete incomplete site when import fails** - if checked, incompletely imported site will be deleted when the import process fails
- **Import files (recommended)** - some objects in the database are linked with physical files in the file system; if you check this check-box, such files contained in the package will be imported too
- **Overwrite system queries** - if checked, system queries will be overwritten by those contained in the package
- **Do not import objects where parent object is missing** - if checked, child objects whose parent objects are not found will be skipped and the import process will continue
- **Import tasks (recommend)** - if checked, delete tasks (incremental deployment) included in the package will be performed



Overwrite system queries

This option is displayed only when importing from version older than the current one; if checked, all queries from the package will be imported and will overwrite the current ones; if the package contains your own **custom queries** that you added to the system, it is necessary to have this option enabled.

Step 3

Objects selection

Please select objects which should be imported.

All objects

- Web site
 - Documents
 - Tools
 - Administration
 - Settings
 - Development
 - E-commerce
- Global objects
 - Tools
 - Administration
 - Settings
 - Development
 - License keys
 - E-commerce

Import objects

Please note: The import process may overwrite your existing objects. The existing objects are marked with * and will be overwritten if checked.

Please select the object type from the tree if you wish to change the default selection. Click **Next** to start the import of selected objects.

Global selection

[Load default selection](#) [Select all objects](#) [Select only new objects](#) [Deselect all objects](#)

Import settings

- Assign all objects to the imported site (recommended)
- Run the site after import
- Delete incomplete site when import fails
- Import files (recommended)
- Do not import objects where parent object is missing
- Import tasks (recommended)

< Previous Next >

The following categories contain extra options to be set:

Documents

- **Import new documents** - if checked, documents will be imported (when importing into an existing site, only new documents will be imported)
- **Import document relationships** - if checked, document relationships will be imported
- **Import document level permissions** - if checked, document security settings made in CMSDesk will be imported
- **Import blog comments** - if checked, blog comments will be imported



Please note

When importing into an existing site, only new documents can be imported. Modified documents that are already present on the target server will not be overwritten.

BizForms

- **Import BizForms data** - if checked, BizForms data included in the package will be imported together with the BizForms

Forums

- **Import forum posts** - if checked, forum posts included in the package will be imported together with the forums

Message boards

- **Import board messages** - if checked, board messages included in the package will be imported together with the message boards

Media libraries

- **Import media files** - if checked, media files (stored in database) included in the package will be imported together with the media libraries
- **Import physical files** - if checked, physical files (stored in the file system) included in the package will be imported together with the media libraries

If you have the "Log export tasks" option enabled in **Site Manager -> Settings -> Content Staging**, a list of tasks may also be displayed under the objects list. This happens when some global objects were deleted (just as the two Web part containers in the screenshot below). If you leave the check-boxes checked, these objects will be deleted on the target server.

Step 3

Objects selection

Please select objects which should be imported.

- Cultures
- Custom tables
- Document types
- E-mail templates
- Form controls
- Inline controls
- Modules
- Notifications
- Page layouts
- Page templates
- Relationship names
- System tables
- Time zones
- UI cultures
- Web part containers
- Web parts
- Widgets
- Workflows
- License keys
- E-commerce

Please select the objects to import. Existing objects are marked with * and will be overwritten if checked.

[\(all\)](#) [None](#) [Default](#)

Import	Display name
* <input checked="" type="checkbox"/>	Black box
* <input checked="" type="checkbox"/>	Breadcrumbs Box
* <input checked="" type="checkbox"/>	Content padding
* <input checked="" type="checkbox"/>	Div element
* <input checked="" type="checkbox"/>	Search box

Tasks

[\(all\)](#) [None](#)

Process	Task title	Type	Task time
<input checked="" type="checkbox"/>	Delete Web part container 'Gray box'	DELETEOBJ	12/17/2009 10:01:32 AM
<input checked="" type="checkbox"/>	Delete Web part container 'Orange box'	DELETEOBJ	12/17/2009 10:02:02 AM

< Previous
Next >

An import log will be displayed, showing the progress of importing (you can abort importing by clicking the **Cancel** button any time). Click the **Finish** button. You will be redirected back to **Site manager** -> **Sites**, where the newly imported site will be running.

Step 4 | **Import progress**
Objects are being imported.

Import has successfully finished

- Starting site 'Corporate Site'
- Copying objects files
- Ensuring missing site settings
- Processing additional actions
- Importing 'Smart search indexes' objects
- Importing 'Notification templates' objects
- Importing 'Notification gateways' objects
- Importing 'Bad words' objects
- Importing board 'Corporate Site - sample message board' messages
- Importing 'Message boards' objects
- Importing media library 'Czech cities' file objects
- Importing media library 'Czech nature' file objects
- Importing 'Media libraries' objects
- Importing 'Forum user favorites' objects
- Importing forum 'Technical support' posts
- Importing forum 'Announcements' posts
- Importing 'Forums' objects
- Importing 'Forum groups' objects
- Importing 'Reports' objects
- Importing 'Report categories' objects
- Importing 'Polls' objects
- Importing 'Newsletter issues' objects
- Importing 'Newsletters' objects
- Importing 'E-mail templates' objects
- Importing BizForm 'Contact Us' data
- Importing 'BizForms' objects

Objects are being imported



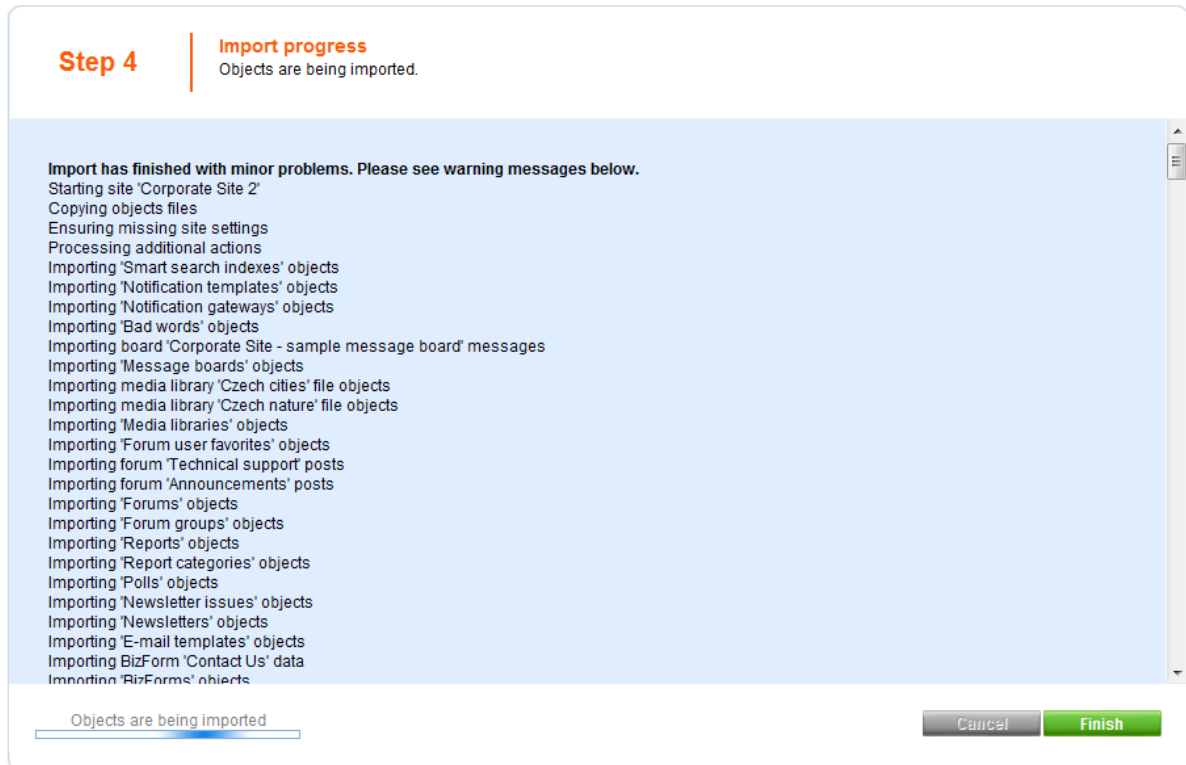
Please note

Packages from different versions of Kentico CMS have different structure. When importing packages from an older version of Kentico CMS to a newer one, structure of the package is always converted to the newer format automatically.

Please pay special attention when importing **Form user control**, **Inline control** and **Web part** objects from older packages. If possible, avoid overwriting your current objects of these types with objects from older packages, as it may cause incompatibility problems.

Conflicts of running sites

If the imported site uses the same domain name or alias as one of the websites that already run on your server, you may get an error message at the end of the import:



WARNING: Failed to start site 'Corporate Site 2', there is already a running site with this domain alias, you need to stop the other site to run this site and run the site manually.

In such case, you need to go to the **Sites** section, change the domain name or domain alias and start the new website manually using the **Start site** button.



Application restart

At the end of the import process, you may get the following error message:

"Application has been restarted and the logging of the import process has been terminated. Please see context help in this section for more details and how to solve this issue."

If so, you will have to finish the import process manually:

1. Open the imported package and extract the following folders located in `<package>\Data\Files` (if they are present):
 - cms_webpart
 - cms_cssstylesheet
 - cms_documenttype
 - cms_formusercontrol
 - cms_inlinecontrol
 - cms_pagetemplate
 - Global

Also extract the `<package>\Data\Site` folder.

2. These folders contain subfolders named identically to the folders inside your web project root. Remove the '.export' extensions from the included files and copy them manually to the appropriate location inside your web project folder with respect to the original folder structure.
3. Under the Site folder, the `##SITENAME##` folder may be found in the folder structure. If so, please rename this folder to the name of the imported website and copy the content of the Site folder to the root of the web.

5.5.6 Folder structure and import/export

Kentico CMS uses a single folder structure, even if you manage multiple websites in a single installation. The following list describes the main folders and how they are affected during the import and export:

- **App_Browsers**
- **App_Code**
 - CMSModules\`<module_name>` (folders of custom modules)
 - **Global** (exports with any site, needs to be created manually; the folder is exported if the 'Export global folders' option is checked in Step 2 of the export process)
 - `<site code name>` (exports with given site, needs to be created manually; the folder is exported if the 'Export site folders' option is checked in Step 2 of the export process)
- **App_Data**
 - CMSModules\`<module_name>` (folders of custom modules)
- **App_Themes**
 - `<stylesheet name>` (all folders related to stylesheets assigned to or used on the website)
- **App_WebReferences**
- **aspnet_client**
- **bin**
- **ClientBin**
- **CMSAdminControls**
- **CMSControlsExamples**

- **CMSTDesk**
- **CMSTFormControls** (all form controls selected in Step 2 of the export process are exported with any site)
- **CMSTGlobalFiles** (exports with any website, needs to be created manually; folder is exported if the 'Export global folders' option is checked in Step 2 of the export process)
- **CMSTImportFiles**
- **CMSTInlineControls** (all form controls selected in Step 2 of the export process are exported with any site)
- **CMSTInstall**
- **CMSTMasterPages**
- **CMSTMessages**
- **CMSTModules**
 - Forums\Controls\Layouts\Custom (forum custom layouts; exported with any website, needs to be created manually; folder is exported only if the 'Copy forum custom layouts folder' option is checked in Step 2 of the export process)
 - **<module name>** (folders of custom modules)
- **CMSTPages**
- **CMSTResources**
- **CMSTScripts**
- **CMSTSiteManager**
- **CMSTSiteUtils**
- **CMSTTemplates** (all files for selected ASPX page templates are exported with any site, page templates in other folders are exported as well if they are assigned/used in the given site; whole folder is exported if the 'Export ASPX templates folder' option is checked in Step 2 of the export process)
- **CMSTWebParts** (all web parts selected in Step 2 of the export process are exported with any site, if the web part uses some additional files, they must be placed in the **<webpartCodeName>_files** folder)
- **<site code name>** (exports with given site, needs to be created manually or may be created automatically when storing files on the disk; the folder is exported if the 'Export site folders' option is checked in Step 2 of the export process)
 - Files (default folder for storing files if the system is configured for saving files on the disk)

Here's the explanation of colors:

- **red** - system folder, do not make changes or place your files here unless you want to modify the administration interface
- **blue** - folders for custom files, part of the export package
- **green** - folders for custom files, part of the export package, may need to be created manually
- **black** - service folders (import files, import/export)

5.5.7 Excluding files and folders from export

Files and folders that are exported into the **Files** folder of the export package can be filtered to be excluded from export. This is achieved by adding the following keys into the *AppSettings* section of your site's *web.config* file:

- **Excluding folders from export:** `<add key="CMSExportExcludedFolders" value="test*;cms*" />`
- **Excluding files from export:** `<add key="CMSExportExcludedFiles" value="test*;cms*" />`

Values of the keys define names of files/folders which will be excluded from export, i.e. will not be exported. Multiple values can be entered separated by semicolons.

You can also use the standard file system mask using the * wildcard, which substitutes any number of characters in the name. No other file system mask wildcards are supported.

.scc files and .svn folders are excluded by default, even if the keys are not entered in the *web.config* file.

5.5.8 Import/export troubleshooting

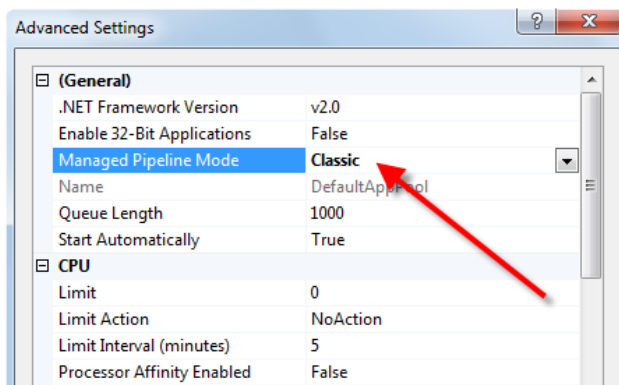
5.5.8.1 Configuration on W2008/IIS7

KenticoCMS fully supports **Microsoft Windows Server 2008** and **Internet Information Server 7**. Should you experience difficulties with import/export on IIS7, please go through the following steps:

1. Open **IIS manager**.
2. Open **Application pools** section.
3. Select application pool of your site and select **Advanced settings...**
4. For property **Managed Pipeline Mode** select **Classic** instead of **Integrated**

or

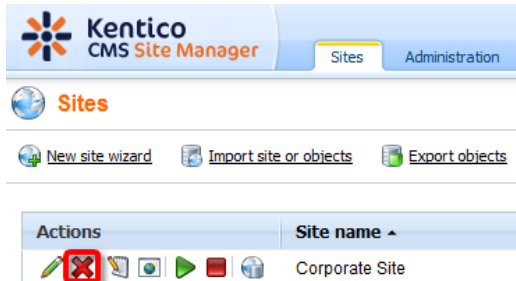
You can select **Classic .NET AppPool** for your website.



5.6 Deleting sites

You can delete sites in the system in **Site Manager -> Sites**.

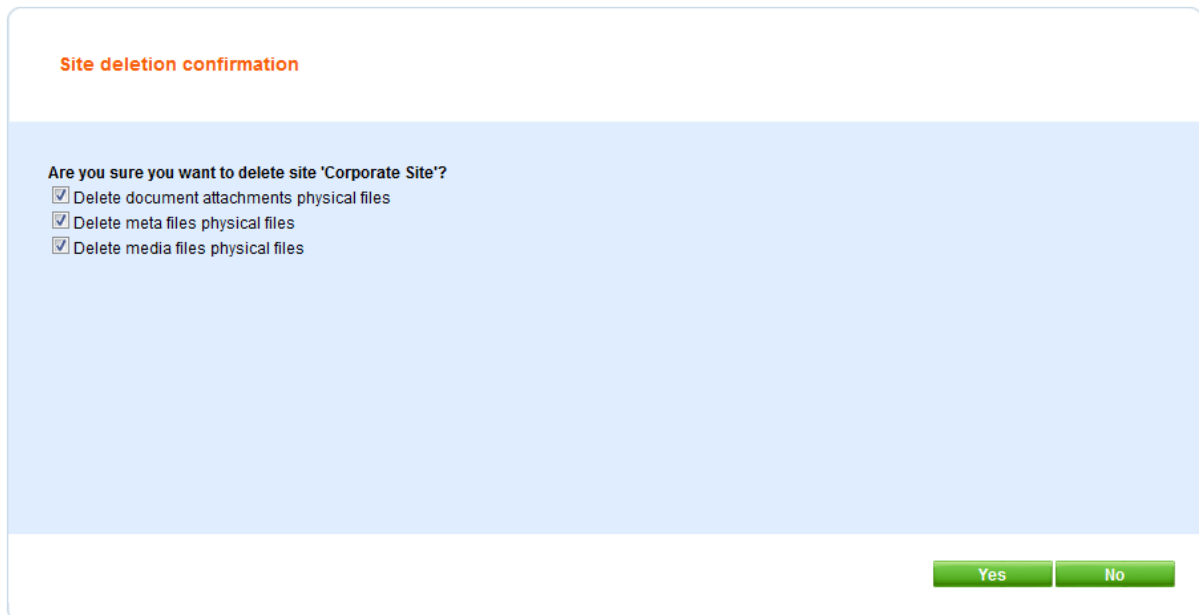
1. Clicking the **Delete** (✖) icon of the site that you want to delete.



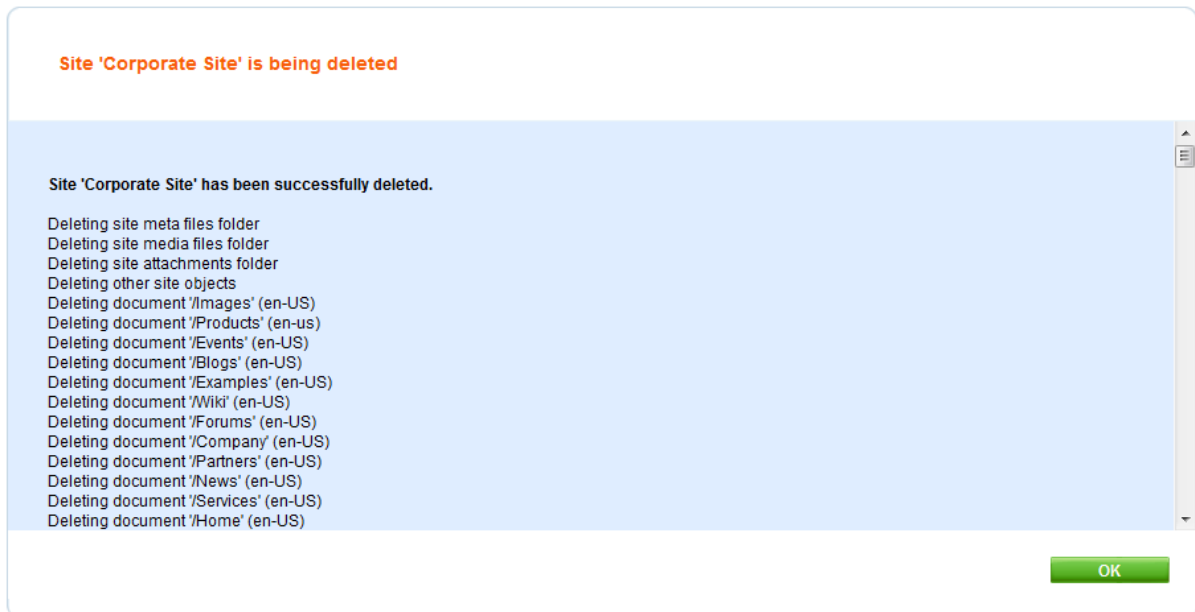
2. In the **Site deletion confirmation** dialog, you can select the following options:

- **Delete document attachments physical files** - if checked, document attachment files stored in the file system will be deleted; these files are stored in the `<web project>\<site name>\files` folder
- **Delete meta files physical files** - if checked, meta files stored in the file system will be deleted; these files are stored in the `<web project>\<site name>\metafiles` folder
- **Delete media files physical files** - if checked, physical files stored in media libraries will be deleted; these files are stored in the `<web project>\<site name>\media` folder

Make the selection and click **Yes** to continue deleting the site.



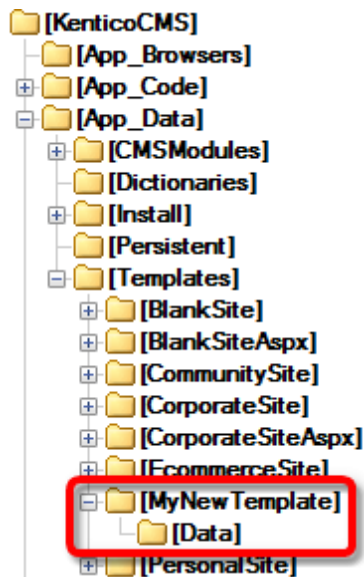
3. A log will be displayed, showing you the progress of site deletion. When the process finishes, click **OK**. You will be redirected back to **Site Manager -> Sites**, where the deleted site will not be listed.



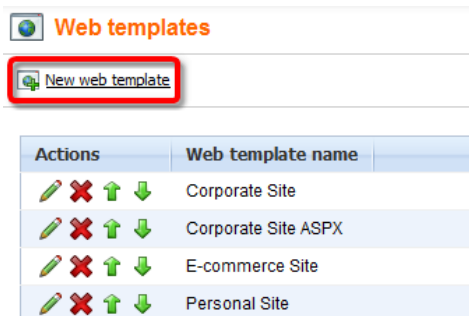
5.7 Creating web templates

In case that you want to use your current site created with Kentico CMS as a web template, so that you can use it as a starting point for developing new sites, you have to take the following steps:

1. Export your site. For a step-by-step tutorial on how to export a site, please refer to the [Exporting a site](#) chapter of this guide.
2. Go to `<web project>\App_Data\Templates`. As you can see, this is the folder where all the default templates, such as Community or Corporate site, are stored. Create a new folder with the name of your new page template. Then create one sub-folder under the newly created folder and give it the name **Data**.



3. Extract the content of your export package into the **Data** folder.
4. Go to **Site Manager -> Development -> Web templates** and click the **New web template** link.



5. Enter the following details:

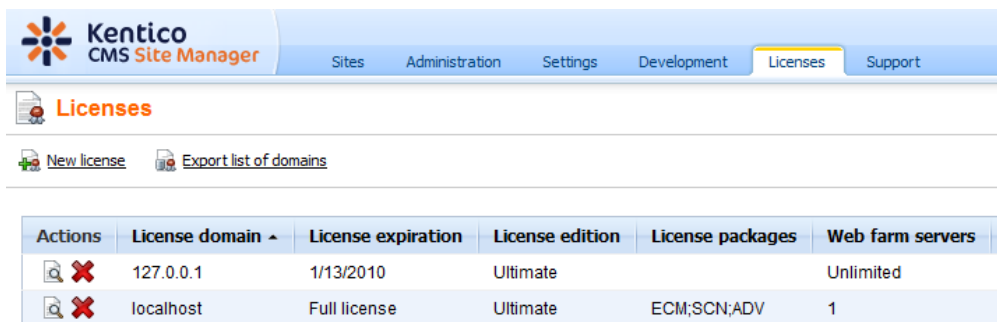
- **Web template display name** - name of the web template displayed in the administration interface
- **Web template code name** - name of the web template used in code
- **Web template folder name** - path to the folder where you have extracted the content of the export package; `~\App_Data\Templates\<your folder>`





- **Web template description** - text describing your new web template
- **License editions** - editions of Kentico CMS in that this web template will be available; check all for full availability


and click **OK**. Your new web template should now be present in the list.


5.8 License management

Kentico CMS requires an appropriate license key for every domain you use. The licenses can be managed in **Site Manager -> Licenses**:



Actions	License domain ^	License expiration	License edition	License packages	Web farm servers
 	127.0.0.1	1/13/2010	Ultimate		Unlimited
 	localhost	Full license	Ultimate	ECM;SCN;ADV	1

The list displays the information about licensed domain, expiration and edition. When you get full or trial key for a particular domain, you need to click **New license** () and enter the full text of the key into the **License key** field.

You can also use the **Export list of domains** () link to export your domains. The export package will be saved in `~\CMSSiteUtils\Export` and can be used to import the licenses on another instance of Kentico CMS.

How licensing works

If you're running website on domain `example.com`, you need a single license key that will also work for:

- `http://example.com`
- `https://example.com`
- `http://www.example.com`
- `https://www.example.com`
- `http://localhost`
- `http://127.0.0.1`

If you use a domain alias (different domain name that points to the same website), such as `example1.com` or `example.net`, you need extra license keys for these domain aliases. Please ask [Kentico support](#) for generating the additional keys (they are free of charge if you already own a license for the main domain).

5.9 Managing site settings

Most of the site settings can be configured in **Site Manager -> Settings** section.

The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings' (selected), 'Development', 'Licenses', and 'Support'. The user is identified as 'Global Administrator' with version 'v5.0.3629'. The left sidebar shows a tree view of settings categories, with 'Web site' selected. The main content area displays the 'Web site' settings, including fields for cache times, culture, and page titles, each with an 'Inherit from global settings' checkbox.

Setting Name	Value	Inherit from global settings
Cache content (minutes)	10	<input checked="" type="checkbox"/>
Cache images (minutes)	10	<input checked="" type="checkbox"/>
Cache page info (minutes)	10	<input checked="" type="checkbox"/>
Combine with default culture	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Combine files with default culture	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Default alias path	/home	<input type="checkbox"/>
Default culture of the content	English - United States	<input type="checkbox"/>
Page description prefix		<input checked="" type="checkbox"/>
Page key words prefix		<input checked="" type="checkbox"/>
Page title format	{%prefix%} - {%pagetitle_orelse_name%}	<input checked="" type="checkbox"/>
Page title prefix	Corporate Site	<input type="checkbox"/>
Page not found for non-published documents	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Page not found URL		<input checked="" type="checkbox"/>
Exclude document types from SQL search		<input checked="" type="checkbox"/>
Exclude documents from SQL search	/SpecialPages/%	<input type="checkbox"/>
Control element	div	<input checked="" type="checkbox"/>

There are two basic types of settings:

- **Global** – such settings apply to all sites.
- **Site-specific** – such settings apply to the particular site and they override the global settings values.

If you want to inherit value from the global settings, you need to check the “inherit from global settings” button and click Save.

Tip: If you mouse-over the name of the settings key, you will see the description of the key.

5.10 Configuring multiple web sites

Kentico CMS allows you to run multiple websites from a single installation (code base) and database. All websites run as a single website in IIS. The following tutorial explains how to set up multiple websites on Windows XP and Windows Server 2003.

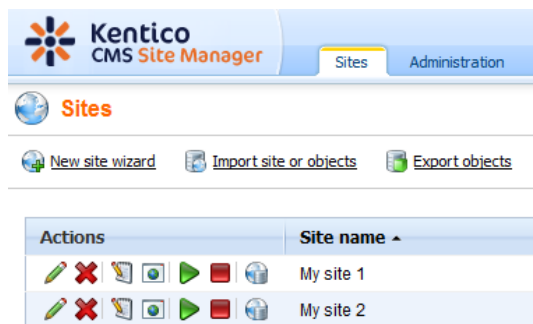
We will configure two websites:

- **mysite.com**
- **mysite2.com**

Configuring multiple sites in Kentico CMS (common for all operating systems)

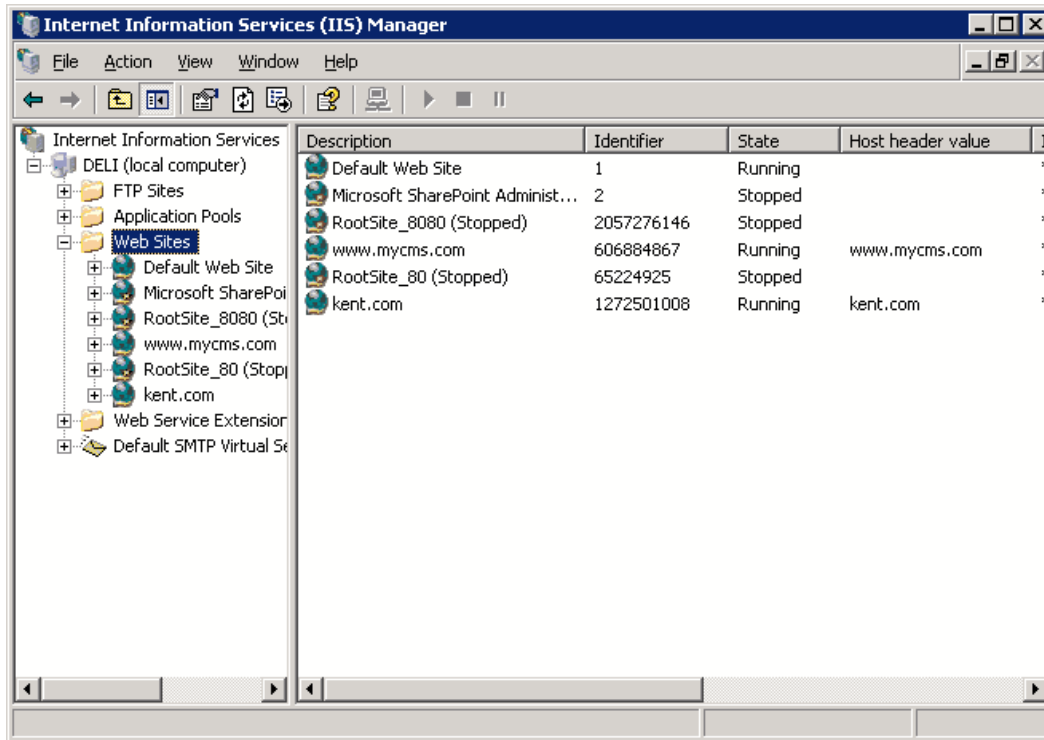
This part is common for all operating systems.

1. Create two websites in **Site Manager -> Sites** - you can either import your existing websites or you can create new websites using the New site wizard.
2. Edit the properties of each website in **Site Manager -> Sites** and set the **Site domain name** value of the each website to the appropriate domain (without www prefix and without http:// protocol).
3. Make sure both sites are running. You can check this in the Site list, in the Status column.
4. Make sure you have valid license keys for both domains in **Site Manager -> Licenses**.

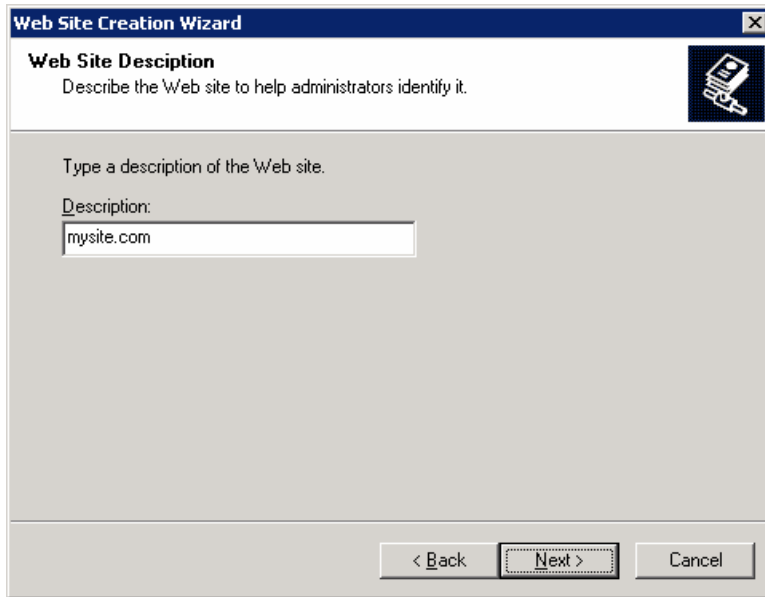


Configuring multiple sites on Windows Server 2003

Open **Start -> Administrative tools -> Microsoft Internet Information Services (IIS) Manager**, go to websites section and if the website does not exist yet, create it.

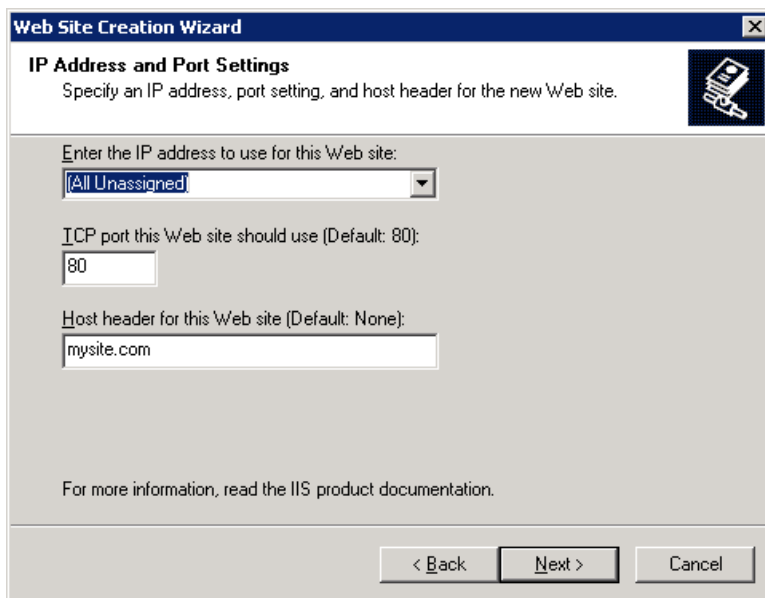


Right-click **websites** and choose **New -> website...** The website Creation Wizard starts. Enter the site descriptive name, such as **mysite.com**:



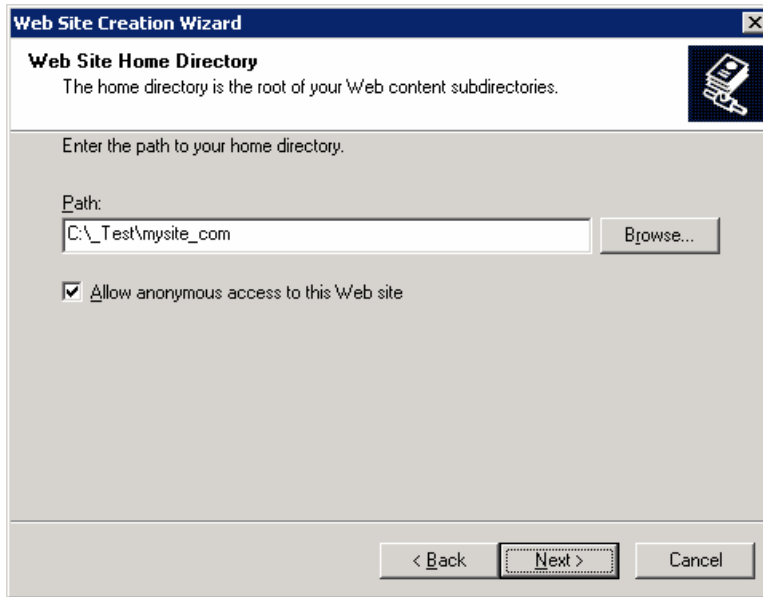
The screenshot shows the 'Web Site Creation Wizard' dialog box. The title bar reads 'Web Site Creation Wizard'. The main heading is 'Web Site Description' with a sub-instruction: 'Describe the Web site to help administrators identify it.' Below this is a text area with the prompt 'Type a description of the Web site.' and a label 'Description:' followed by a text box containing 'mysite.com'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

Click **Next**. Enter the **Host header for this website** as **mysite.com**:

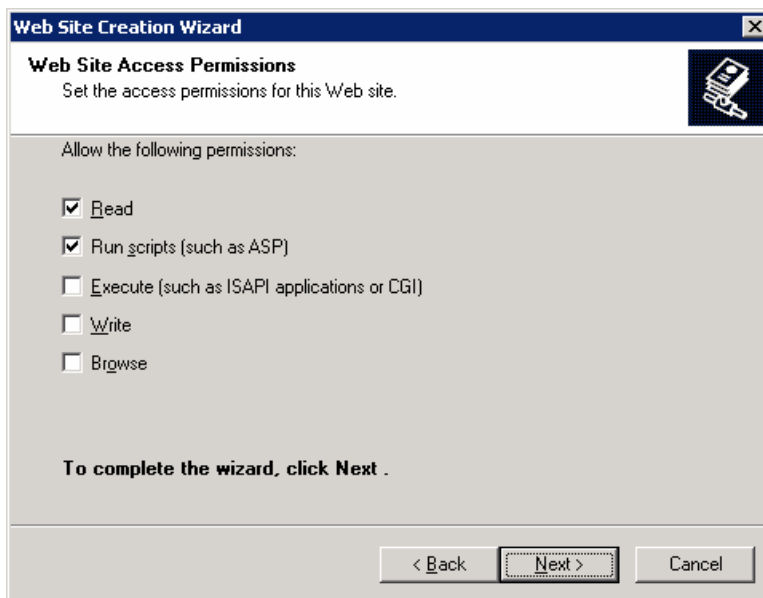


The screenshot shows the 'Web Site Creation Wizard' dialog box at the 'IP Address and Port Settings' step. The title bar reads 'Web Site Creation Wizard'. The main heading is 'IP Address and Port Settings' with a sub-instruction: 'Specify an IP address, port setting, and host header for the new Web site.' Below this are three fields: 'Enter the IP address to use for this Web site:' with a dropdown menu showing '(All Unassigned)'; 'TCP port this Web site should use (Default: 80):' with a text box containing '80'; and 'Host header for this Web site (Default: None):' with a text box containing 'mysite.com'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. A link at the bottom reads 'For more information, read the IIS product documentation.'

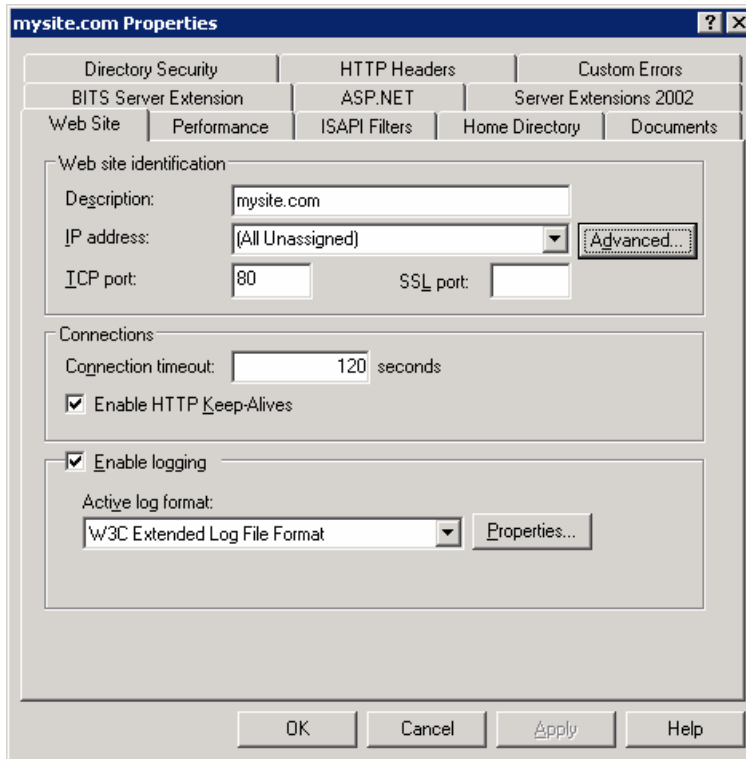
Click **Next**. Select the disk path where the root of your website is placed. This must be the folder where web.config file is placed.



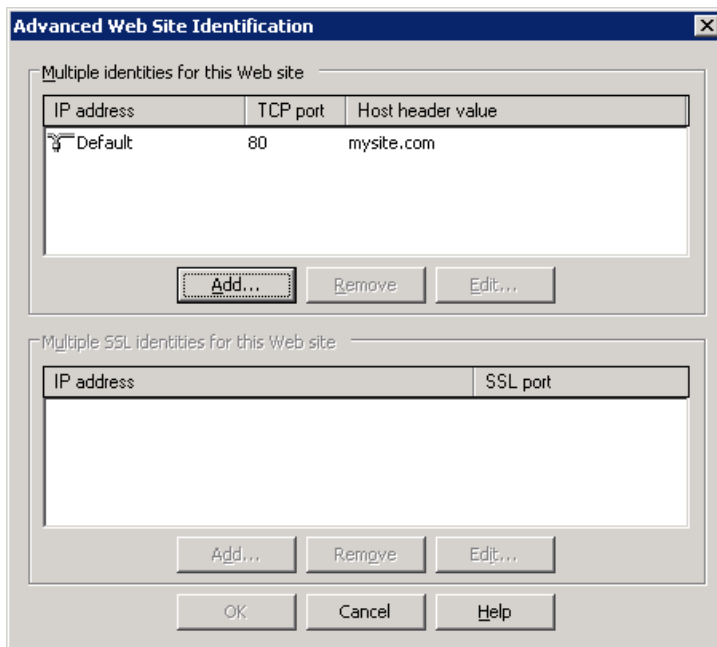
Click **Next**. In the next step, enable the **Read** and **Run scripts** boxes.



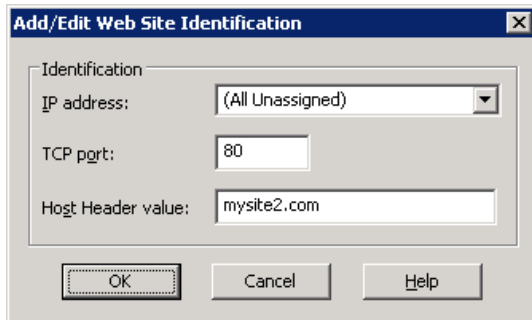
Click **Next**. The wizard is finished. Click **Finish**. Now we need to add the other domain name to the list of URLs hosted by this website. Right-click the newly created website and display website properties. On the **website** tab, click **Advanced...**



Now you need to add another host header value for your second domain:



Click the top **Add...** button and enter the appropriate values. The standard HTTP port is 80:

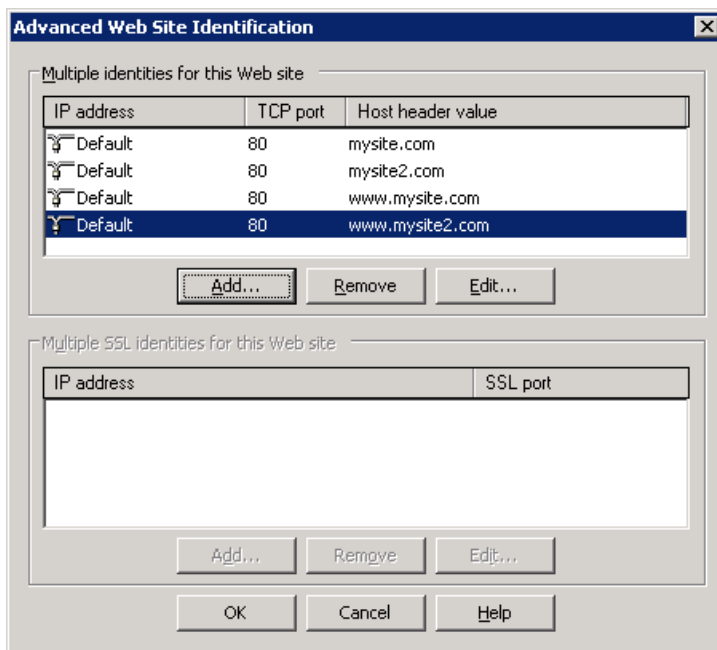


The dialog box titled "Add/Edit Web Site Identification" contains the following fields:

- IP address: (All Unassigned) (dropdown menu)
- TCP port: 80 (text input)
- Host Header value: mysite2.com (text input)

Buttons: OK, Cancel, Help

You need to repeat this also for `www.*` alternatives of your website:



The dialog box titled "Advanced Web Site Identification" contains two sections:

Multiple identities for this Web site

IP address	TCP port	Host header value
Default	80	mysite.com
Default	80	mysite2.com
Default	80	www.mysite.com
Default	80	www.mysite2.com

Buttons: Add..., Remove, Edit...

Multiple SSL identities for this Web site

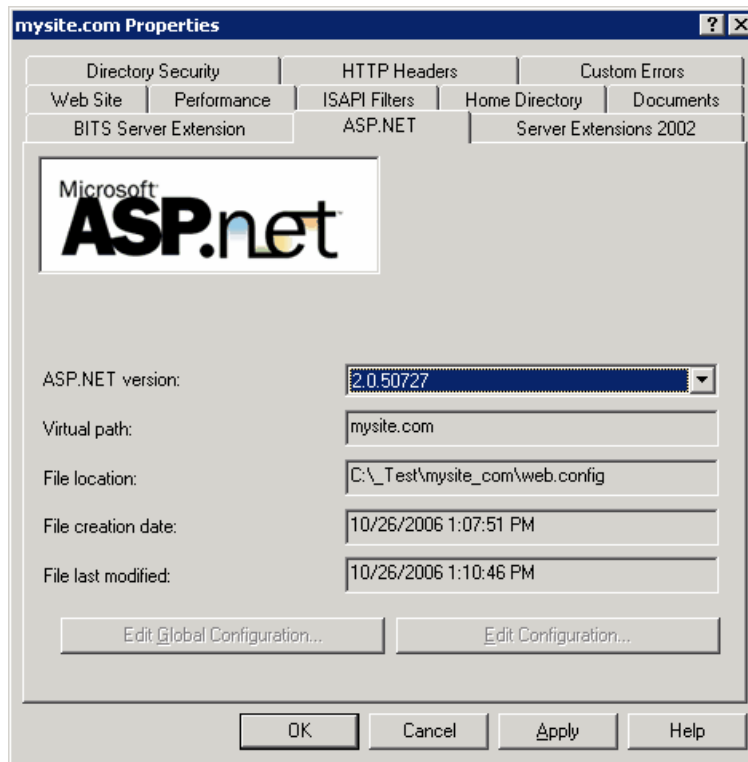
IP address	SSL port
------------	----------

Buttons: Add..., Remove, Edit...

Buttons: OK, Cancel, Help

Click **OK** on all dialogs.

Please note: You may also need to configure the website for ASP.NET 2.0 in website Properties, on the **ASP.NET** tab:



Your new website is now configured to host all incoming requests for domains `mysite.com` and `mysite2.com` (or other domains depending on your particular situation). You may need to ask your network administrator to redirect the domain in the DNS records to your website.

If you do not own the domain, you can test it by modifying the `C:\WINDOWS\system32\drivers\etc\hosts` file in notepad and adding the following lines to the end of the file:

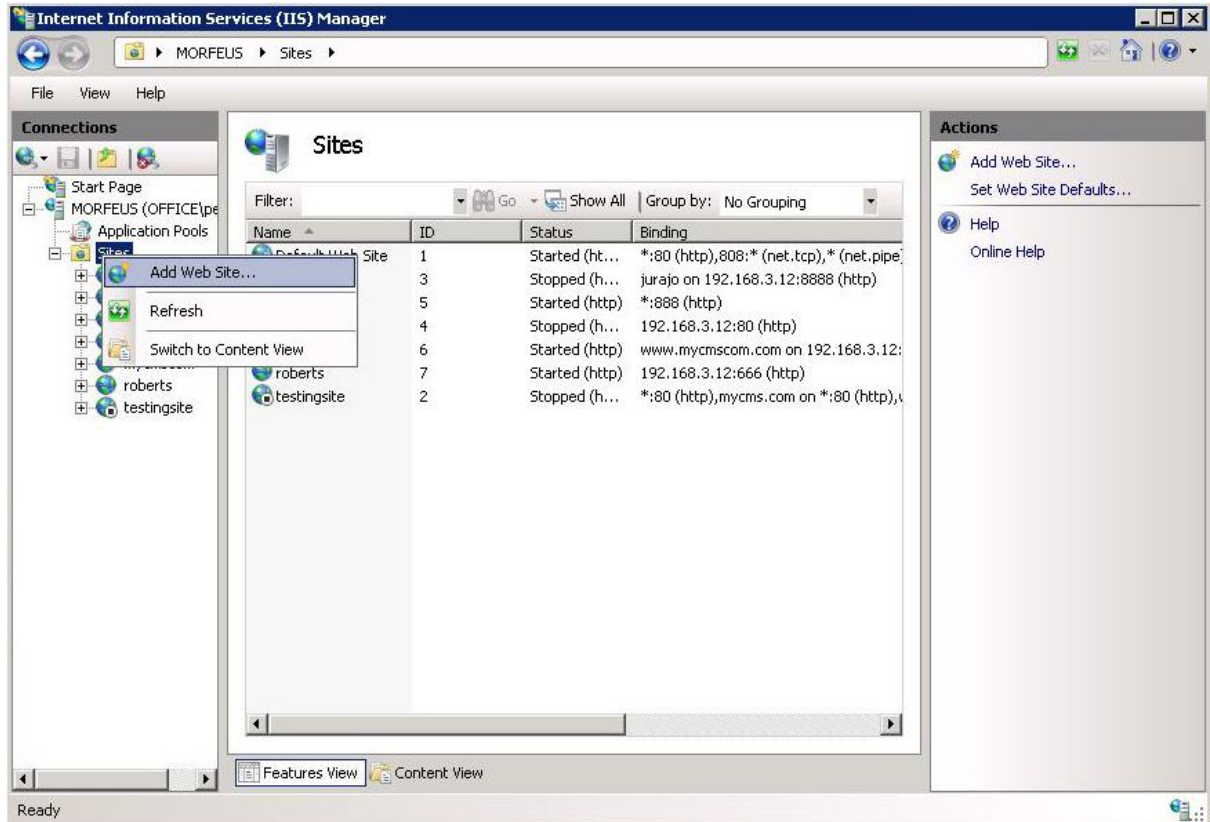
```
127.0.0.1    mysite.com
127.0.0.1    www.mysite.com
127.0.0.1    mysite2.com
127.0.0.1    www.mysite2.com
```

Save the file. Please note: these are client settings, which means they will work only if you use web browser on your server.

Now, when you go to `http://www.mysite.com` and to `http://www.mysite2.com` (or your own domain names), you should see two different websites.

Configuring multiple sites on Windows Vista / Server 2008

Go to **Start -> Control Panel -> Administrative tools -> Microsoft Internet Information Services (IIS) Manager**. In the tree view, right click **Sites** and choose **Add website....**



Enter the following details:

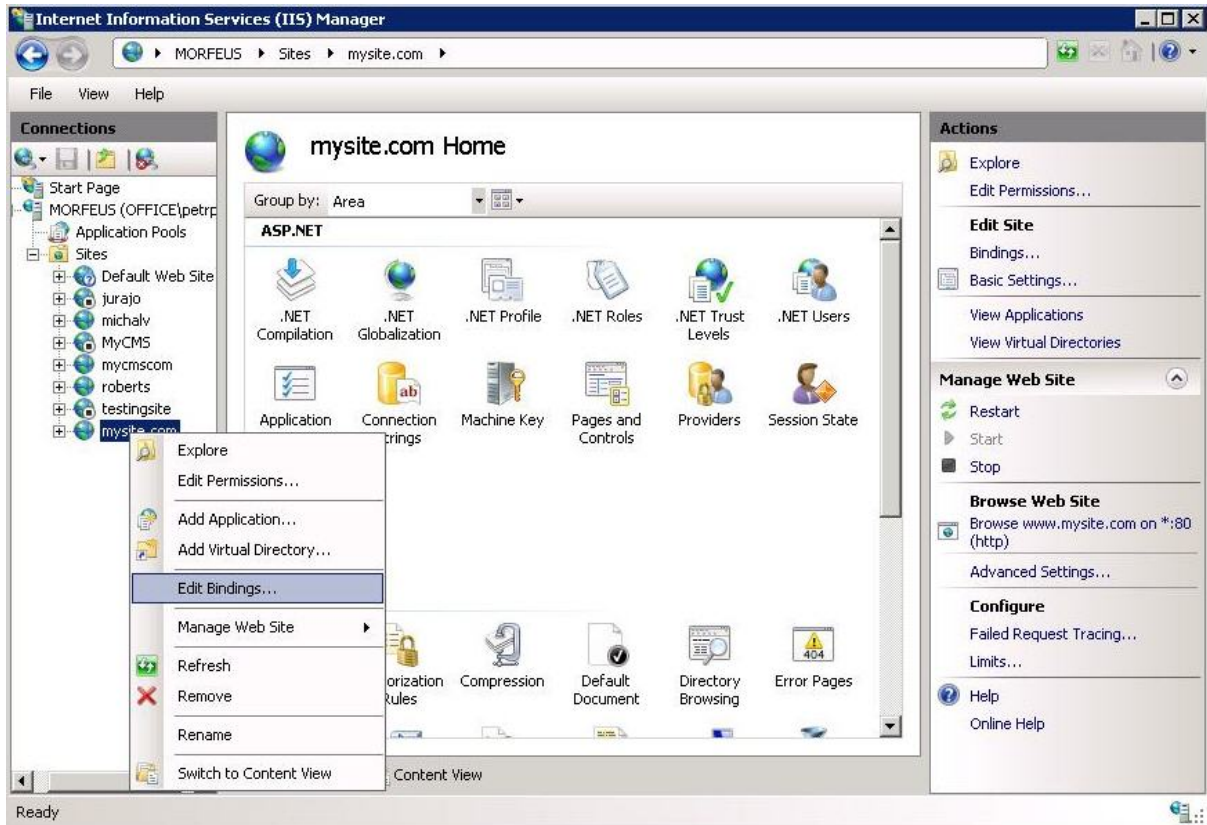
- **Site name:** mysite.com
- **Physical path:** disk path to the location where your website is placed; this must be the location where the *web.config* file is stored
- **Host name:** www.mysite.com

Click **OK**.

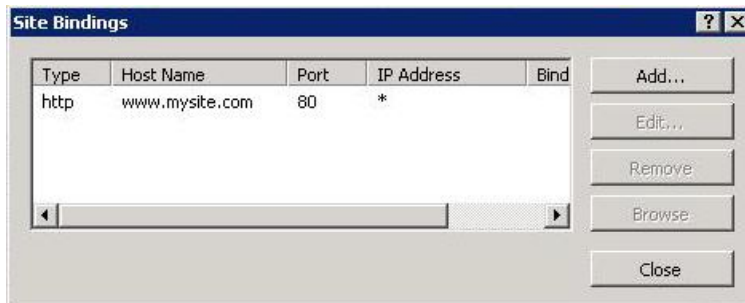
The screenshot shows the 'Add Web Site' dialog box with the following configuration:

- Site name:** mysite.com
- Application pool:** mysite.com
- Content Directory:**
 - Physical path: C:\inetpub\wwwroot\petrpe1
 - Pass-through authentication: Connect as... Test Settings...
- Binding:**
 - Type: http
 - IP address: All Unassigned
 - Port: 80
 - Host name: www.mysite.com
 - Example: www.contoso.com or marketing.contoso.com
- Start Web site immediately

The site should now appear in the tree, under the **Sites** node. Right click the site and choose **Edit bindings** (or **Bindings** on Vista).



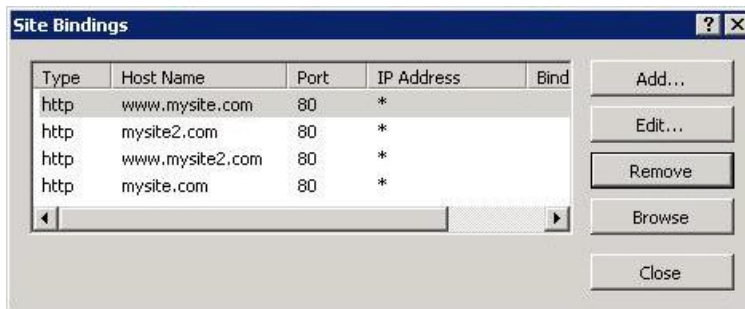
The site bindings dialog appears. Click **Add...**



Enter the domain name of your second website (*www.mysite2.com* in this case) into the **Host name** field and click **OK**. Repeat this for both of the sites without the 'www.' prefix.



The result should look like the following screenshot.



Type	Host Name	Port	IP Address	Bind
http	www.mysite.com	80	*	
http	mysite2.com	80	*	
http	www.mysite2.com	80	*	
http	mysite.com	80	*	

Your new website is now configured to host all incoming requests for domains *mysite.com* and *mysite2.com* (or other domains depending on your particular situation). You may need to ask your network administrator to redirect the domain in the DNS records to your website.

If you do not own the domain, you can test it by modifying the `C:\WINDOWS\system32\drivers\etc\hosts` file in notepad and adding the following lines to the end of the file:

```
127.0.0.1    mysite.com
127.0.0.1    www.mysite.com
127.0.0.1    mysite2.com
127.0.0.1    www.mysite2.com
```

Save the file.

Please note: these are client settings, which means they will work only if you use web browser on your server.

Now, when you go to `http://www.mysite.com` and to `http://www.mysite2.com` (or your own domain names), you should see two different websites.

Configuring multiple sites on Windows XP

On Windows XP, the support of multiple sites and domains in IIS is limited, so we will use a single IIS website and define "virtual" domains in our hosts file:

Open the c:\WINDOWS\system32\drivers\etc\hosts file in notepad and add the following lines to the end of the file:

```
127.0.0.1      mysite.com
127.0.0.1      www.mysite.com
127.0.0.1      mysite2.com
127.0.0.1      www.mysite2.com
```

Save the file. Please note: these are client settings, which means they will work only if you use web browser on your local computer.

Go to <http://www.mysite.com> or <http://www.mysite.com/kenticocms> (where kenticocms is the name of the virtual directory with Kentico CMS website) and to <http://www.mysite2.com>. You should see two different websites.



Multiple websites on a single domain (in subfolders)

If you cannot use (for some reason) multiple domain names, you can configure Kentico CMS so that it differentiates websites by subfolder (virtual directory). Read chapter [Multiple websites on a single domain \(in subfolders\)](#) for more details.



Using multiple websites on Windows XP

Windows XP allows you to run only one IIS website at a time. If you need to develop multiple websites (multiple Kentico CMS instances) in the root folder, you may need to create additional websites and switch between them using the IISAdmin utility that can be downloaded at <http://jetstat.com/iisadmin/download.asp>.

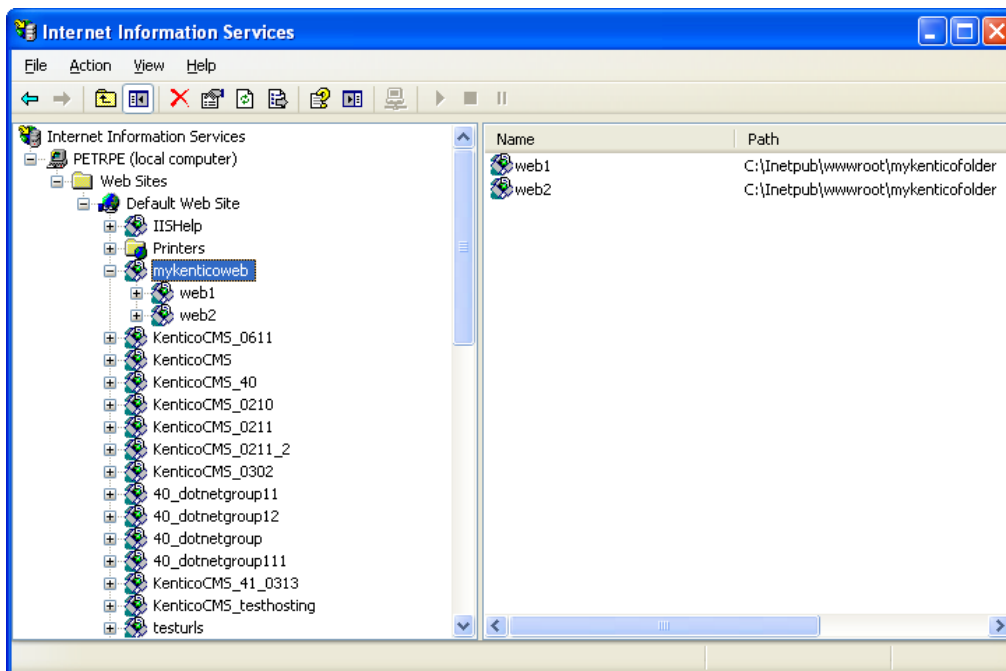
5.11 Multiple web sites on a single domain (in subfolders)

In some cases, you may want to run multiple websites in separate subfolders, without getting a new domain.

In this case, you can configure the domain names (or domain aliases) of the websites like in the following example:

Example

1. Install Kentico CMS to the following folder: **C:\inetpub\wwwroot\mykenticofolder**. Make sure the name of the folder is different from the name in the URL that you will later enter in IIS. In the same step of the installer, choose **This is an installation to the root (do not create virtual directory)**. When the setup finishes, the link to your new website will not work as the virtual directory is not created in IIS.
2. Open IIS console (Control Panels -> Administrative Tools -> Internet Information Services) and create a new virtual directory named **mykenticoweb**. Assign it to a **non-website-root folder** on your disk. Ideally, create an empty folder on the disk for this purpose (e.g. c:\empty).
3. Create two new virtual sub-directories under **mykenticoweb** called **web1** and **web2**. Both of them need to be assigned to the installation folder on the disk, which is **C:\inetpub\wwwroot\mykenticofolder** in this example.



4. Now open your browser and type in either **http://localhost/mykenticoweb/web1** or **http://localhost/mykenticoweb/web2**. [Kentico CMS Database setup](#) appears. Continue through the setup as usual and install the first site.
5. When the setup finishes, go to **Site Manager -> Sites** and install the second site.
6. Configure website 1 domain name as: **localhost/mykenticoweb/web1**

7. Configure website 2 domain name as: **localhost/mykenticoweb/web2**

Now when you go to **http://localhost/mykenticoweb/web1**, you will see website 1. If you go to **http://localhost/mykenticoweb/web2**, you will see website 2.

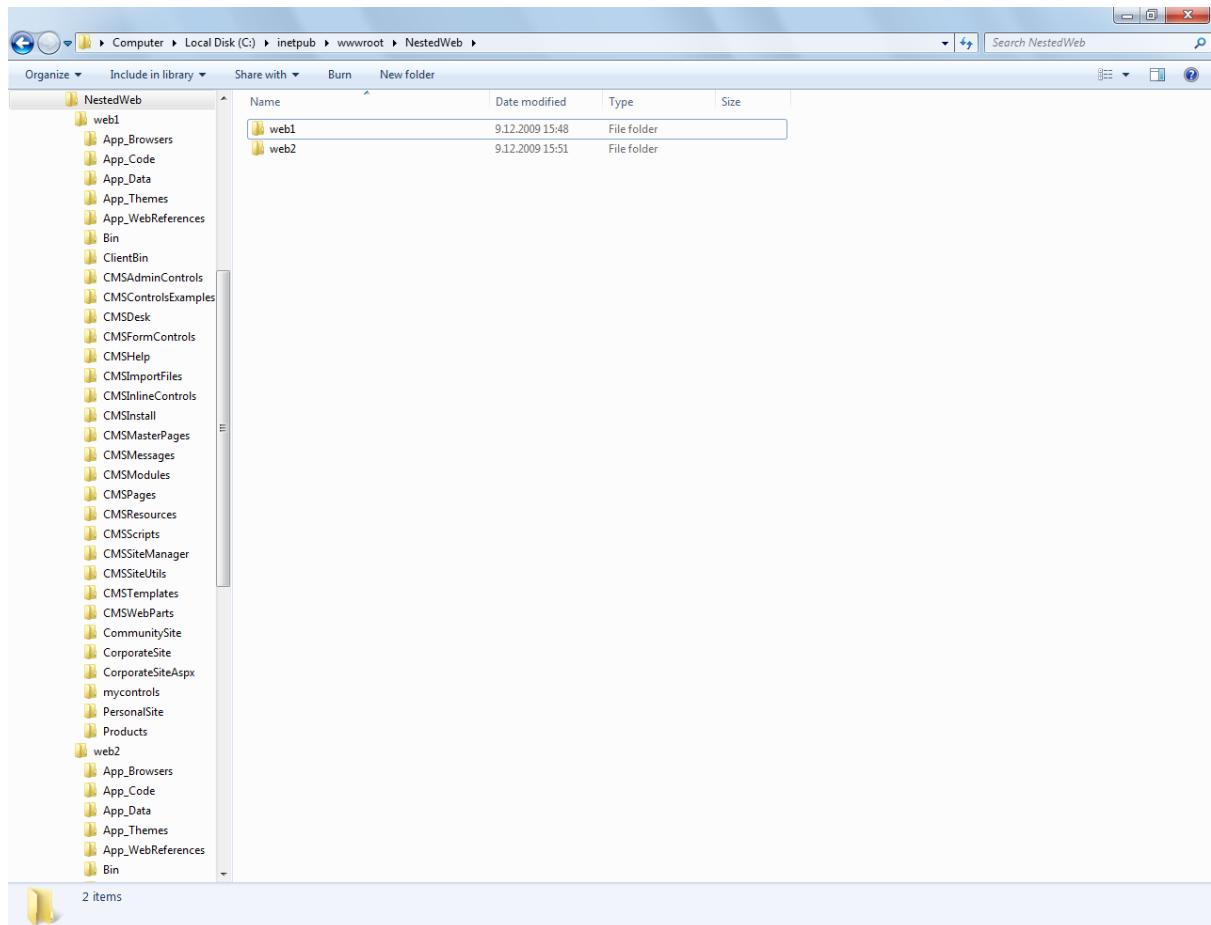
5.12 Configuring nested web sites

In the following example, you will learn how to set up two nested websites. It should be possible to achieve any level of nesting in case that the following steps are complied with.

1. Install two projects into two independent, not overlapping folders. Choose folder names that won't be the same as the names in the URL to prevent later collision when setting up the IIS. The installation folders may be for example like this:

- **Inetpub/wwwroot/NestedWeb/Web1** (first website from Web installer)
- **Inetpub/wwwroot/NestedWeb/Web2** (second website from Web installer)

This means that you have two completely independent projects, as you can see in the screenshot below:



2. Open IIS management console and create two virtual directories:

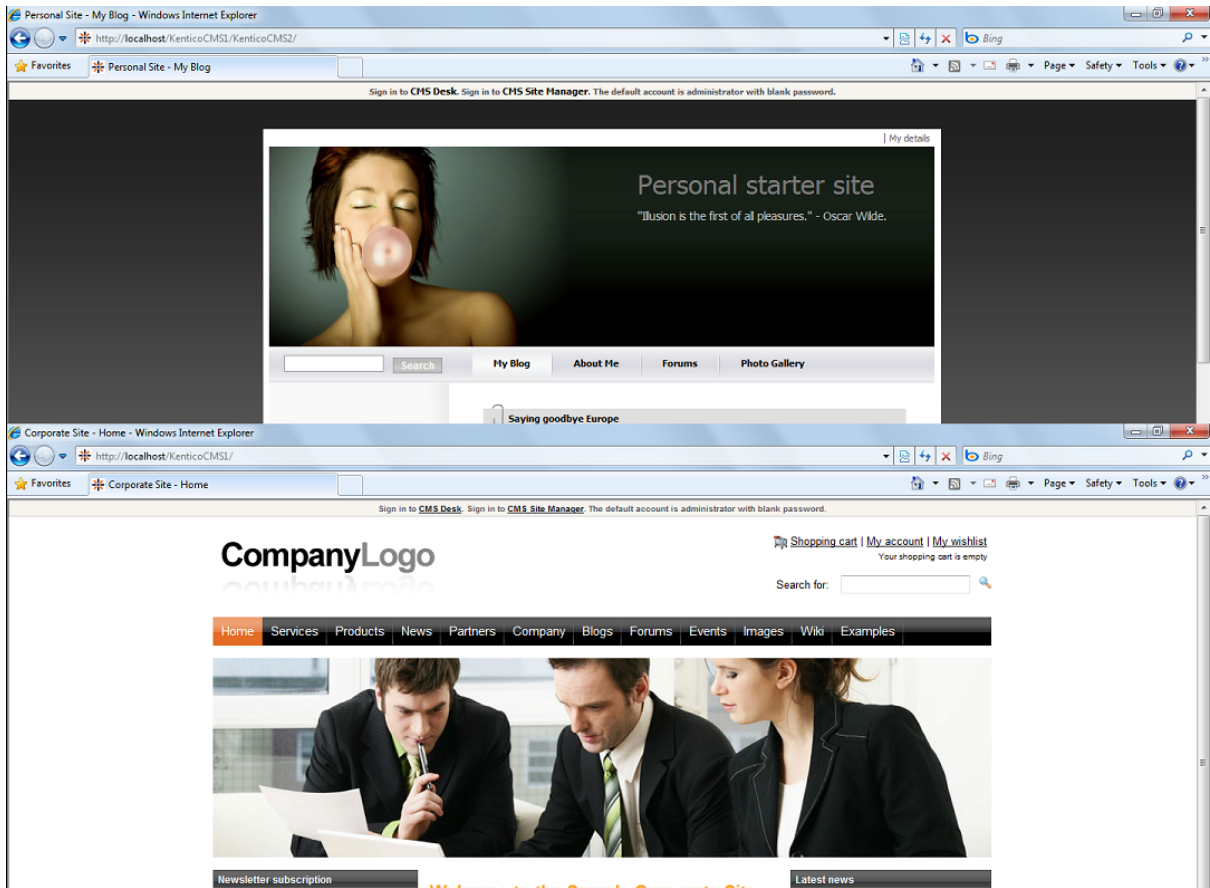
- **[Default website]/KenticoCMS1** (pointing to physical directory Web1)
- **[Default website]/KenticoCMS1/KenticoCMS2** (child directory pointing to physical directory Web2)

Like this, you have two independent projects configured as nested only in the IIS.

The screenshot displays the IIS management console. On the left, the 'Connections' pane shows the hierarchy: DANIELK (OFFICE\PavelK) > Application Pools > Sites > Default Web Site > KenticoCMS > KenticoCMS1. The main pane shows the 'Content View' of the 'KenticoCMS1 Content' directory. The table below lists the contents of this directory.

Name	Type
App_Browsers	File Folder
App_Code	File Folder
App_Data	File Folder
App_Themes	File Folder
App_WebReferences	File Folder
Bin	File Folder
ClientBin	File Folder
CMSAdminControls	File Folder
CMSControlsExamples	File Folder
CMSDesk	File Folder
CMSFormControls	File Folder
CMSHelp	File Folder
CMSImportFiles	File Folder
CMSInlineControls	File Folder
CMSInstall	File Folder
CMSMasterPages	File Folder
CMSMessages	File Folder
CMSModules	File Folder
CMSPages	File Folder
CMSResources	File Folder
CMSScripts	File Folder
CMSSiteManager	File Folder
CMSSiteUtils	File Folder
CMSTemplates	File Folder
CMSWebParts	File Folder
CommunitySite	File Folder
CorporateSite	File Folder
CorporateSiteAspx	File Folder
KenticoCMS2	Virtual Directory
mycontrols	File Folder
PersonalSite	File Folder
Products	File Folder
Default.aspx	ASP.NET Server Page
Default.aspx.cs	Visual C# Source file
favicon.ico	Icon
Global.asax	ASP.NET Server Application
parameters.config	XML Configuration File
web.config	XML Configuration File
WebResource.resx	Microsoft Visual Studio Solution

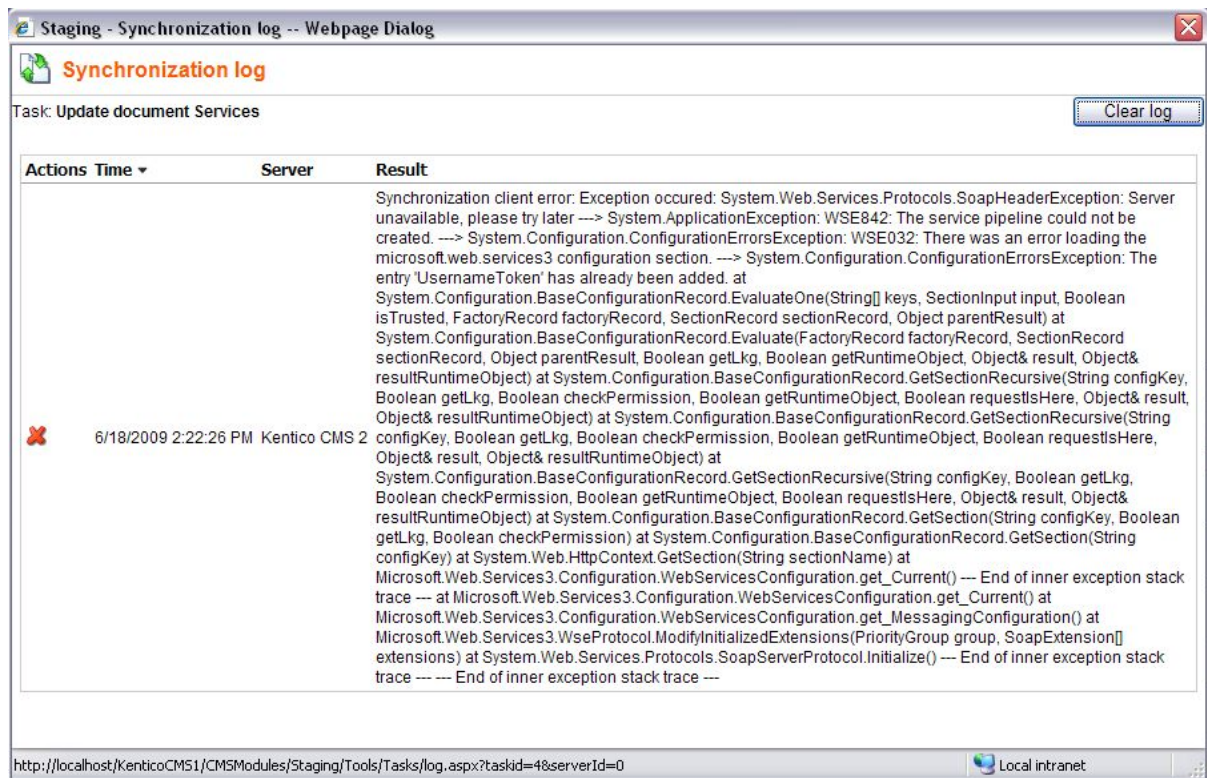
3. The websites are now accessible via nested URLs as you can see in the screenshot below. The websites can be configured independently without experiencing any issues.



Additional configuration for Content staging

You may come to the point where you want to set up [Content staging](#) from one of these sites to another. Content staging has some sections in the *web.config* that collide. Config files are inherited within the IIS virtual directories structure (even when the projects are not nested on the file system), but you cannot have the same section of *web.config* twice in the config file.

So if we configure staging from the **KenticoCMS1** site to the **KenticoCMS1/KenticoCMS2** site (see details on how to configure the staging [here](#)), the inner project may have issues with the configuration. You would get an error like this:



The important part of the error message is "**The username token has already been added**", that means that some of the **configuration is duplicate**.

User name token authentication is defined in the policy file which is referenced from the **<microsoft.web.services3>** section, so **remove the whole <microsoft.web.services3> section** from the **web.config** of the **inner project (Web2)**. Do not remove it from the Web1 (outer) project since this configuration will be used for both websites. After doing this, Content staging should work flawlessly between the sites.

5.13 API Examples

You can use Kentico CMS API to create new websites or update and delete existing ones. To create a new website, you need to import some of the website templates (typically the Blank website template stored in folder CMSSiteUtils\Templates\BlankSite).

You can find API examples in chapters [Import and export of the website](#), [Update website properties](#) and

[Delete website.](#)

Part

VI

Website settings

6 Website settings

6.1 Settings overview

Kentico CMS settings are stored in two places:

- **Site settings** are used for site configuration. These settings are stored in the database.
- **System settings** are used for low-level configuration of the CMS system. These settings are stored in the *web.config* file. You can find more details in [Appendix C - Web.config parameters](#).

Site settings

The site settings are stored in Kentico CMS database. You can configure them in **Site Manager -> Settings**. There are two types of settings:

- **Global** - applied on all sites in the system
- **Site-specific** - you can edit them after you choose the relevant website in the drop-down list in the upper left corner




The site-specific settings may inherit global values:

Site time zone	<input type="text" value="(GMT-10.00) Hawaii"/>	<input type="checkbox"/> Inherit from global settings
No-reply e-mail address	<input type="text" value="no-reply@mydomainXY.com"/>	<input checked="" type="checkbox"/> Inherit from global settings

Settings are organized in the following categories:

- **website** - general website settings
- **Content management** - settings related content management of your website
- **Files** - settings related to the way how files are handled by the system; more info [here](#)
- **Membership** - settings related to user accounts, on-line users monitoring, etc.
- **Security** - settings related to passwords, permissions, secured protocols, banned IPs etc.
- **URLs and SEO** - settings related to URLs and SEO, URL extensions, forbidden characters in URLs, permanent redirection etc.
- **Output filter** - settings of how the output HTML code is modified before it is sent to the browser; more info [here](#)
- **System** - general system settings, including time zones, UI, DB, event log, notification e-mails, etc.
- **E-mails** - settings related to the e-mail engine, used SMTP server, etc.; more info [here](#)
- **Avatars** - settings related to user and group avatar images and their resizing; more info [here](#)
- **Bad words** - settings related to the Bad words module; more info [here](#)
- **Blogs** - settings related to the Blogs module; more info [here](#)
- **Booking system** - settings of booking system notification e-mails
- **Community** - settings related to the community features - groups, members, activity points, etc.

- **Content staging** - settings related to the Content staging module; more info [here](#)
- **Forums** - settings related to the Forums module; more info [here](#)
- **Media libraries** - settings related to the Media libraries module; more info [here](#)
- **Message boards** - settings related to the Message boards module; more info [here](#)
- **Messaging** - settings related to the Messaging module; more info [here](#)
- **Web analytics** - settings related to the Web analytics module; more info [here](#)
- **Windows LiveID** - settings related to LiveID authentication; more info [here](#)
- **E-commerce** - settings related to the E-commerce module; more info in [this chapter](#) of the E-commerce guide
- **Payment gateway - Authorize.NET** - settings of the Authorize.NET payment gateway used by the E-commerce module; more info in [this chapter](#) of the E-commerce guide
- **Payment gateway - PayPal** - settings of the PayPal payment gateway used by the E-commerce module; more info in [this chapter](#) of the E-commerce guide

You can find more details on particular settings keys when you mouse-over the key name - you will see a pop-up info box that displays the key description. Detailed descriptions can also be found in **Context help**, which can be displayed by clicking the  icon at the top right corner of the page.

Part

VII

Development

7 Development

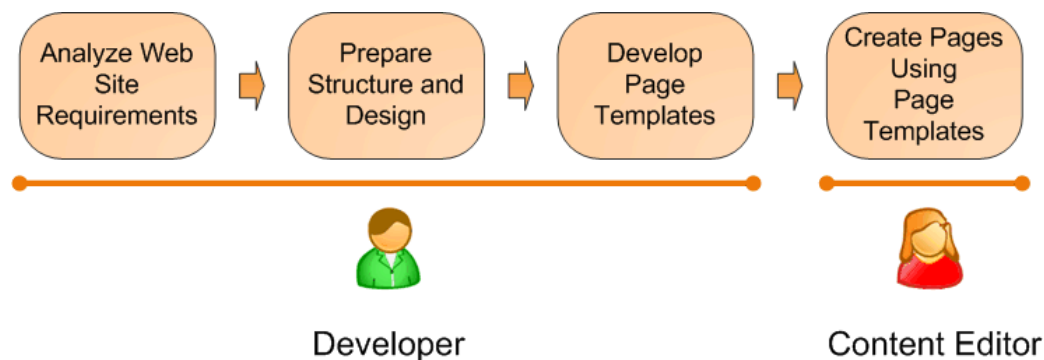
7.1 Overview

This section provides reference on various topics related to website development and system administration. Open the particular sub-chapters in order to get the related topics displayed.

7.2 Web development overview

7.2.1 The role of a web developer

The role of a web developer is described in the following figure:



This figure shows how you develop a website and how roles are split between developers and editors. A typical development process consists of the following steps:

1. The developer analyzes client requirements.
2. The developer prepares site structure (site map) and web design.
3. The developer creates **page templates** for every type of page required on the site (home page, solutions, products, news, etc.)
4. The content editor creates new pages - they enter text and images into the page templates defined by the developer.

7.2.2 What is a page template

A page template is a predefined look of the page that allows content editors to enter the content. A single page template can be re-used for multiple pages with the same structure and design, but with different content.

The templates allow content editors to focus just on content editing, without the need to take care of page formatting. They also help keep the web design consistent throughout the whole website. The following figure shows how a single page template can be used for multiple pages:



The [following chapter](#) describes two development models of creating such page templates with Kentico CMS.

7.2.3 Portal templates versus ASPX templates

Kentico CMS provides two development models and you can choose which one suits you better:

- **Portal Engine** - this model allows you to build websites using a portal engine. It's the recommended way for most developers since it doesn't require programming in Visual Studio. Instead, you can simply build websites using web parts in the **browser-based** user interface.
- **ASPX Templates** - this model can be chosen by advanced ASP.NET developers who prefer to create websites using standard ASP.NET architecture and using standard development tools, such as **Visual Studio**. This model requires that you are familiar with ASP.NET development and have at least basic programming knowledge of C# or VB.NET.

Both approaches are fully supported and they provide **the same level of flexibility and extensibility**. We recommend that you use the portal engine model, but if you're an advanced .NET developer and do not trust portal engines, you may want to use ASPX templates.

The following table compares portal engine and ASPX templates:

	Portal Engine	ASPX Template
How you work	You build website using the browser-based interface. No programming knowledge is required for common tasks.	You build ASPX pages in Visual Studio. At least basic programming knowledge of ASP.NET and either C# or VB.NET

		is required.
How you assemble pages	You use built-in or custom web parts that you place into customizable page layouts (HTML code with placeholders for web parts).	You use built-in or custom ASP.NET server controls that are placed on the ASPX pages. You can also use the code behind files - these are standard ASPX pages and they are part of the website project that you can open in Visual Studio. You can also place web parts (which are actually ASCX user controls) on the page templates if the appropriate server control is not available.
Master pages and visual inheritance	Sub-pages inherit the content from the parent pages by default (so called "visual inheritance"). The inheritance can be optionally broken if you want to create a page without parent content.	All page templates may use a master page, which is a standard ASP.NET 2.0 master page. The pages do not inherit content from their parents, they only inherit content from the master page (if it's used).
Custom code integration and extensibility	You can create your own user controls (ASCX) and web parts (ASCX with specific interface) in Visual Studio if you need to integrate some custom functionality. You can add any custom controls and code to the web parts or user controls that you use on your website.	You build standard ASPX pages with codebehind which means you can put any custom controls and code to the page in Visual Studio as you normally do.
Advantages	<ul style="list-style-type: none"> • Easier and faster to build a website. • ASP.NET programming knowledge is not required for common tasks. • You can build the whole website very quickly, only using the web browser. 	<ul style="list-style-type: none"> • Standard ASP.NET architecture. • You can use your favorite development tools, such as Visual Studio for all changes.
Disadvantages	<ul style="list-style-type: none"> • Proprietary architecture and development. 	<ul style="list-style-type: none"> • Requires ASP.NET programming knowledge.

Is Kentico CMS just another portal engine?

Now you may wonder what the difference between Kentico CMS and DotNetNuke or Rainbow Portal is.

Well, the main difference is the **flexibility**. Kentico CMS gives you full control over:

- site structure
- site navigation
- page layout
- design
- content structure

Also, it's important to explain that Kentico CMS is a **content management system**, not only a portal engine. It means it provides features of advanced CMS systems, such as:

- content repository using a logical tree hierarchy for all types of content - see [Where is the content stored?](#) for details
- content/design separation
- custom document types with custom fields
- workflow and versioning
- content locking (check-out, check-in)
- multilingual content
- content preview and content staging
- document-level permissions with permission inheritance
- full-text search in all content
- document management features for uploaded files

Moreover, Kentico CMS comes with many **professional and flexible built-in modules out-of-the-box**, including:

- Newsletters
- On-line forms
- Forums
- E-commerce
- Content Staging
- Image gallery
- Blogs
- Polls
- Web analytics
- Reporting

It means you do not need to obtain or purchase third-party modules with inconsistent user and programming interface, but you get everything from a single source, with complete documentation and support.

7.2.4 Portal engine development model

7.2.4.1 Portal engine overview

Each page in a Kentico CMS website uses some page template. A **page template** consists of a layout with particular web parts and their configuration. The portal engine page templates are physically stored in the database, so you will not find them on the disk.

Design of the page template is defined by **page layout**, which is a standard HTML code. The HTML code is used to define two-column, three-column, or virtually any custom layout you can think of.

The page layout contains special markup tags that specify places where the developer can place web parts - so called **web part zones**. A web part zone can contain any number of web parts.

A **web part** (also called "servlet", "portlet" or "module" in other solutions) is a piece of code that displays some content, e.g. a single document. Technically, web parts are standard ASCX user controls with some predefined programming interface (inherited from *CMSAbstractWebPart*).

The following figures show an example of a simple page, its page template, layout, web part zones and

web parts:

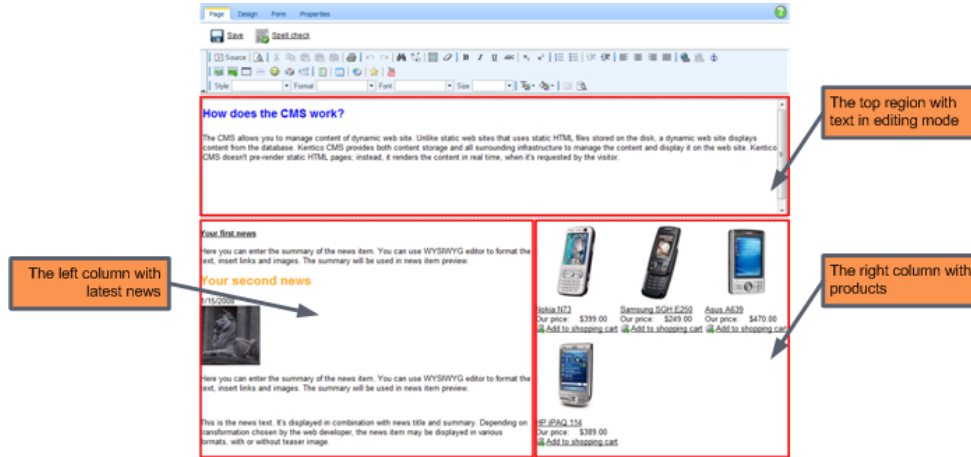
1) The sample page on the live site

This image shows our sample page on the live site. It displays the text on the top, news in the left column and products on right.



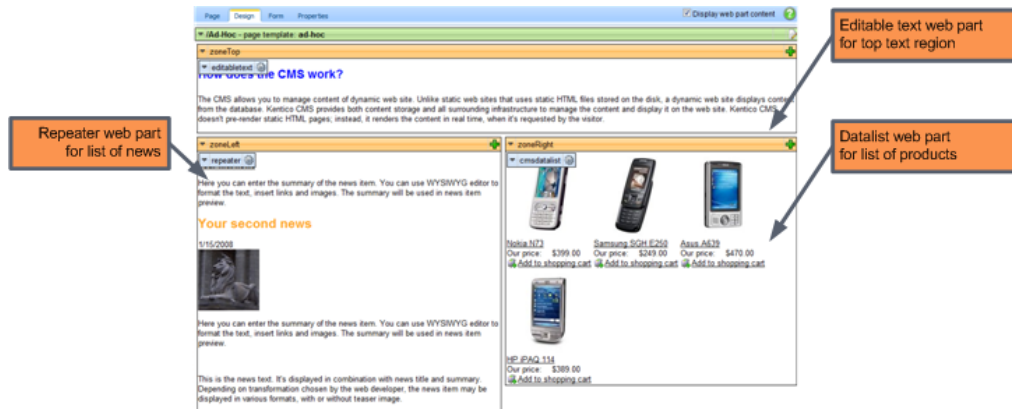
2) The sample page in the editing mode

Here you can see the top region with editable text and the lists of news and products.



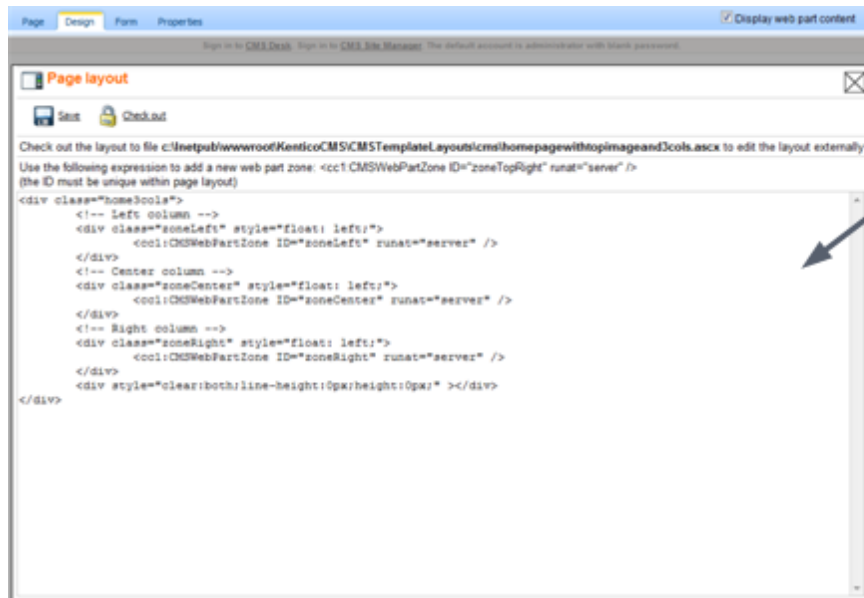
3) The page template of the sample page on the Design tab

This is the **Design** mode view of the page template used for our sample page. As you can see, it consists of three web part zones - **zoneTop**, **zoneLeft** and **zoneRight**. The web part zones contain particular web parts.



4) HTML layout of the page template

This image shows the HTML layout of the page template with tags representing web part zones on the top and in the table columns. We are using tables for layout here, but you can easily use CSS-based layout - you have full control over the HTML code and CSS styles.



```
Check out the layout to file c:\inetpub\wwwroot\Kentico\CMS\CMSTemplateLayouts\cms\homepagewithtopimageand3cols.aspx to edit the layout externally.
Use the following expression to add a new web part zone: <cc1:CMSWebPartZone ID="zoneTopRight" runat="server" />
(the ID must be unique within page layout)
<div class="home3cols">
  <!-- Left column -->
  <div class="zoneLeft" style="float: left;">
    <cc1:CMSWebPartZone ID="zoneLeft" runat="server" />
  </div>
  <!-- Center column -->
  <div class="zoneCenter" style="float: left;">
    <cc1:CMSWebPartZone ID="zoneCenter" runat="server" />
  </div>
  <!-- Right column -->
  <div class="zoneRight" style="float: left;">
    <cc1:CMSWebPartZone ID="zoneRight" runat="server" />
  </div>
  <div style="clear: both; line-height: 0px; height: 0px;" ></div>
</div>
```

HTML layout containing three web part zones for top, left and right sections

7.2.4.2 Creating a new page template

There are two ways how to create a new page template:

1. Creating a blank page using an ad-hoc template.
2. Cloning an existing page template.

We will start with the first option.



What is an ad-hoc template?

An ad-hoc template is a page template that is used by only one page. An ad-hoc template doesn't have any name. If you want to re-use the template for multiple pages, you need to save it as a named template first.

Creating a blank page using an ad-hoc template

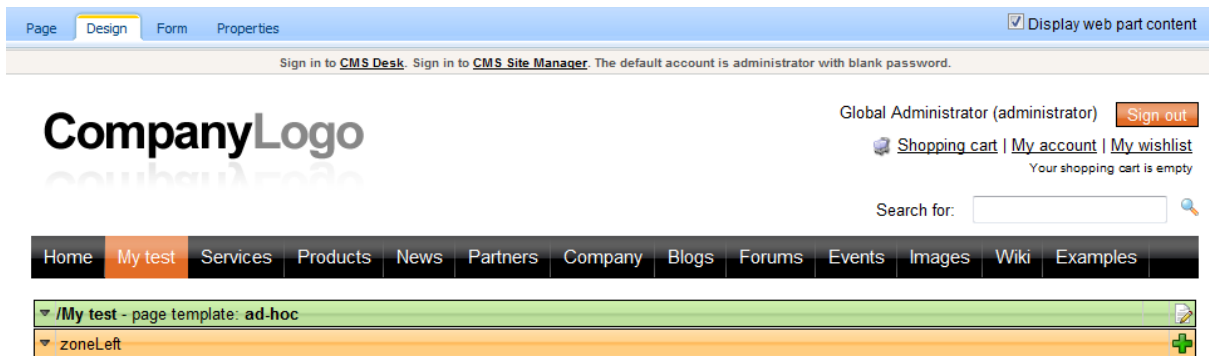
Please note: It's recommended that you use the sample **Corporate Site** for this example.

1. Go to **CMS Desk -> Content**, click **New** and choose to create a new **Page (menu item)** under the website root.
2. Enter **My test** into the **Page name** field and choose the **Create a blank page using this layout** option. Choose **Simple** from the list of layouts and leave the box **Copy this layout to my page template** checked. Click **Save**.

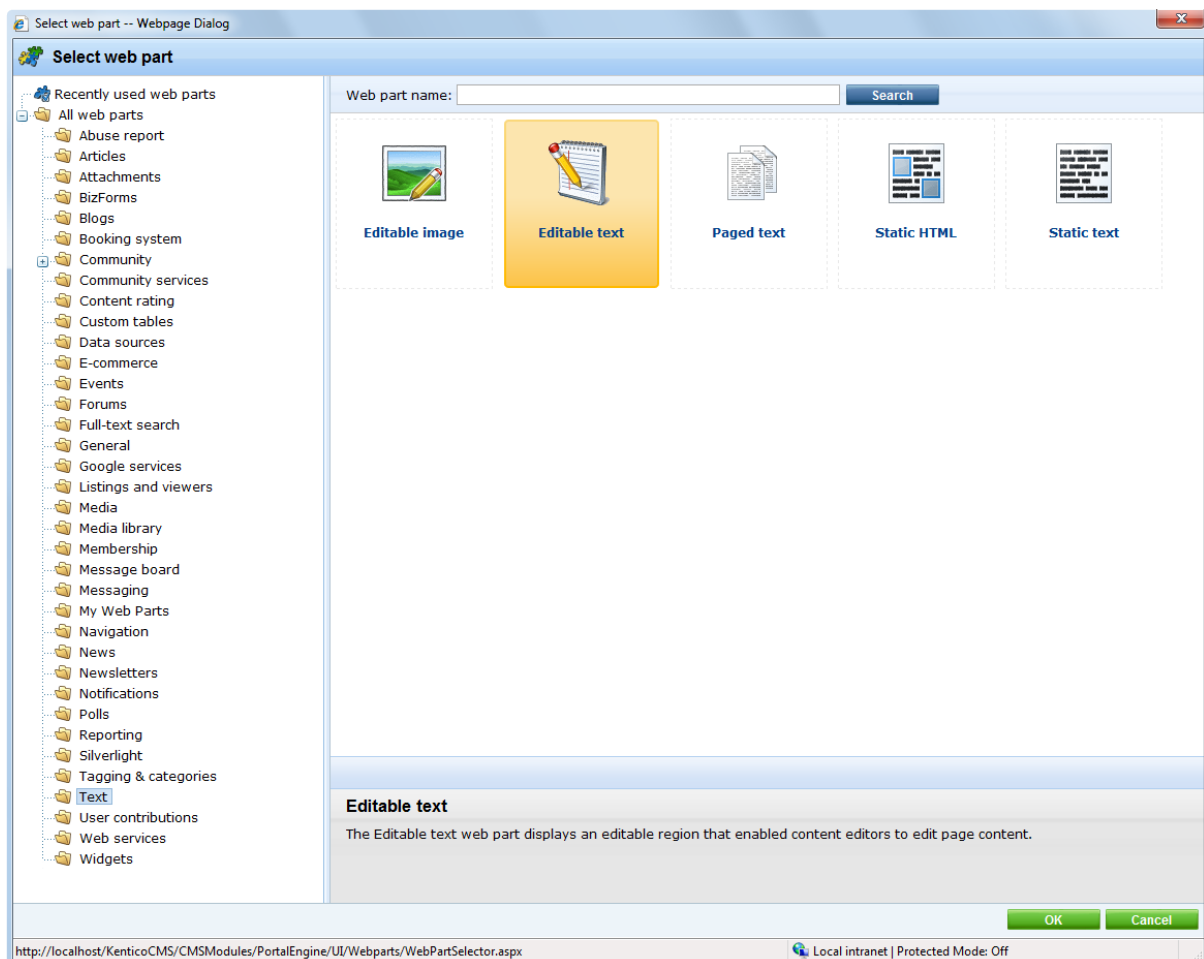
The screenshot shows the 'Create a blank page' dialog in Kentico CMS. At the top, the 'Page name' field is set to 'My test'. Below it, three radio buttons are present: 'Use page template', 'Inherit from parent page', and 'Create a blank page', with the latter being selected. A 'Layout name' search bar is also visible. The main area displays a grid of layout options, with the 'Simple' layout highlighted in yellow. At the bottom, the 'Simple' layout is selected, and the 'Copy this layout to my page template' checkbox is checked.

3. The page is now displayed in the tree view and selected. Click the **Design** tab. You will see a page as in the screenshot below.

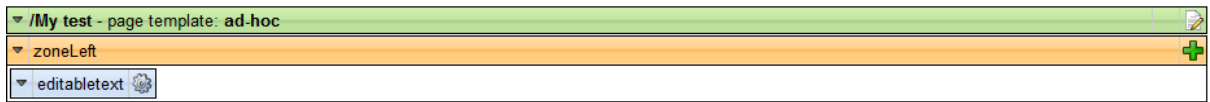
The green box with **/My test** title displays the current page. As you can see, we are now using an ad-hoc template that is specific for this page. The yellow box with **zoneLeft** title displays the web part zone, where web parts can be placed.



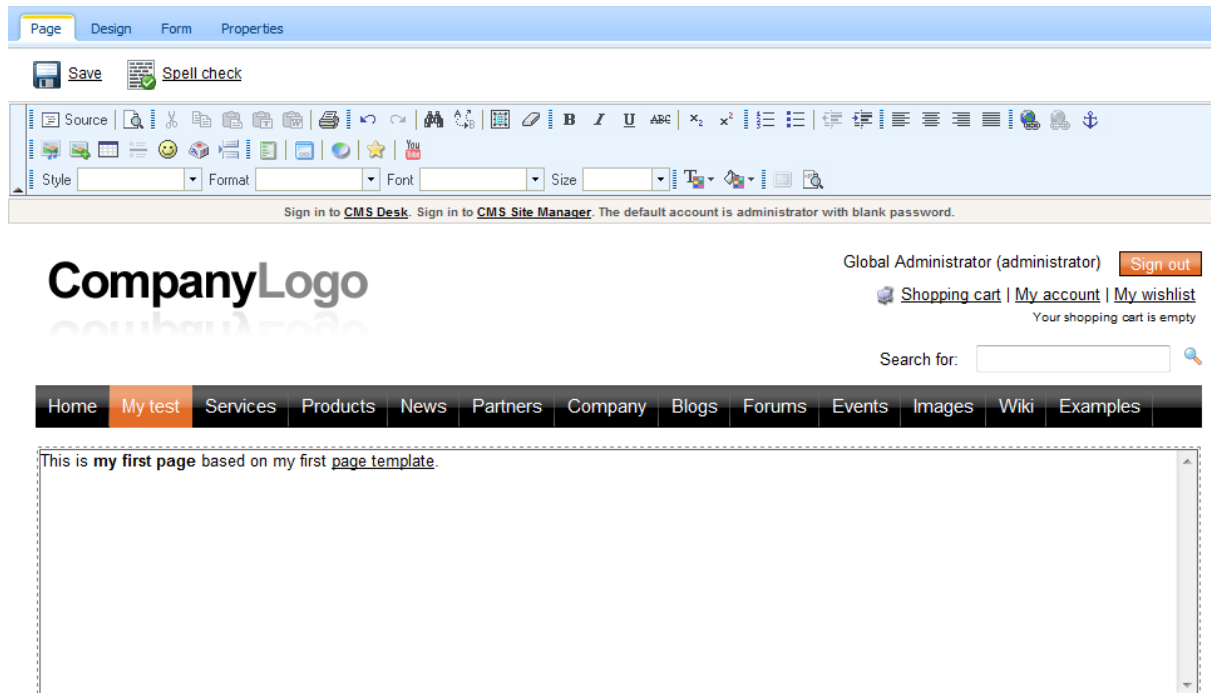
4. Click **Add web part** (+). The **Select web part** dialog opens. Select the **Text/Editable text** web part and click **OK**. This web part allows you to create editable regions where content editors can insert content.



5. The **Web part properties** dialog opens. Enter *Main text* into the **Editable region title** property and click **OK**. The web part is now added to the web part zone:



6. Now click the **Page** tab. You will see the page in editing mode. The page now contains your web part which displays the editable region. Enter some text into the region and click **Save**.



7. Click **Live site** in the main toolbar. You will see the live version of the page that is displayed to the visitors:



What you did

You have created a new page based on an ad-hoc page template. The page template defines the page structure and contains the editable text web part which enables content editors to enter text into the page.



Important!

Please, keep in mind that when you create a page based on an ad-hoc page template and later delete the page, the corresponding ad-hoc page template is deleted as well.

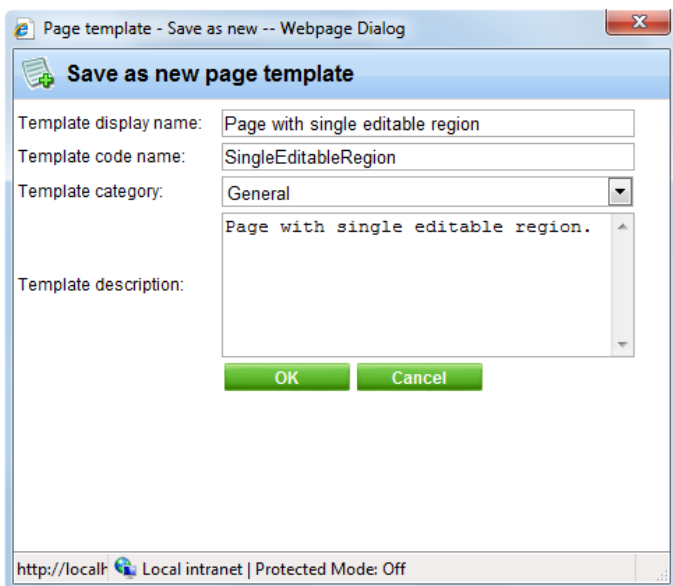
7.2.4.3 Re-using an ad-hoc page template

In many cases, you may want to re-use an ad-hoc page template for other pages. In this case, you need to **save the ad-hoc template as a new re-usable template**.

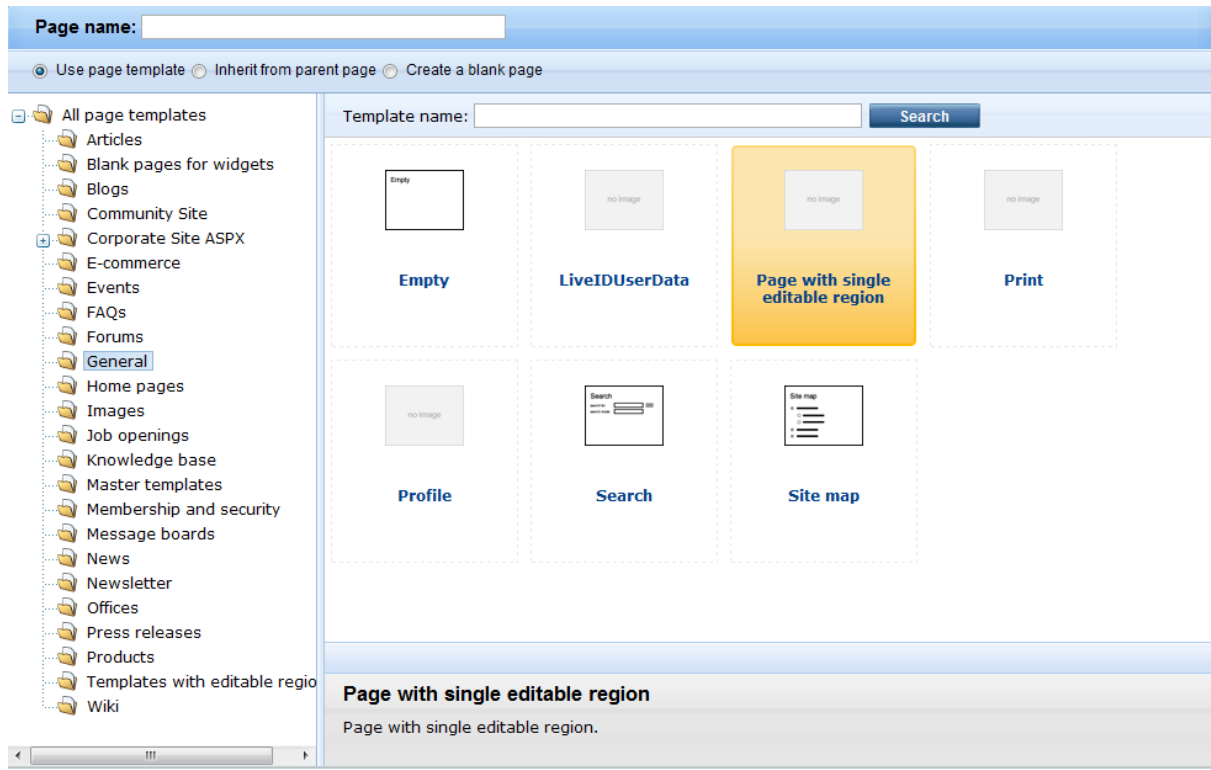
1. Go to **Content** -> select your new page created in the [previous example](#) -> **Properties** -> **Template**. You will see a page as in the following screenshot. As you can see, the current page is based on an ad-hoc template.

The screenshot shows the Kentico CMS Desk interface. The top navigation bar includes 'Content', 'My desk', 'Tools', and 'Administration'. The main area is divided into a left sidebar with a tree view of the site structure (Corporate Site, Home, My test, Services, Products, News, Partners, Company, Blogs, Forums, Events, Images, Wiki, Examples, Mobile, Special pages, Images) and a right pane showing the 'Properties' dialog for the selected page. The 'Template' field is highlighted with a red box and contains the text 'Ad-hoc: My test'. Below it are options for 'Save as new template...', 'Inherit template', and 'Edit template properties'. The 'Inherit content' section has radio buttons for 'Use page template settings', 'Do not inherit any content', 'Inherit only master page', and 'Select inherited levels'.

2. If you want to re-use this page template for some other page, click **Save as new template** (). The **Save as new page template** dialog opens. Fill in values as shown on the picture below and click **OK**, then click **Save** on the **Template** dialog.



Now when you try to create a new page, you will be able to create the page based on this new page template:



What you did

You have converted the previously created ad-hoc page template that was specific only for a single page into a re-usable page template that can be used for many pages.

7.2.4.4 Page template scopes

Page template scopes define where a page template can be used. **Important - template scopes are not a security feature!** They only provide a way how to simplify the user experience by not offering too many page templates to the users!




This means that you can limit which page templates will be offered to the users in the page template catalog in a certain location. But when the user creates a page there, they can move it to another location, even to such which is not allowed by the template scope.

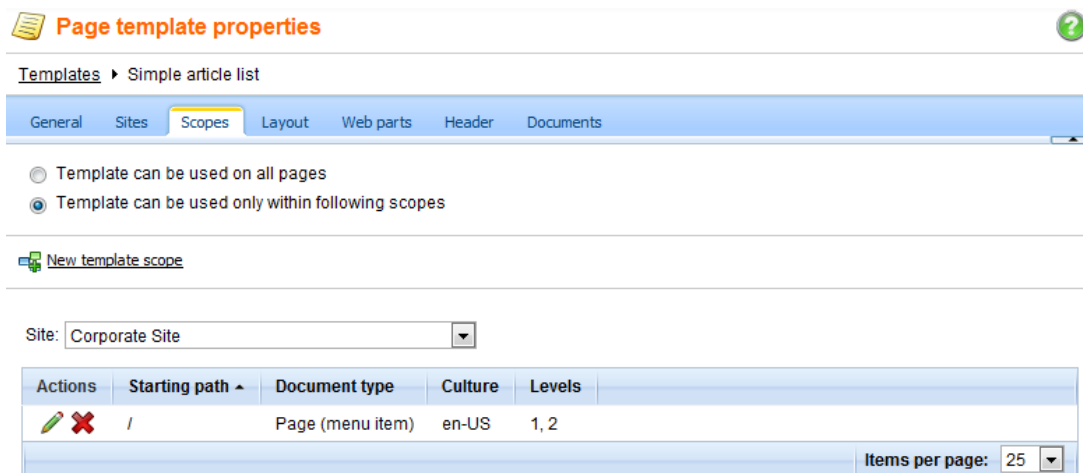
Template scopes can be defined on the **Scopes** tab when editing a page template. You have the following two basic options on the **Scopes** tab:

- **Template can be used on all pages:** the use of the page template is not limited and it can be used anywhere
- **Template can be used only within following scopes:** if selected, the page can be used based on the defined template scopes

If you choose the second of the options mentioned above, UI controls for managing the scopes will be displayed below the line.

Based on the site selected in the **Site** drop-down, you can display either site-related scopes or global scopes. Site-related scopes are applied only on the selected site, while the **(global scopes)** option indicates that the scopes are valid on all sites in the system.

Using the **New template scope** () link, you can create new template scopes. Listed scopes can be **Edited** () or **Deleted** ()




Page template properties



Templates ▸ Simple article list

General Sites **Scopes** Layout Web parts Header Documents

Template can be used on all pages
 Template can be used only within following scopes

 [New template scope](#)

Site: Corporate Site


Actions	Starting path	Document type	Culture	Levels
 	/	Page (menu item)	en-US	1, 2

Items per page: 25

When creating a new scope or editing an existing one, you can specify the following details, which define where the page template can be used:

- **Starting path:** path in the content tree where the page template can be used; the page template can not be used outside this path
- **Document type:** the page template can be used only for documents of the specified type
- **Culture:** the page template can be used only in the specified culture
- **Levels:** the page can either be used in all levels or only in the selected levels in the content tree

General Sites **Scopes** Layout Web parts Header Documents

Scopes > / (Corporate Site) 

Starting path:

Document type:

Culture:

Levels:

Allow for all levels

Allow only for following levels

- Level0
 - Level1
 - Level2
 - Level3
 - Level4
 - Level5
 - Level6
 - Level7
 - Level8
 - Level9

7.2.4.5 Page layouts

A **page layout** consists of **HTML layout** of the page template and **web part zones** that specify regions where web parts can be placed. You will use page layouts to define the **layout and design of your site**.

The easiest way how to edit a page layout is to switch to the **Design tab** of the page and click the **Edit layout** button at the top-right:



Page layout
✖

Save
Check out

Check out the layout to file `c:\inetpub\wwwroot\KenticoCMS\CMSTemplateLayouts\cms\toplogoandmenu.ascx` to edit the layout externally.

Use the following expression to add a new web part zone: `<cc1:CMSWebPartZone ID="zoneTopRight" runat="server" />` (the ID must be unique within page layout)

```

<!-- Top info -->
<div class="zoneTopInfo">
  <cc1:CMSWebPartZone ID="zoneTopInfo" runat="server" />
</div>
<!-- Content container -->
<div class="mainDiv">
  <!-- Logo -->
  <div class="zoneLogo">
    <cc1:CMSWebPartZone ID="zoneLogo" runat="server" />
  </div>
  <!-- Top zone -->
  <div class="zoneTop">
    <cc1:CMSWebPartZone ID="zoneTop" runat="server" />
  </div>
  <!-- Menu -->
  <div class="zoneMenu">
    <cc1:CMSWebPartZone ID="zoneMenu" runat="server" />
  </div>
  <!-- Content -->
  <div class="zoneMainContent">
    <cc1:CMSWebPartZone ID="zoneContent" runat="server" />
    <div style="clear:both;line-height:0px;height:0px;" ></div>
  </div>
  <!-- Bottom zone -->
  <div class="zoneBottom">
    <cc1:CMSWebPartZone ID="zoneBottom" runat="server" />
  </div>

```

The web part zones are defined by the following tag:

```

<cc1:CMSWebPartZone ID="xy" runat="server" />

```

The ID value must be unique within given layout.

As you can see, the layout code is standard HTML. It means **you have full control over rendered HTML code** and you can choose between table and CSS layout.



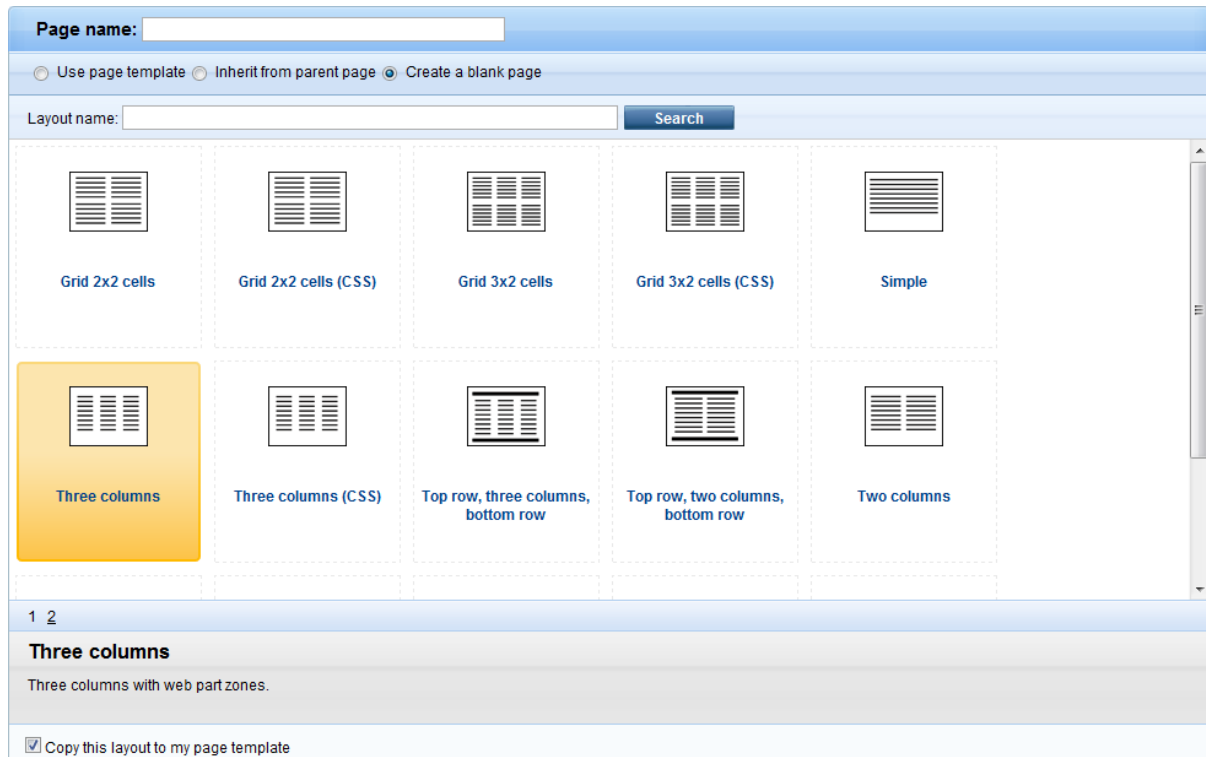
Editing the layout in your favorite editor

Editing of HTML code in plain text area may not be very comfortable. However, you can use the button **Check out to file** to save the layout code to the disk and open it in your favorite HTML editor.

Please note: The file is saved on the disk where the web application is running.

Managing pre-defined page layouts

When you are creating a new blank page, you can choose from pre-defined page layouts:



The **Copy this layout to my page template** option allows you to decide whether you will be using the shared layout or if you create a copy of the layout specific for your page template only. If you choose the **shared layout** and make changes to the HTML layout code, they will affect all pages that use the same shared page layout, so it's better to use a copy of the layout in most cases.

You can manage the pre-defined page layouts in **Site Manager -> Development -> Page layouts**. You can configure the following properties:

| | |
|---------------------|--|
| Layout display name | The name of the site displayed to the users. |
| Layout code name | The name of the site used in the code. |
| Layout description | Optional description. |
| Layout code | ASCX code of the page layout. |

Sample layout code

The following sample page layout code uses a table to define a two-column layout:

```
<table>
  <tr>
    <td>
      <cc1:CMSWebPartZone ID="zoneLeft" runat="server" />
    </td>
    <td>
      <cc1:CMSWebPartZone ID="zoneRight" runat="server" />
    </td>
  </tr>
</table>
```

The following layout code defines the same two-column layout, but using DIV elements and CSS styles:

```
<div style="width: 50%;">
  <div style="width: 80%; float: left;">
    <cc1:CMSWebPartZone ID="zoneLeft" runat="server" />
  </div>
  <div style="width: 50%; float: right;">
    <cc1:CMSWebPartZone ID="zoneRight" runat="server" />
  </div>
</div>
```

7.2.4.6 The master page concept

Master pages represent a powerful concept of sharing the same header and footer for all pages on the website. It allows you to manage repeated items, such as site logo, main menu and footer content on a single place.

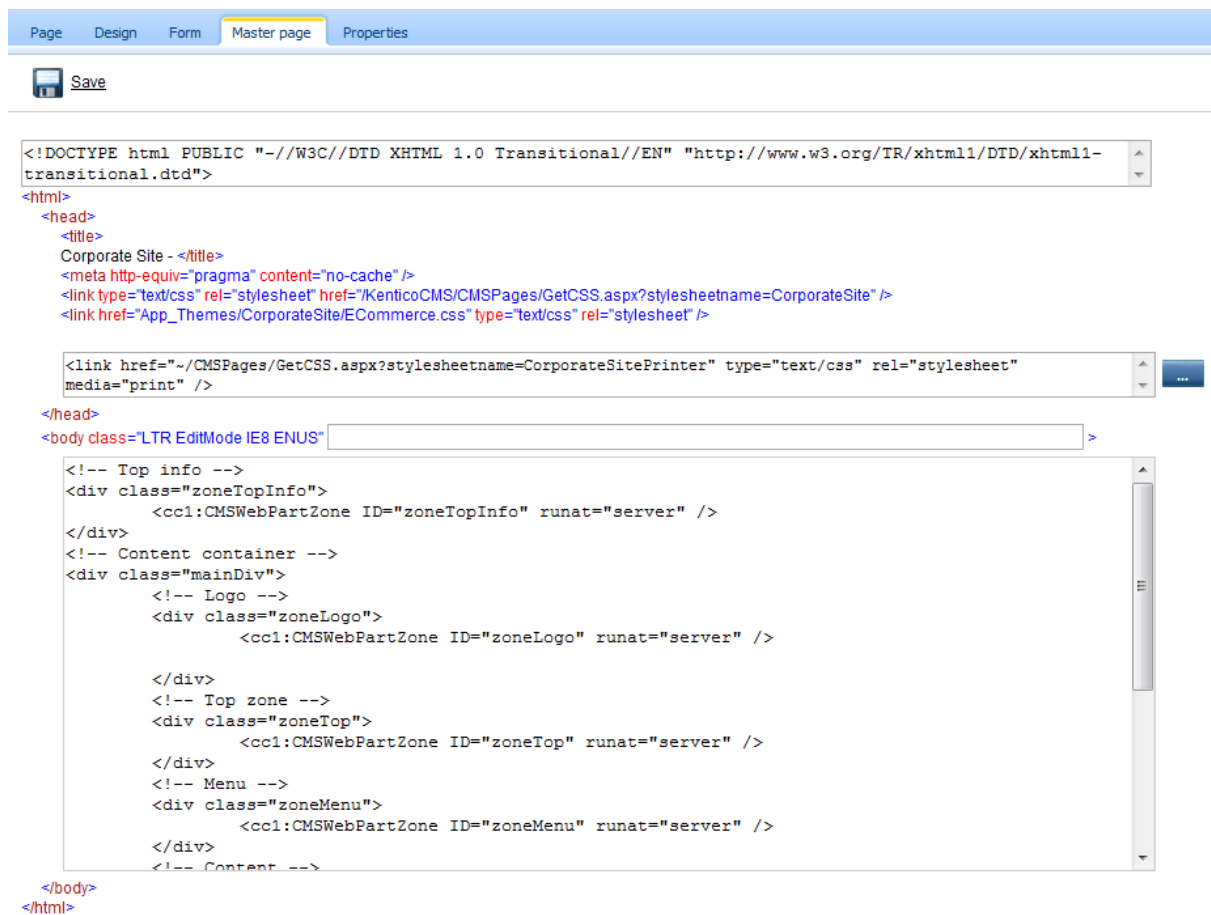
The root of the content tree is always a master page. You can also configure any other page template to be a master page by enabling the **Master page** option on the **General** tab of the page template editing interface.

The following figure shows how the same master page is used for home page and for product page. As you can see, the pages are inserted inside the master page:



7.2.4.7 Editing the master page

Master pages are either the root of the content tree or pages whose page template has the **Master page** option enabled on the **General** tab of the page template editing interface. They can be edited as any other page. You can use the **Design** tab to edit the web parts and HTML layout of the master page. Besides, there's a special **Master page** tab available only for the master pages:



```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html>
<head>
<title>
Corporate Site - </title>
<meta http-equiv="pragma" content="no-cache" />
<link type="text/css" rel="stylesheet" href="/KenticoCMS/CMSPages/GetCSS.aspx?stylesheetname=CorporateSite" />
<link href="App_Themes/CorporateSite/ECommerce.css" type="text/css" rel="stylesheet" />

<link href="~/CMSPages/GetCSS.aspx?stylesheetname=CorporateSitePrinter" type="text/css" rel="stylesheet"
media="print" />
</head>
<body class="LTR EditMode IE8 ENUS" >

<!-- Top info -->
<div class="zoneTopInfo">
<cc1:CMSWebPartZone ID="zoneTopInfo" runat="server" />
</div>
<!-- Content container -->
<div class="mainDiv">
<!-- Logo -->
<div class="zoneLogo">
<cc1:CMSWebPartZone ID="zoneLogo" runat="server" />

</div>
<!-- Top zone -->
<div class="zoneTop">
<cc1:CMSWebPartZone ID="zoneTop" runat="server" />
</div>
<!-- Menu -->
<div class="zoneMenu">
<cc1:CMSWebPartZone ID="zoneMenu" runat="server" />
</div>
<!-- Content -->
</div>
</body>
</html>

```

As you can see, you can define the following sections of the HTML code of the master page. This code is used for all pages on your website:

- **DOCTYPE** - here you can enter any code that needs to be placed at the beginning of the file, typically the DOCTYPE definition.
- **HEAD** - here you can put any HTML code that needs to be placed in the **<head>** section of the page.
- **BODY** - here you can add custom attributes to the **<body>** element.
- **Master page code** - this is actually the HTML layout of the master page template. This is the same code that you edit on the **Design** tab, in the **HTML Layout** mode.



Page placeholder

The master page must always contain the **Page placeholder** web part that specifies where the content of sub-pages should be loaded. Visual inheritance is described in more detail in the next chapter.

7.2.4.8 Visual inheritance

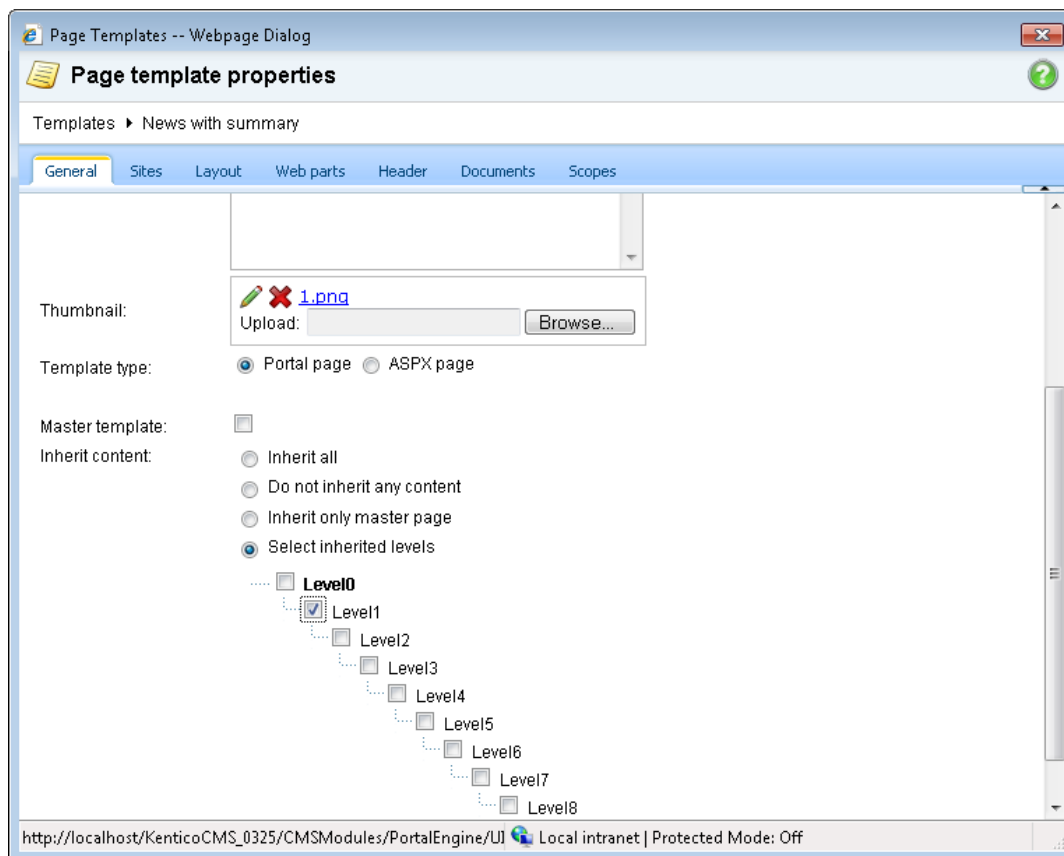
As you saw in chapter [The master page concept](#), the content of sub-pages is displayed within master page or generally within any parent page using the **Page placeholder** web part. The impact of this

approach is that the sub-page content is "nested" inside the content of the parent pages.

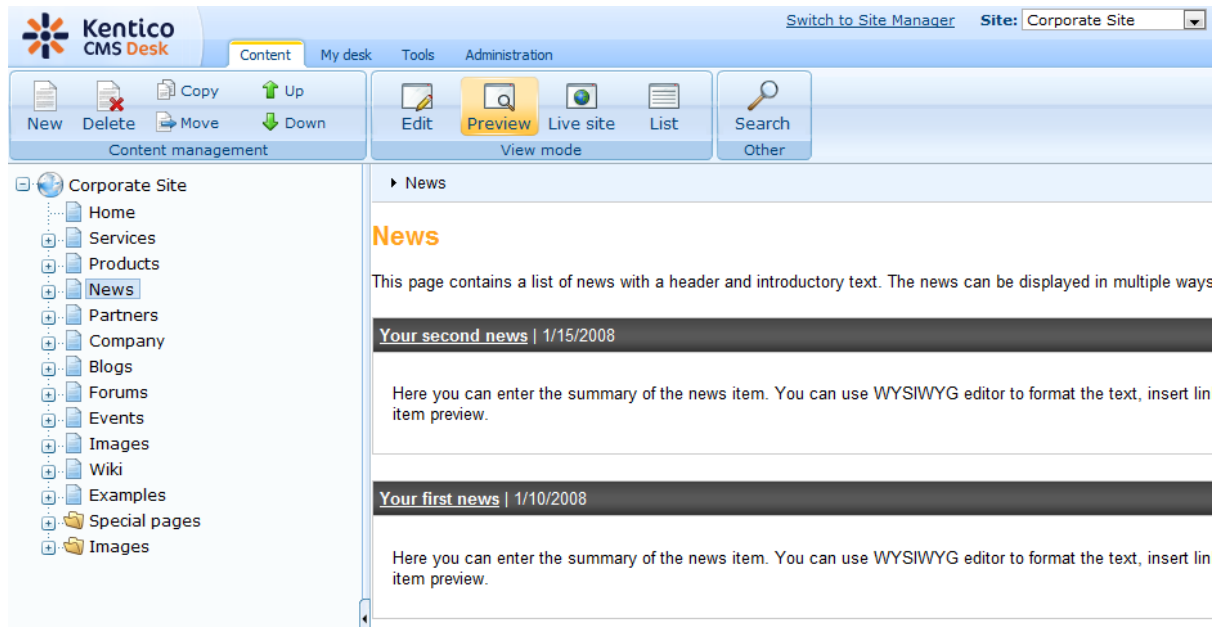
In some cases, you may want to hide some parts of the parent page. There are several ways how to achieve that:

Using the "Inherit content" property of the page template

Click the **/News** page and click **Properties -> Template -> Edit template properties**. Now you can set the **Inherit content** value to **Selected inherited levels** and check only the **Level 1** boxes. It means that only the content from first level of content hierarchy will be displayed and the master page (root) is not inherited. Click **OK** to save the changes.

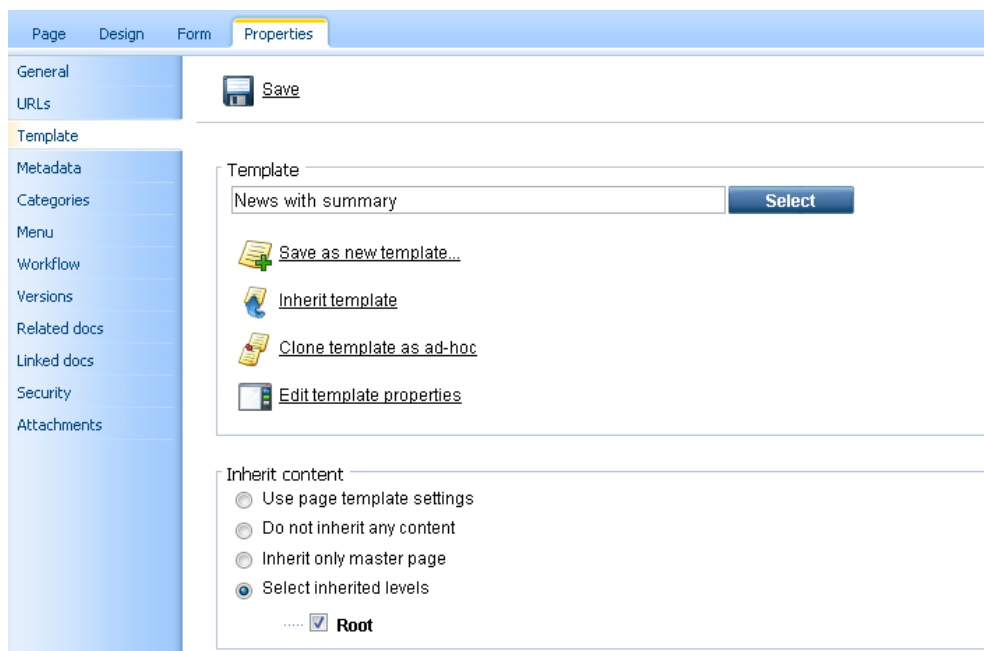


The page will look like this:



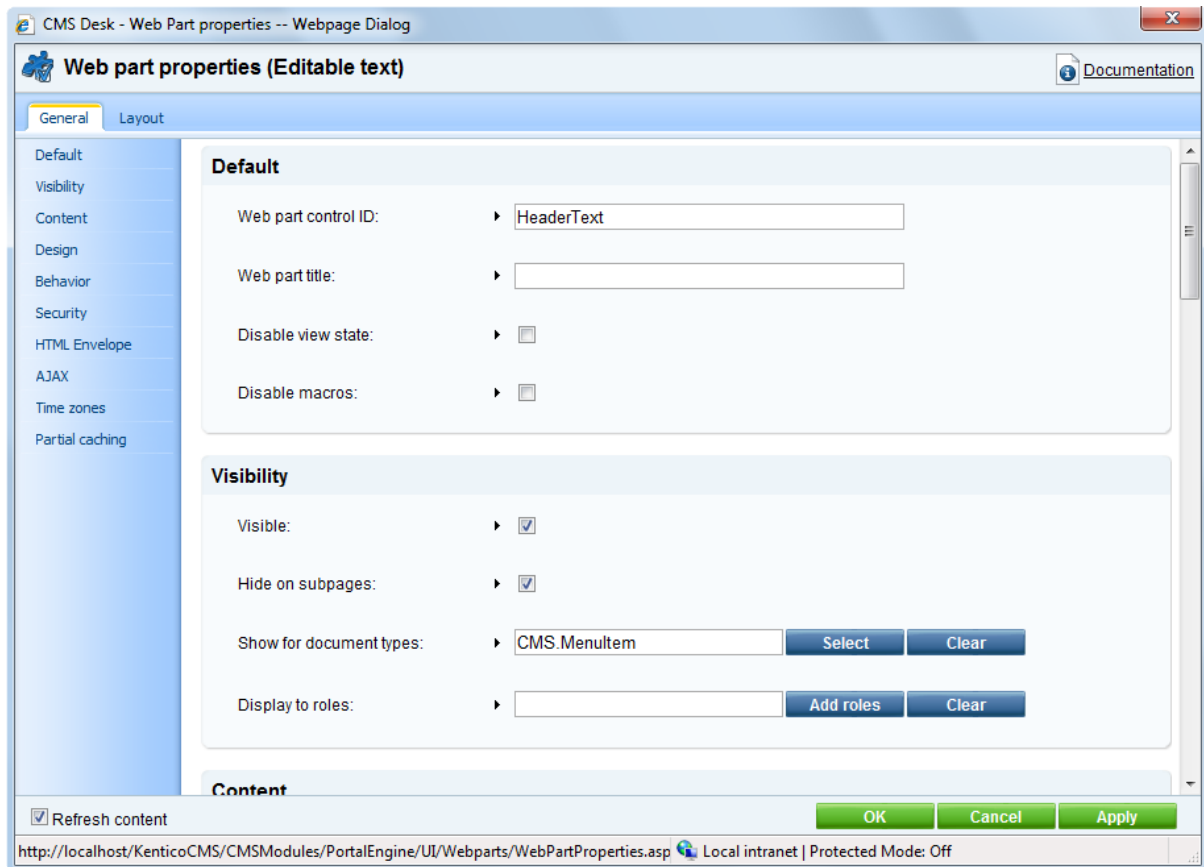
Set the value back to empty value for now.

Similarly, you can set the content inheritance on **page level** using the **Properties -> Template** dialog. The content inheritance settings you configure for the page override the page template settings:



Using the "Hide on sub-pages" web part property

Click **/News** and click **Design**, click **configure** in the **HeaderText** web part. The web part has the property Hide on sub-pages set to true:



Click **Cancel** and click **Live site**. Please note that when you display the list of news, the title **News** is displayed:

Home Services Products **News** Partners Company Blogs Forums Events Images Wiki Examples

News

This page contains a list of news with a header and introductory text. The news can be displayed in multiple ways depending on chosen transformation and web part.

Your second news | 1/15/2008

Here you can enter the summary of the news item. You can use WYSIWYG editor to format the text, insert links and images. The summary will be used in news item preview.

Your first news | 1/10/2008


Here you can enter the summary of the news item. You can use WYSIWYG editor to format the text, insert links and images. The summary will be used in news item preview.

If you go to some particular news item, the title is hidden:

Home Services Products **News** Partners Company Blogs Forums Events Images Wiki Examples

[News](#) > Your second news

Your second news

 **1/15/2008**

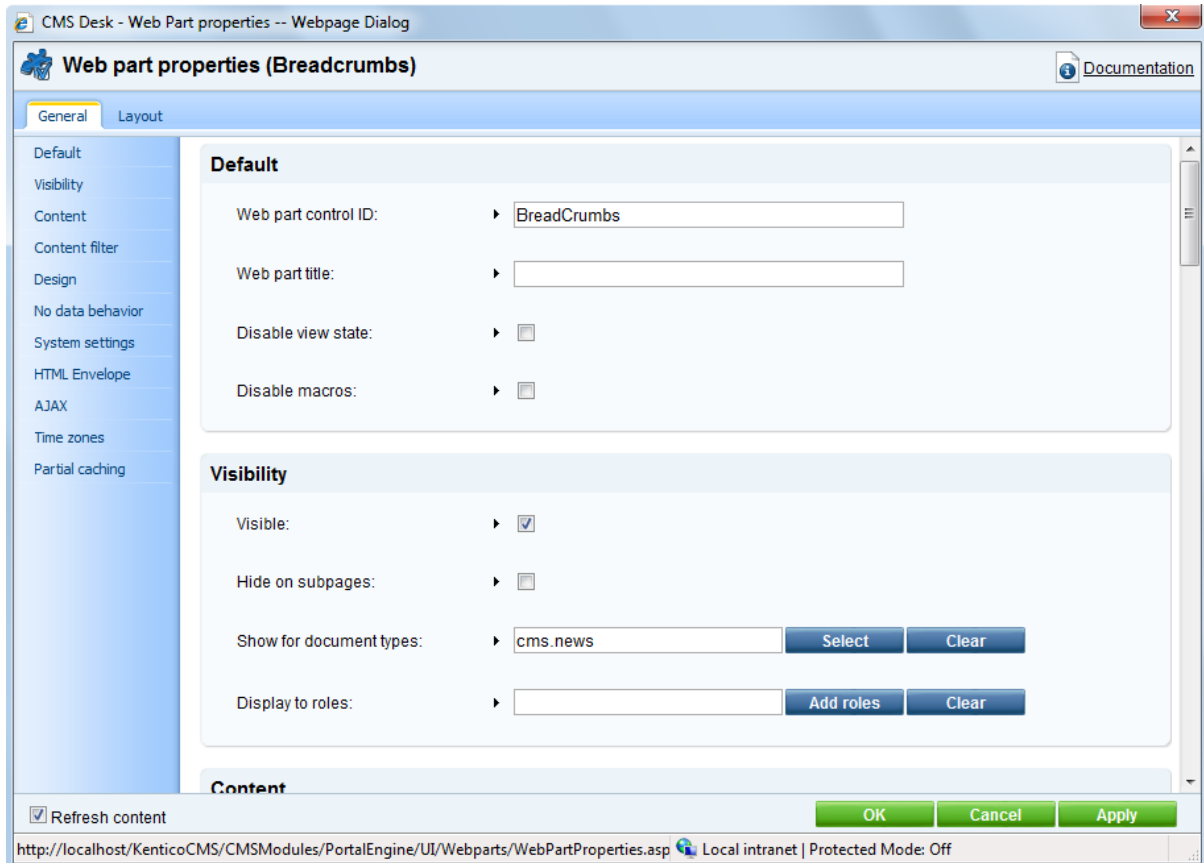
Here you can enter the summary of the news item. You can use WYSIWYG editor to format the text, insert links and images. The summary will be used in news item preview.

This is the news text. It's displayed in combination with news title and summary. Depending on transformation chosen by the web developer, the news item may be displayed in various formats, with or without teaser image.

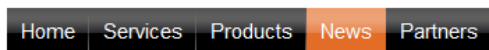
This is ensured by the **Hide on sub-pages** property that hides the web part displaying the **News** title.

Using the "Show for document types" web part property

The **Show for document types** property allows you to define a list of document types for which the web part will be displayed. Click **/News**, click **Design** and click **configure** in the **BreadCrumbs** web part. The **Show for document types** field is set to the **News** document type. Click **Cancel**.



Go to the live site, to the **/News** page. The breadcrumb navigation is hidden since the currently selected document type is a page:



News

This page contains a list of news with a header and introductory part.

Your second news | 1/15/2008

When you go to some particular news item, the currently selected document is a news item and the breadcrumb navigation is displayed:



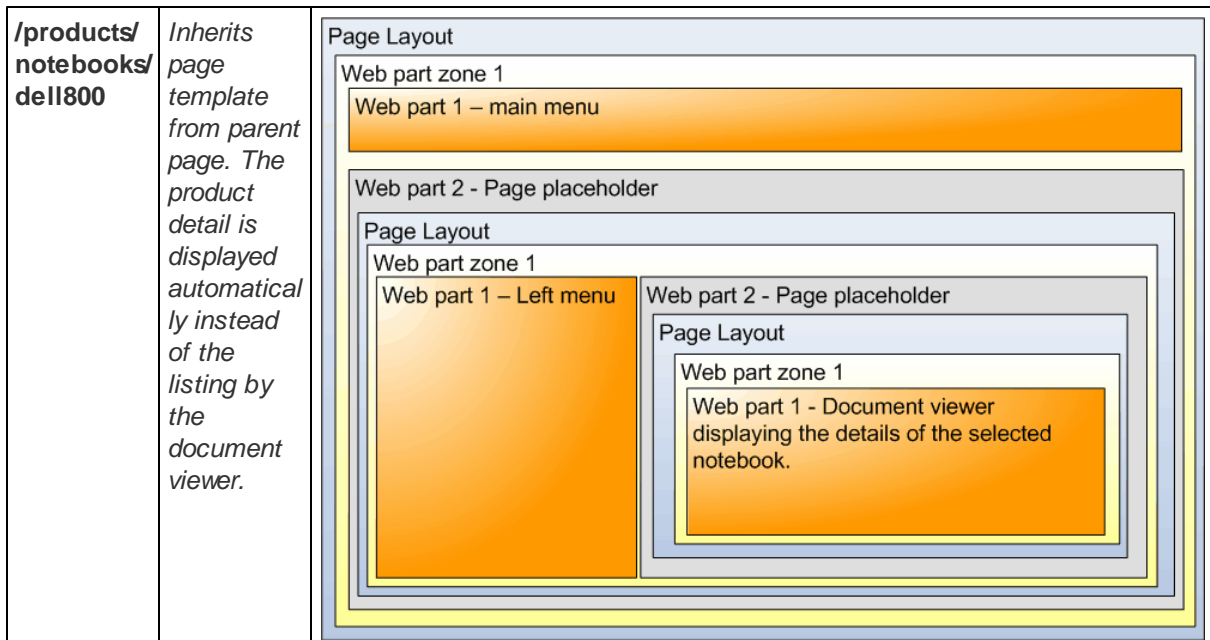
You have learned how to break inheritance of content or how to display content based on the current document type.

7.2.4.9 Content tree and page templates

The content tree defines not only the site map of your website, but it also defines how the pages are nested. When you request a page `/products/notebooks/dell1800`, the portal engine works loads the content in the following order:

| Processed path | Page template | Rendered page |
|----------------|-------------------------|--|
| / (root) | Main menu page template | <p>The diagram shows a nested structure of the rendered page. It starts with a "Page Layout" container. Inside this container is "Web part zone 1", which contains "Web part 1 - main menu" (highlighted in orange). Below this is "Web part 2 - Page placeholder" (a large grey area). The entire structure is enclosed in a yellow border.</p> |

| | | |
|--|--------------------------------|--|
| <p>/products</p> | <p>Products page template</p> | <p>Page Layout</p> <p>Web part zone 1</p> <p>Web part 1 – main menu</p> <p>Web part 2 - Page placeholder</p> <p>Page Layout</p> <p>Web part zone 1</p> <p>Web part 1 – Left menu</p> <p>Web part 2 - Page placeholder</p> |
| <p>/products/
notebooks</p> | <p>Notebooks page template</p> | <p>Page Layout</p> <p>Web part zone 1</p> <p>Web part 1 – main menu</p> <p>Web part 2 - Page placeholder</p> <p>Page Layout</p> <p>Web part zone 1</p> <p>Web part 1 – Left menu</p> <p>Web part 2 - Page placeholder</p> <p>Page Layout</p> <p>Web part zone 1</p> <p>Web part 1 - Document viewer displaying the list of notebooks</p> |



7.2.4.10 Managing page template catalog

You can manage the page templates in **Site Manager -> Development -> Page templates**. Here you can organize the templates into categories, modify their descriptions, etc.

Each template has the following properties:

General tab

| | |
|-------------------------|--|
| Template name display | The name of the template displayed to the users. |
| Template name code | The name of the template used in the code. |
| Category | Here you can choose the category of the page template. |
| Template description | Description of the template. |
| Thumbnail | Teaser (preview) of the template. It is displayed in 'Select template' dialog, e.g. if you are creating new page. |
| Template type | Indicates if the page template is a portal page template or ASPX page (the second option is used for backward compatibility with CMS 1.x). If you choose ASPX page you will need to specify path to .aspx file using tilde (~) to symbolize the root directory of project folder, e.g.: ~/CMSTemplates/CorporateSiteASPX/Blog.aspx |
| Show as master template | Indicates if the field should be offered in the New site wizard among master page templates. Master page templates are usually used for main menu and logo of the website. |
| Inherit content | Configures the visual inheritance as explained in the Visual inheritance chapter .

You can choose from the following options: <ul style="list-style-type: none"> • Inherit all - inherits the content of all parent pages • Do not inherit any content - displays only the current page without any parent content • Inherit only master page - inherits from the first master page above the page in the content tree, i.e. if there are more master pages, it inherits only from the one which is the closest above • Select inherited levels - inherits only content from the chosen content tree levels |

Sites tab

On the Sites tab, you can choose which websites the page template will be available for.

Layout tab

Here you can edit the HTML layout of the page template. You can either choose to use some of the pre-defined ("shared") layouts or you can specify your own HTML layout code ("custom layout").

Web parts

Here you can see the XML document with configuration of the web parts. Use this dialog only in situation when the standard **Design** dialog doesn't work as expected (e.g. due to some data inconsistency).

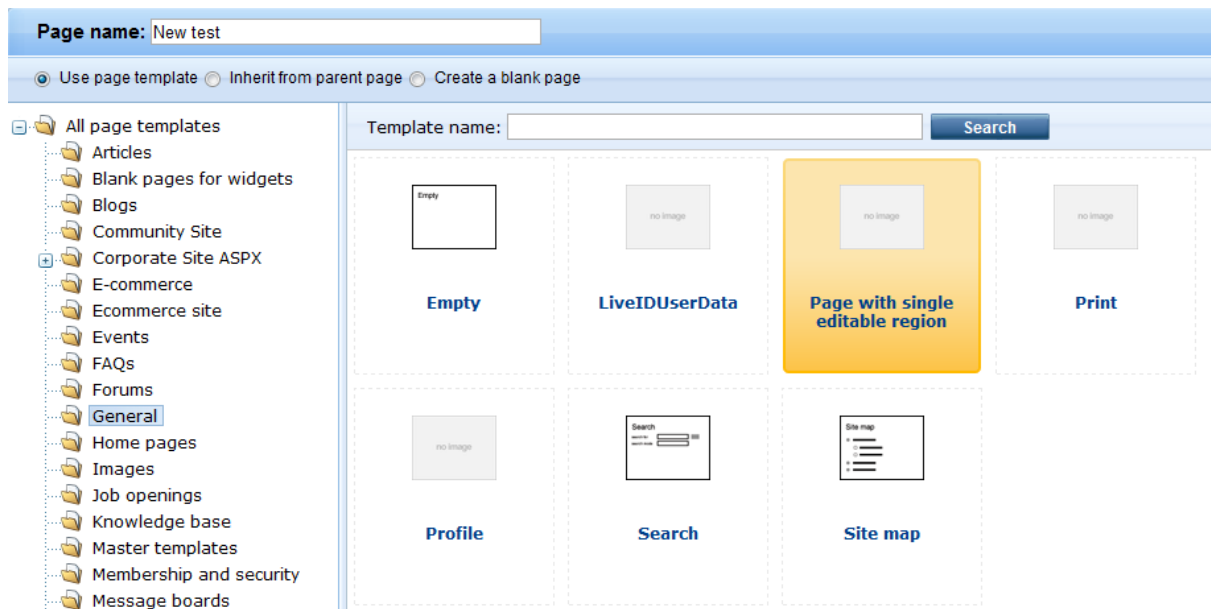
Header

Here you can specify custom HTML code that will be added to the <head> element of the page for all pages that use this page template. It's useful if you need to link some additional CSS or JavaScript files.

7.2.4.11 Cloning and modifying a page template

You may need to create a new page that will be similar to existing pages, but with some minor modification of the page template. Consider you want to display the editable region from the previously created page template in a green container box.

Instead of creating the page template from scratch, simply create a new page based on your existing page template.



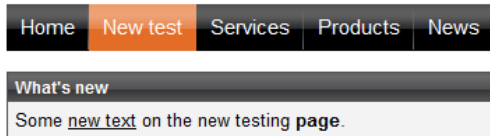
Then, choose the page and click **Properties -> Template** and click **Clone as ad-hoc template** and click **Save**. A new ad-hoc template is created now and you can edit it without modifying the existing pages based on the original template:

The screenshot shows the 'Properties' tab in a CMS interface. The left sidebar contains a navigation menu with items: General, URLs, Template (selected), Metadata, Categories, Menu, Workflow, Versions, Related docs, Linked docs, Security, and Attachments. The main content area is titled 'Properties' and has a 'Save' button. Below that, the 'Template' section is active, showing a dropdown menu with 'Ad-hoc: New test' and a 'Select' button. Below the dropdown are three links: 'Save as new template...', 'Inherit template', and 'Edit template properties'. At the bottom, the 'Inherit content' section has three radio buttons: 'Use page template settings' (selected), 'Do not inherit any content', and 'Select inherited levels'.

Now switch to the **Design** tab and click the **configure** button of the Editable text web part. Choose to use the **Black box** container in the **Use container** value and enter **What's new** into the **Container title** field:

The screenshot shows the 'Web part properties (Editable text)' dialog box. The title bar reads 'CMS Desk - Web Part properties -- Webpage Dialog'. The dialog has a 'Documentation' link. The left sidebar contains a navigation menu with items: Default, Visibility, Content, Design (selected), Behavior, Security, HTML Envelope, AJAX, Time zones, and Partial caching. The main content area is titled 'Web part properties (Editable text)' and has a 'Documentation' link. Below that, the 'HTML Envelope' section is active, showing four fields: 'Web part container:' with a dropdown menu set to 'Black box', 'Web part container title:' with a text box containing 'What's new', 'Content before:' with a dropdown menu and a '...' button, and 'Content after:' with a dropdown menu and a '...' button. Below the 'HTML Envelope' section is the 'AJAX' section, which has a 'Use update panel:' checkbox. Below the 'AJAX' section is the 'Time zones' section, which has two fields: 'Time zone:' with a dropdown menu set to 'Inherit', and 'Custom time zone:' with a dropdown menu set to '(none)'. At the bottom of the dialog, there is a 'Refresh content' checkbox, and three buttons: 'OK', 'Cancel', and 'Apply'. The status bar at the bottom shows the URL 'http://localhost/KenticoCMS/CMSModules/PortalEngine/UI/Webparts/WebPartProperties.asp' and the text 'Local intranet | Protected Mode: Off'.

Click **OK**. Switch to the **Page** tab and enter some text into the editable region. Click **Save** and click **Live site** in the main toolbar. You will see a page like this:



As you can see, the text is now surrounded with a green container. When you check the original **My test** page, you will see it uses the original design and it wasn't affected by the change we made to our new copy of the page template.



Re-using the adjusted template again

If you want to re-use the new, adjusted page template, you can click the **Save as new template** button in the **Properties -> Template** dialog as you previously did.



Important!

Please keep in mind that when you create a page based on an ad-hoc page template and later delete the page, the corresponding ad-hoc page template is deleted too and **can not be restored**.

7.2.4.12 Using and configuring web parts

Web parts can be used on both portal page templates and ASPX page templates. However, with ASPX page templates, you're losing the friendly user interface and you need to set the properties in Visual Studio.

Go to **CMS Desk -> Content**, click some page and choose **Design** in the toolbar. You will see the page template structure like this:

The screenshot displays the Kentico CMS Design view for a sample corporate site. The interface includes a top navigation bar with tabs for Page, Design (selected), Form, and Properties, along with a 'Display web part content' checkbox. Below the navigation is a sign-in area for 'CMS Desk' and 'CMS Site Manager'. The main content area shows the site's layout with a 'CompanyLogo' placeholder, user information for 'Global Administrator (administrator)', and links for 'Shopping cart', 'My account', and 'My wishlist'. A search bar is also present. The design view is divided into zones: 'zoneTop' (containing an 'EditableImage' web part with a photo of three business professionals), 'zoneLeft' (containing a 'NewsletterSubscription' web part with input fields for 'First Name', 'Last Name', and 'E-mail', and a 'Subscribe' button), 'zoneCenter' (containing a 'MainContentText' web part with the text 'welcome to the Sample Corporate Site' and a paragraph about Kentico CMS), and 'zoneRight' (containing a 'ScrollingNews' web part with the text 'Your first news' and a date '1/10/2008').

Every web part can be moved up/down, to another web part zone and it can be configured using the **Configure** button. It opens the Web part properties dialog like this:

The screenshot shows the 'Web part properties (Editable text)' dialog box. The 'General' tab is active, and the 'Layout' tab is also visible. The 'Default' section includes the following fields:

- Web part control ID:
- Web part title:
- Disable view state:
- Disable macros:

The 'Visibility' section includes the following fields:

- Visible:
- Hide on subpages:
- Show for document types:
- Display to roles:

The 'Content' section has a Refresh content checkbox. At the bottom of the dialog are three buttons: , , and . The status bar at the bottom shows the URL: `http://localhost/KenticoCMS/CMSModules/PortalEngine/UI/Webparts/WebPartProperties.asp` and the text: Local intranet | Protected Mode: Off.

When you click **OK**, the changes are saved and the window closes. When you click **Apply**, the changes are saved, but you can continue modifying the properties. All changes are applied immediately, the page templates are not connected with workflow or versioning.



Impacts of changing page templates

When you change a re-usable page template that is used by several pages, the changes will appear on all page templates.

If you need to modify only a single page structure, you need to clone the page template as an ad-hoc template or as a new page template. See also [Cloning and modifying a page template](#).

7.2.4.13 Web part binding (obsolete)



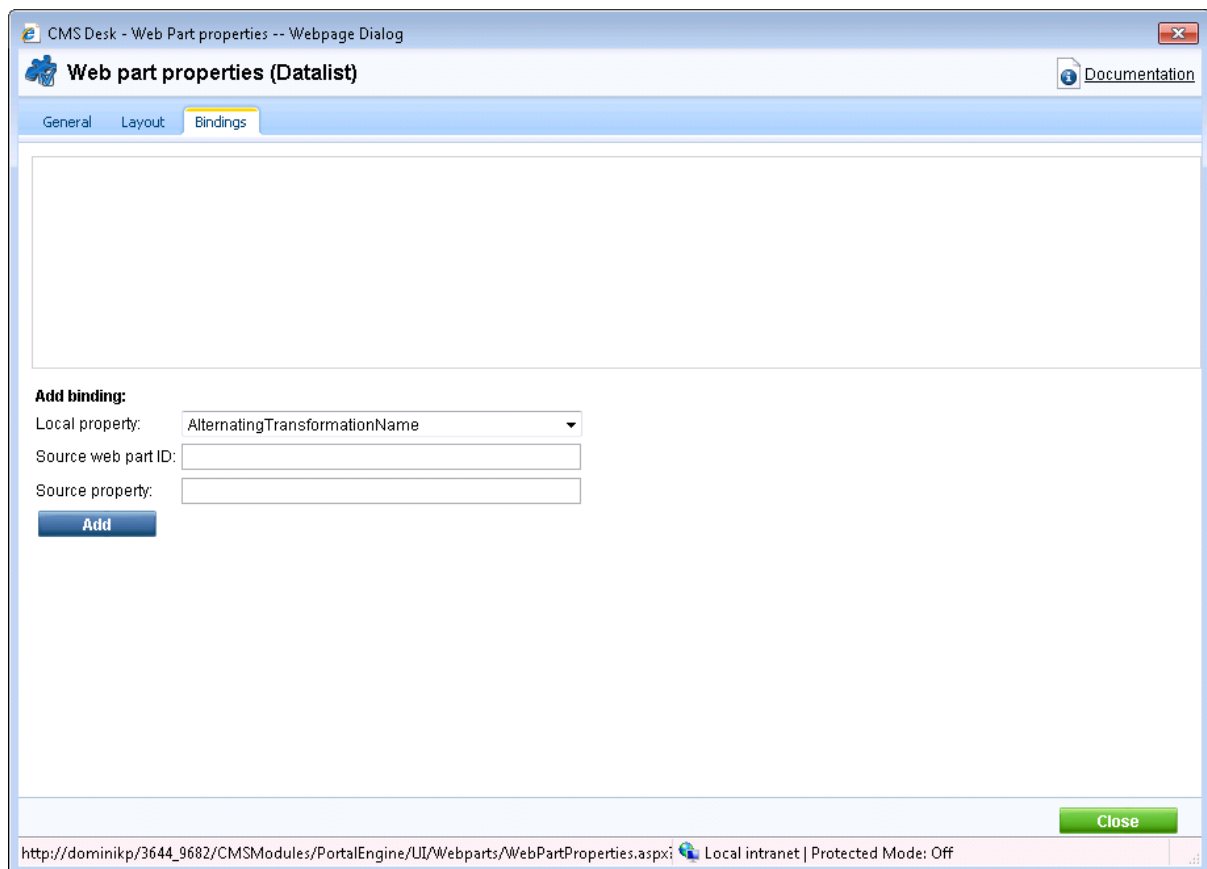
Obsolete feature

This feature is now obsolete. If you need to bind the behavior of some web part to another web part value, please use URL parameters or create a user control where you put both web parts and write custom code that will ensure the communication between web parts.

If you need to use this feature for backward compatibility, you need to add the following parameter to your web.config file, to the appSettings section:

```
<add key="CMSShowWebPartBindingTab" value="true" />
```

Web part binding allows you to connect two web parts. For example: you can have a web part containing drop-down list with countries. When some value is selected, it is provided to another web part that displays a list of company offices in the selected country. You can manage web part binding on the **Binding** tab:



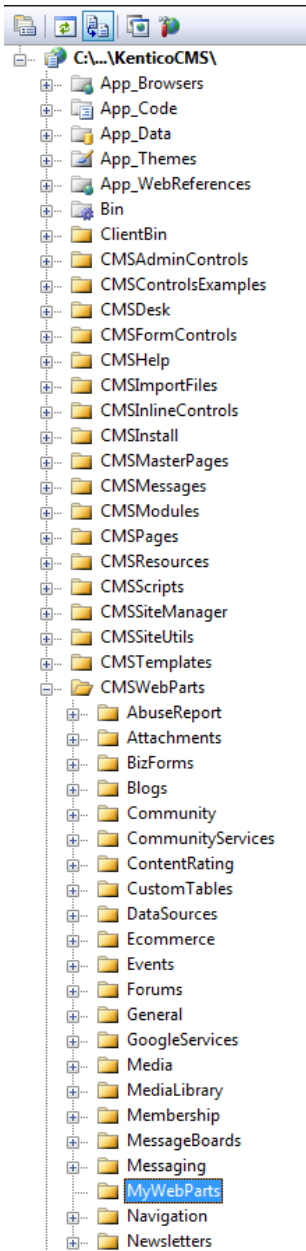
**Alternative option**

If binding doesn't work as expected, you can alternatively create your own user control, place required web parts on it and manage their interactions using your own code. You can find more details on creating your own user control in chapter [Adding custom code to the page](#).

Example - creating a product selection dialog with drop-down list and product list

In this example, we will create two web parts - selector and viewer and bind their properties so that the product viewer reflects the product selector status.

1. Open the CMS project in Visual Studio and create a new folder MyWebParts under CMSWebParts folder in the Solution Explorer:



2. Create a new user control (ASCX) under MyWebParts folder and call it `ProductSelector.ascx`. Switch to its HTML source and paste the following code:

```
<asp:DropDownList ID="DropDownList1" runat="server"
    OnSelectedIndexChanged="DropDownList1_SelectedIndexChanged" AutoPostBack
    ="true">
    <asp:ListItem Value="Under">Under 250</asp:ListItem>
    <asp:ListItem Value="Over">Over 250</asp:ListItem>
</asp:DropDownList>
```

Switch to the code behind and add the following code to the beginning of the code:

[C#]

```
using CMS.PortalControls;
using CMS.GlobalHelper;
using CMS.TreeEngine;
using CMS.CMSHelper;
using CMS.ExtendedControls;
```

Change the class inheritance like this:

[C#]

```
public partial class CMSWebParts_MyWebParts_ProductSelector : CMSAbstractWebPart
```

Add the following code inside the page class:

[C#]

```
protected void DropDownList1_SelectedIndexChanged(object sender, EventArgs e)
{
    this.SetValue("PriceRange", this.DropDownList1.SelectedValue.ToString());
    this.ReloadConsumers();
}
```

Please note that you need to set the new value of the web part property `PriceRange` and call the `ReloadConsumers` method.

3. Create a new user control (ASCX) under MyWebParts folder and call it `ProductViewer.ascx`. Switch to its HTML source and paste the following code:

```
<%@ Register Assembly="CMS.Controls" Namespace="CMS.Controls" TagPrefix="ccl" %>
<ccl:CMSRepeater ID="CMSRepeater1" runat="server" EnableViewState="true"
    TransformationName="cms.product.default" SelectedItemTransformationName="cms.
product.default"
```



```
Path="/%" ClassNames="cms.CellPhone">  
</cc1:CMSRepeater>
```

The CMSRepeater web part displays the product list.

Switch to the code behind and add the following code to the beginning of the code:

[C#]

```
using CMS.PortalControls;  
using CMS.GlobalHelper;  
using CMS.TreeEngine;  
using CMS.CMSHelper;  
using CMS.ExtendedControls;  
using CMS.PortalControls;
```

Change the class inheritance like this:

[C#]

```
public partial class CMSWebParts_MyWebParts_ProductViewer : CMSAbstractWebPart
```

Add the following code inside the page class:

[C#]

```
/// <summary>
/// Content loaded event handler
/// </summary>
public override void OnContentLoaded()
{
    base.OnContentLoaded();
    SetupControl();
}

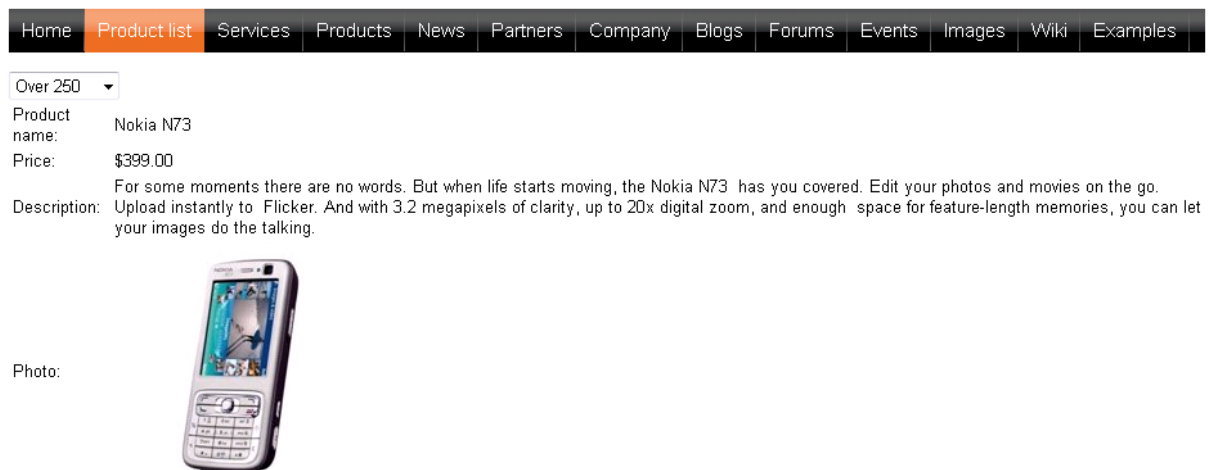
/// <summary>
/// Reloads data on request
/// </summary>
public override void ReloadData()
{
    base.ReloadData();
    this.SetupControl();
    this.CMSRepeater1.ReloadData(true);
}

/// <summary>
/// Initializes the control properties
/// </summary>
protected void SetupControl()
{
    if ((this.PagePlaceholder.ViewMode == ViewModeEnum.Design) || (this.
HideOnCurrentPage) || (!this.IsVisible))
    {
        // Stop processing in Design mode and if the control is invisible
        this.CMSRepeater1.StopProcessing = true;
    }
    else
    {
        // set CMSRepeater properties according to the selected value (price
range)
        string priceRange = ValidationHelper.GetString(this.GetValue("PriceRange"
), "Under");
        if (priceRange == "Over")
        {
            this.CMSRepeater1.WhereCondition = "SKUPrice > 250";
        }
        else
        {
            this.CMSRepeater1.WhereCondition = "SKUPrice <= 250";
        }
    }
}
```

4. Save the changes and go to Site Manager -> Development -> Web parts. Create a new category called `My Web Parts` and add a new web part:
 - Web part display name: Product selector
 - Web part code name: ProductSelector
 - Web part file name: MyWebParts/ProductSelector.ascx
5. Create another new web part:
 - Web part display name: Product viewer
 - Web part code name: ProductViewer
 - Web part file name: MyWebParts/ProductViewer.ascx

... and then switch to the Properties tab and create a new property:

 - Attribute name: PriceRange
 - Attribute type: Text
 - Attribute size: 100
 - Allow empty value: yes
 - Display attribute in the editing form: no
6. Go to CMS Desk and create a new blank page using the Simple page layout and call it **Product list**.
7. Switch to the **Design** tab and add the web parts **Product selector** and **Product viewer** on the page.
8. Configure the **Product viewer** web part and choose the **Binding** tab. Add a new web part binding using the following values:
 - Local property: PriceRange
 - Source web part ID: ProductSelector
 - Source property: PriceRange
9. Go to the Live site mode and see the page. It should look like this:



Home Product list Services Products News Partners Company Blogs Forums Events Images Wiki Examples

Over 250 ▾

Product name: Nokia N73

Price: \$399.00

Description: For some moments there are no words. But when life starts moving, the Nokia N73 has you covered. Edit your photos and movies on the go. Upload instantly to Flickr. And with 3.2 megapixels of clarity, up to 20x digital zoom, and enough space for feature-length memories, you can let your images do the talking.

Photo: 

When you change the drop-down list value, the product list below is automatically updated.

7.2.4.14 Adding custom code to web parts (obsolete)



Obsolete feature

This feature is now obsolete. If you need to customize the behavior of some web part, please clone the web part and customize it.

You can find more details in chapter [Modifying web part behavior](#).

If you still need to use this feature (for backward compatibility), you need to enable it by adding the following parameter to your web.config file, to the appSettings section:

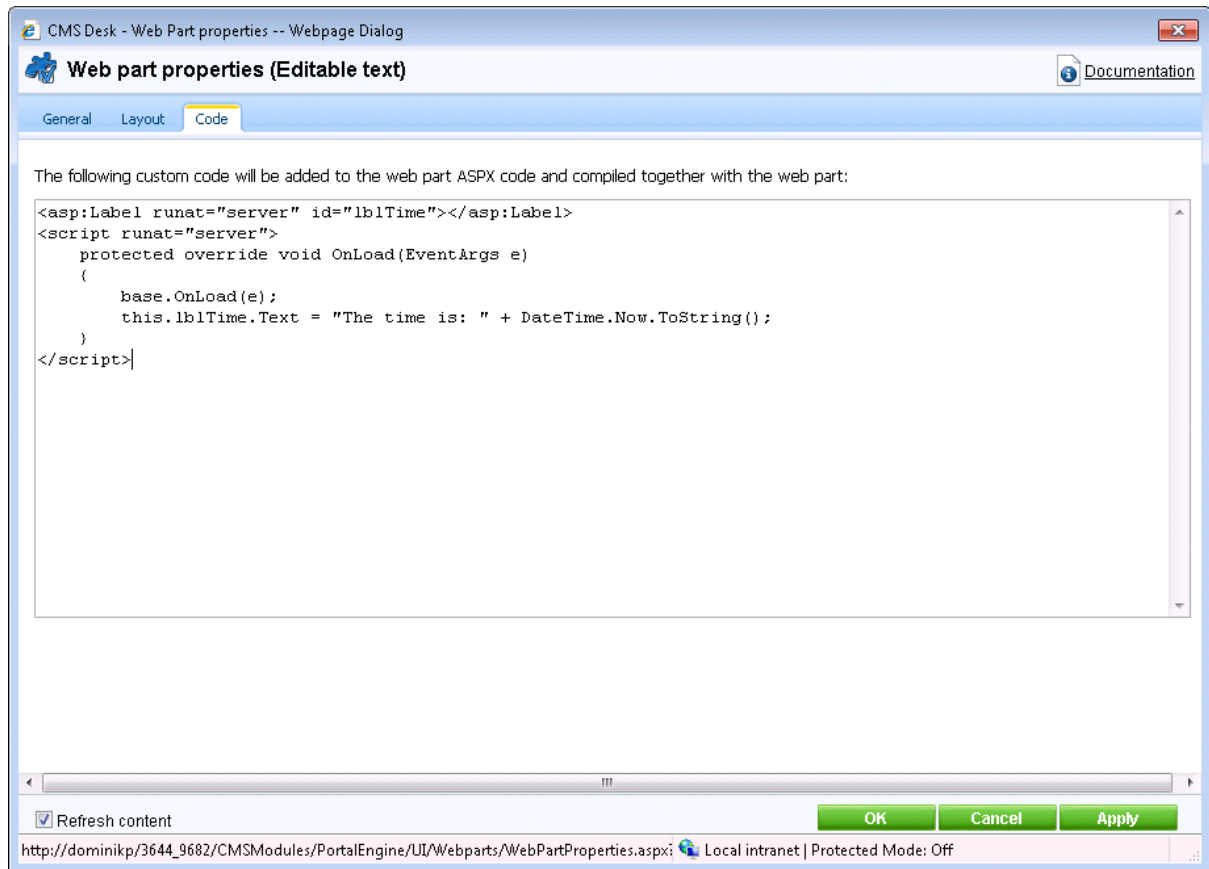
```
<add key="CMSShowWebPartCodeTab" value="true" />
```



Limitations when you use the Code tab

If you add custom code on the Code tab, you will not be able to pre-compile the website and you will not be able to use the website in medium trust environment. If this is an issue for you, you can use an alternative solution described in chapter [Modifying web part behavior](#).

If you need to modify the behavior or enhance the functionality of some web part only on a single page template, you can add custom code on the **Code** tab:



The following code displays current date and time below the current web part:

[C#]

```
<asp:Label runat="server" id="lblTime"></asp:Label>  
<script runat="server">  
    protected override void OnLoad(EventArgs e)  
    {  
        base.OnLoad(e);  
        this.lblTime.Text = "The time is: " + DateTime.Now.ToString();  
    }  
</script>
```

**Programming language**

Please note: You can use only the programming language in which the web part is written. If the web part was written in C#, you can use only C# here.

The following code sample sets the WhereCondition property of the web part dynamically at run-time:

[C#]

```
<script runat="server">
public override void OnContentLoaded()
{
this.SetValue("WhereCondition", "NewsTitle LIKE '%News%'");
base.OnContentLoaded();
}
</script>
```

**Calling the original method from the inherited class**

If you override some method of the web part, please be sure to always call also the original method (using `base.Method` in C# or `MyBase.Method` in VB). If you omit this, the web part may not work properly.

7.2.4.15 Common web part properties

Many of web parts use the same or similar properties. The following table summarizes the most important properties found in most web parts:

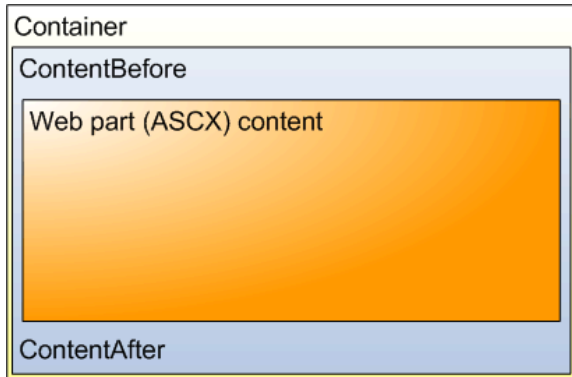
General properties

| Property Name | Description | Sample Value |
|-------------------------|---|-----------------------|
| Hide on sub-pages | Indicates if web part should be hidden on sub-pages. If you check this box, the web part will be displayed only on the page that uses the page template with this web part and it will be hidden on sub-pages that inherit the page template. | |
| ID | Web part unique identifier. | text1 |
| Visible | Indicates if web part is visible. | |
| Show for document types | Indicates for which document types should the web part be displayed. If the type of the currently selected document is different, the web part is not displayed. | cms.news;cms.event |
| Display to roles | The list of roles who should see the web part. If now role is specified, the web part is displayed to all roles. | cmseditors;customrole |

HTML envelope

| Property Name | Description | Sample Value |
|--------------------------|---|---|
| Web part container | Container displayed around the web part. The containers can be defined in Site Manager -> Development -> Web part containers . | |
| Web part container title | Title displayed in the web part container (if it supports displaying of title). | Latest news |
| Content before | Text to be displayed before the web part. | <table style="background-color: red"><tr><td> |
| Content after | Text to be displayed after the web part. | </td></tr></table> |

The structure of the web part and its envelope looks like this:



You can find more details on web part containers in chapter [Containers overview](#).

Content

| Property Name | Description | Sample Value |
|-----------------------|--|-----------------------|
| Path | Path of the documents to be displayed. See Appendix B - Path expressions for details. | /news/% |
| Highlighted node path | Alias path of the node that should be selected in the menu control. If you do not specify any value, the current path is used. | /products/nokia |
| Query | Name of the query to be used for retrieving data from Kentico CMS Database. The queries can be defined in Site Manager -> Document types -> edit some document type -> Queries . | cms.news.selectlatest |

Content filter

| Property Name | Description | Sample Value |
|--------------------------------|--|---|
| Document types | <p>Types of documents that should be displayed, separated with a semicolon (;).</p> <p>In case of menu and navigation web parts, the page (cms.menuitem) documents are selected by default.</p> <p>The other web parts retrieve all documents without their custom fields by default.</p> <p>Please note: if you specify more than one document type, only common data fields from the View_CMS_Tree_Joined view will be available in the web part (in transformations, WHERE condition and ORDER BY expressions).</p> | cms.article;cms.news;cms.menuitem |
| Combine with default culture | Indicates if default language version of the document should be displayed if the document is not translated to the current language. | You can choose from yes and no or you can choose to use website-level settings. |
| Culture code | Culture version of the displayed content. | en-us |
| Maximum nesting level | <p>Maximum nesting level. It specifies the number of sub-levels in the content tree that should included in the displayed content.</p> <p>Value 1 indicates that only the current document should be returned.</p> <p>Value -1 indicates all child documents.</p> | |
| ORDER BY expression | ORDER BY part of the SELECT query. | ProductName ASC, ProductPrice DESC |
| Select only published | Indicates if only published documents should be displayed. | |
| Site name | <p>Code name of the website from which you want to display the content.</p> <p>If you leave the value empty, the content is retrieved from the current website.</p> | CorporateSite |
| WHERE condition | WHERE part of the SELECT query. | ProductPrice > 100 AND ProductColor='green' |
| Filter out duplicate documents | If the displayed data contains multiple links to the same document (see Linked docs for details), you can choose to display only one of them. | |

System settings

| Property Name | Description | Sample Value |
|-------------------|--|----------------|
| Check permissions | Indicates if permissions should be checked for the displayed content and only the documents for which the current user has the "read" permission should be displayed. | |
| Cache item name | Name of the cache item. If not explicitly specified, the name is automatically created based on the control unique ID.

You can assign the same value of this property if you want to display the same content on several pages and do not want the system to keep the same items in memory redundantly. | latestnewslist |
| Cache minutes | The number of minutes for which the content is kept in the cache until the latest version is reloaded from the database.

If you specify 0, the content is not cached.

If you specify -1, the site-level settings are used. | 10 |

Design

| Property Name | Description | Sample Value |
|-----------------------------|--|---------------------|
| CSS prefix | Prefix used for CSS class names. This property allows you to set up different CSS styles for particular menu levels. Every level of the menu will use the prefix for CSS class names that you specify. | Main;Sub1;Sub2 |
| Highlight all items in path | Indicates if all items in the currently selected path of the menu control should be displayed as highlighted. | |
| Submenu indicator | Sub-menu indicator image | /images/submenu.gif |
| Use alternating styles | Indicates if odd and even items should have different styles. | |

Paging

| Property Name | Description | Sample Value |
|-----------------------------|---|--------------|
| Enable paging | Indicates if displayed data should be paged. | |
| Page size | Number of records per page. | 10 |
| Pager position | Position of the pager - top or bottom | |
| Show first and last buttons | Indicates if First and Last buttons should be displayed. | |
| Query string key | The name of the URL parameter that will contain the current page number. | mylistpage |
| Paging mode | Type of paging parameter - it can be passed either through URL (Query string) or through postback (Postback). | |

Relationships

These settings allow you to configure the web part so that it displays only content that is in relation with given (main) document.

| Property Name | Description | Sample Value |
|-----------------------------------|--|---------------|
| Main document | Document for which you want to display its related documents. | |
| Relationship name | Name of the relationship between documents. | Is related to |
| Main document is on the left side | Indicates if the given document is on the left side of the relationship. | |

No data behavior

| Property Name | Description | Sample Value |
|-------------------------|--|----------------|
| Hide if no record found | Indicates if content should be hidden when no record is found. | |
| No record found text | Text that should be displayed if no data is found. | No data found. |

Editing buttons

| Property Name | Description | Sample Value |
|------------------------------|---|---------------|
| Show New button | Indicates if the button for adding new items should be displayed in the editing mode when viewing the page. | |
| New button text | New button description text. | Add new news. |
| Show edit and delete buttons | Indicates if edit and delete buttons should be automatically shown for each item in the | |

| | | |
|--|---------------|--|
| | editing mode. | |
|--|---------------|--|

Transformations

| Property Name | Description | Sample Value |
|------------------------------|---|------------------------------|
| Alternating transformation | Transformation used in the list view mode for even items. | cms.news.preview_alternating |
| Transformation | Transformation used in the list view mode. | cms.news.preview |
| Selected item transformation | Transformation used in the detail view mode. | cms.news.default |
| Item separator | Item separator displayed between records. | <hr/> |

7.2.4.16 Path and macro expressions in web part properties

Many web parts use the Path property to specify what content from the content tree should be displayed. You can find all path format options in [Appendix B - Path expressions](#).

Also, all web part properties support macro expressions that allow you to insert dynamic value instead of constant in the property. Such as dynamic value is evaluated in run-time and allows you to specify context-dependent values. See [Appendix A - Macro expressions](#) for details.

7.2.4.17 Adding custom code to the portal page template

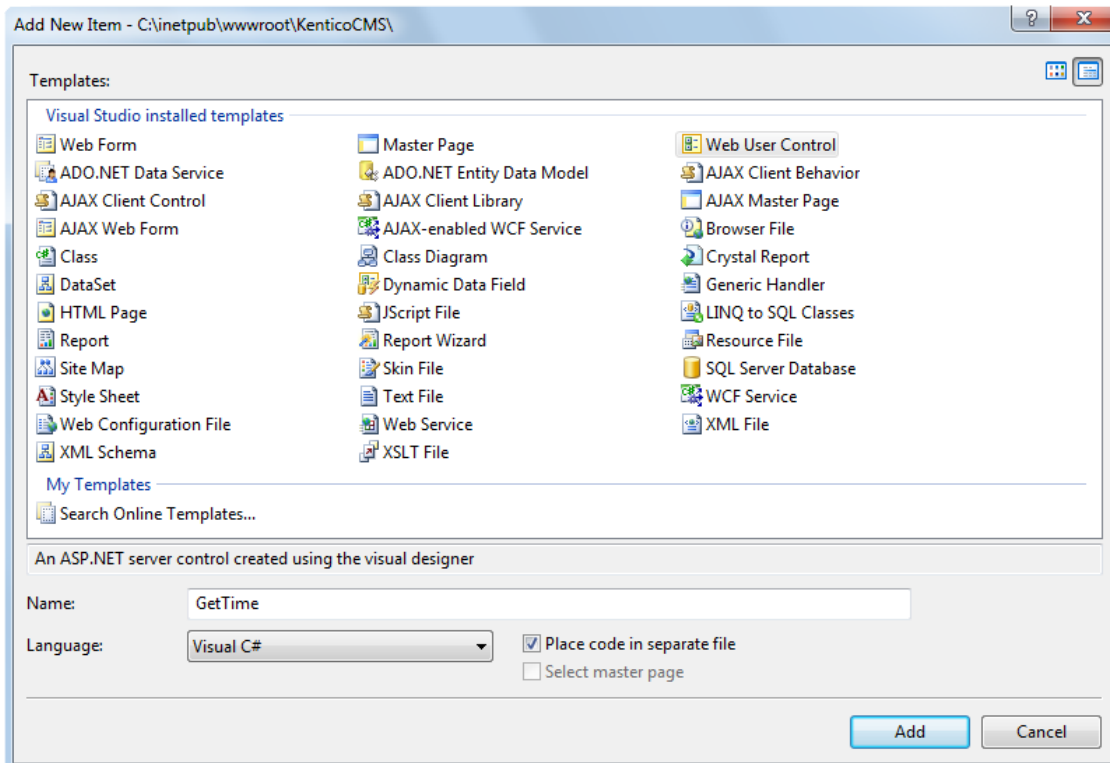
The easiest way how to insert custom code into the portal engine-based website is using the standard ASCX user controls. This chapter will show you how to do that. If you're not familiar with Visual Studio development, you can skip this chapter.

Current time example

In this example, we will create a simple user control (ASCX) using Visual Studio and integrate it to our home page.

Open the website project using the WebProject.sln file that is placed in the folder where you deployed the website. Right-click the web project in the Solution Explorer window and click **New Folder**. Call the folder as the code name of your site, e.g. CorporateSite - this folder will be exported with your project when you decide to export the site and import it on the live server.

Right-click the new folder and click the **Add new item...** option. Choose to create a new Web User Control and set its name to **GetTime.ascx**. You can set the programming language option to either Visual C# or Visual Basic.



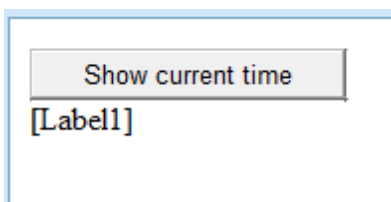
Click **Add**. Switch to the **Design** tab and drag and drop the following controls and set their properties:

Button control:

- ID: Button1
- Text: Show current time

Label control:

- ID: Label1
- Text: <clear the value>



Double-click the **Show current time** button and enter the following code to the Button1_Click method:

[C#]

```
Label1.Text = DateTime.Now.ToString();
```

[VB.NET]

```
Label1.Text = DateTime.Now.ToString()
```

This code ensures that the label displays current date and time when the button is clicked. It's not necessary to compile the project - the user controls are compiled at run time.

Save all changes.

Adding the user control on the page

Sign in to **Kentico CMS Desk**, click the **Home** page and click **Design**. Remove the web part in the **zoneCenter** zone and click **+** (**Add web part**) in this zone. Choose the **General/User control** web part. Enter the following value in the **User control virtual path** property:

```
~/CorporateSite/GetTime.ascx
```

(the folder name must reflect the folder that you previously created)

The ~ character represents the root of your web application. Click **OK**. Click the **Live site** mode and now you can see the user control in the page. When you click the **Show current time** button now, the current date and time is displayed below to the button:



In this short example, you have seen that you can easily add any custom code developed as an ASCX user control in Visual Studio. This user control can contain any .NET controls, third-party controls or ADO.NET code that will retrieve data from an external database.

User controls versus web parts

Another option how to insert custom code into the page is creating your own web part. A web part is basically an ASCX user control, but it inherits some standardized properties and methods from the `CMSAbstractWebPart` class. You will build web parts in case that you need to create re-usable, parameterized user controls. The web part development is described in chapter [Developing web parts](#).

7.2.4.18 Displaying data from external database or Web Service

Beside displaying Kentico CMS content, you can also display data from your external databases or Web Service. In this case, you need to develop a user control (ASPX) that will use ADO.NET to retrieve the data or that will contact the Web Service and call its methods. Since you can place any custom code into the user control, you will simply use the standard ASP.NET code you would use if you created the website from scratch.

Example: Retrieving data from the sample Northwind database

In this simple example, you will see how to display data from the Categories table of the Northwind database using ADO.NET, in the sample Corporate Site. You may need to use some other database if you do not have the sample database Northwind on your server.

Open the web project in Visual Studio using the **WebProject.sln** file. Create the folder **CorporateSite** and create a new user control **CustomData.ascx** in this folder. It's important to create the control in this folder so that it's exported with your website later, when you decide to import the website on your live server.

Drag and drop the standard ASP.NET **GridView** control on your user control and set its ID to

GridView1.

Add the following line to the beginning of the code:

[C#]

```
using System.Data.SqlClient;
```

Add the following code to the **Page_Load** method:

[C#]

```
// create sql connection - you could use Oracle or OLEDB provider as well

SqlConnection cn = new SqlConnection("Persist Security Info=False;
database=northwind;server=server1;user id=sa;password=psswd;Current
Language=English;Connection Timeout=120;");

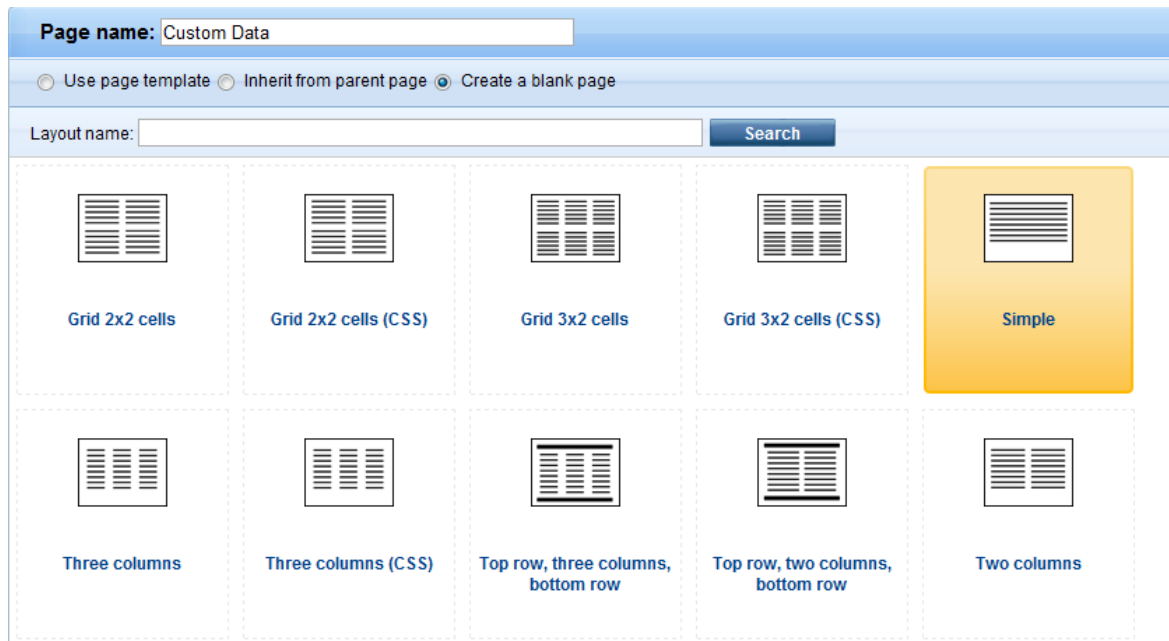
// create data adapter
SqlDataAdapter da = new SqlDataAdapter("SELECT * FROM categories", cn);
DataSet ds = new DataSet();

// fill the dataset with data from database
da.Fill(ds);

// bind data to the grid view
GridView1.DataSource = ds;
GridView1.DataBind();
```

Save all changes.

Sign in as administrator to **CMS Desk**, select **/Examples** document in the content tree and create a new **Page (menu item)**. Call it **Custom Data** and choose the **Create a blank page using this layout** option. Select the **Simple** layout and click **Save**.



Switch to the **Design** tab and add a new web part **General/User control** and set its **User control virtual path** property value to `~/corporatesite/customdata.ascx`.

Click **OK** and switch to the **Live site** mode of the page. You will see a grid with data from external database:

| CategoryID | CategoryName | Description |
|------------|--------------|------------------------------|
| 1 | Animals | Dogs, cats, horses |
| 2 | Colors | Red, green, blue, orange,... |
| 3 | Names | John, Kevin, Julia, Robin |

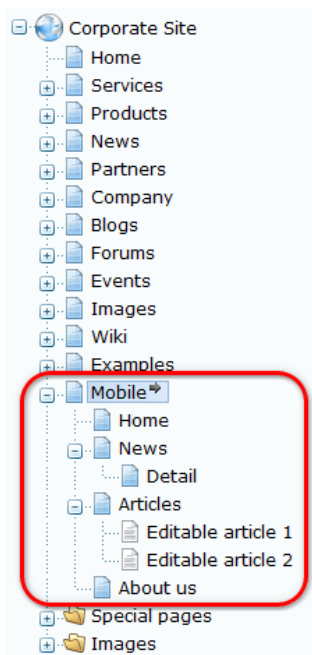
As you can see we used standard ASP.NET methods to display external data on the website.

7.2.4.19 Developing sites for mobile devices

Kentico CMS allows you to create a dedicated site section where users accessing the site from mobile devices will be redirected.

An example of such site section can be found on the sample **Corporate Site**, under the **/Mobile** node. The **Mobile** page works as a master page for the mobile section. It has no template inheritance configured so that it doesn't inherit from the site's main master page. Under it, you can find the following sections:

- **Home** – this is the page where the mobile user gets redirected from the site's main *Home* page; the content of the page is loaded by the *Repeater* dynamically from the *Editable text* on the main *Home* page
- **News** – this page contains a *Repeater* displaying the *News* documents stored under */News*; its transformation is written so that when you click a news item's title, you get redirected to the */Mobile/News/Detail* page with the ID of the news item in the wildcard part of the URL (*/Mobile/News/{id}*)
- **Articles** – the *Repeater* on this page displays the articles stored under it; the content of this section is not shared with the rest of the site and is used only in the mobile section
- **About us** – this page contains only two *Editable text* web parts and its content is separate and used only in the mobile section



Mobile device recognition

Mobile device recognition is ensured by the **Mobile device redirection** web part placed on the **Home** page. Site visitors accessing the site's main **Home** page from a mobile device get recognized by the web part and redirected to the URL specified by its **Redirection URL** property. In this case, they get redirected to the mobile section of the website, i.e. `~/Mobile/Home.aspx`.

The figures below show how the page looks when viewed on different mobile devices:



CSS stylesheet for the mobile section

There is a dedicated CSS stylesheet - **Corporate Site – Mobile** - which is used only by the pages in the mobile section. While the site's main stylesheet is **Corporate Site**, the pages in the mobile section have the **Corporate Site – Mobile** stylesheet assigned in **Properties -> General -> CSS stylesheet**.

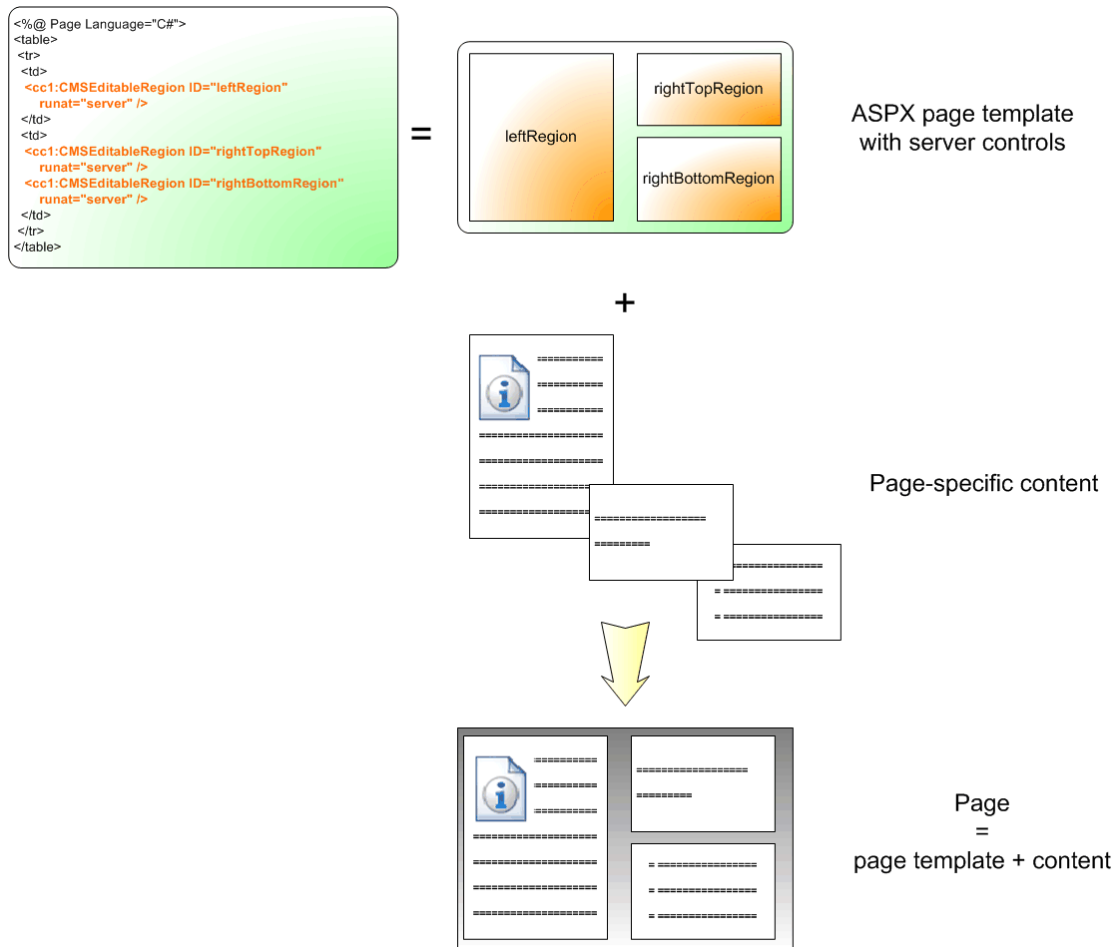
7.2.5 ASPX page templates development model

7.2.5.1 Overview

If you're familiar with ASP.NET development in Visual Studio, you may want to choose to develop websites using standard ASPX page templates. ASPX page templates in Kentico CMS are standard ASP.NET pages that display content from Kentico CMS. They receive a URL parameter **aliasPath** that tells the page template which page should be displayed.

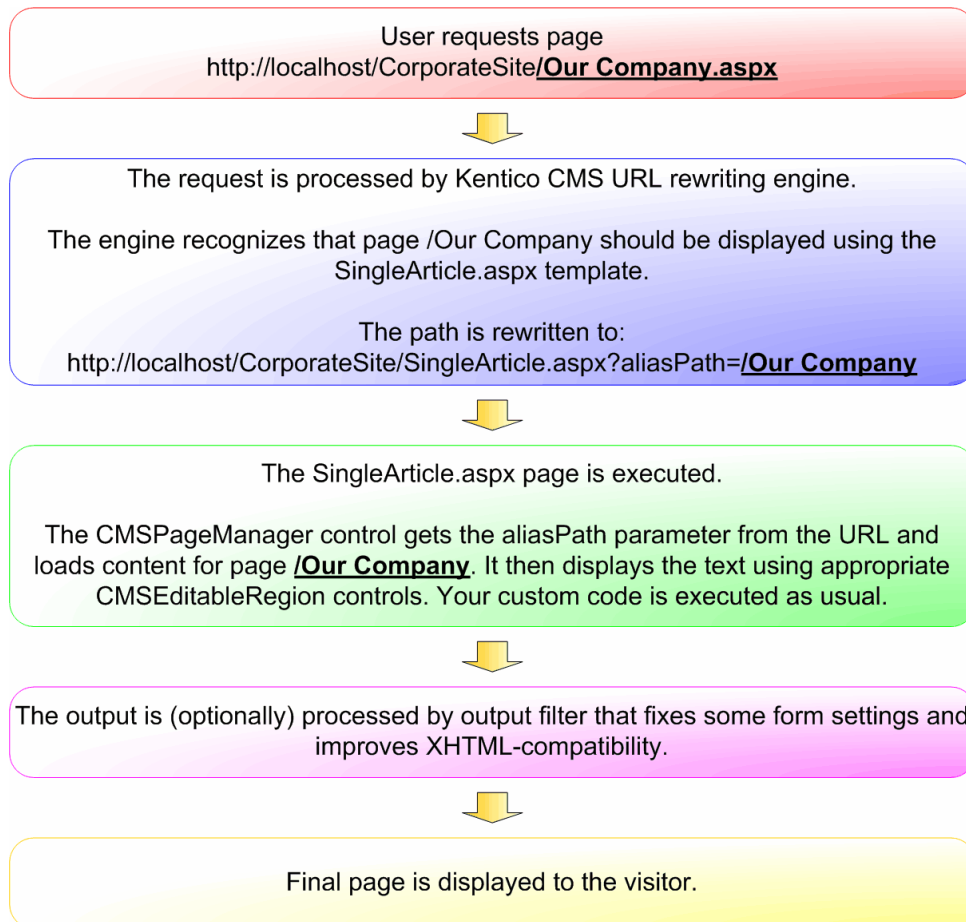
What does the ASPX page template consist of?

The page template is a combination of static HTML code and ASP.NET server controls (or user controls) that render dynamic content. You can also use code behind (in both VB.NET and C#) to modify page behavior and add custom functionality. The following figure illustrates how ASPX page template and page content are combined to display a page:



How is the ASPX page template processed?

When a user requests some page, such as `/services/web-development.aspx`, the system calls the assigned page template with URL parameter `aliasPath` that specifies what content (which page from the content tree) should be displayed using the given template:



The built-in Kentico CMS controls understand the `aliasPath` parameter in the URL and render the appropriate content automatically.

As you can see, the system uses a standard ASP.NET architecture. If you developed the website without Kentico CMS, you would most likely use URLs like this: `/news.aspx?newsid=127` which is similar to `/news.aspx?aliaspath=/news/november news.aspx` URL used in Kentico CMS. Kentico CMS uses friendly URLs in format `/news/november news.aspx` that are better for search engine optimization.

7.2.5.2 Creating a new ASPX page template

Now you will learn how to create a new page ASPX page template. We will create a new **Investors** page with two columns that will contain editable regions.

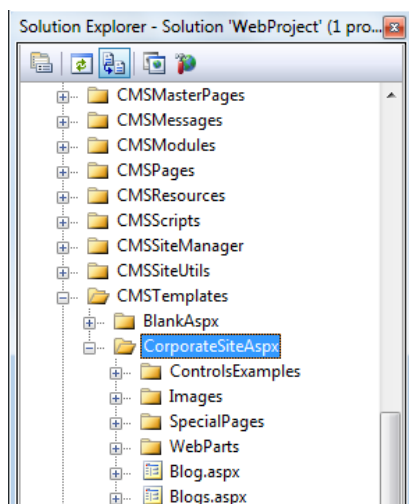


Adding Kentico CMS Controls to your Visual Studio Toolbox

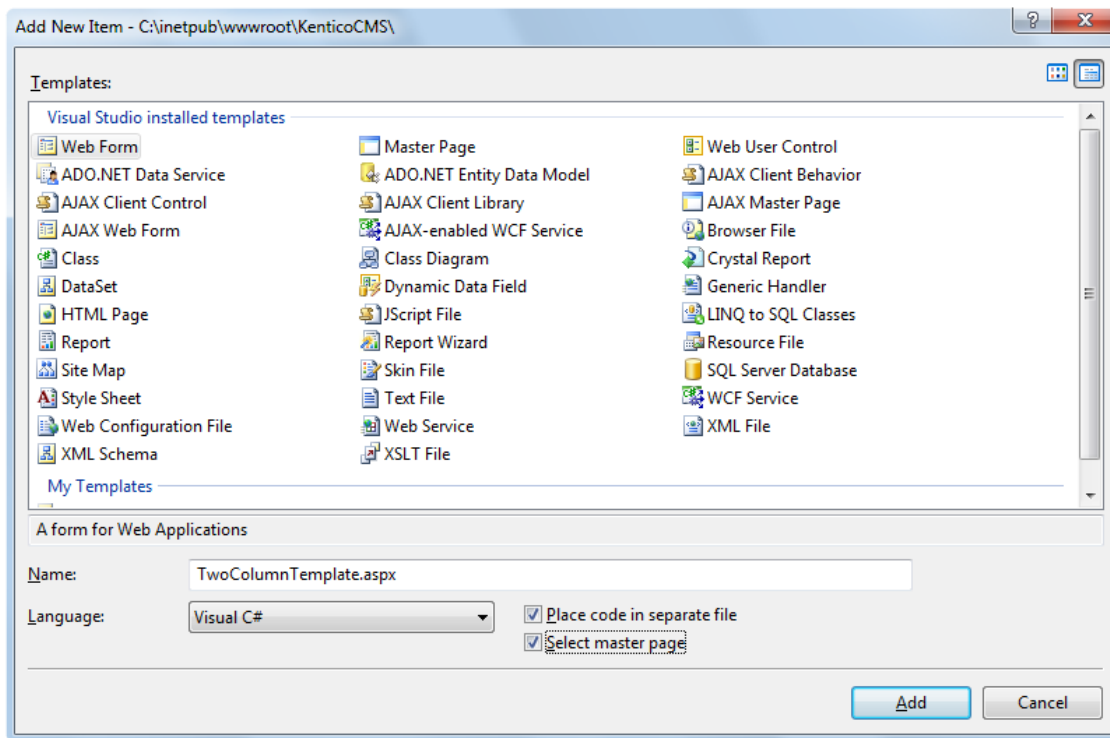
Before you start development of ASPX page templates, it's recommended that you add Kentico CMS Controls to your Visual Studio Toolbox so that you can simply drag and drop the controls on the ASPX pages.

You can find step-by-step instructions in chapter [Adding Kentico CMS Controls to the Toolbox](#).

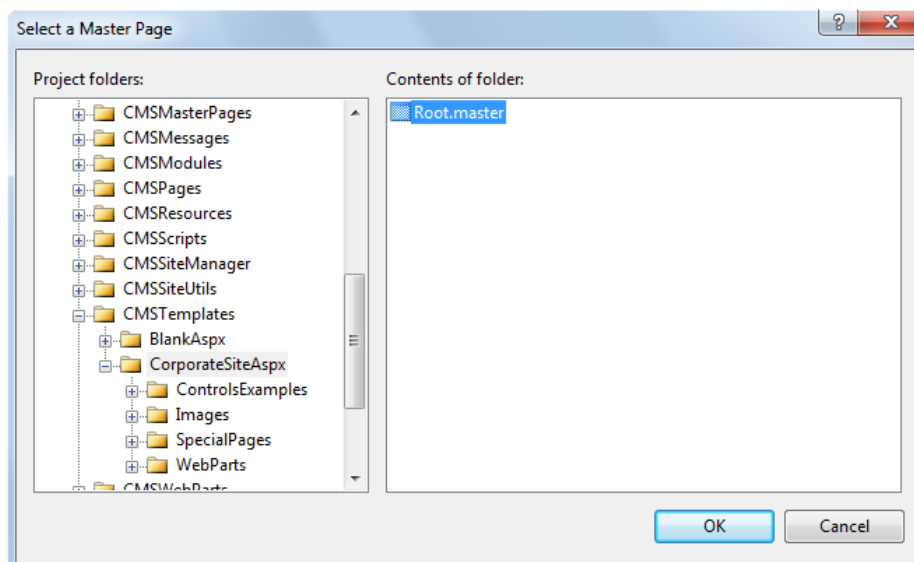
1. Open the web project in **Visual Studio**. You can open it either using the **WebProject.sln** file or using the **File -> Open -> website** menu.
2. Now right-click the **CMSTemplates -> CorporateSiteAspx** folder in the Solution Explorer and choose to add a new web item:



3. Choose to create a new web form and call it **TwoColumnTemplate.aspx** and check the box **Select master page**. Click **Add**.



4. The **Select a Master Page** dialog appears. Choose the folder **CMSTemplates/CorporateSiteASPX** and choose the **root.master** file and click **OK**.



Writing the ASPX code

5. Switch to the **Source** view of the newly created ASPX page. Add the following line under the `<%@ Page %>` directive:

```
<%@ Register Assembly="CMS.Controls" Namespace="CMS.Controls" TagPrefix="cc1" %>
```

Then add the following code inside the `<asp:Content></asp:Content>` control:

```
<table width="100%">
  <tr valign="top">
    <td width="50%">
      <cc1:CMSEditableRegion ID="txtLeft" runat="server" DialogHeight="400"
        RegionType="HtmlEditor" RegionTitle="Left column" />
    </td>
    <td width="50%">
      <cc1:CMSEditableRegion ID="txtText" runat="server" DialogHeight="400"
        RegionType="HtmlEditor" RegionTitle="Right column" />
    </td>
  </tr>
</table>
```

The `<cc1:CMSEditableRegion>` control defines an editable region that will be displayed as an HTML editor in the editing mode. On the live site, it ensures displaying of the page content.

Please note: this example uses a table layout. If you prefer CSS layout, you can simply replace the surrounding HTML code with `<DIV>` elements. As you can see, you have full control over the HTML code.

6. Switch to the code behind. You need to add reference to the `CMS.UIControls` namespace:

[C#]

```
using CMS.UIControls;
```

7. The last step is to modify the class from which our page is inherited. Change the following code:

[C#]

```
public partial class CMSTemplates_CorporateSiteASPX_TwoColumnTemplate : System.
  Web.UI.Page
```

to this:

[C#]


```
public partial class CMSTemplates_CorporateSiteASPX_TwoColumnTemplate :  
    TemplatePage
```

so that the page can be used as a page template in Kentico CMS.

Registering the ASPX page as a page template

Now that we have created a new ASPX page, we need to register it in Kentico CMS as a page template, so that it can be used by content editors.

8. Sign in to **Site Manager** and go to **Development -> Page templates**. Click the **Corporate Site ASPX** folder and click **New template**. Enter the following values:

- Template display name: Two column template
- Template code name: TwoColumnTemplate

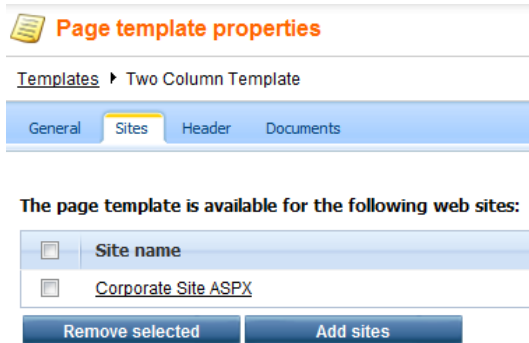
Click **OK**. Now enter the following value in the **File name** field:

```
~/CMSTemplates/CorporateSiteASPX/twocolumntemplate.aspx
```

It is the virtual path of our ASPX page. Click **OK** to save the changes.

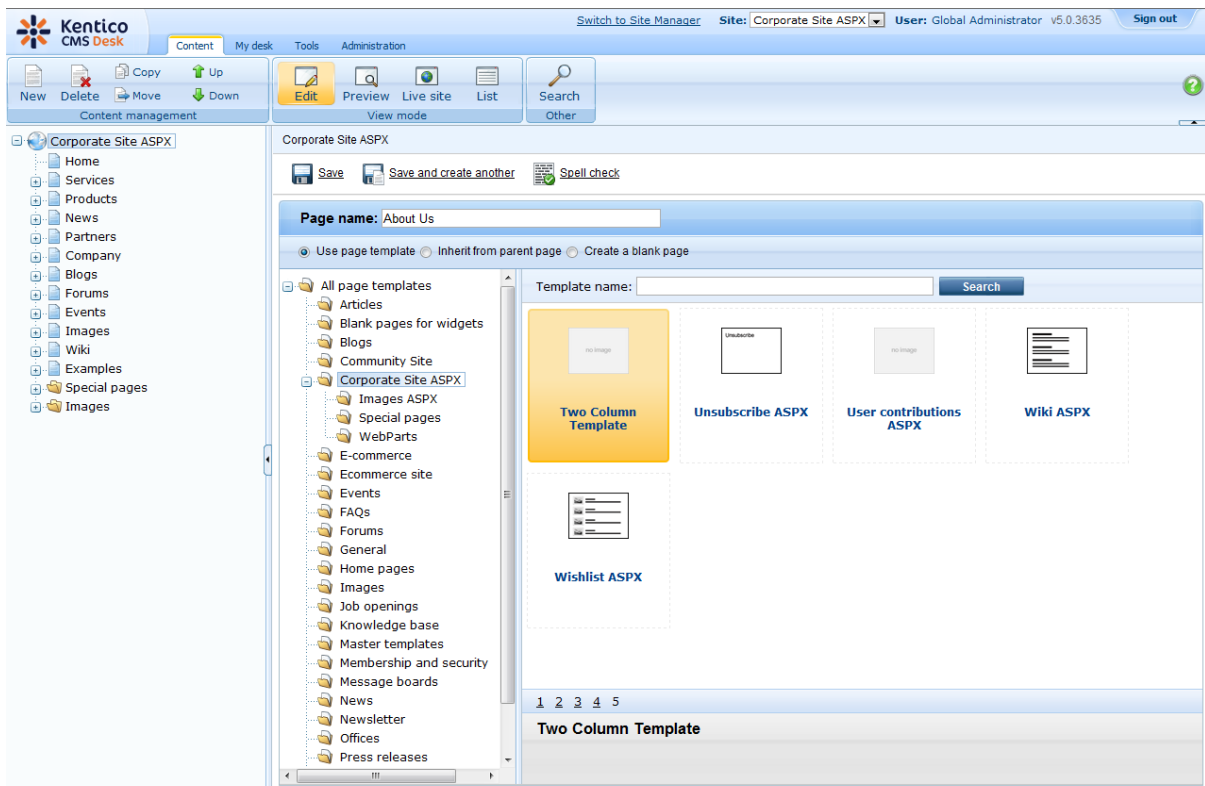
The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The left sidebar shows the 'Development' menu with 'Page templates' selected. The main area displays a tree view of 'All page templates' under the 'Corporate Site ASPX' folder, with 'Two Column Template' selected. The right pane shows the 'Page template properties' for 'Two Column Template', with fields for 'Template display name' (Two Column Template), 'Template code name' (TwoColumnTemplate), 'Category' (Corporate Site ASPX), and 'File name' (~/CMSTemplates/CorporateSiteASPX/two). The 'Template type' is set to 'ASPX page'.

9. Now click the **Sites** tab, assign the page template to the current website and click **OK**.

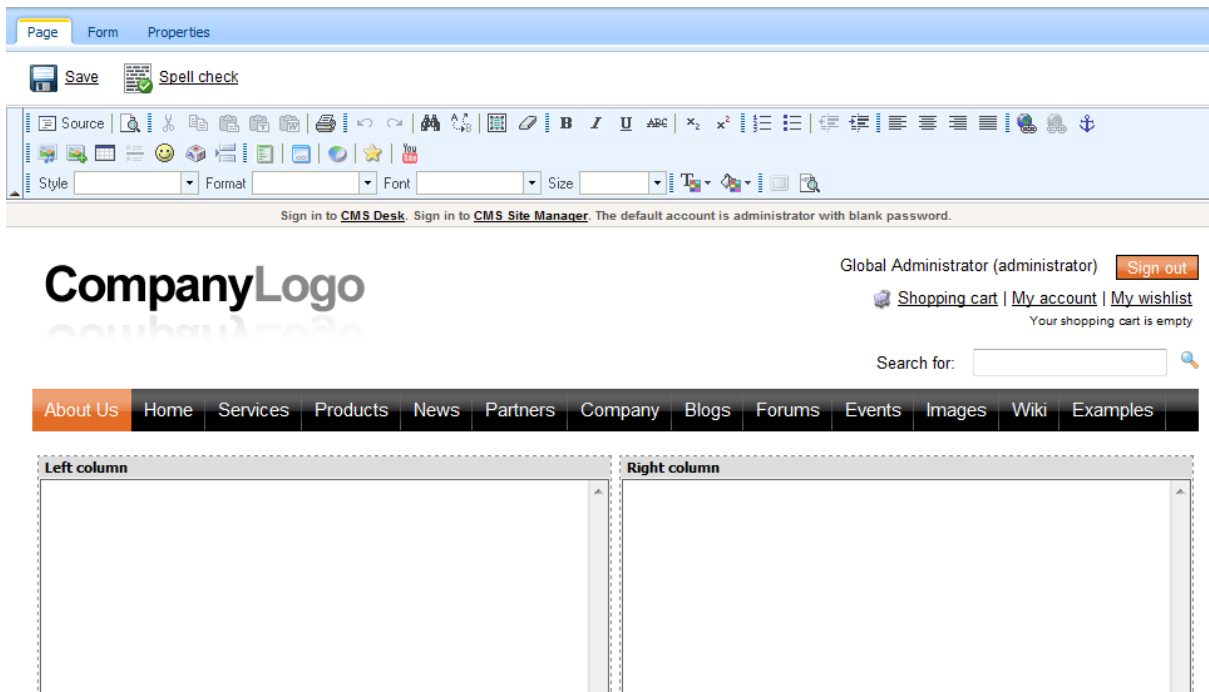


Creating an About Us page based on the new page template

10. Go to **Kentico CMS Desk** -> **Content**. Click **Corporate Site ASPX** (the root of the content tree) and click **New** in the Content section main menu. Choose to create a new **Page (menu item)**. Enter *About Us* into the page name field and choose to create a page using the page template **Corporate Site ASPX/Two column template**. Click **Save** to create the new page.



11. Click **Page** and you will see a page with editable regions like this:



Congratulations, you have just created your first ASPX page template. Now you can enter some text and click **Save** to save the changes.

7.2.5.3 Creating ASPX master pages

Kentico CMS allows you to use standard ASP.NET 2.0 master pages together with ASPX page templates. This is a very powerful concept which allows you to share the same site header and footer with logo, main menu, search box, etc. over all pages without having to create these sections on each page template again and again.

The master pages are defined in files with extension **.master**. You can assign a single master page to each ASPX page. The master page must always contain the **ContentPlaceHolder** control like this:

```
<asp:ContentPlaceHolder ID="plcMain" runat="server">
```

The *ContentPlaceHolder* control specifies where the content of page templates should be loaded. So the master page typically contains the main logo and navigation and the content is displayed by ASPX pages loaded into the master page.

The following code sample defines a very simple master page:

```
<%@ Master Language="C#" AutoEventWireup="true" CodeFile="Root.master.cs" Inherits="
CMSTemplates_CorporateSiteASPX_Root" %>
<%@ Register Assembly="CMS.PortalControls" Namespace="CMS.PortalControls"
TagPrefix="cc2" %>
<%@ Register Assembly="CMS.Controls" Namespace="CMS.Controls" TagPrefix="ccl" %>
<%=DocType%>
<html xmlns="http://www.w3.org/1999/xhtml">
<head id="Head1" runat="server">
    <asp:literal runat="server" id="ltlTags" enableviewstate="false" />
</head>
<body class="<%=BodyClass%>" <%=BodyParameters%>>

    <form id="form2" runat="server">

        <ccl:CMSPageManager ID="CMSPageManager1" runat="server" />
        <ccl:CMSMenu ID="cmsmenu1" runat="server" CSSPrefix=";Sub" Cursor="Pointer"
            HighlightAllItemsInPath="true"
            Layout="Horizontal"
            Padding="0"
            Spacing="1" />
        <asp:ContentPlaceHolder ID="plcMain" runat="server">
        </asp:ContentPlaceHolder>
    </form>
</body>

</html>
```

The **CMSPageManager** control ensures loading of the content from the database into the editable regions. The **CMSMenu** control displays a drop-down menu. The **ContentPlaceHolder** control defines where the content of sub-pages should be loaded.

In case that you are planning to use AJAX components on your site, you need to add the **ScriptManager** control after the CMSPageManager control.

```
<asp:ScriptManager ID="manScript" runat="server" />
```

In code behind, you need to add reference to the CMS.UIControls namespace:

[C#]

```
using CMS.UIControls;
```

The master page must be inherited from the TemplateMasterPage, so the class definition must look like this:

[C#]

```
public partial class CMSTemplates_CorporateSiteASPX_Root : TemplateMasterPage
```

And you also need to put the following code to the master page code-behind class:

[C#]

```
protected override void CreateChildControls()
{
    base.CreateChildControls();

    this.PageManager = this.CMSPageManager1;
}

protected override void OnPreRender(EventArgs e)
{
    base.OnPreRender(e);

    this.ltlTags.Text = this.HeaderTags;
}
```

[VB.NET]

```
Protected Overloads Overrides Sub CreateChildControls()
    MyBase.CreateChildControls()

    Me.PageManager = Me.CMSPageManager1
End Sub

Protected Overloads Overrides Sub OnPreRender(ByVal e As EventArgs)
    MyBase.OnPreRender(e)

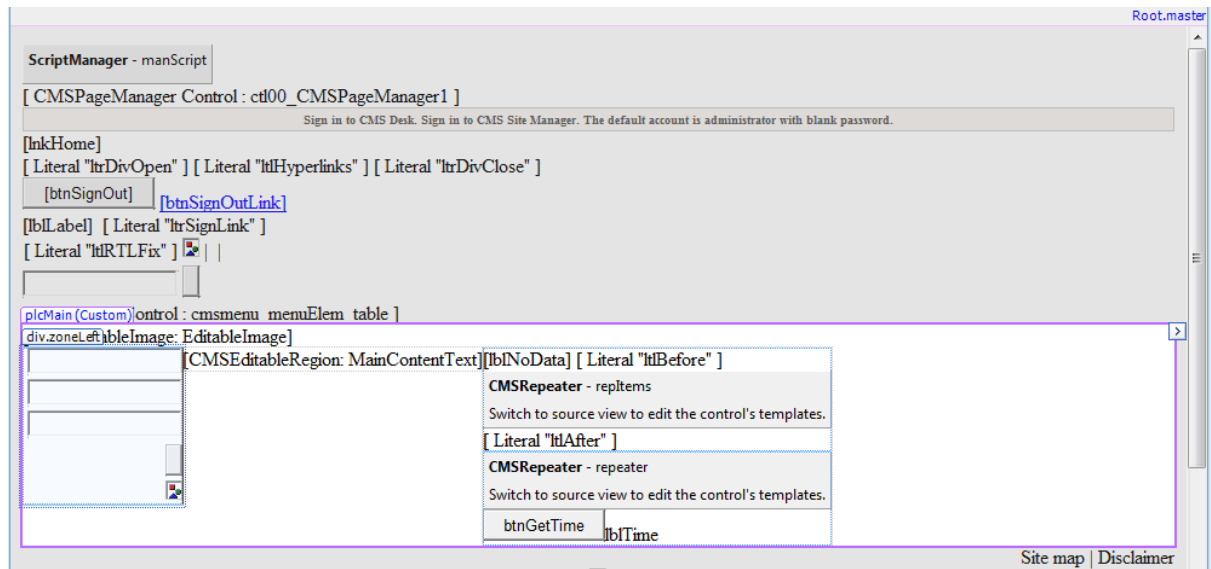
    Me.ltlTags.Text = Me.HeaderTags
End Sub
```

You should store master pages in the **CMSTemplates** folder together with page templates, so that they are exported with your website.

7.2.5.4 Adding custom code to the ASPX page template

In this simple example, you will see how you can easily add custom code to the code of the Home page template. You will see that you can add custom code in Visual Studio, as you usually do. You will need to use the sample **Corporate Site ASPX** website for this example.

1. Open the web project in Visual Studio using the **WebProject.sln** file and open the **home.aspx** page located in the **CMSTemplates\CorporateSiteASPX** folder.
2. Switch to the **Design** tab and add a new button to the page. Call it **btnGetTime** and set its text to **Get time**. Add a new label, call it **lblTime** and clear its text.



3. Double-click the button and add the following code inside the click event handler:

[C#]

```
lblTime.Text = DateTime.Now.ToString();
```


4. Save all changes and see the home page on the live site. When you click the button, you can see the label displays the current date and time:

Welcome to the Sample Corporate Site

This is a sample web site created with **Kentico CMS for ASP.NET**. You can use it as a starter kit for your own web site and to learn Kentico CMS.

Default user name and password

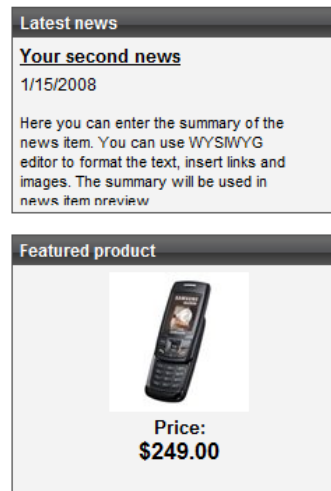
You can sign in to CMS Desk (the administration interface) using the link at the top of the page or by going to the following address <http://localhost/KenticoCMS/CMSDesk> (if you're using the default installation path). Use the following credentials:

User name: administrator

Password: Leave the password blank.

Getting Started

[Kentico CMS Tutorial](#) will guide you through Kentico CMS. You can also get help at <http://www.kentico.com/Support.aspx>.



Get time 12/10/2009 2:14:32 PM

As you can see, you can use the standard programming methods you usually use. You can also use the standard debugging process in Visual Studio.

7.2.5.5 Combining ASPX templates and portal engine templates

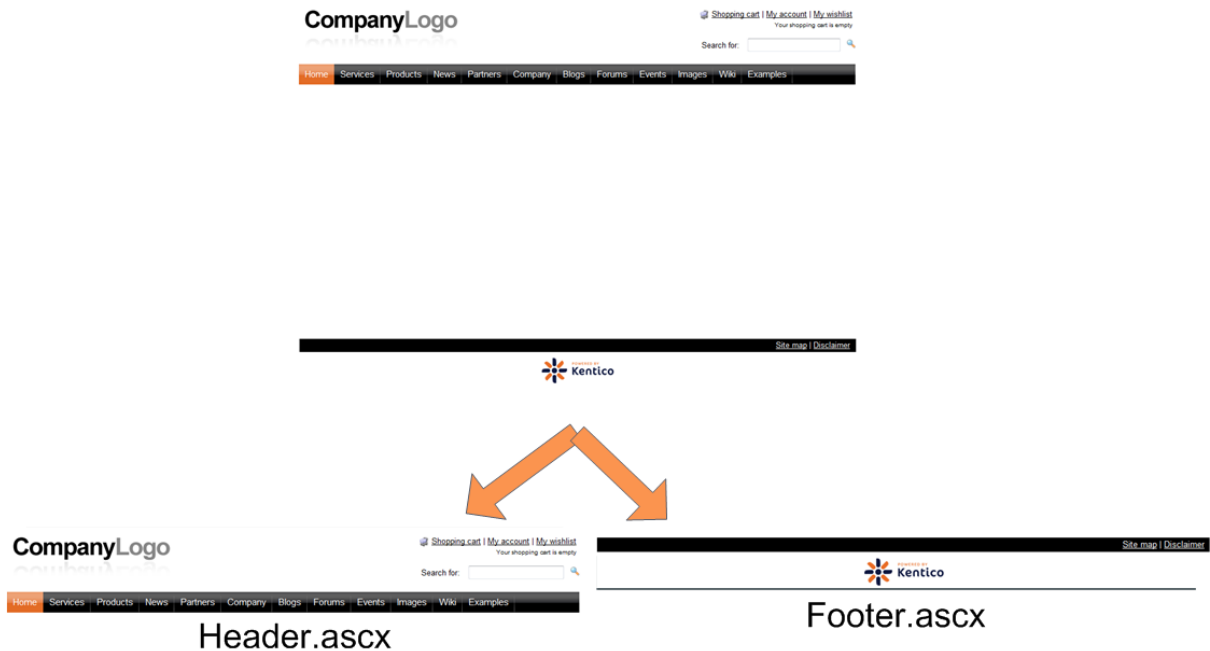
In some cases, you may need to combine ASPX page templates or external ASPX pages and the portal engine page templates. The following text describes how you can accomplish that.

You will create a website using the portal engine model - it means you will create the master page and some of the pages using the portal engine page templates. The point here is how to "insert" the ASPX pages inside the same master page. Unfortunately, it's not possible to do that directly. However, you can use the following workaround:

You will have two master pages - the portal engine master page defined in the root document in the content tree and the ASPX master page (.master file) used for all ASPX pages within the website.

The drawback is that you will need to manage the master page in two places. But this issue also has a simple solution:

You need to take the web parts and HTML code you have "above" the **Page placeholder** web part in your original master page and place them into a user control called **Header.ascx**. Then, you take the web parts and HTML code "below" the **Page placeholder** and place it into the **Footer.ascx** user control as shown on the following figure:



Now, you delete the content of the original **portal engine master page** and place only the following web parts into the master page:

- **General/User control** web part displaying the **Header.ascx** user control
- **Page placeholder** web part
- **General/User control** web part displaying the **Footer.ascx** user control

In the **ASPX master page** (.master file), you simply put:

- the **Header.ascx** user control
- the **ContentPlaceHolder** control
- the **Footer.ascx** user control

In this way, you ensure that you manage the header and footer in a single place for both portal engine and ASPX master page.

7.2.5.6 Integration with your existing ASP.NET application

If you need to integrate some existing ASP.NET application with Kentico CMS website, there are several issues you need to consider. This chapter contains a summary of this topic, if you need more details or help with some particular issues, please contact Kentico support.

Location of CMS and your application

There three options how you can organize the CMS web project and your application web project:

1. Mixing both together

It makes sense to mix both applications into a single project if you wish to share functionality, content, security information and session or application variables between the CMS and your application. The easiest way is to use Kentico CMS web project, as the main project since it's already correctly configured for the CMS, and add your own ASPX pages and other files to this project.

If you need to display your own ASPX pages inside the context of the website, you can simply register them as page templates and then create new pages based on these page templates in the standard website navigation (in the content tree). You will also need to modify your ASPX pages so that they use the master page (.master file) of the Kentico CMS website.

If you wish to use a website built using the Kentico CMS portal engine development model, please read also the chapter [Combining ASPX templates and portal engine templates](#).

2. Having the CMS in the root and your application in a sub-folder

If your application can or needs to run separately from the CMS and you want the CMS to manage the main website, you can place Kentico CMS web project in the root of the website and your application into a sub-folder. You will need to create a virtual directory for the sub-folder so that your application runs correctly.

3. Having your application in the root and the CMS in a sub-folder

If your application can or needs to run separately from the CMS and your application is the main part of the website and you wish to use the CMS only for some sub-section of the website where you publish the content, you need to place the CMS into a sub-folder and create a virtual directory for it.

Interaction between the CMS and your application

If you need to include your application inside the website (front-end), you can do that either through ASPX pages (see paragraph **Mixing both together** above) or you need to create ASCX user controls that you place into the CMS website.

If you need to build an application that will interact with the CMS system, but will mostly provide back-end user interface, you can create a custom module as described in chapter [Custom modules](#).

Sharing security information between CMS and your application (single-sign-on)

If you wish to use single-sign-one for both your application and the CMS, you need to configure your

environment as described in chapter [Single sign-on](#). If you wish to use a single system of permissions (authorization), you can leverage the permission system for custom modules as described in chapter [Custom modules](#).

7.2.5.7 Displaying data from external database

Beside displaying Kentico CMS content, you can also display data from your external databases or Web Service. In this case, you need to add custom code to your ASPX page that will use ADO.NET to retrieve the data or that will contact the Web Service and call its methods. Since you can place any custom code into the page (page template), you will simply use the standard ASP.NET code you would use if you created the website from scratch.

Example: Retrieving data from the sample Northwind database

In this simple example, you will see how to display data from the Categories table of the Northwind database using ADO.NET, in the sample Corporate Site ASPX website. You may need to use some other database if you do not have the sample database Northwind on your server.

Open the web project in Visual Studio using the **WebProject.sln** file. Open the page `CMSTemplates\CorporateSiteASPX\home.aspx`.

Drag and drop the standard ASP.NET **GridView** control on your user control and set its ID to **GridView1**.

Add the following line to the beginning of the code:

[C#]

```
using System.Data.SqlClient;
```

Add the following code to the **Page_Load** method:

[C#]

```
// create sql connection - you could use Oracle or OLEDB provider as well
SqlConnection cn = new SqlConnection("Persist Security Info=False;
database=northwind;server=server1;user id=sa;password=psswd;Current
Language=English;Connection Timeout=120;");
// create data adapter
SqlDataAdapter da = new SqlDataAdapter("SELECT * FROM categories", cn);
DataSet ds = new DataSet();

// fill the dataset with data from database
da.Fill(ds);

// bind data to the grid view
GridView1.DataSource = ds;
GridView1.DataBind();
```

Save all changes. See the page on the live website. You will see a grid with data from the external database:

| CategoryID | CategoryName | Description |
|------------|--------------|------------------------------|
| 1 | Animals | Dogs, cats, horses |
| 2 | Colors | Red, green, blue, orange,... |
| 3 | Names | John, Kevin, Julia, Robin |

As you can see we used standard ASP.NET methods to display external data on the website.

7.3 Caching and performance

7.3.1 Overview

The performance of your website depends on many aspects:

1. Hardware on which your website and database server are running.
2. Available system performance when you're sharing system resources with other applications (typically in shared hosting environment).
3. Size of your website.
4. Complexity of the website (number of nesting levels, number of web parts on a page, etc.)
5. Custom code added to the website.
6. Use of caching.
7. Other special circumstances, such as network connectivity between web server and SQL server, etc.

7.3.2 Caching options

Global caching settings

Go to **CMS Site Manager -> Settings -> website**, choose your website from the drop-down list. You can configure the following values:

- **Cache content (minutes)** - this option specifies that all web parts/controls should cache the content they retrieve from Kentico CMS. You can override this value by setting the Cache minutes property of the web parts to 0, which disables caching for the given control, or generally to some different number of minutes. It's recommended that you cache all possible content that is not modified too often. The drawback of this option is that when you modify some content, the changes appear on the live site after the old version expires in the cache.
- **Cache images (minutes)** - this option is used only for caching of images. It's recommended that you always use it. Kentico CMS automatically removes the cached image when it's modified, so it doesn't cause displaying of outdated content.
- **Cache page info (minutes)** - this option is used for caching of page content and metadata. Since Kentico CMS often retrieves page information many times during a single page processing, it's actually a must to **always set this value to at least 10 minutes!** Kentico CMS automatically removes the cached page when it's modified, so it doesn't cause displaying of outdated content.

Full-page caching

Full-page caching represents the most powerful option. It caches the whole page, so it's not necessary

to contact the SQL Server and run the page code again when the page is requested second time. You can configure the full-page caching in **CMS Desk -> Properties -> General**. The configuration is automatically **inherited to child pages** unless you disable caching on them.

The page stored in the cache is automatically removed when you modify the given page. However, if the page displays other documents (such as news list) and you modify these documents, the page will not be updated.

This option is not suitable for pages with web parts that need to be refreshed very often (e.g. the Random document web part) since you cannot disable caching for particular web parts. For such pages, it's recommended that you do not use full-page caching and use content caching instead.

Full client cache

You can enable full client cache by adding the following key into the *configuration/appSettings* section of your *web.config*:

```
<add key="CMSFullClientCache" value="true"/>
```

If you enable this type of caching, **CSS styles** and **images** will be cached in the client browser. This type of caching can be useful for live site displaying, as changes made to the page in non-live-site modes would not be displayed due to the caching.

Web part/control-level caching settings

Some web parts/controls used for displaying content have two properties related to caching:

- **Cache item name/CacheItemName** - this property specifies the key name under which the content will be stored in the cache; if not specified, the system generates the key name automatically based on the site name, page path, web part ID and current user name.
- **Cache minutes/CacheMinutes** - this property specifies for how long the web part should cache the content retrieved from Kentico CMS. The default value is defined in the **Cache content (minutes)** site settings value described above. You can override the global value by setting this property to a different number.
- **Cache dependencies/CacheDependencies** - using this property, you can specify on which object change the web part's cache gets cleared. Below, you can find a table showing which dummy cache keys get touched when some object gets changed, including some examples. By entering the appropriate dummy keys, one per one line, you can specify that when the object gets changed, the cache gets cleared.

If you check the **Use default cache dependencies** check-box, default settings will be used. The default settings are configured for each web part and include all possible object changes that the content of the web part could depend on.

| Object | Touched keys | Sample values |
|-------------------------------|---|--|
| Document
(TreeNode) | node <sitename> <aliaspath>
<culture>
node <sitename> <aliaspath>
nodeid <nodeid> | node corporatesite /home en-us
node corporatesite /home
nodeid 12
nodeid 34 |

| | | |
|---|--|---|
| | nodeid <linkednodeid>
nodes <sitename> <classname> all
+ for every parent node:
node <sitename> <aliaspath>
childnodes | nodes corporatesite cms.menuitem
all

node sitename / childnodes |
| Any object
(except documents) | <classname> all
<classname> byid <id>
<classname> byname <codename>
<classname> byguid <guid> | cms.user all
cms.user byid 53
cms.user byname administrator
cms.user byguid 1ced44f3-f2fc- ... |
| Metafile | metafile <guid> | metafile 1ced44f3-f2fc- ... |
| Document attachment | attachment <guid> | attachment 1ced44f3-f2fc- ... |
| Forum attachment | forumattachment <guid> | forumattachment 1ced44f3-f2fc- ... |
| Avatar | avatarfile <guid> | avatarfile 1ced44f3-f2fc- ... |
| Media file | mediafile <guid>
mediafile preview <guid> | mediafile 1ced44f3-f2fc- ...
mediafile preview 1ced44f3-f2fc- ... |
| Page template | template <id> | template 12 |
| CacheHelper
.ClearFullPageCache | fullpage | fullpage |

Example 1: let's presume that you have a web part displaying some information about users. Therefore, whenever some user gets its details modified, the web part's cache should be cleared. To assure this, you need to enter **cms.user|all** into the field, which is the dummy key that would get touched whenever some users' details get changed.

Example 2: now let's presume that your web part is displaying information about one particular user - the administrator. Her user name is *administrator*, her ID is *53* and her GUID is something beginning with *1ced44f3-f2fc*. So if you want to have the cache cleared whenever this user's details are changed, you can use any of the following three keys that are specifying the user by the previously named properties:

- **cms.user|byid|53**
- **cms.user|byname|administrator**
- **cms.user|byguid|1ced44f3-f2fc-...**

Partial caching

Partial caching is, simply put, full-page caching for web parts. Like with full-page caching, partial caching also stores the output HTML code. But in this case, it doesn't store the whole page, but only the output HTML code of the particular web part. The web parts have the **Partial cache minutes** and **Partial cache dependencies** properties, which can be used the same way as the **Cache minutes** and **Cache dependencies** properties described above.

Please note: default partial cache dependencies are not specified for the web parts, so if you want to use this feature, you need to specify them manually by entering the dummy keys as described above.

Caching and personalization

If your website contains sections for site members, the caching will be personalized, which means each

signed in user will have their own cache. This may lead to large memory consumption, so it's recommended that you set caching to lower values for membership sites.

Previewing modifications made to pages with caching

Caching may confuse the content editors since they will not see the changes they made on the live site immediately. In such case, they can preview their changes in the **Preview** mode in Kentico CMS Desk since this mode doesn't use caching. The **Edit** mode doesn't use caching either.

7.3.3 Troubleshooting performance issues

If you encounter performance issues, please try to follow these steps to make sure that your system is optimized for best performance:

1. Make sure you're using the latest version of Kentico CMS

We improve the performance with every new release. Especially the 2.0 and 2.1 versions didn't provide a very good performance. You can find the version number in the lower right corner of Kentico CMS Desk -> Content dialog or on the logon screen of the administration interface.

2. Make sure caching is configured on your website.

Go to CMS Site Manager -> Settings, choose the appropriate website in the Sites drop-downlist and choose the website category. Make sure the values are set like these:

- Cache content \geq 0
- Cache images $>$ 0, at least 10 minutes recommended (images are automatically removed from the cache and reloaded if you modify them)
- **always set Cache page info $>$ 0**, at least 10 minutes recommended (page data is automatically removed from the cache and reloaded if you modify it)

3. Try configuring full-page caching

Full-page caching is the most powerful caching option. Once the page is cached in the memory during the first view, it's displayed without contacting SQL server and running the page code. You can configure full-page caching in **CMS Desk -> Content -> Properties -> General -> Cache**.

The page is automatically removed from the memory and reloaded when you modify it's content. Please note that the performance improvement will be visible only during the second load of the page.

4. Turning off output filters

In special cases, the website may be slowed down by output filters. Go to Site Manager -> Settings, choose the appropriate website in the Sites drop-down list and choose the **Output filter** category. You can try to temporarily turn off all output filters by setting the following values to / (slash), which will disable the given filter for the whole website:

- Excluded output form filter URLs
- Excluded resolve filter URLs
- Excluded XHTML filter URL

If it helps, please contact us and we will help you find a workaround (if possible).

5. Configure file caching

Displaying files stored in Kentico CMS repository may require lots of CPU time and may harm the overall website performance. Please try to configure these values in the **Site Manager -> Settings -> Files** section (your web application needs to have Modify permissions on the disk):

- Generate thumbnails: yes
- Redirect files to disk: yes
- Store files in file system: yes

6. Check your code

If you integrated any custom .NET code into the website, please make sure it works properly. Please be sure to avoid too many database operations and be sure to close the database connections properly. Try to comment out your code and see if it improves the performance.

7. Check your hardware

It's recommended that your system has at least 1 GB RAM and Pentium 4 or Pentium Core 2 Duo (or similar) processor.

8. Check the other applications/websites running on the same server

Whether you use your own server or shared hosting, make sure that the other applications do not take all the server performance. It's highly recommended that you run Kentico CMS in a **separate application pool** on Windows Server 2003.

9. Setting application pool Idle time-out in IIS

If your website is accessed not very frequently (less than every 20 minutes by default), users may experience long delays on first access to the site. To prevent this, you need to set the **Idle time-out (minutes)** property of the application pool to a higher value. This property can be accessed through:

IIS 6: open **IIS Manager** -> select **<machine>/Application Pools** -> right click the application pool -> select **Properties** -> switch to the **Performance** tab -> set the **Shutdown worker process after being idle for (time in minutes)** to a higher value or disable the option completely by unchecking the box

IIS 7: open **IIS Manager** -> select **<machine>/Application Pools** -> right click the application pool -> select **Advanced Settings** -> the property is located in the **Process Model** section

If the above mentioned settings don't help, please send us an exported copy of your website and we will try to analyze it.

7.3.4 File management and performance

Files can be stored in the file system (faster) or in database. If you're experiencing problems with slow image viewing, please try to configure the following values in the **Site Manager -> Settings -> Files** section:

- **Generate thumbnails:** yes
- **Redirect files to disk:** yes
- **Store files in file system:** yes

You can find more details on file management in chapter [Where the files are stored](#).

7.4 CSS stylesheets and design

7.4.1 Overview

CSS stylesheets allow you to modify the design of the website. You can use standard CSS styles with Kentico CMS as you are used to.

Every **website** has some default CSS stylesheet. It can be modified in **Site Manager -> Sites -> Site Properties**, in field **Site CSS stylesheet**.

Every page can either use the website stylesheet or it can override it with its own stylesheet. The page stylesheet can be configured in **CMS Desk -> Content -> Properties tab -> General**, in field **CSS stylesheet**.

Managing stylesheets

You can manage CSS stylesheets in **Site Manager -> Development -> CSS stylesheets**. Every stylesheet has the following properties:

| | |
|-------------------------|--|
| Stylesheet display name | The name of the stylesheet displayed to the users. |
| Stylesheet code name | The name of the stylesheet used in the code. |
| Stylesheet text | Standard CSS stylesheet code. |

You also need to enable the stylesheet for particular websites on the **Sites** tab.



Stylesheet URL

You can receive any stylesheet using the URL like this:

```
web.com/CMSPages/GetCSS.aspx?stylesheetname=mystylesheetcodename
```

Combining website and page stylesheet

If you need to only combine the website and page stylesheet, you need to configure the page for using its own style sheet and import the website stylesheet using the following CSS directive:

[CSS]

```
@import url(/alfa17/CMSPages/GetCSS.aspx?stylesheetname=corporatesite);
```

The `@import` directive must be placed at the beginning of the stylesheet. All styles defined after this directive override the styles defined in the imported stylesheet.



Using your favorite CSS editor for stylesheet editing

If you want to edit CSS styles with your favorite editor, you can simply use the `@import` directive to import your static CSS stylesheet and edit it in your editor. After you finish the design, you can simply copy and paste the stylesheet to Kentico CMS stylesheet.

Using CSS blocks for easier navigation in CSS code

You can use comments in format `/* #BLOCKNAME# */` to make your navigation in CSS code easier. The comments may contain sub-blocks separated with a slash, such as `/* #BLOCKNAME/SUBBLOCK# */`.

Example:

[CSS]

```
/* #Menu# */  
  
// some CSS code  
  
/* #Menu/TreeMenu# */  
  
// some CSS code  
  
/* #Menu/MainMenu# */  
  
// some CSS code
```

The outlined structure will look like this:

```
/* #Menu# */  
  
    // some CSS code  
  
/* #Menu/TreeMenu# */  
  
    // some CSS code  
  
/* #Menu/MainMenu# */  
  
    // some CSS code  
  
/*#Examples#*/  
  
.Slider .Pager  
{  
}  
  
.Slider .Pager a  
{  
    text-decoration: none;  
    font-weight: bold;  
    font-size: 11px;  
}
```

7.4.2 App themes

In some cases, you may leverage the built-in support for ASP.NET themes. You can use them for setting styles of controls that do not have their own CSS class name, such as Datagrid or Calendar.

The name of the theme folder under App_Themes must be same as the code name of the site CSS stylesheet. So if you use the Green stylesheet on your site, your theme must be stored in the App_Themes\green sub-folder.

You need to add your skins to the default.skin file. Here's an example of CMSCalendar / Calendar web part skin:

```
<c1:CMSCalendar Runat="server">  
<NextPrevStyle ForeColor="Red"></NextPrevStyle>  
<WeekendDayStyle BackColor="#E0E0E0"></WeekendDayStyle>  
</c1:CMSCalendar>
```



website design files

It's recommended that you store all images or Flash movies that are part of the website design template in the application theme folder. This ensures that the files are exported together with website when your deploying it to some other server.

7.4.3 Printer friendly CSS styles

This chapter explains how to use the printer friendly CSS styles on your website. These styles are used only if a document is sent to a printer.

1. Create a new CSS style sheet in **Site Manager -> Development -> CSS style sheets**, name it *Printer styles* and set its code name to *Printer_styles*, for example. See the simple example bellow for an illustration of the printer friendly CSS styles created for our default **Corporate site**.

```
.zoneLeft, .zoneRight, .zoneTopInfo, .zoneTop, .horizontalmenu, .zoneBottom
{
    display: none;
}
.eventCalendarDetail .zoneLeft, .eventCalendarDetail zoneRight
{
    display: block;
}
.eventCalendarDetail zoneRight
{
    float: left;
}
.logonReg .zoneLeft, .logonReg .zoneRight
{
    display: block;
}
.logonReg .zoneRight
{
    float: left;
}
.zoneContent
{
    float: left !important;
}
```

Please note that you have to hide the all the elements that should not be visible in the print version. You can do this by adding **display:none**; to the given style.

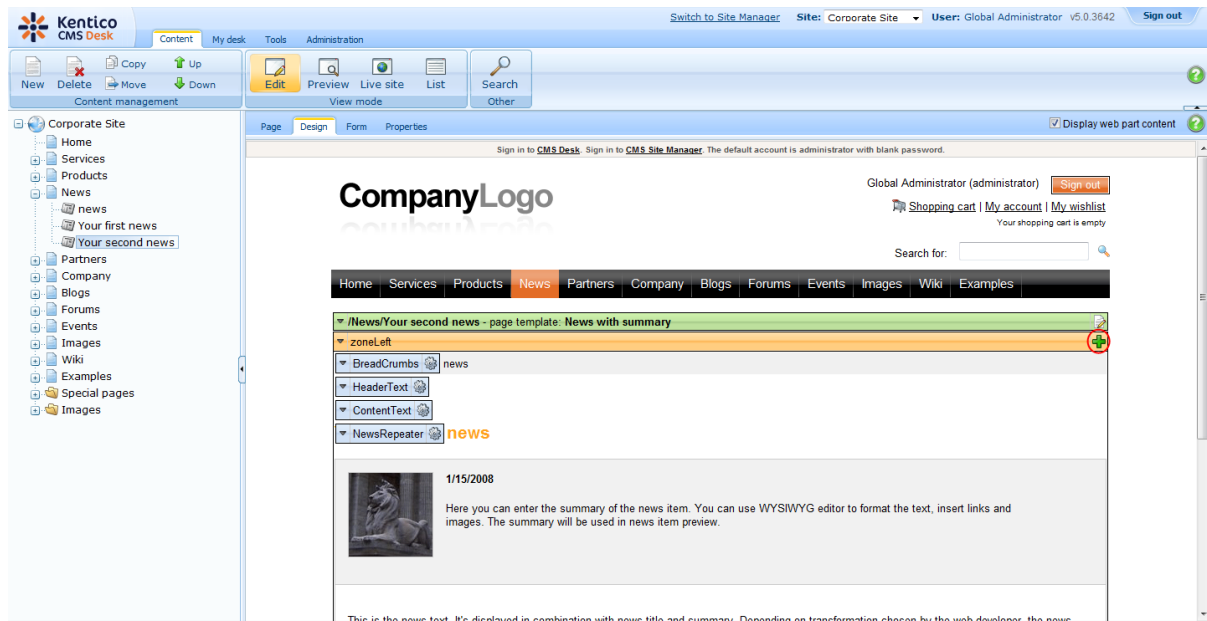
2. Add to the master page header tag link to appropriate CSS style. For example:

```
<link href="CMSPages/GetCSS.aspx?stylesheetname=Printer_styles" type="text/css"
rel="stylesheet" media="print" />
```

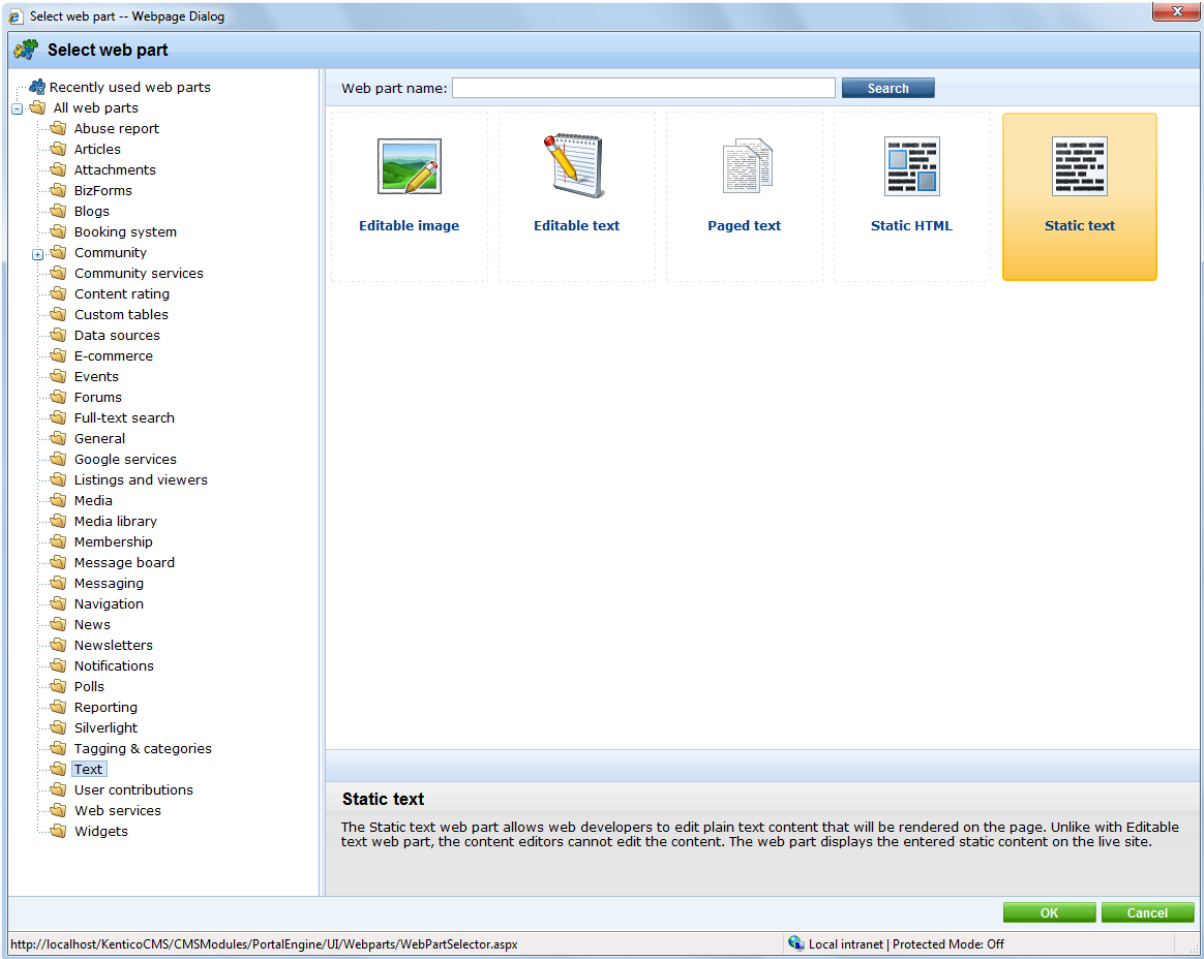
7.4.4 Print page

Kentico CMS allows you to add a link button to your web page that will create print version of the given document. The following example shows you on the sample Corporate Site how to create the given button for the news section.

1. Go to **CMS Desk -> Content -> News -> Your second news -> Design** and click the **Add web part** button at the **zoneLeft**.

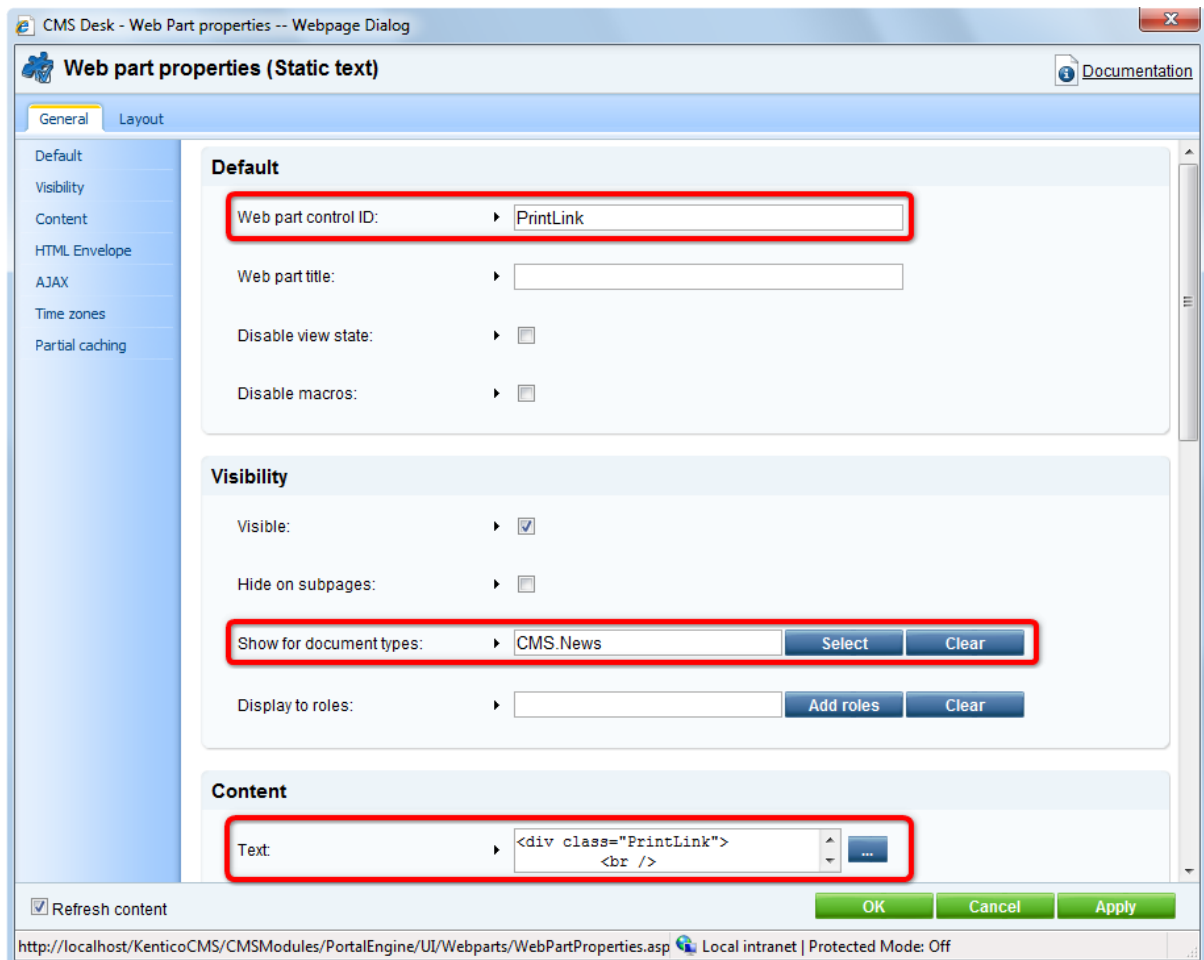


2. Select **Text/Static Text**.

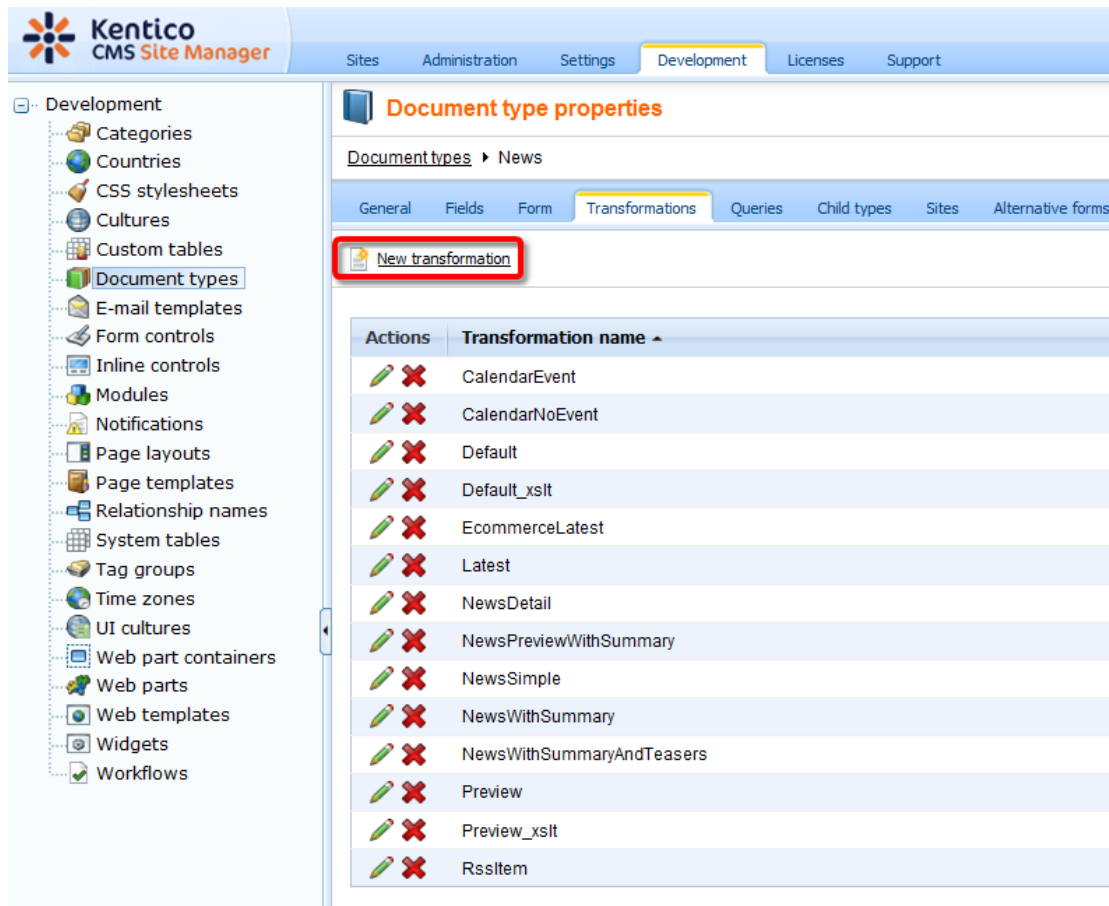


3. In the web part properties, enter *PrintLink* as **ID** and choose **CMS.News** for the Show for document types text box. Enter the following code into the **Text** text box. Then click **OK**.





























```
<div class="PrintLink">
  <br />
  <a href="~/SpecialPages/Print.aspx?printpath={%NodeAliasPath%}&classname={%
ClassName%}" target="_blank" >
    
    Print
  </a>
</div>
```



4. Now you have to specify the Print transformation for the new document type. Go to **Kentico Site Manager** -> **Development** -> **Document Types** and click the **Edit** button next to the **News** document type. Switch to the **Transformation** tab and click **New Transformation**.



The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a tree view of the 'Development' section, with 'Document types' selected. The main content area is titled 'Document type properties' and shows the 'News' document type. The 'Transformations' tab is active, and a 'New transformation' button is highlighted with a red box. Below the button is a table of existing transformations.

| Actions | Transformation name |
|---|---------------------------|
|   | CalendarEvent |
|   | CalendarNoEvent |
|   | Default |
|   | Default_xslt |
|   | EcommerceLatest |
|   | Latest |
|   | NewsDetail |
|   | NewsPreviewWithSummary |
|   | NewsSimple |
|   | NewsWithSummary |
|   | NewsWithSummaryAndTeasers |
|   | Preview |
|   | Preview_xslt |
|   | RssItem |

5. Enter *Print* as **Transformation name** and enter the following code into the **Code** text box. Then click **Save**.

```
<div class="newsItemDetail">
<h1><# Eval("NewsTitle") %></h1>
<div class="NewsSummary">
  <# IfEmpty(Eval("NewsTeaser"), "", GetImage("NewsTeaser")) %>
  <div class="NewsContent">
    <div class="Date"><# GetDateTime("NewsReleaseDate", "d") %></div>
    <# Eval("NewsSummary") %>
  </div>
  <div class="Clearer">&nbsp;</div>
</div>
<div class="NewsBody">
  <# Eval("NewsText") %>
</div>
</div>
```

The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a navigation tree with categories like 'Development', 'Categories', 'Countries', etc. The main content area is titled 'Document type properties' and shows the 'News' document type. Under the 'Transformations' tab, the 'Print' transformation is selected. The 'Code' field contains the following HTML code:

```
<%@ Control Language="C#" AutoEventWireup="true" Inherits="CMS.Controls.CMSAbstractTransformation" %>
<%@ Register TagPrefix="cc1" Namespace="CMS.Controls" Assembly="CMS.Controls" %>
<div class="newsItemDetail">
<h1><# Eval("NewsTitle") %></h1>
<div class="NewsSummary">
  <# IfEmpty(Eval("NewsTeaser"), "", GetImage("NewsTeaser")) %>
  <div class="NewsContent">
    <div class="Date"><# GetDateTime("NewsReleaseDate", "d") %></div>
    <# Eval("NewsSummary") %>
  </div>
  <div class="Clearer">&nbsp;</div>
</div>
<div class="NewsBody">
  <# Eval("NewsText") %>
</div>
</div>
```

Below the code field, there is a link: [Click here to view list of transformations examples.](#)

6. Now, go back to **CMS Desk** -> **Content** -> **News** -> **Your second news** and click the newly created **Print** button. You will be redirected to the **Print** page that displays the print version of the given news item.

CompanyLogo

Your second news



1/15/2008

Here you can enter the summary of the news item. You can use WYSIWYG editor to format the text, insert links and images. The summary will be used in news item preview.

This is the news text. It's displayed in combination with news title and summary. Depending on transformation chosen by the web developer, the news item may be displayed in various formats, with or without teaser image.

Please note:

For the sample Corporate Site, the **Print** page is already created. For your own website, you have to create it by yourself.

Add a new blank page to the **Special pages** folder and name it **Print**. Firstly, you have to disable the content inheritance at **Properties -> Template**.

The screenshot displays the Kentico CMS Desk interface. The top navigation bar includes the Kentico CMS Desk logo, a 'Switch to Site Manager' link, the current site name 'Corporate Site', and the user 'Global'. Below the navigation bar are several toolbars: 'Content management' (New, Delete, Move, Copy, Up, Down), 'View mode' (Edit, Preview, Live site, List), and 'Other' (Search). The left sidebar shows a tree view of the 'Corporate Site' structure, with the 'Print' page selected under the 'Special pages' folder. The main content area is divided into tabs: 'Page', 'Design', 'Form', and 'Properties'. The 'Properties' tab is active, showing a 'Save' button and a 'Template' dropdown menu with the value 'Print' and a 'Select' button. Below the dropdown are four actions: 'Save as new template...', 'Inherit template', 'Clone template as ad-hoc', and 'Edit template properties'. At the bottom, the 'Inherit content' section has three radio buttons: 'Use page template settings', 'Do not inherit any content' (which is selected), and 'Select inherited levels'.

Every **Print** page contains the repeater web part that renders the **Print** transformation for the given document type that can be specified at **CMS Site Manager -> Development -> Document Types -> <edit document type> -> Transformations**. Therefore, add the **Repeater** web part and set its properties to the following values.

- **Path:** {?printpath}/%{?}
- **Document types:** {?classname|cms.root?}
- **Transformation:** {?classname|cms.root?}.print

Content

Path:

Data source name:

Content filter

Document types:

Combine with default culture: Yes
 No
 Use site settings

Culture code:

Maximum nesting level:

ORDER BY expression:

Select only published:

Select top N documents:

Site name:

WHERE condition:

Columns:

Filter out duplicate documents:

Filter name:

Transformations

Transformation:

Alternating transformation:

Selected item transformation:

Item separator:

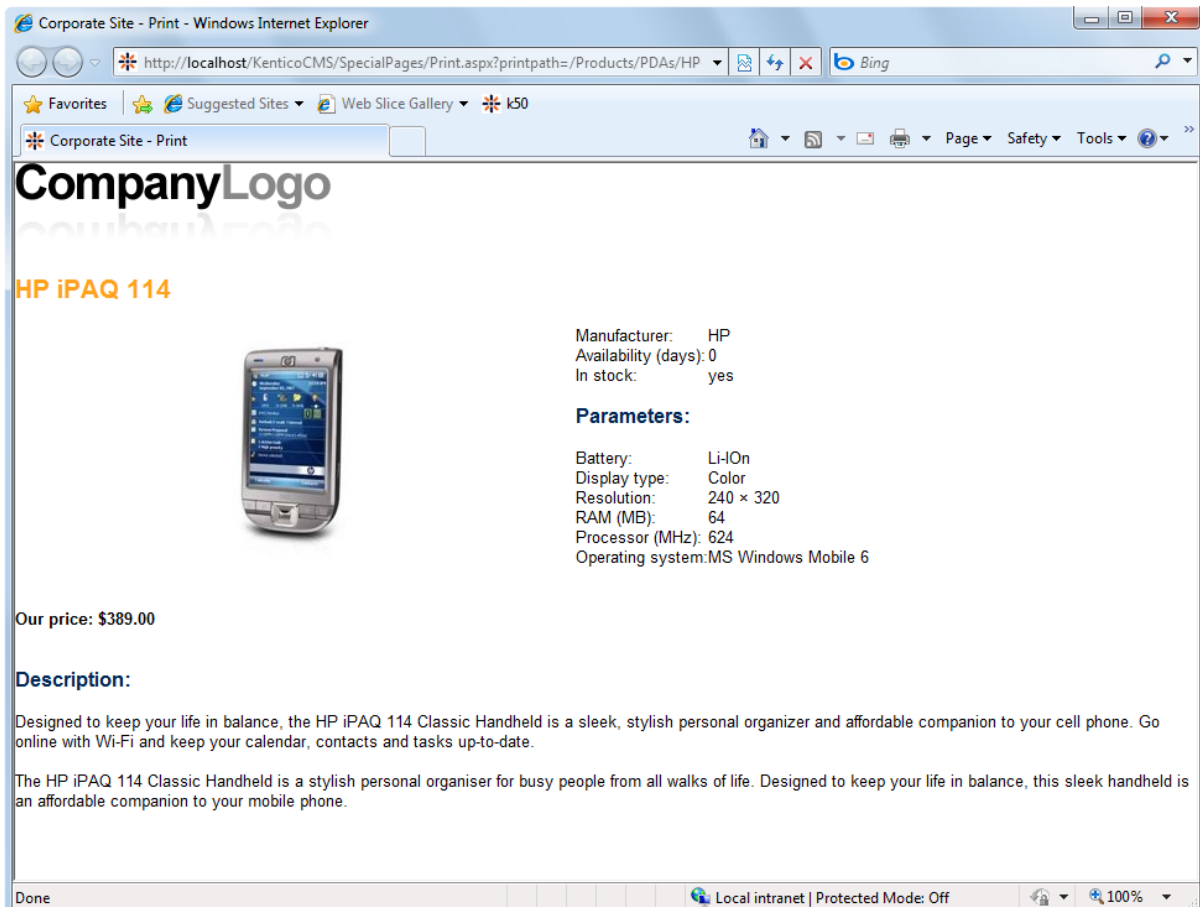
Nested controls ID:

The **Path** text box specifies the path to the document whose print version you want to make. The value of the **printpath** macro expression is supplied in URL. If no value is supplied in URL (for instance you go directly on the **Print** page from the content tree and not through the print link button), the default **Print** transformation for **cms.root** is displayed.

The **Document types** text box specifies the document types that should be displayed.

The **Transformation** text box specifies the name of the transformation that should be used to render the print version. If the **Print** transformation is not defined for the given document type, the **Print** transformation for the **cms.root** is used.

You can try out the functionality of the **Print** page by printing the detail of any product, because the **Print** link button is already created for all products on the Corporate Site.



7.5 Debugging

7.5.1 Overview

Debugging in the UI

The **Administration -> System -> Debug** tab can be used for system debugging, i.e. finding and fixing performance or settings issues on your website. Debugs are also particularly useful in case that you are reporting an issue to our support department. Every extra bit of information related to your issue that you find in the debugs can significantly shorten the time needed to solve the issue.

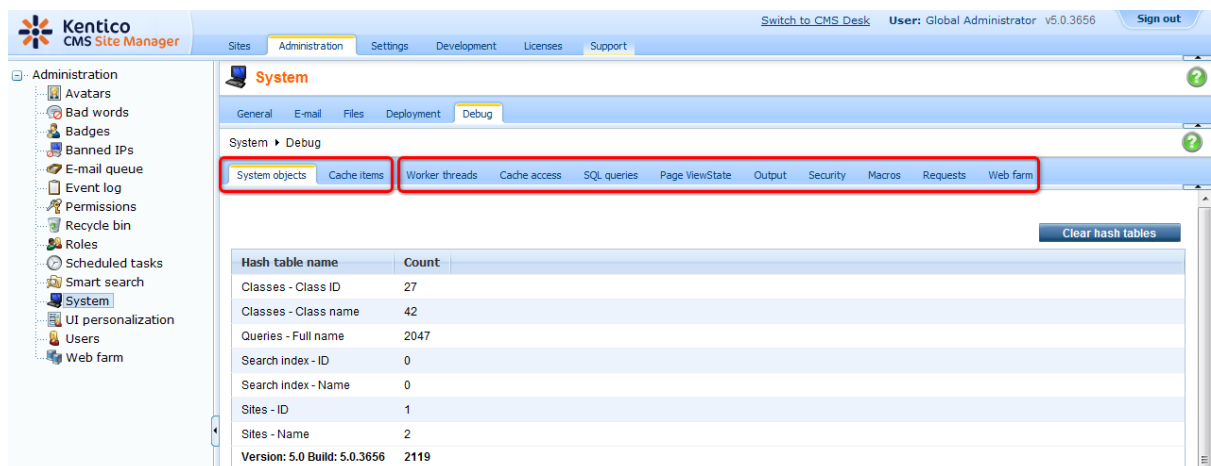
The debugging interface is divided into several sub-tabs. Only the following two tabs are displayed by default. Click the name of the tab to learn more.

- [System objects](#)
- [Cache items](#)

The other sub-tabs are displayed only after adding a dedicated key into the *AppSettings* section of your *web.config* file. Here again, click the name of the tab to get detailed information.

- [Cache access](#)
- [SQL queries](#)
- [Page ViewState](#)
- [Output](#)
- [Security](#)
- [Requests](#)
- [Worker threads](#)

You can enable all these debugs at once using the [bulk keys](#).

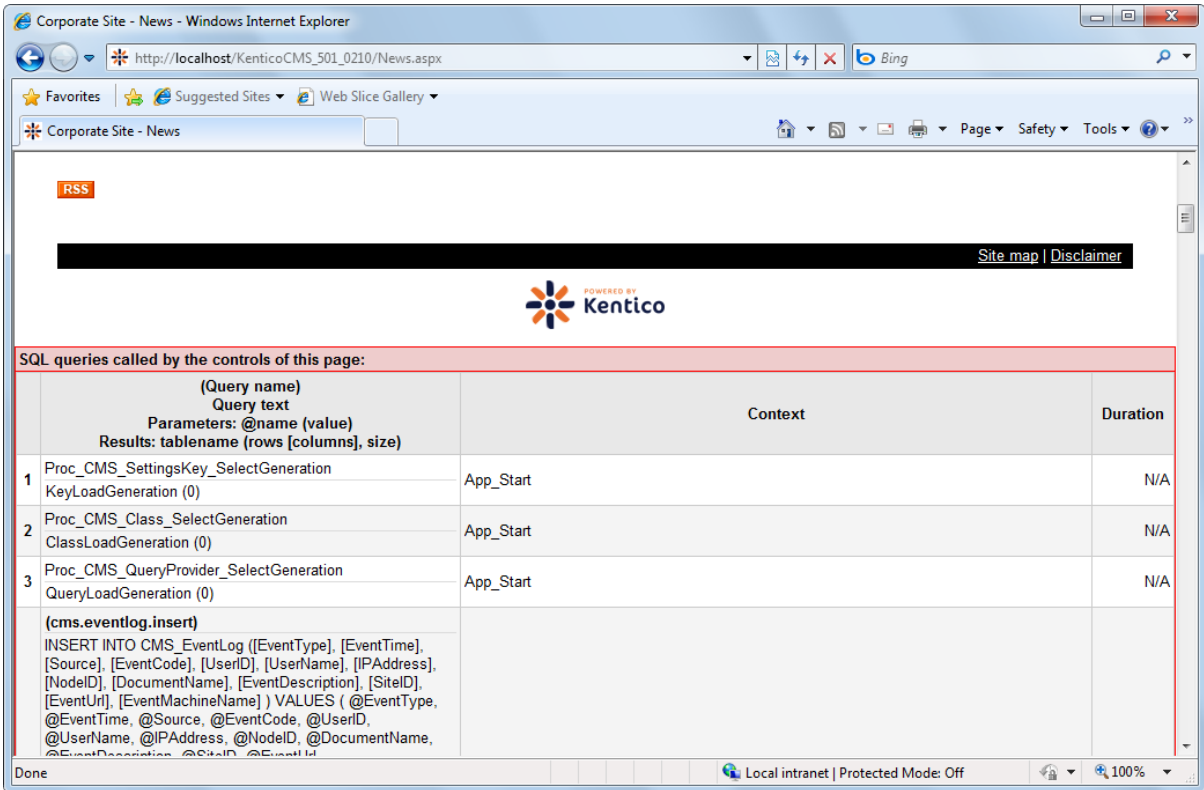


The screenshot shows the Kentico CMS 5.5 Administration interface. The top navigation bar includes 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The left sidebar lists various administration options, with 'System' selected. The main content area is titled 'System' and contains a 'Debug' sub-tab. The 'Debug' sub-tab is active, and its sub-tabs are: 'System objects', 'Cache items', 'Worker threads', 'Cache access', 'SQL queries', 'Page ViewState', 'Output', 'Security', 'Macros', 'Requests', and 'Web farm'. The 'System objects' and 'Cache items' sub-tabs are highlighted with a red box. Below the sub-tabs is a table showing hash table names and their counts.

| Hash table name | Count |
|------------------------------|-------|
| Classes - Class ID | 27 |
| Classes - Class name | 42 |
| Queries - Full name | 2047 |
| Search index - ID | 0 |
| Search index - Name | 0 |
| Sites - ID | 1 |
| Sites - Name | 2 |
| Version: 5.0 Build: 5.0.3656 | 2119 |

Debugging on the live site

You can also enable debugging directly on the live site. In this case, the debug log is displayed at the bottom of each loaded page. Like UI debugs, live site debugging too can be enabled either separately using the dedicated keys (follow the links above) or all at once using the [bulk keys](#).



Request details

You can display request details for each debugged request by clicking its URL in any debug log either in the UI or on the live site.

The screenshot shows the Kentico CMS Site Manager Administration interface. The left sidebar contains a tree view with categories like Avatars, Bad words, Badges, Banned IPs, E-mail queue, Event log, Permissions, Recycle bin, Roles, Scheduled tasks, Smart search, System, UI personalization, Users, and Web farm. The main content area is titled 'System' and has tabs for General, E-mail, Files, Deployment, and Debug. The Debug tab is active, showing a sub-tab for 'System > Debug'. A red box highlights the URL `/KenticoCMS_501_0210/CMSSiteManager/Administration/System/System_Deployment.aspx (02:02:13)`. Below this is a table of SQL queries:

| (Query name) | Query text | Context | Duration |
|--|---|---------|----------|
| 1 Proc_CMS_SqlResourceManager_GetStringByKey
Parameters: @name (value)
Results: tablename (rows [columns], size) | SqlHelperClass.ExecuteQuery
SqlResourceManager.GetStringFromDB
SqlResourceManager.GetString
ResHelper.GetString
CMSSiteManager_Administration_System_System_DeploymentPage_Load | | 0.003 |
| 2 Proc_CMS_SqlResourceManager_GetStringByKey
Parameters: @stringKey (Deployment.SaveAll)
@cultureCode (en-US) | SqlHelperClass.ExecuteQuery
SqlResourceManager.GetStringFromDB
SqlResourceManager.GetString
ResHelper.GetString
CMSSiteManager_Administration_System_System_DeploymentPage_Load | | 0.002 |
| 2 queries (0 B) | Version: 5.0 Build: 5.0.3656 | | 0.005 |

After doing so, a new pop-up window gets opened, listing the request's debug log for all enabled debugs.

The screenshot shows a Windows Internet Explorer window titled 'Request details' with the URL `http://localhost/KenticoCMS_501_0210/CMSSiteManager/Administration/System/Debug/System_Vie`. The main content area displays the request details for `/KenticoCMS_501_0210/CMSSiteManager/Administration/System/System_Deployment.aspx (02:02:13)`. It includes a table of SQL queries called by the controls of this page:

| (Query name) | Query text | Context | Duration |
|--|---|---------|----------|
| 1 Proc_CMS_SqlResourceManager_GetStringByKey
Parameters: @name (value)
Results: tablename (rows [columns], size) | SqlHelperClass.ExecuteQuery
SqlResourceManager.GetStringFromDB
SqlResourceManager.GetString
ResHelper.GetString
CMSSiteManager_Administration_System_System_DeploymentPage_Load | | 0.003 |
| 2 Proc_CMS_SqlResourceManager_GetStringByKey
Parameters: @stringKey (Deployment.SaveAll)
@cultureCode (en-US) | SqlHelperClass.ExecuteQuery
SqlResourceManager.GetStringFromDB
SqlResourceManager.GetString
ResHelper.GetString
CMSSiteManager_Administration_System_System_DeploymentPage_Load | | 0.002 |
| 2 queries (0 B) | Version: 5.0 Build: 5.0.3656 | | 0.005 |

Below the SQL queries table is a table of ViewState used by the controls of this page:

| Control ID | ViewState |
|------------------------------------|------------------------------------|
| 1 bodyElem | class = "IE8 ENUS" (8 B) |
| 2 pnlBody | CssClass = "DialogPageBody" (14 B) |
| 3 pnlBody
pnlAdditionalControls | CssClass = "PageHeaderLine" (14 B) |

A 'Close' button is visible at the bottom right of the pop-up window.

7.5.2 Particular debugs

7.5.2.1 System objects debug

On the **Debug -> System objects** tab, you can see the numbers of objects currently stored in hash tables on the server.

The first table shows the names of particular **hash tables** and the numbers of records in them. The second table shows particular **object types** and the numbers of currently hashed objects of each type.

All hash tables can be cleared using the **Clear hash tables** button.

The screenshot displays the Kentico CMS Site Manager Administration interface. The left sidebar shows the 'Administration' menu with 'System' selected. The main content area is titled 'System' and has the 'Debug' tab selected. Under the 'Debug' tab, the 'System objects' sub-tab is active. A 'Clear hash tables' button is visible in the top right of the main content area. Below the button are two tables:

| Hash table name | Count |
|------------------------------|-------|
| Banned IPs - ID | 0 |
| Banned IPs - ID | 0 |
| Classes - Class ID | 27 |
| Classes - Class name | 42 |
| CSS stylesheets - ID | 1 |
| CSS stylesheets - Name | 4 |
| Cultures - Culture code | 265 |
| Page personalization - IDs | 2 |
| Page templates - ID | 2 |
| Page templates - Name | 2 |
| Queries - Full name | 2040 |
| Search index - ID | 0 |
| Search index - Name | 0 |
| Sites - ID | 1 |
| Sites - Name | 2 |
| Transformations - Full name | 336 |
| Webparts - ID | 212 |
| Webparts - Name | 384 |
| Version: 5.0 Build: 5.0.3656 | 3320 |

| Object type | Count |
|----------------|-------|
| cms.attachment | 0 |

7.5.2.2 Cache items debug

On the **Debug -> Cache items** tab, you can see which **Keys** and **Dummy keys** are currently stored in the system cache. For more information about caching in Kentico CMS, please refer to [this topic](#).

All dummy keys can be cleared from the cache using the **Clear cache** button.

The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a navigation menu with items like Avatars, Bad words, Badges, Banned IPs, E-mail queue, Event log, Permissions, Recycle bin, Roles, Scheduled tasks, Smart search, System, UI personalization, Users, and Web farm. The main content area is titled 'System' and has tabs for General, E-mail, Files, Deployment, and Debug. Under the 'Debug' tab, there is a sub-tab for 'System > Debug' and another sub-tab for 'Cache items'. The 'Cache items' sub-tab is active, showing a table of cache items. The table has two columns: 'Key' and 'Data'. The 'Data' column includes a magnifying glass icon and the size of the data. A 'Clear cache' button is located in the top right corner of the table area.



| Key | Data |
|--|---|
| cmsdatasource en-us corporate news en-us false cms.news newsreleasedate desc -1 true 0 | [DataSet]: CMS.News (2 [120], 2 kB) |
| cmsmenudatasource en-us corporate en-us false 2 true false | [DataSet]: CMS.Document (32 [35], 4.9 kB) |
| getcss corporate site | CMS.UIControls.CMSOutputCSS (53 kB) |
| getcss corporate site printer | CMS.UIControls.CMSOutputCSS (417 B) |
| getFile corporate site en-us nodeguid=9836d166-e320-4533-b49b-8cde71ccbfc | CMS.UIControls.CMSOutputFile (680 B) |
| language selection corporate site | [DataSet]: Table (1 [6], 83 B) |
| pageinfo corporate site en-us false | CMS.PortalEngine.PageInfo (771 B) |
| pageinfo corporate site news en-us news true | CMS.PortalEngine.PageInfo (687 B) |
| pageinfo url corporate site http://localhost/kenticocms_501_0210/news.aspx en-us true true | CMS.PortalEngine.CachedPageInfo |

| Dummy key |
|---|
| attachment 887a2f3-884b-493a-a2ce-105b3025f8ec |
| cms.cssstylesheet byguid 8caaf19d-1ad7-4a52-8407-2561220a4a05 |
| cms.cssstylesheet byguid bc4f184a-14d0-4f79-9804-3f65908d12a5 |

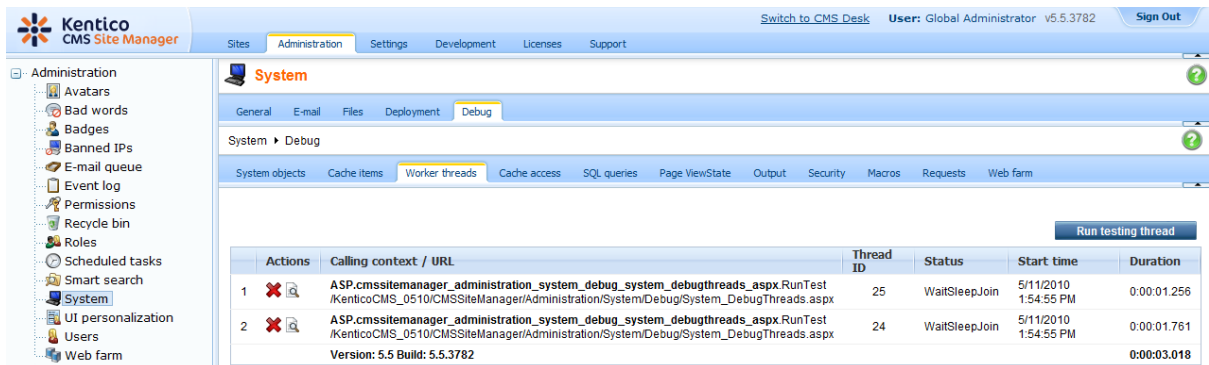
7.5.2.3 Worker threads debug





On the **Debug -> Worker threads** tab, you can see which worker threads are currently running in the system. This is particularly useful if your application is consuming significantly more resources than it normally should. It may often be caused by threads running in the background, e.g. threads for Smart Search re-indexing or Mass e-mail sending.

You can perform the following actions with the listed threads:

-  **Cancel** - cancels execution of the thread (useful if the original window where the thread was started is already closed)
-  **View** - displays a pop-up window showing the current content of the thread log (in case that there is a log)

The **Run testing thread** button can be used to launch a testing thread in order to verify that threads debugging works correctly.



| Actions | Calling context / URL | Thread ID | Status | Start time | Duration |
|---|--|-----------|---------------|----------------------|-------------|
| 1   | ASP.cmsitemanager_administration_system_debug_system_debugthreads.aspx.RunTest /KenticoCMS_0510/CMSiteManager/Administration/System/Debug/System_DebugThreads.aspx | 25 | WaitSleepJoin | 5/11/2010 1:54:55 PM | 0:00:01.256 |
| 2   | ASP.cmsitemanager_administration_system_debug_system_debugthreads.aspx.RunTest /KenticoCMS_0510/CMSiteManager/Administration/System/Debug/System_DebugThreads.aspx | 24 | WaitSleepJoin | 5/11/2010 1:54:55 PM | 0:00:01.761 |
| Version: 5.5 Build: 5.5.3782 | | | | | 0:00:03.018 |

7.5.2.4 Cache access debug

Cache access debugging can be turned on by adding one or more of the following keys into the *AppSettings* section of your *web.config* file:

- `<add key="CMSDebugCache" value="true" />` - enables the Cache access tab in Administration -> System -> Debug
- `<add key="CMSDebugCacheLive" value="true" />` - enables cache access debugging on the live site
- `<add key="CMSDebugAllCaches" value="true" />` - enables cache access debugging for all operations (including the UI)
- `<add key="CMSDebugCacheLogLength" value="10" />` - maximal length of the cache access debug log (number of preserved records)
- `<add key="CMSLogCache" value="true" />` - if applied, cache access debug log will be stored into `~/App_Data/logcache.log`

It can also be enabled using the [bulk keys](#).

On the **Debug -> Cache access** tab, you can see a log of accesses to the system cache.

For each access, you can see the URL of the page on whose loading the cache was accessed. The table below the URL always shows the type of **Access**, the accessed **Cache key**, the object type and size of cached **Data** and the **Context** from which the cache was accessed. For more information about caching in Kentico CMS, please refer to [this topic](#).

All dummy keys can be cleared from the cache using the **Clear cache** button.

By clicking the **View object** (🔍) icon, you can display details of the cached object in a new window. Clicking the **Clear cache log** button clears all records in this debug log.

The screenshot shows the Kentico CMS Site Manager Administration interface. The left sidebar contains a tree view with 'System' selected. The main content area is titled 'System' and has a 'Debug' sub-tab selected. Under 'Debug', the 'Cache access' sub-tab is active. A 'Clear cache log' button is visible in the top right of the main area. Below the button, there are three entries in the cache access log, each with a table showing the access details.

| Access | Cache key | Data | Context |
|------------------------------|---|---|---------|
| 1 ADD | getfile corporateSite en-us nodeguid=9836d166-e320-4533-b49b-8cded71ccbfc | "CMS.UIControls.CMSOutputFile (680 B)" (36 B) | GetFile |
| Version: 5.0 Build: 5.0.3656 | | | |
| 1 ADD | getcss corporateSite | "CMS.UIControls.CMSOutputCSS (53 kB)" (35 B) | GetCSS |
| Version: 5.0 Build: 5.0.3656 | | | |
| 1 ADD | getcss corporateSite printer | "CMS.UIControls.CMSOutputCSS (417 B)" (35 B) | GetCSS |
| Version: 5.0 Build: 5.0.3656 | | | |

7.5.2.5 SQL queries debug

SQL queries debugging can be turned on by adding one or more of the following keys to the *web.config* file of your web project:

- `<add key="CMSDebugSQLQueries" value="true" />` - enables the SQL queries tab in Site Manager -> Administration -> System -> Debug
- `<add key="CMSDebugSQLQueriesLive" value="true" />` - enables SQL queries debugging on the live site
- `<add key="CMSDebugAllSQLQueries" value="true" />` - enables debugging of all SQL queries (including the UI)
- `<add key="CMSDebugSQLQueriesLogLength" value="10" />` - maximal length of the SQL queries debug log (number of preserved records)
- `<add key="CMSLogSQLQueries" value="true" />` - if applied, SQL queries debug log will be saved into `~/App_Data/logsql.log`

It can also be enabled using the [bulk keys](#).

On the **Debug -> SQL queries** tab, you can see a log of SQL queries called on loading of particular pages. For each record, there is row with a URL of the loaded page followed by its time of display. Below it, you can find a table listing all SQL queries executed when loading the page.

For each query, there are two lines in the table. The first line contains the exact text of the query, while the second line contains the number of loaded rows, columns in each row and the size of the loaded data. The Context column shows where the query was called from. The last column of the table displays the exact duration of query execution. The last line of the table displays the overall page loading time.

Clicking the **Clear SQL log** button clears all records in this debug log.

| | (Query name)
Query text
Parameters: @name (value)
Results: tablename (rows [columns], size) | Context | Duration |
|---|--|--|----------|
| 1 | (SELECT TOP 1 * FROM View_PageInfo WHERE ((NodeSiteID = 1) AND (DocumentUriPath = N'/Company') AND (DocumentUriPath <=> NodeAliasPath))) UNION ALL (SELECT * FROM View_PageInfo WHERE ((NodeSiteID = 1) AND (NodeAliasPath = N'/Company') AND (DocumentCulture = N'En-US')))
Table (1 [52], 921 B) | AuthorizeRequest | 0.068 |
| 2 | (cms.document.selectuptree)
SELECT IsSecuredNode, DocumentStyleSheetID, DocumentPageTemplateID, NodeDocType, NodeHeadTags, NodeCacheMinutes, DocumentPageTitle, DocumentPageKeywords, DocumentPageDescription, NodeBodyElementAttributes, RequiresSSL, NodeID, DocumentID, DocumentCulture, NodeACLID, NodeLinkedNodeID, ClassName FROM View_CMS_Tree_Joined WHERE (((SiteName = N'CorporateSite') AND (DocumentCulture = N'En-US')) AND (NodeLevel <= 1)) AND (NodeAliasPath = '/') ORDER BY NodeLevel DESC
Table (1 [17], 291 B) | AuthorizeRequest | 0.007 |
| 3 | (cms.pagetemplate.select)
SELECT * FROM CMS_PageTemplate WHERE [PageTemplateID] = @ID
@ID (52)
Table (1 [21], 6.4 kB) | AuthorizeRequest | 0.004 |
| 4 | (cms.personalization.selectall)
SELECT TOP 1 * FROM CMS_Personalization WHERE PersonalizationUserID = 65 AND PersonalizationDocumentID = 8 | PersonalizationInfoProvider.GetUserPersonalization
PersonalizationInfoProvider.GetPersonalizedTemplateInstance
CMSAbstractLayout.LoadContent
CMSPagePlaceholder.LoadContent (2)
CMSPortalManager.LoadContent | 0.004 |

7.5.2.6 Page ViewState debug

Page ViewState debugging can be turned on by adding one or more of the following keys into the *AppSettings* section of your *web.config* file:

- `<add key="CMSDebugViewState" value="true" />` - enables the Page ViewState tab in Administration -> System -> Debug
- `<add key="CMSDebugViewStateLive" value="true" />` - enables ViewState debugging on the live site
- `<add key="CMSDebugAllViewStates" value="true" />` - enables ViewState debugging for all operations (including the UI)
- `<add key="CMSDebugViewStateLogLength" value="10" />` - maximal length of the ViewState debug log (number of preserved records)

It can also be enabled using the [bulk keys](#).

On the **Debug -> Page ViewState** tab, you can see the ViewState of particular controls on recently loaded pages. The **Is dirty** column indicates if the

The log can be cleared using the **Clear ViewState log** button.

Please note: ViewState of the controls is retrieved using reflection. Therefore this debug may not work properly under [medium trust environment](#) or other specific circumstances.

The screenshot shows the Kentico CMS Site Manager Administration interface. The left sidebar contains a tree view with 'System' selected. The main content area is titled 'System' and has a sub-tab 'Debug'. Under 'Debug', there is a sub-tab 'Page ViewState'. The page title is '/KenticoCMS_0331/Company.aspx (03:03:21)'. A 'Clear ViewState log' button is located in the top right corner of the table area.

| Control ID | Is dirty | ViewState |
|--|------------|---|
| 1
plc
pnlPage | No | CssClass = "PagePlaceholder" (15 B) |
| 2
PagePlaceholder
PagePlaceholder
pnlPage | No | CssClass = "PagePlaceholder" (15 B) |
| 3
ContentText
BizFormControl1
Bizform1 | Yes
Yes | FormName = "ContactUs" (9 B)
FormMode = Insert |
| 4
BizFormControl1
Bizform1
ctl00 | No
No | Mode = Insert
SiteName = "CorporateSite" (13 B) |
| 5
Bizform1
ctl00
pnlCategoryList | No | CssClass = "FormCategoryList" (16 B) |
| 6
Bizform1
ctl00
pnlForm | No | CssClass = "FormPanel" (9 B) |
| 7
pnlForm
FirstName_control
N/A | Yes | CssClass = "EditingFormControlNestedControl" (31 B) |

7.5.2.7 Output debug

Output debugging can be turned on by adding one or more of the following keys into the *AppSettings* section of your *web.config* file:

- `<add key="CMSDebugOutput" value="true" />` - enables the Output tab in Site Manager -> Administration -> System -> Debug
- `<add key="CMSDebugOutputLive" value="true" />` - enables output debugging on the live site
- `<add key="CMSDebugAllOutputs" value="true" />` - enables output debugging for all operations (including the UI)
- `<add key="CMSDebugOutputLogLength" value="10" />` - maximal size of the output debug log (number of preserved records)
- `<add key="CMSLogOutputToFile" value="true" />` - if applied, output debug log is saved into `~/App_Data/logoutput.log`

It can also be enabled using the [bulk keys](#).

On the **Debug -> Output** tab, you can see the exact output code of recently displayed pages. This is particularly useful in case of AJAX request, whose code can not be viewed as part of the page source directly in the browser.

The log can be cleared using the **Clear output log** button.

The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The left sidebar lists various administration tasks like 'Avatars', 'Bad words', 'Badges', etc. The main content area is titled 'System' and has tabs for 'General', 'E-mail', 'Files', 'Deployment', and 'Debug'. Under the 'Debug' tab, there is a sub-tab for 'Output'. The output log shows a recent entry for an AJAX request to the URL `[AJAX] /KenticoCMS_501_0210/CMSSiteManager/Administration/System/System.aspx` at `04:02:12`. The log content is as follows:

```

12371|updatePanel|ctl100_plcContent_pnlUpdate|
  <span id="ctl100_plcContent_timRefresh" style="visibility:hidden;display:none;"></span>
  <table width="100%">
    <tr>
      <td style="width: 40%; vertical-align: top">
        <table width="400px">
          <tr>
            <td style="white-space: nowrap; width: 200px;">
              <span id="ctl100_plcContent_lblAspAccount">ASP.NET account:</span>
            </td>
            <td>
              <span id="ctl100_plcContent_lblValueAspAccount">NT AUTHORITY\NETWORK SERVICE</span>
            </td>
          </tr>
          <tr>
            <td>
              <span id="ctl100_plcContent_lblIP">Your IP address:</span>
            </td>
            <td>
              <span id="ctl100_plcContent_lblIPValue">:1</span>
            </td>
          </tr>
        </table>
      </td>
    </tr>
  </table>

```

7.5.2.8 Security debug

Security debugging can be turned on by adding one or more of the following keys into the *AppSettings* section of your *web.config* file:

- `<add key="CMSDebugSecurity" value="true" />` - enables the Security tab in Site Manager -> Administration -> System -> Debug
- `<add key="CMSDebugSecurityLive" value="true" />` - enables security debugging on the live site
- `<add key="CMSDebugAllSecurity" value="true" />` - enables security debugging for all operations (including the UI)
- `<add key="CMSDebugSecurityLogLength" value="10" />` - maximal length of the security debug log (number of preserved records)
- `<add key="CMSLogSecurity" value="true" />` - if applied, output debug log will be saved into `~/App_Data/logsecurity.log`

It can also be enabled using the [bulk keys](#).

On the **Debug -> Security** tab, you can see which security checks were recently performed on the site. This is particularly useful if you want to quickly find out why some user is not able to access some section of the UI or gets the *Access denied* page displayed.

The log can be cleared using the **Clear security log** button.

The screenshot displays the Kentico CMS Site Manager Administration interface. The left sidebar shows the navigation menu with 'System' selected. The main content area is titled 'System' and has tabs for 'General', 'E-mail', 'Files', 'Deployment', and 'Debug'. The 'Debug' tab is active, showing a list of security log entries. A 'Clear security log' button is located in the top right of the log area.

| User name | Operation | Result | Resource / Class / ID | Permission / UI element | Site | Context |
|---|-----------------------|--------|-----------------------|-------------------------|------|---|
| 1 administrator | IsGlobalAdministrator | True | | | | CurrentUserInfo.get_IsGlobalAdministrator
CMSPage.CheckGlobalAdministrator |
| Version: 5.0 Build: 5.0.3656 | | | | | | |
| /KenticoCMS_501_0210/CHSSiteManager/Administration/System/System.aspx (04:02:01) | | | | | | |
| User name | Operation | Result | Resource / Class / ID | Permission / UI element | Site | Context |
| 1 administrator | IsGlobalAdministrator | True | | | | CurrentUserInfo.get_IsGlobalAdministrator
CMSPage.CheckGlobalAdministrator |
| Version: 5.0 Build: 5.0.3656 | | | | | | |
| /KenticoCMS_501_0210/CHSSiteManager/Administration/System/System_Header.aspx (04:02:01) | | | | | | |
| User name | Operation | Result | Resource / Class / ID | Permission / UI element | Site | Context |
| 1 administrator | IsGlobalAdministrator | True | | | | CurrentUserInfo.get_IsGlobalAdministrator
CMSPage.CheckGlobalAdministrator |
| Version: 5.0 Build: 5.0.3656 | | | | | | |
| /KenticoCMS_501_0210/CHSSiteManager/Administration/System/System_Frameset.aspx (04:02:00) | | | | | | |
| User name | Operation | Result | Resource / Class / ID | Permission / UI element | Site | Context |
| 1 administrator | IsGlobalAdministrator | True | | | | CurrentUserInfo.get_IsGlobalAdministrator
CMSPage.CheckGlobalAdministrator |
| Version: 5.0 Build: 5.0.3656 | | | | | | |

7.5.2.9 Macros debugging

Macros debugging can be turned on by adding one or more of the following keys into the *AppSettings* section of your *web.config* file:

- `<add key="CMSDebugMacros" value="true" />` - enables the Macros tab in Site Manager -> Administration -> System -> Debug
- `<add key="CMSDebugMacrosLive" value="true" />` - enables macros debugging on the live site
- `<add key="CMSDebugAllMacros" value="true" />` - enables macros debugging for all operations (including the UI)
- `<add key="CMSDebugMacrosLogLength" value="20" />` - maximal length of the macros debug log (number of preserved records)

It can also be enabled using the [bulk keys](#).

On the **Debug -> Macros** tab, you can see which macros were recently resolved. For each macro, its exact expression, result (1 - resolved successfully, 0 - not resolved) and context from which it was called is logged. This is useful if you want to analyze how macros were processed.

The log can be cleared using the **Clear macro log** button.

The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a navigation menu with items like Avatars, Bad words, Badges, Banned IPs, E-mail queue, Event log, Permissions, Recycle bin, Roles, Scheduled tasks, Smart search, System, UI personalization, Users, and Web farm. The main content area is titled 'System' and has a 'Debug' sub-tab selected. Under 'Debug', there are several sub-tabs: System objects, Cache items, Worker threads, Cache access, SQL queries, Page ViewState, Output, Security, Macros, Requests, and Web farm. The 'Macros' sub-tab is active, showing a table of macro resolution logs. The table has columns for 'Expression', 'Result', and 'Context'. Two entries are visible, both with a result of '1'. A 'Clear macro log' button is located in the top right corner of the log area.

| Expression | Result | Context |
|--------------------------|--------|--|
| 1 (%CurrentSite.SiteID%) | 1 | ContextResolver.MacroMatch
MacroResolver.MacroMatch
MacroResolver.ResolveMacros
CMSContext.ResolveMacros
CMSAdminControls_UI_UIProfiles_UIGuide.GetGuideltemParameters
CMSAdminControls_UI_UIProfiles_UIGuide.Page_Load |
| > CurrentSite.SiteID | 1 | |
| 2 (%CurrentSite.SiteID%) | 1 | ContextResolver.MacroMatch
MacroResolver.MacroMatch
MacroResolver.ResolveMacros
CMSContext.ResolveMacros
CMSAdminControls_UI_UIProfiles_UIGuide.GetGuideltemParameters
CMSAdminControls_UI_UIProfiles_UIGuide.Page_Load |
| > CurrentSite.SiteID | 1 | |

7.5.2.10 Request debug

Request debugging can be turned on by adding one or more of the following keys into the *AppSettings* section of your *web.config* file:

- `<add key="CMSDebugRequests" value="true" />` - enables the Request tab in Site Manager -> Administration -> System -> Debug
- `<add key="CMSDebugRequestsLive" value="true" />` - enables request debugging on the live site
- `<add key="CMSDebugAllRequests" value="true" />` - enables request debugging for all pages (including the UI)
- `<add key="CMSDebugRequestsLogLength" value="10" />` - if applied, output debug log will be saved into `~/App_Data/logrequests.log`

It can also be enabled using the [bulk keys](#).

On the **Debug -> Requests** tab, you can see the time each of the recent page requests took to process. You not only see the overall time, but also separate times of particular parts of each requests, along with other detailed information about the request.

This is particularly useful if your response time is too large and you need to figure out why. You can basically see whether the issue is outside the application or inside it by comparing the real response time and response time spent in the application, what data came with the request and from which context.

The log can be cleared using the **Clear request log** button.

The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a navigation menu with 'System' selected. The main content area is titled 'System' and has tabs for 'General', 'E-mail', 'Files', 'Deployment', and 'Debug'. The 'Debug' tab is active, showing a sub-tab for 'Requests'. A 'Clear requests log' button is visible. The request log table shows the following data:

| Method | Additional info | From last | From first |
|------------------------------|---------------------|-----------|------------|
| 1 | BeginRequest | | 0.000 |
| 2 | AuthorizeRequest | 0.001 | 0.001 |
| 3 | AcquireRequestState | 0.000 | 0.001 |
| 4 | > OnPreInit | 0.000 | 0.001 |
| 5 | > OnInit | 0.001 | 0.002 |
| 6 | > OnLoad | 0.000 | 0.002 |
| 7 | > OnPreRender | 0.008 | 0.010 |
| 8 | > Render | 0.001 | 0.011 |
| 9 | EndRequest | 0.001 | 0.012 |
| Version: 5.0 Build: 5.0.3656 | | | |

Below the table, there are sections for 'Request cookies' and 'Request information':

Request cookies:

| Name | Value |
|-------------------------|---|
| 1 CMSPreferredCulture | en-US |
| 2 CMSPreferredUICulture | en-us |
| 3 VisitorStatus | 1 |
| 4 ASP.NET_SessionId | i4vgdhnsqz0rn345wsqyljzv |
| 5 ViewMode | 0 |
| 6 FormState | 6c40dd48-1e85-4978-9155-9b1584635f14 |
| 7 ASPXFORMSAUTH | C04C4DD792B62CE69C9AAD35E751C048FA2426C9C7E8B63FDDE42F88810EA87AE89ECF3D... |

Request information:

| Name | Value |
|---------------|--|
| 1 HttpMethod | GET |
| 2 UriReferrer | http://localhost/KenticoCMS_501_0210/CMSSiteManager/Administration/System/System_Frameset.aspx |
| 3 UserAgent | Mozilla/4.0 (compatible; MSIE 8.0; Windows NT 6.1; WOW64; Trident/4.0; SLCC2; .NET CLR 2.0.50727; .NET CLR 3.5.30729; .NET CLR 3.0.30729; Media Center PC 6.0; InfoPath.2) |

7.5.2.11 Web farm debugging

Web farm debugging can be turned on by adding one or more of the following keys into the *AppSettings* section of your *web.config* file:

- `<add key="CMSDebugWebFarm" value="true" />` - enables the Web farm tab in Site Manager -> Administration -> System -> Debug
- `<add key="CMSDebugAllWebFarm" value="true" />` - enables web farm debugging on the live site
- `<add key="CMSDebugWebFarmLive" value="true" />` - enables web farm debugging for all operations (including the UI)
- `<add key="CMSDebugWebFarmLogLength" value="20" />` - maximal length of the web farm debug log (number of preserved records)

It can also be enabled using the [bulk keys](#).

On the **Debug -> Web farm** tab, you can see which web farm tasks were logged and which servers were notified about the changes. This is particularly useful if you want to find out if the web farm works effectively and synchronizes correct data, or generally if you want to troubleshoot web-farm-related issues.

The following screenshot shows how the debug looks on the source server (the server where the data was modified). The bottom part show the logged tasks, while the top part shows asynchronous notifications of other web farm servers.

The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a navigation menu with items like Avatars, Bad words, Badges, Banned IPs, E-mail queue, Event log, Permissions, Recycle bin, Roles, Scheduled tasks, Smart search, System, UI personalization, Users, and Web farm. The main content area is titled 'System' and has tabs for General, E-mail, Files, Deployment, and Debug. The 'Debug' tab is active, and the 'Web farm' sub-tab is selected. A 'Clear web farm log' button is visible. The interface displays two task logs:

Task 1 (Notification):

| Task type | Target | Data | Context |
|-----------|--|------|------------------------------|
| 1 NOTIFY | http://davids/5.0_Release/CMSPages/webfarmupdater.aspx | | Version: 5.5 Build: 5.5.3782 |

Task 1 (Cache Update):

| Task type | Target | Data | Context |
|------------------|--------|---|---|
| 1 TOUCHCACHEITEM | Cache | cms.rolejall
cms.rolejbyid13
cms.rolebynamejnewrole
cms.rolejbyguidj03b73d97-b937-4add-99d7-18709d7ad7bc | WebSynchelperClass.CreateTask
CacheHelper.TouchKeys
AbstractInfo.TouchKeys
AbstractInfo.Insert
SynchronizeInfo.Insert
RoleInfoProvider.SetRoleInfoInternal
RoleInfoProvider.SetRoleInfo
CMSiteManager_Administration_Roles_Controls_RoleEdit.btnOK_Click
Version: 5.5 Build: 5.5.3782 |

The second screenshot shows how the debug looks on the target server after it is notified about the modification. You can recognize the task by the DO: prefix, which indicates that the synchronization task was (is being) processed.

The log can be cleared using the **Clear web farm log** button.

The screenshot displays the Kentico CMS Site Manager Administration interface. The left sidebar shows the 'Administration' tree with 'System' selected. The main content area is titled 'System' and has tabs for 'General', 'E-mail', 'Files', 'Deployment', and 'Debug'. The 'Debug' tab is active, showing a sub-tab for 'Web farm'. Below this, there is a 'Clear web farm log' button and a log entry for the file `/5.0_Release/CMSPages/webfarmupdater.aspx` (04:13:37). The log entry is as follows:

| Task type | Target | Data | Context |
|----------------------|--------|--|---|
| 1 DO: TOUCHCACHEITEM | Cache | cms.rolejall
cms.rolebyid 13
cms.rolebyname newrole
cms.rolebyguid 03b73d97-b937-4add-99d7-18709d7ad7bc | WebSyncHelper.ProcessMyTasks
CMSPages_WebFarmUpdater.Page_Load

Version: 5.5 Build: 5.5.3779 |

7.5.3 Bulk keys for all debugs

You can also add one of the following bulk keys to the *AppSettings* section of your *web.config* file in order to enable all the debugs with a single key.

- `<add key="CMSDebugEverything" value="true" />` - enables all debugging sub-tabs in Site Manager -> Administration -> System -> Debug
- `<add key="CMSDebugAllForEverything" value="true" />` - enables all debugging sub-tabs, while UI operations are debugged too
- `<add key="CMSDebugEverythingLive" value="true" />` - enables all debugging on the live site (the debug log will be displayed at the bottom of the page)
- `<add key="CMSDebugEverythingLogLength" value="20" />` - limits the maximal length of the debug log (number of preserved log records)
- `<add key="CMSLogEverythingToFile" value="true" />` - logs all possible operations (including Event log and E-mail sending log) into *.log* files stored in `~/App_Data/`

These keys enable all the available debugs listed [on this page](#), while the dedicated keys for particular debugs have higher priorities. This means that you can for example enable all debugs using *CMSDebugEverything* with the value set to *true* and hide one particular sub-tab by using its dedicated key with the value set to *false* at the same time.

7.5.4 System error notifications

If you go to **Site Manager -> Settings -> System** and fill in an e-mail address into the **Error notification e-mail address**, notifications about internal errors in Kentico CMS system will be sent to this address whenever such an error occurs.

The e-mail address specified in the **No-reply e-mail address** field will be used as the sender ('From') e-mail address.

The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The 'Settings' tab is active, and the 'System' settings page is displayed. The left sidebar shows a tree view of settings categories, with 'System' selected. The main content area shows the 'System' settings, including fields for 'Log size', 'Default user ID', 'Log metadata changes', 'Scheduler interval', 'DB object owner', 'Enable time zones', 'Server time zone', 'Site time zone', 'No-reply e-mail address', 'Error notification e-mail address', 'Send e-mail notifications from', 'Show splash screen', and 'Hide unavailable user interface'. The 'No-reply e-mail address' and 'Error notification e-mail address' fields are highlighted with a red box. The 'Error notification e-mail address' field contains the value 'admin@mydomainXY.com'.

| Setting Name | Value |
|-----------------------------------|-------------------------------------|
| Log size | 1000 |
| Default user ID | 53 |
| Log metadata changes | <input checked="" type="checkbox"/> |
| Scheduler interval | 1 |
| DB object owner | dbo |
| Enable time zones | <input type="checkbox"/> |
| Server time zone | (GMT-06:00) Central America |
| Site time zone | (none) |
| No-reply e-mail address | no-reply@mydomainXY.com |
| Error notification e-mail address | admin@mydomainXY.com |
| Send e-mail notifications from | no-reply@mydomainXY.com |
| Show splash screen | <input checked="" type="checkbox"/> |
| Hide unavailable user interface | <input type="checkbox"/> |

7.6 Document types and transformations

7.6.1 Overview

Each document is of some type. Each document type has its own:

- fields (data structure)
- editing form layout
- transformations (design)
- queries

and other settings.

Document types are fully customizable - you can add, modify and delete custom fields. The advantage of using custom document types is that you can define custom structure of documents and store content (data) separated from design. This can be done in **Site Manager -> Development -> Document types**.

General properties of a document type

| | |
|----------------------------------|--|
| Document type display name | The name of the site displayed to the users. |
| Document type code name | The name of the site used in the code. |
| New page | URL of the page that will be used for creating new documents of this type. |
| Editing page | URL of the editing page that will be used when the document is displayed in the editing mode, using the Page tab. |
| Editing form | URL of the editing page that will be used when the document is displayed in the editing mode, using the Form tab. |
| Preview page | URL of the editing page that will be used when the document is displayed in the preview mode. |
| List page | URL of the editing page that will be used when the document is displayed in the list mode. |
| Use publish from/publish to | Indicates if publish from/to fields should be displayed for this document type. |
| Show template selection | Indicates if users must select some page template first when they create a new document of this type. |
| Default page template | The page template used by default when the document is created. If no page template is specified, the document inherits the parent page template. |
| Behaves as Page (menu item) type | Indicates if the document type has similar behavior as Page (menu item) document type. The default view mode is the Page tab for such document type, viewer web parts are automatically set to display the child documents if the path is not configured and the document does not inherit its parent template by default. |

7.6.2 Defining a new document type

Go to **Site Manager -> Development -> Document types** and click **New document type**. You are redirected to the New document type wizard. In the first step, enter the following values:

- **Document type display name:** Computer (this name will be displayed to the users)
- **Document type code name:** custom.computer (custom is your namespace to distinguish your document types from system types that use the *cms* namespace, computer is the document type); you will use this value in web part properties later.

The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The 'Development' tab is active. The left sidebar lists various development tools, with 'Document types' selected. The main content area is titled 'New document type' and shows 'Step 1 | General'. Below the title, there is a form with two input fields: 'Document type display name' containing 'Computer' and 'Document type code name' containing 'custom.namespace.computer.document.type'. A 'Next >' button is located at the bottom right of the form.

Click **Next**. In step 2, you need to choose the name of the database table that will be used for storing computer details. You also need to enter the name of the primary key in this table. Enter the following values:

- **Table name:** CUSTOM_Computer
- **Primary key name:** ComputerID

Step 2

Data type

Please choose document data type. If you choose a document type with custom attributes you will also need to supply names of the new database table and its primary key.

The document type has custom fields

Table name:

Primary key name:

The document type is only a container without custom fields

Next >

Click **Next**. The wizard has created a new database table for computers. Now you need to define the fields (columns of the table). Click **New attribute** (+) to create a new field. Enter the following values:

- **Attribute name:** ComputerName
- **Attribute type:** Text
- **Attribute size:** 200
- **Field caption:** Computer name
- **Field type:** Text box

Click **OK**. Click **New attribute** (+). Enter:

- **Attribute name:** ComputerProcessorType
- **Attribute type:** Text
- **Attribute size:** 200
- **Field caption:** Processor type
- **Field type:** Drop-down list, choose to use Options instead of SQL Query
- **Options:** enter the following options, one per line:
Athlon;Athlon
Pentium XEON;Pentium XEON
Pentium Core 2 Duo;Pentium Core 2 Duo

Click **OK**. Click **New attribute** (+). Enter:

- **Attribute name:** ComputerRamSize
- **Attribute type:** Integer number

- **Field caption:** RAM (MB)
- **Field type:** Text box

Click **OK**. Click **New attribute (+)**. Enter:

- **Attribute name:** ComputerHddSize
- **Attribute type:** Integer number
- **Field caption:** HDD (GB)
- **Field type:** Text box

Click **OK**. Click **New attribute (+)**. Enter:

- **Attribute name:** ComputerImage
- **Attribute type:** File
- **Field caption:** Image
- **Field type:** Upload file
- **Allow empty value:** check the box

Click **OK**.

Step 3 | **Fields**
Please define custom attributes of the document type and their appearance in the editing form. You can define attributes, such as product number, product weight, press release text, etc.

The changes were saved.

| | |
|-----------------------|--|
| ComputerID | |
| ComputerName | |
| ComputerProcessorType | |
| ComputerRamSize | |
| ComputerHddSize | |
| ComputerImage | |

Database

Attribute name: ComputerImage

Attribute type: File

Attribute size:

Allow empty value:

Attribute default value:

Display attribute in the editing form

Field

Field caption: Image

Field type: Upload file

Automatic image resize on upload
(use site settings)

Width (px):

Height (px):

OK







Next >

You can also define system fields to be displayed on the documents' **Form** tab. This can be done by clicking the **Add system attribute** icon. Using the **Group** drop-down list, you can then choose from the following two groups of system fields:

- **Document attribute** - offers the document's system fields
- **Node attribute** - offers the document node's system fields

Document or node system fields will then be offered in the **Attribute name** drop-down list. If you leave the **Display attribute in the editing form** check-box checked, the field will be visible on the documents' **Form** tab.

Step 3 | **Fields**
Please define custom attributes of the document type and their appearance in the editing form. You can define attributes, such as product number, product weight, press release text, etc.

| | | |
|---|---|---|
| ComputerID
ComputerName
ComputerProcessorType
ComputerRamSize
ComputerHddSize
ComputerImage
New attribute | 




 | Database
Group: Node attributes
Attribute name: NodeAliasPath
Attribute type: Text
Attribute size: 450
Allow empty value: <input type="checkbox"/>
Attribute default value: <input type="text"/>
<input checked="" type="checkbox"/> Display attribute in the editing form
Field
Field caption: NodeAliasPath
Field type: Label |
|---|---|---|

OK

Next >

Click **Next**. Now you need to choose the field that will be used as document name. Choose the **Use document name field** option from the drop down list. It means that when you create a new computer document, its name will be automatically taken from the ComputerName value and this value will appear in site navigation and in CMS Desk content tree.

Step 4 | **Additional settings**
Please choose the source field that will be used as a document name. You can choose either one of the custom fields or you can choose to use document name as a separate field.

Document name source:

[Next >](#)

Click **Next**. In step 5, you need to select the document types under which the computers will be displayed. Check only the **Page (menu item)** value, which means the editors will be able to create computer documents only under some page, not under article or news document in the content tree.

Step 5 | **Parent types**
Please select document types under which this document template can be placed.

| | |
|--------------------------|---------------------------------|
| <input type="checkbox"/> | Document type name |
| <input type="checkbox"/> | Page (menu item) (CMS.MenuItem) |

[Remove selected](#) [Add document types](#)

[Next >](#)

Click **Next**. In step 6, you need to choose which websites will use this document type. Check the appropriate website and click **Next**.

Step 6

Sites

Please select sites where this document type can be used:

Site name

Corporate Site

Remove selected

Add sites

Next >

In Step 7, you are asked to specify how documents of this type will be indexed and displayed in the search results. For more information on these settings, please refer to [this topic](#). Make your choice and click **Next**.

Step 7

Search options

Please set search fields for Smart search module.

Title field:

Content field:

Image field:

Date field:

Set automatically

| Field name | Content | Searchable | Tokenized | Custom search name |
|-----------------------|-------------------------------------|-------------------------------------|-------------------------------------|----------------------|
| ComputerID | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| ComputerName | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="text"/> |
| ComputerProcessorType | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="text"/> |
| ComputerRamSize | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| ComputerHddSize | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |

Next >

The wizard has finished the configuration of the new document type. It has automatically created not only the database table, but also the SQL queries for SELECT, INSERT, UPDATE, DELETE operations and a default transformation.

Step 8 | **The wizard has finished**

The setup has finished the following steps:

- The new document type was created.
- The new editing form was created.
- The document types were added among allowed child types of the new document type.
- The sites were selected where this document type can be used.
- The default queries were created.
- The default ASCX transformations were created.
- The default permission names were created.
- The default icon was created.
- Document smart search specification was created.

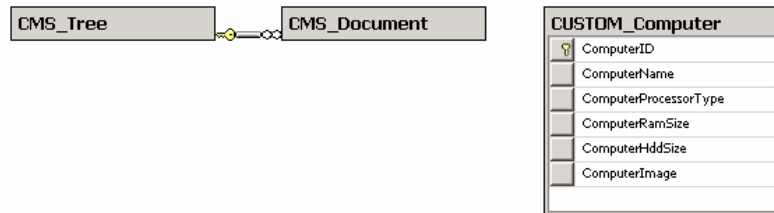
[Finish](#)

You have learned how to define a new document type.



How the content is stored

As you already know, the new document type Computer has its own database table. Each document is stored in three tables: CMS_TREE (tree structure), CMS_Document (document properties and metadata) and the custom table - in this case CUSTOM_Computer:



The system automatically ensures all operations on these tables. The advantage of this storage is that it's very fast and you can easily write standard SQL SELECT queries to retrieve data from the repository (i.e. from the Microsoft SQL Server database).



Changing document type icon

If you create a new document type, documents of this type will appear with the default document icon (📄) in the administration interface. To change the document type icon:

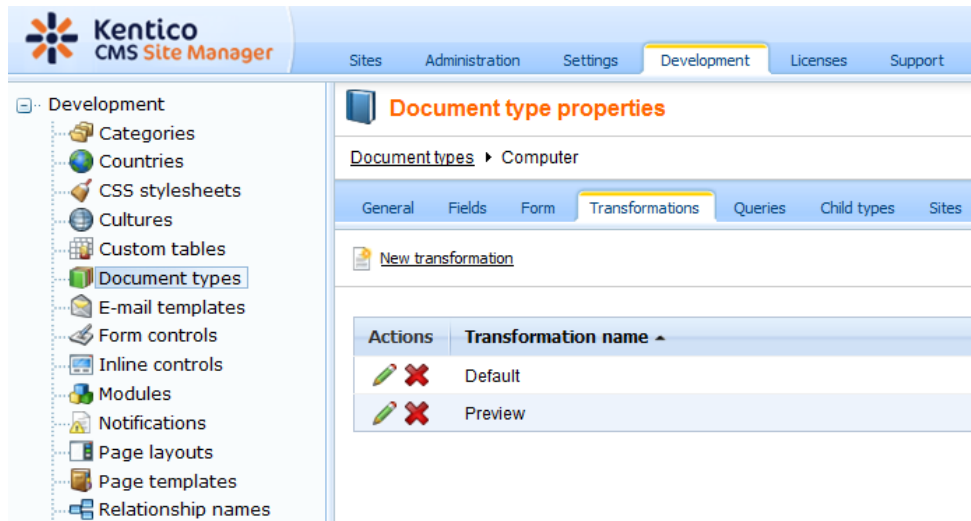
1. go to `<web project folder>\App_Themes\Default\Images\CMSDesk\Icons\`
2. find your document type's icon named `<namespace>_<document type>.gif`
3. open the file in your image editor and modify it, or create a new image with the same name and format and replace the original one with it

After doing so, all documents of this type should appear with the new icon. You can also change any other document types' icons this way, as all document type icons are stored in the location mentioned above.





7.6.3 Writing transformations

Now that we have created a new document type, we need to prepare the transformations that will be used for displaying product details in list and in detail view.

In the **Computer** document type properties dialog, click the **Transformations** tab:



The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a tree view with 'Development' expanded, and 'Document types' selected. The main content area displays the 'Document type properties' dialog for the 'Computer' document type. The 'Transformations' tab is active, showing a table of transformations.

| Actions | Transformation name ^ |
|---|-----------------------|
|   | Default |
|   | Preview |

As you can see, the wizard has created some default transformation. We will use it for our detail view. Click **Edit** and enter the following code:

```
<h1><%# Eval("ComputerName") %></h1>

<table>
<tr>
<td>
Processor:
</td>
<td>
<%# Eval("ComputerProcessorType") %>
</td>
</tr>

<tr>
<td>
RAM (MB):
</td>
<td>
<%# Eval("ComputerRamSize") %>
</td>
</tr>

<tr>
<td>
HDD (GB):
</td>
<td>
<%# Eval("ComputerHddSize") %>
</td>
</tr>

<tr>
<td>
Image:
</td>
<td>
<%# GetImage("ComputerImage") %>
</td>
</tr>
</table>
```

Click **OK**. As you can see the transformation code is the standard ItemTemplate template that you may already know from ASP.NET 2.0 Repeater and DataList controls. It combines HTML code with ASP.NET commands and data binding expressions. You can use several built-in functions, such as **GetImage** that simplify some tasks. You can find the list of all functions directly under the transformation code.

We will create transformation for the list of computers. Now go back to the transformation list and click **New transformation**. Enter the following values:

- **Transformation name:** preview
- **Transformation type:** ASCX (it's also possible to use XSLT, but we will not use it now)

Enter the following transformation code:

```
<div style="text-align:center;border: 1px solid #CCCCCC">
<h2><a href="<# GetDocumentUrl() %>"><# Eval("ComputerName") %></a><h2>
?maxsize=120" />
</div>
```

Click **OK**.

Please note how the link to the document is created:

```
<a href="<# GetDocumentUrl() %>"><# Eval("ComputerName") %></a>
```

It consists of standard HTML tags for links and it inserts the URL and link text dynamically.

Similarly, you can create an image tag with parameter that ensures automatic resize of the longest side to 120 pixels on the server side:

```
?maxsize=120" />
```

You have learned how to write transformations for displaying the content of structured documents.

Please note: should you want to use the XSLT transformation, it can be used for the **XSLT viewer (CMSViewer)** web part. Otherwise it won't work.



Transformations for multilingual websites

In some cases, you may need to display different text in transformations, based on the currently selected language. If you're using the built-in multilingual support, you can achieve this by creating another transformation with name ending with culture code.

Example:

English (default language) transformation code name: cms.news.detail

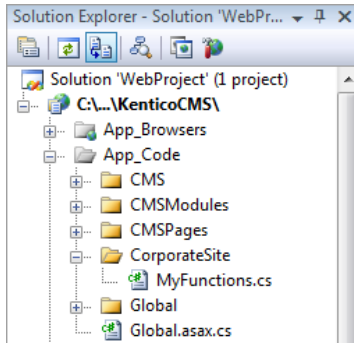
French transformation code name: cms.news.detail_fr-fr

When you switch the content language to French, the French transformation will be automatically used in this case.

7.6.4 Adding custom functions to transformations

In many cases, you may need to process values and display them in a different format or add custom conditions. The following example shows you how to create custom function that will return first N characters of the text and how to use it in a transformation.

Open the web project in Visual Studio. Create a new folder under the **App_Code** section and call it as your site code name. Right-click the folder and choose **Add New Item**. Choose to add a new Class and call it **MyFunctions.cs** (the custom transformation functions can be developed only in C# at this moment).



Paste the following code to the MyFunctions.cs file:

[C#]

```
using System;
using System.Data;
using System.Configuration;
using System.Web;
using System.Web.Security;
using System.Web.UI;
using System.Web.UI.WebControls;
using System.Web.UI.WebControls.WebParts;
using System.Web.UI.HtmlControls;

/// <summary>
/// Summary description for MyFunctions
/// </summary>
public static class MyFunctions
{
    public static string TrimText(object txtValue, int leftChars)
    {
        if (txtValue == null | txtValue == DBNull.Value)
        {
            return "";
        }
        else
        {
            string txt = (string) txtValue;
            if (txt.Length <= leftChars)
            {
                return txt;
            }
            else
            {
                return txt.Substring(0, leftChars) + "...";
            }
        }
    }
}
```

Please note: the function must be defined as **static** so that we can easily call it from our transformation.

Then, go to **Site Manager -> Development -> Document types -> News -> Transformations**. Edit the **preview** transformation and change its code like this:

[C#]

```
<b><a href="<%# GetDocumentUrl() %>">
<%# Eval("NewsTitle") %></a></b> (<%# GetDate("NewsReleaseDate") %>)<br/>
<i>
<%# MyFunctions.TrimText(Eval("NewsSummary"), 10) %>
</i>
<br/>
```

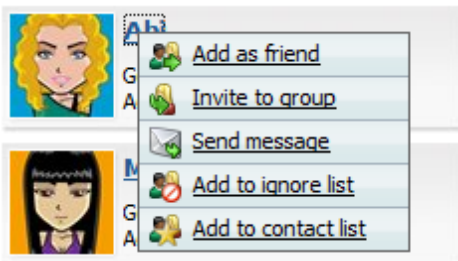
Click **OK** to save. Go to the live site and see the page with news listing. As you can see, the news summary text is truncated to first 10 characters.

You have learned how to write your own transformation methods.

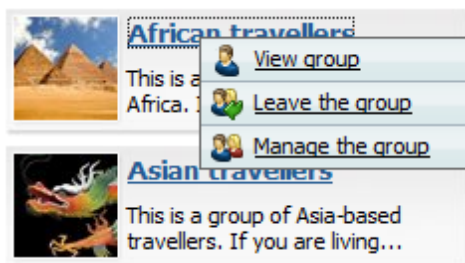
7.6.5 Context menus in transformations

When writing transformations for a web part displaying **Users** or **Groups**, you can enclose the transformation in a menu container control, which ensures displaying of context menus after right-click on a user or group. You can see a live example of these context menus on the sample **Community Starter site**:

In the screenshot below, you can see the context menu displayed when you right-click one of the users listed in the **Members** section:



The following screenshot shows the context menu displayed when you right-click one of the groups listed in the **Groups** section:



How is this achieved? As you can see when you view the transformation code used in the **Users viewer** or **Groups viewer** web parts, you need to enclose your transformation in the **cms:usermenucontainer**, resp. **cms:groupmenucontainer** control:

Users

```
<cms:usermenucontainer runat="server" ID="userMenuElem" MenuID="userContextMenu"
Parameter='<%# Eval("UserID").ToString() %>' ContextMenuCssClass="UserContextMenu"
>
... transformation code ...
</cms:usermenucontainer>
```

Groups

```
<cms:groupmenucontainer runat="server" ID="groupMenuElem" MenuID
="groupContextMenu" Parameter='<%# Eval("GroupID").ToString() %>'
ContextMenuCssClass="UserContextMenu" >
... transformation code ...
</cms:groupmenucontainer>
```

Modifying context menu design

The default controls used for context menus are stored in **<web project>\CMSAdminControls\ContextMenus**:

- **GroupContextMenu.ascx**
- **UserContextMenu.ascx**

These two controls are used automatically for the Group or User context menus. If you want to modify the design of the context menus, you can edit these controls in Visual Studio.

You can also develop your custom controls for this purpose. In this case, you need to include the **MenuControlPath** parameter in the **cms:usermenucontainer** or **cms:groupmenucontainer** controls in the transformation and set its value to the path to your control:

```
<cms:groupmenucontainer runat="server" ID="groupMenuElem" MenuID
="groupContextMenu" Parameter='<%# Eval("GroupID").ToString() %>'
ContextMenuCssClass="UserContextMenu" MenuControlPath
="~/CMSAdminControls\ContextMenus\MyGroupContextMenu.ascx" >
... transformation code ...
</cms:groupmenucontainer>
```

7.7 E-mail templates

7.7.1 E-mail templates

Kentico CMS sends e-mails for various purposes, such as workflow notification. You can modify the e-mail templates sent by the system so that they match your design and/or language.

You can modify e-mail templates in Site Manager -> Development -> E-mail templates.

There are two types of e-mail templates: global and site-specific. If there's no site-specific template, the global template is used instead.

The e-mail template has the following properties:

| | |
|--------------|--|
| Display name | The name of the template displayed to the users. |
| Code name | The name of the template used in the code. |
| From | E-mail address that will be used as the sender (From) address of the e-mail. |
| Cc | E-mail addresses of copy recipients. |
| Bcc | E-mail addresses of copy recipients. These will get a copy of the e-mail, but won't see other recipient's addresses in the mail. |
| Subject | Subject of the e-mail. |
| Text | HTML code of the e-mail template. |
| Plain text | Plain text of the e-mail template. |

Example of the template text:

```
<html>
  <head>
  </head>
  <body style="FONT-SIZE: 12px; FONT-FAMILY: arial">
    <p>
      This an automatic notification sent by Kentico CMS. The following
      document is waiting for your approval. Please          sign in to Kentico
      CMS Desk and approve it.
    </p>
    <p>
      <b>Document:</b> <a href="{%applicationurl%}/cmsdesk/default.aspx?
      expandidpath={%idpath%}&expandmode=publish">          {%documentname%}</a>
    <br>
      <b>Last approved by:</b> {%approvedby%}
    <br>
      <b>Last approved when:</b> {%approvedwhen%}
    <br>
      <b>Original step:</b> {%originalstep%}
    <br>
      <b>Current step:</b> {%currentstep%}
    <br>
      <b>Comment:</b>
    <br>
      {%comment%}
    </p>
  </body>
</html>
```

Please note that the template may contain special macro expressions that are resolved (merged) when the e-mail is sent, such as **{%approvedby%}**.

7.8 Form controls

7.8.1 Overview

Form controls allow you to use custom field types in editing forms that are based on Kentico FormEngine. These include:

- Document editing forms (Form tab)
- Web part properties
- BizForms
- Forms using system tables defined in Site manager -> Development -> System tables
- Forms using custom tables defined in Site manager -> Development -> Custom tables
- Report parameters

Form controls are standard ASCX controls that inherit from the **CMS.FormControls.FormEngineUserControl** class.

Managing form controls

You can register form controls in the catalog in **Site Manager -> Development -> Form controls**. The form controls have the following properties:

| | |
|----------------------------|--|
| Control display name | The name of the control displayed to the users. |
| Control code name | The name of the control used in the code. |
| Control file name | Relative path to the ASCX control starting from /CMSFormControls folder.

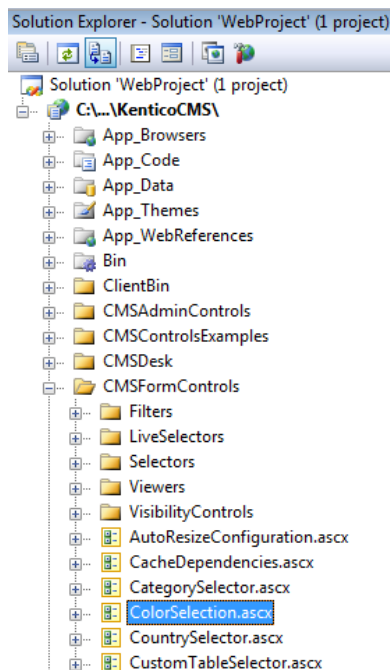
Example:
countryselection.ascx |
| Use control for text | Indicates if the control can be used for text values. |
| Use control for long text | Indicates if the control can be used for long text values. |
| Use control for integer | Indicates if the control can be used for integer values. |
| Use control for decimal | Indicates if the control can be used for decimal values. |
| Use control for date-time | Indicates if the control can be used for date-time values. |
| Use control for boolean | Indicates if the control can be used for boolean (bit) values. |
| Use control for file | Indicates if the control can be used for file (attachments). |
| Use control for GUID | Indicates if the control can be used for GUID values. |
| Use control for visibility | Indicates if the control can be used as a field visibility control. See this chapter for more details. |
| Show control in BizForms | Indicates if the control should be offered among field types in the simplified mode in BizForms module. If you enable this box, you also need to enter the following values: <ul style="list-style-type: none"> • Default data type - the type of the field that will be used by default when the user chooses to create a new field with this field type. |

| | |
|--|--|
| | <ul style="list-style-type: none"> • Column size - default size of the database column (applies only to Text data type). |
| Show control in document types | Indicates if the control should be offered among field types in the document types field editor. |
| Show control in system tables | Indicates if the control should be offered among field types in the system tables field editor. |
| Show control in custom tables | Indicates if the control should be offered among field types in the custom tables field editor. |
| Show control in controls (web parts and inline controls) | Indicates if the control should be offered among field types in the web part property editor. |
| Show control in reports | Indicates if the control should be offered among field types in report parameters field editor. |

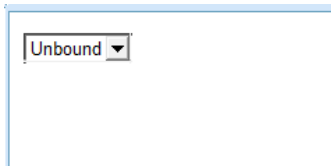
7.8.2 Developing form controls

The following example shows how to create a form control that will allow users to choose color from a dropdownlist.

1. Open the web project in Visual Studio (or Visual Web Developer) using the **WebProject.sln** file or using **File -> Open -> website** in Visual Studio.
2. Right-click the **CMSFormControls** folder and choose **Add New Item**. Choose to create a new **Web User Control** and call it **ColorSelection.ascx**.



3. Edit the ColorSelection.ascx user control on the Design tab. Drag and drop a **DropDownList** control onto the form:



4. Edit the properties of the DropDownList and change its **ID** to *drpColor*.
5. Switch to the code behind.
6. Change the following line

[C#]

```
public partial class CMSFormControls_ColorSelection : System.Web.UI.UserControl
to
public partial class CMSFormControls_ColorSelection : CMS.FormControls.
FormEngineUserControl
```

[VB.NET]

```
Partial class CMSFormControls_ColorSelection Inherits SystemWeb.UI.UserControl
to
Partial class CMSFormControls_ColorSelection Inherits CMS.FormControls.
FormEngineUserControl
```

It ensures that our user control inherits from the FormEngineUserControl class and can use its standardized properties.

7. Modify the code behind like this:

[C#]

```
protected void Page_Load(object sender, EventArgs e)
{
    // Ensure drop down list options
    EnsureItems();
}

/// <summary>
/// Gets or sets field value, color hexa code in this case.
/// </summary>
public override Object Value
{
    get
    {
        return drpColor.SelectedValue;
    }
    set
    {
        // Ensure drop down list options
        EnsureItems();
        drpColor.SelectedValue = System.Convert.ToString(value);
    }
}

/// <summary>
/// Returns an array of values of any other fields returned by the control.
/// </summary>
/// <returns>It returns an array where first dimension is attribute name and the
second dimension is its value.</returns>
public override object[,] GetOtherValues()
{
    object[,] array = new object[1, 2];
    array[0, 0] = "ProductColor";
    array[0, 1] = drpColor.SelectedItem.Text;
    return array;
}

/// <summary>
/// Returns true if some color is selected. If no, it returns false and displays
an error message.
/// </summary>
public override bool IsValid()
{
    if ((string)Value != "")
    {
        return true;
    }
    else
    {
        // Set form control validation error message
        this.ValidationErrors.Add("Please choose some color.");
        return false;
    }
}
```

```

/// <summary>
/// Ensures that the DropDownList contains color options.
/// </summary>
protected void EnsureItems()
{
    if (drpColor.Items.Count == 0)
    {
        drpColor.Items.Add(new ListItem("(select color)", ""));
        drpColor.Items.Add(new ListItem("red", "#FF0000"));
        drpColor.Items.Add(new ListItem("green", "#00FF00"));
        drpColor.Items.Add(new ListItem("blue", "#0000FF"));
    }
}

```

[VB.NET]

```

Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs)
Handles Me.Load
    ' Ensure drop down list options
    EnsureItems()
End Sub

''' <summary>
''' Gets or sets field value, color hexa code in this case.
''' </summary>
Public Overrides Property Value() As Object
    Get
        Return drpColor.SelectedValue
    End Get
    Set(ByVal value As Object)
        EnsureItems()
        drpColor.SelectedValue = System.Convert.ToString(value)
    End Set
End Property

''' <summary>
''' Returns an array of values of any other fields returned by the control.
''' </summary>
''' <returns>It returns an array where first dimension is attribute name and the
second dimension is its value.</returns>
Public Overrides Function GetOtherValues() As Object(,)
    Dim arr(0, 1) As Object
    arr(0, 0) = "ProductColor"
    arr(0, 1) = drpColor.SelectedItem.Text
    Return arr
End Function

''' <summary>
''' Returns true if some color is selected. If no, it returns false and displays
an error message.
''' </summary>
Public Overrides Function IsValid() As Boolean
    If CType(Value, String) <> "" Then
        Return True
    Else
        ' Set form control validation error message

```

```
        Me.ValidationError = "Please choose some color."  
        Return False  
    End If  
End Function  
  
''' <summary>  
''' Ensures that the DropDownList contains color options.  
''' </summary>  
Public Sub EnsureItems()  
    If drpColor.Items.Count = 0 Then  
        drpColor.Items.Add(New ListItem("(select color)", ""))  
        drpColor.Items.Add(New ListItem("red", "#FF0000"))  
        drpColor.Items.Add(New ListItem("green", "#00FF00"))  
        drpColor.Items.Add(New ListItem("blue", "#0000FF"))  
    End If  
End Sub
```

8. Go to **Site Manager -> Development -> Form controls** and click **New form control**. Enter the following values:

- Control display name: Color selection
- Control code name: colorselection
- Control file name: colorselection.ascx

Check the **Use control for text** box, check the **Show control in document types** box and click **OK**.

New form control

Form controls ▶ New form control

Control display name:

Control code name:

Control file name:

Use control for text:

Use control for long text:

Use control for integer:

Use control for decimal:

Use control for date-time:

Use control for boolean:

Use control for file:

Use control for GUID:

Use control for visibility:

Show control in BizForms:

Default data type:

Column size:

Show control in document types:

Show control in system tables:

Show control in custom tables:

Show control in controls:
(web parts and inline controls)


Show control in reports:

OK

9. Now we will test this control in some document editing form. Go to **Site Manager -> Development -> Document types** and edit the **Product** document type. Click the **Fields** tab and add 2 new fields with the following properties:

- **Attribute name:** ProductColor
- **Attribute type:** Text
- **Attribute size:** 100
- **Display attribute in editing form:** false (the field will be set via GetOtherValues() method of the ColorSelection control)
- Click **OK** to save the new field

- **Attribute name:** ProductHexaColor
- **Attribute type:** Text
- **Attribute size:** 100
- **Field caption:** Color
- **Field type:** Color selection
- Click **OK** to save the new field

 **Document type properties**

Document types ▶ Product

General **Fields** Form Transformations Queries Child types Sites E-commerce Alternative forms Search fields Documents

| | |
|---|--|
| <div style="border: 1px solid #ccc; padding: 2px;"> ProductID
 ProductColor
 ProductHexaColor
 ProductName </div> <div style="display: flex; align-items: center; gap: 5px; margin-top: 5px;"> ↑
 ↓
 +
 × </div> | <div style="border: 1px solid #ccc; padding: 5px;"> Database Attribute name: <input type="text" value="ProductColor"/>
 Attribute type: <input type="text" value="Text"/>
 Attribute size: <input type="text" value="100"/>
 Allow empty value: <input type="checkbox"/>
 Attribute default value: <input type="text"/>
 <input type="checkbox"/> Display attribute in the editing form
 Field
 Field caption: <input type="text"/>
 Field type: <input type="text" value="Label"/> </div> <div style="text-align: right; margin-top: 5px;"> <input type="button" value="OK"/> </div> |
|---|--|

Document name source field:
Document alias source field:

10. Go to **CMS Desk -> Content** and create a new product in the **Products** section. The new form control will be displayed like this:

Color:

If you do not choose any color, the error label is displayed.



Getting and setting values of other fields using the API

You can get and set the values of the other fields by getting their reference like this:

[C#]

```
TextBox txtBox = (TextBox) Form.FieldControls["productprice"];
```

[VB.NET]

```
Dim txtBox as TextBox = CType(Me.Form.FieldControls("productprice"),  
    TextBox)
```

Please note that the field name must be written **in lowercase**.

When you get the reference to the control, you can get or set its value (for example: `txtBox.Text = "150"`)

If you want to change the value of some other control **before its loaded**, you need to place the code inside the **PageLoad** method of your form control.

If you want to change the value of some other control **before its saved**, you need to place the code inside the **IsValid** method of your form control.

You can also use the **this.DataDR (me.DataDR)** property of the form control that provides the `DataRow` object with data of the current form.

7.9 Inline controls


7.9.1 Overview

Inline controls are user controls (ASCX) that can be placed into text using a special expression in format `%%control:MyUserControl%%`

where `MyUserControl` is name of the user control file without the ".ascx" extension. The system then dynamically loads the controls when the page is displayed on the live site.

The controls may contain any functionality, such as "latest news", "mortgage calculator", "travel destination search", etc. The advantage of inline controls is that any content editor can place them anywhere into the text without programming knowledge.

How to insert the inline controls into the text

The inline controls can be inserted into the text using the **Insert inline control**  command in the WYSIWYG editor toolbar. If the text is not edited in the WYSIWYG editor, you can insert inline controls by typing the `%%control:MyUserControl%%` expressions manually.

The inline control may also have a single parameter. In this case, you may use one of the following expression formats:

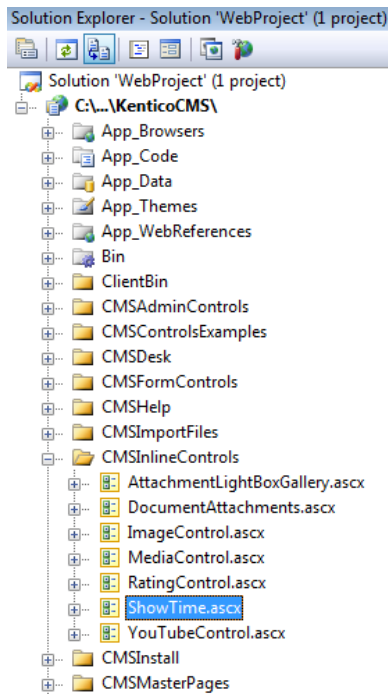
- `%%control:BizFormControl?form1%%`
- `{^BizFormControl|form1^}`
- `{^BizFormControl|(formname)form1^}`

In the next chapter, you will learn [how to develop your own inline controls](#).

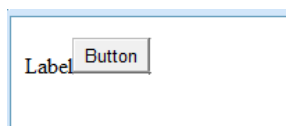
7.9.2 How to develop inline controls

This chapter will show you an example of inline control development. We will create a simple control that will display the current time when the button is clicked.

1. Open the web project in Visual Studio (or Visual Web Developer) using the **WebProject.sln** file or using **File -> Open -> website** in Visual Studio.
2. Right-click the **CMSInlineControls** folder and choose **Add New Item**. Choose to create a new **Web User Control** and call it **ShowTime.ascx**.



3. Switch to the **Design** tab and drag and drop a Label control and a Button control on the form:



4. Double-click the Button control and enter the following code into the Button1_Click method that will ensure displaying of current date and time in the label control.

[C#]

```
Label1.Text = DateTime.Now.ToString();
```

[VB.NET]

```
Label1.Text = DateTime.Now.ToString()
```

5. Change the following line:

[C#]

```
public partial class CMSInlineControls_ShowTime : System.Web.UI.UserControl  
  
to  
  
public partial class CMSInlineControls_ShowTime : CMS.ExtendedControls.  
InlineUserControl
```

[VB.NET]

```
Partial Class CMSInlineControls_ShowTime  
    Inherits System.Web.UI.UserControl  
  
to  
  
Partial Class CMSInlineControls_ShowTime  
    Inherits CMS.ExtendedControls.InlineUserControl
```

What you did

You have changed the user control so that it inherits from the InlineUserControl class. It allows you to access the parameter of the control in the next step.

6. Add the following code to the Page_Load method of the control:

[C#]

```
Button1.Text = this.Parameter;
```

[VB.NET]

(Page_Load method is not generated by default in VB.NET)

```
Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs)
    Handles Me.Load
    Button1.Text = Parameter
End Sub
```

What you did

This code sets the Button1 caption based on the inline control parameter.

7. Save the changes and run the project.

8. Go to **CMS Site Manager -> Development -> Inline controls**. Click **New control** and enter in the following values:

- **Control display name:** Show time
- **Control name:** showtime (the name of the user control without extension)
- **Control file name:** ~/CMSInlineControls/ShowTime.ascx
- **Parameter caption:** Button text

New control

Inline controls ▸ New control

Control display name:

Control name:

Control file name:

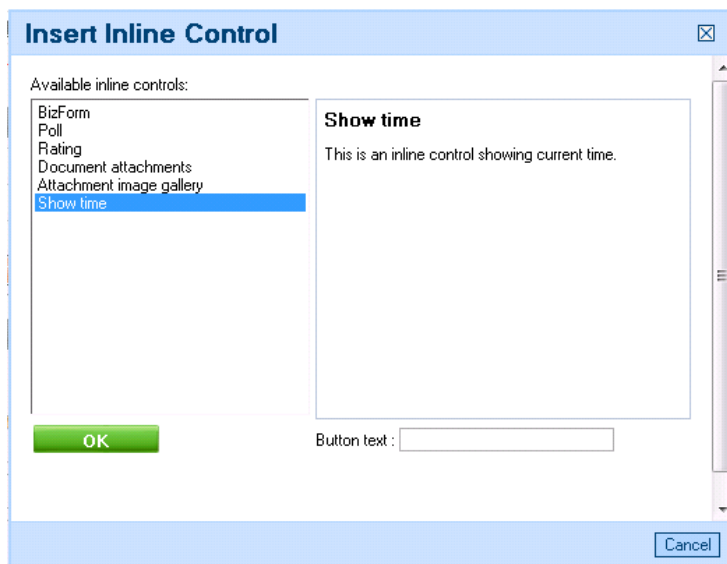
Parameter caption:

Description:

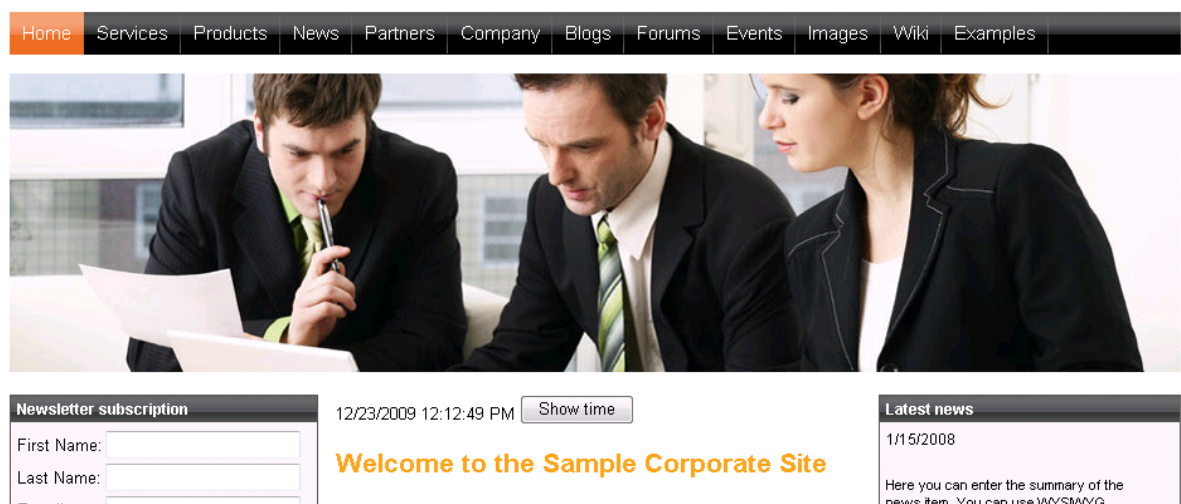
assign to web site Corporate Site

Click **OK**.

9. Now click the **Sites** tab and check the boxes for all sites where content editors should be able to insert this control. Click **OK**.
10. In case that you defined some properties in the control code, you will have to register them on the **Properties** tab. On the tab, you will find the familiar field editor. Property categories can be created using the **New category** (📁) icon. New properties can be added using the **Add** (+) icon.
11. Go to CMS Desk, edit some page with editable regions and click the **Insert Inline Control** (📄) button. Select the control and set the **Button text** value to *Show current time*. Click **OK**. The special expression is inserted into the text.



12. Click **Save** to save changes and click **Live site** to see the live version of the page. The user control is now displayed inside your text. The button has the caption you have specified. When you click the button, the label displays current date and time:



7.10 Membership, permissions and security

7.10.1 Security model overview

Kentico CMS provides a flexible security model that allows you to configure granular access permissions for content and modules.

The security model consists of:

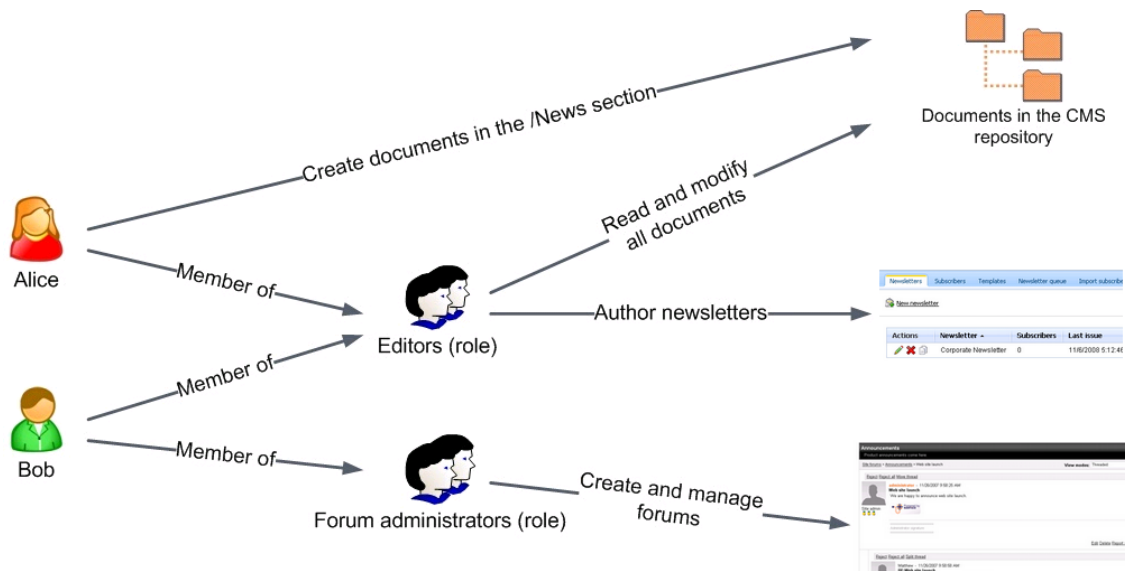
- [users](#) (shared among websites)
- [roles](#) (specific for websites)
- [module permissions](#)
- [document permissions](#)
- [UI personalization](#)

User, role and global permissions can be managed at two levels:

- In **Site Manager -> Administration**, where global administrators can edit all data.
- In **CMS Desk -> Administration**, where local administrators can edit only data related to the current website (the current website is recognized by the current domain).

Relationships between users, roles and permissions

The following figure shows how users are assigned to roles and how users and roles are granted with permissions for documents and modules:



Users can be members of any number of roles. They can be granted with permissions for particular documents in the CMS repository. If you want to grant a user with permissions for some module, you need to make the user a member of some role and grant the permissions to the role (the users cannot be granted with permissions for modules directly).

Roles in Kentico CMS are fully customizable. It means you're not limited to some predefined set of

roles. Instead, you can define your own roles with custom sets of permissions.

If the user is member of multiple roles, their **permissions for modules** are calculated as a sum of all permissions granted to all roles.

If the **permissions for documents** in the CMS repository are granted to both a user and their roles, document permissions are calculated as a sum of all permissions granted to the user and to all roles. If the user or some of their roles are **denied to make some action** (such as modify document), then the result is always "denied" for the given permission even if the roles are allowed to perform the action.

7.10.2 User management

The user can be a member of any number of roles and can be assigned to any number of websites.

There are two important attributes of the user account:

- **Is editor** – the user can access the CMS Desk interface; this attribute doesn't implicate any particular permissions - it only differentiates the site editors and "registered users" who only access the live website and its secured areas and thus provides an extra security layer; the user can access CMS Desk for all sites to which they are assigned on the Sites tab
- **Is global administrator** – the user is authorized to perform all operations and their access can not be denied by permissions or otherwise limited; global administrators are the only users who can use the Site Manager interface



Global administrators

Global administrators are the only users who can manage site settings and all development tools. Their permissions cannot be denied or limited – they have access to all features and data.

The local administrators cannot modify global administrator accounts.

Default user accounts

There are following default user accounts:

- **Administrator** – user with full permissions.
- **Public** – user that represents an anonymous visitor of the site.

Creating a new user

New users accounts are typically created when a user goes through [registration](#) on the live site. However, you can also create accounts manually in **Site manager -> Administration -> Users** or **CMS Desk -> Administration -> Users**. Click the **New user** (👤) icon and enter the following properties into the displayed form:

- **User name** - the user's user name (login); it must be unique across all websites in the system
- **Full name** - user's full name (first name, middle name and last name)

- **E-mail** - user's e-mail address
- **Enabled** - indicates if the user account is enabled and the user can sign in
- **Is editor** - indicates if the user is authorized to sign in to CMS Desk; it's used to differentiate users who are only allowed to visit member areas of the website from content editors who can use the CMS Desk user interface; this provides an extra security layer
- **Password** - user's password
- **Confirm password** - user's password again for confirmation

Editing user properties

You can edit user properties in **Site manager -> Administration -> Users** -> click the **Edit** (✎) icon of the chosen the user.

General properties

The following properties can be set on the **General** tab:

- **User name** - the user's user name (login); it must be unique across all websites in the system
- **Full name** - user's full name (first name, middle name and last name)
- **First name** - user's first name
- **Middle name** - user's middle name
- **Last name** - user's last name
- **E-mail** - user's e-mail address

- **Enabled** - indicates if the user account is enabled and the user can sign in
- **Is editor** - indicates if the user is authorized to sign in to CMS Desk; it's used to differentiate users who are only allowed to visit member areas of the website from content editors who can use the CMS Desk user interface; this provides an extra security layer
- **Is global administrator** - indicates if the user is global administrator; global administrators have full permissions for all features and data across the system and are not affected by permission settings for particular modules
- **Is external user** - this attribute is used when you are using an integration with an external user database
- **Is domain user** - indicates if the user was imported from Active Directory
- **Is hidden** - if true, the user is not visible on the site (e.g. on-line users monitoring, repeaters displaying users, etc.)
- **Disable site manager** - this option is available only when editing a global administrator, but not when a global administrator is editing her own account; by enabling it, the user is still a global administrator, but can not access Site Manager, i.e. can only perform actions in CMS Desk

- **Preferred content culture** - preferred culture in which the content is displayed to the user
- **Preferred user interface culture** - preferred culture in which the users wants to see the user interface (CMS Desk and Site Manager)

- **Created** - date and time when the user account was created
- **Last logon** - date and time when the user last logged in
- **Last logon information** - information about the IP address and browser agent of the user's last logon

- **Starting alias path** - the starting alias path of the content tree in CMS Desk -> Content; if you specify this value, the user is not allowed to browse other sections of the website in the content tree; please note that this feature is only intended for better usability and it doesn't ensure security control - if you need to establish access rights for a given user, grant them with appropriate document

permissions (Properties -> Security)

Impersonation

Global administrators can also see the **Log in as this user** (👤) link at the top of this tab. By clicking this link, the administrator gets logged in as the currently edited user and get redirected depending on the type of user:

- **Global administrator** - if you log in as some other global administrator, you will stay on the **General** tab
- **Editor** - if you log in as some editor (a user with the **Is editor** option enabled), you will be redirected to CMS Desk
- **Standard user** - if you log in as a standard user, you will be redirected to the title page of the live site

In **Site Manager -> Administration -> Event log**, any changes made while impersonated will be logged with under the user name in format `<user name> (<original user name>)` where the original user is the administrator who clicked the **Log in as this user** (👤) link.

Password

Here you can change the user's password:

- **Password** - user's password
- **Confirm password** - user's password again for confirmation

Settings

On the **Settings** tab, you can edit the following properties of the user:

- **User nick name** - nick name of the user used in website forums, on the user's profile, etc.
- **User picture** - user's avatar image; this image will be used in forums and on user's profile; you can either upload an image or select a pre-defined avatar
- **User signature** - user's signature that will be used below the user's forum posts
- **Description** - optional text describing the user
- **URL referrer** - URL from that the user came to the site when they performed registration
- **Campaign** - the campaign from which the user came to your website before they registered; see [this topic](#) for details
- **Messaging notification e-mail** - notifications about new messages received in the messaging module will be sent to this e-mail address
- **Time zone** - user's time zone; if set, this time zone will be used where applicable instead of the site time zone
- **Badge** - user's badge; depends on the number of gained activity points
- **User activity points** - number of user's activity points; these points are gained for forum posts, message board posts, blog posts and blog post comments
- **Live ID** - user's Live ID token; this is a hexadecimal number that the user is identified by when logging-in via Windows Live ID
- **Activation date** - date of the user's account activation
- **Activated by user** - user who activated this user's account
- **Registration info** - user's IP and browser agent detected on registration
- **Gender** - user's gender
- **Date of birth** - user's date of birth
- **Waiting for approval** - if checked, the user is waiting for administrator's approval
- **Show splash screen** - determines if splash screen should be displayed to the user when accessing

Kentico CMS administration interface

- **Forum posts** - number of user's forum posts
- **Forum comments** - number of user's forum comments
- **Blog comments** - number of user's blog comments
- **Message board posts** - number of user's message board posts

Custom Fields

Here you can edit the custom fields added to the user profile. The custom fields can be defined in **Site Manager -> Development -> System tables -> User Sites**

Here you can specify the sites into which the user can sign in with their user name and password. Simply check the appropriate boxes and click **OK** to save the changes. This dialog applies only to logging in to the CMS Desk and is intended for separation of content editors responsible for different websites.

Roles

Here you can add or remove user from roles. First, you need to select the site (since roles are always connected with a single website) and then check the appropriate boxes and click **OK**.

Please note: if you cannot see any sites in the listbox, you may need to assign the user to some site on the **Sites** tab.

Departments

Here you can specify the E-commerce module departments the user is authorized to manage products in.

Notifications

On this tab, you can see a list of all notification subscriptions of the currently edited user. You can Delete (✖) subscriptions in the list, which unsubscribes the user from receiving notifications.

Categories

This tab displays a list of the user's custom categories. Each of the categories can be edited (✎) or deleted (✖).

By clicking the **New category** link, you can create a new category that will behave the same way as if it was created by the user in **CMS Desk -> Edit -> Properties -> Categories**.

The following details will be required when creating a new category:

- **Display name** - name of the category displayed in the user interface
- **Code name** - name of the category used in website code

Friends

On this page, you can manage the currently edited user's friends.

Subscriptions

On this tab, you can manage the user's subscriptions to newsletters and notifications about new blog posts and message board messages.

Languages

On this tab, you can specify which cultural versions of documents can be edited by the user. You have the following options:

- **User can edit all languages** - if selected, the currently edited user can edit documents in all language versions of all sites in the system
- **User can edit following languages** - if selected, you can specify which language versions can be edited by the user by checking the check-boxes in the list of language versions; this can be set separately for each site in the system using the **Select site** drop-down list

7.10.3 Role management

Roles are assigned to a particular (single) website. A role can have any number of members.

You can manage roles in **Site Manager -> Administration -> Roles**.

Creating a new role

Go to **Site Manager -> Administration -> Roles** and click **New role**. Enter the following values:

- **Role display name** - The name of the role displayed to the users.
- **Role code name** - The name of the role used in the code.
- **Role description** - Optional description.
- **Is domain role** - Indicates if the role was imported from Active Directory.

Editing a role

Go to **Site Manager -> Administration -> Roles** and click the **Edit** button of the appropriate role.

General

- **Role display name** - The name of the role displayed to the users.
- **Role code name** - The name of the role used in the code.
- **Role description** - Optional description.
- **Is domain role** - Indicates if the role was imported from Active Directory.

Users

Here you can add or remove users to/from the current role. If you want to add a user, click the **Add user to role** button. The **Select users** dialog appears. Enter the name of the user or its part and click **Search users**. Now select the listed users in the box (you can use CTRL+left mouse button) and click **Add selected users to role**.

Deleting a role

Go to **Site Manager -> Administration -> Roles** and click the **Delete** button of the appropriate role.

7.10.4 Username customization

If you want to customize the way usernames are displayed in the administration interface, you can do it by modifying the **GetFormattedUsername** method in `~/AppCode/CMS/Functions.cs`. The method has four overrides and is used to retrieve usernames in the whole administration interface.

Example: Usernames are displayed in the `<full name>` (`<user name>`) (e.g. *Abigail Woodwarth (Abi)*) format in some parts of the system, e.g. in document **Properties -> General -> Owner**. The following code example shows how you can modify the method to get usernames in format `<user name>` [`<full name>`] (e.g. *Abi [Abigail Woodwarth]*):

[C#]

```
public static string GetFormattedUserName(string username, string fullname, bool
isLiveSite)
{
    if (!String.IsNullOrEmpty(DataHelper.GetNotEmpty(fullname, "").Trim()))
    {
        return String.Format("{1} [{0}]", fullname, username);
    }
    else
    {
        return username;
    }
}
```

7.10.5 Permissions

7.10.5.1 Permissions overview

Permissions are a way how you can control access to particular sections of Kentico CMS administration interface (modules), documents in the content tree and custom tables.

Permissions for roles

Permissions for roles can be configured in **Administration -> Permissions**. Every website has its own set of roles (there are no shared or global roles). These permissions are also assigned to roles, which means every website can use a different configuration of role permissions.

Based on the selection made by the **Permission type** drop-down list, you can choose from the following three types of permissions. Then you need to select the appropriate Permission matrix, which will be offered based on the selected Permission type.

- **Modules** - permissions for specified actions in Kentico CMS modules; you can find details on particular permissions in documentation of respective [modules](#)
- **Document types** - permissions applied to all documents of a particular type; more info can be found [here](#)
- **Custom tables** - permissions for the custom tables module, read [here](#) for more info

The screenshot shows the Kentico CMS Site Manager Administration interface. The left sidebar contains a tree view of administration options, with 'Permissions' selected. The main content area is titled 'Permissions' and shows settings for the 'Corporate Site'. The 'Permission type' dropdown menu is open, showing 'Modules', 'Document types', and 'Custom tables'. Below this is a table showing the permission matrix for various user roles.

| | Manage | Read |
|------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Permission-related settings for users

When editing (✎) a user in **Administration -> Users**, you can enable the following two options for the user. These options have impact on permissions checking and provide an extra security layer:

- **Is global administrator** - the user is authorized to perform all operations and their access can not be denied by permissions or otherwise limited; global administrators are the only users who can use the Site Manager interface
- **Is editor** – the user can access the CMS Desk interface; this attribute doesn't implicate any particular permissions - it only differentiates the site editors and "registered users" who only access the live website and its secured areas and thus provides an extra security layer; the user can access CMS Desk for all sites to which they are assigned on the Sites tab

The screenshot shows the Kentico CMS Site Manager Administration interface. The left sidebar contains a tree view of administration options, with 'Users' selected. The main content area is titled 'Users' and shows the configuration for the 'administrator' user. The 'General' tab is active, displaying various user details and checkboxes. A red box highlights the 'Is editor' checkbox, which is checked. Other checked checkboxes include 'Enabled', 'Is global administrator', and 'Is hidden'. The 'Is external user' and 'Is domain user' checkboxes are unchecked.

| | |
|--------------------------|-------------------------------------|
| User name:* | administrator |
| Full name: * | Global Administrator |
| First name: | Global |
| Middle name: | |
| Last name: | Administrator |
| E-mail: | administrator@localhost.local |
| Enabled: | <input checked="" type="checkbox"/> |
| Is editor: | <input checked="" type="checkbox"/> |
| Is global administrator: | <input checked="" type="checkbox"/> |
| Is external user: | <input type="checkbox"/> |
| Is domain user: | <input type="checkbox"/> |
| Is hidden: | <input checked="" type="checkbox"/> |

7.10.5.2 Document type permissions

Permissions for particular document types

Document type permissions allow limiting access to and operations with documents in the content tree. These permissions are assigned to roles in **Administration -> Permissions**, by selecting **Permission type: Document types** and choosing the document type from the **Permission matrix** drop-down list. All documents of a type will have access limited by the permissions configured for the document type.

You can assign roles with the following permissions:

- **Read** - read all documents of this type
- **Create** - create documents of this type
- **Modify** - modify all documents of this type
- **Delete** - delete all documents of this type
- **Destroy** - destroy all documents of this type
- **Browse tree** - display child documents of all documents of this type
- **Modify permissions** - manage local permissions of all documents of this type

Permissions for all content

There is also a special permission matrix for controlling access to all documents within the content tree. It is the **Permission type: Modules, Permission matrix: Content matrix**. These permissions are then mixed the permissions configured for particular document types.

You can set the following permissions for all content:

- **Browse tree** - allows members of the role to browse the content tree; if not assigned, the Content tab may not be displayed (unless the role has the Read permission for the *CMS.Root* document type or for the *Root* document (on document-level))
- **Check in any document** - authorizes user to perform the Check in or Undo checkout actions on the Properties -> Versions tab of a document
- **Create** - allows members of the role to create any document in the content tree
- **Delete** - allows members of the role to delete any document in the content tree
- **Design website** - allows members of the role to access the Design tab; please note: although users can make changes only to the current website, the changes may affect other websites if they modify a page template shared among multiple websites
- **Destroy** - allows members of the role to destroy any document (delete without undo option)
- **Manage workflow** - allows members of the role to approve/reject any document at any workflow step
- **Modify** - allows members of the role to modify any document in the content tree
- **Modify permissions** - manage local permissions of any document
- **Read** - allows members of the role to view any document in the content tree

Document-level permissions

You can also set permissions on a document level directly in the content tree. These permissions are combined with global permissions for all content (the Content module) and global permissions for document types. Document-level permissions are described in detail on [the following page](#).

7.10.5.3 Document-level permissions

You can manage local permissions (i.e. permissions for particular document or particular site section) in **CMS Desk -> Content ->** select a document in the content tree -> click **Properties ->** choose the **Security** tab.

Select the appropriate user or role in the left box. If the user or role is not available in the box, you may need to add them using the **Add users** or **Add roles** button. Now you can choose if the permissions should be "allowed" or "denied".

If you deny a permission, the action will not be allowed even if the user or role has the permission assigned on a global level, i.e. the Deny option overrides global settings for this permission.

You can configure the following permissions:

- **Full control** - perform all operations with the document
- **Read** - read document content
- **Modify** - modify document content, check-in, check-out
- **Create** - create new documents under this document
- **Delete** - delete this document
- **Destroy** - destroy this document (without undo option)
- **Browse tree** - unfold the current document and see its child documents
- **Modify permissions** - change document permissions

The screenshot shows the 'Properties' dialog box with the 'Security' tab selected. The left sidebar contains a list of categories: General, URLs, Template, Metadata, Categories, Menu, Workflow, Versions, Related docs, Linked docs, Security (highlighted), and Attachments. The main area is titled 'Permissions' and contains the text: 'This document inherits permissions from the parent document. Change permission inheritance...'. Below this, there are two sections: 'Users and Roles:' and 'Access rights:'. The 'Users and Roles:' section has a list box containing 'CMS Editors'. The 'Access rights:' section is a table with columns 'Allow' and 'Deny'.

| | Allow | Deny |
|--------------------|-------------------------------------|-------------------------------------|
| Full control | <input type="checkbox"/> | <input type="checkbox"/> |
| Read | <input type="checkbox"/> | <input type="checkbox"/> |
| Modify | <input type="checkbox"/> | <input type="checkbox"/> |
| Create | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Delete | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Destroy | <input type="checkbox"/> | <input type="checkbox"/> |
| Browse tree | <input type="checkbox"/> | <input type="checkbox"/> |
| Modify permissions | <input type="checkbox"/> | <input type="checkbox"/> |

At the bottom of the dialog, there are three buttons: 'Add users', 'Add roles', and 'Remove'. A green 'OK' button is located at the bottom right.

Permission inheritance

You will typically need to set up permissions for site sections, rather than for particular documents. In this case, you grant users with permission for the main section document, such as /products and these permissions are inherited to all child documents.

Example

Consider the site structure like this:

- Root
 - Home
 - News
 - Products
 - Category 1
 - Category 2

You may want to grant users with following permissions:

| | | |
|---------------|---|--|
| JohnS | Marketing manager
John can manage all content. | Grant user with Full control permission on the root or grant some of this user's roles with permissions for the CMS Content module. |
| MarkJ | Product manager
Mark can manage only the documents in the /Products section. | Grant user with Browse tree permission on the root so that they can browse to the Products section.

Grant user with Read, Modify, Create, Delete, Destroy and Browse tree permission on the /Products document. These permissions are inherited down to the child documents under the /Products section.

Please note that if you click on the /Products/Category 1 document, the Browse tree permission is grayed and disabled. It means this permission is inherited and cannot be removed - you can only deny the permission (unless you break inheritance - see below). |
| AliceM | Copy writer
Alice can modify the copy of all documents, but Mark prefers to manage the copy of the /Products section by himself only. | Grant user with Read, Modify, Create, Delete and Browse tree permission on the root.

Go to the /Products document and deny the Modify, Create, Delete permission for the user so that Alice cannot modify the copy in the /Products section. |

Please note: It's recommended that you configure local permissions for roles and then only assign users to the appropriate roles. In this example, you would first create roles "Marketing manager", "Product manager" and "Copy writer" and then configure their permissions.

Breaking the inheritance

In case you need to break the permission inheritance and configure different permissions for some site section, you need to click **Change permission inheritance...** link in the **Security** dialog and choose one of the following options:

- **Break inheritance and copy parent permissions** - breaks inheritance and the permissions of the selected document are set to a copy of the original permissions.
- **Break inheritance and remove parent permissions** - breaks inheritance and the permissions of the selected document are cleared.

Restoring the inheritance

If you decide to inherit the permissions from the parent again, click the **Change permission inheritance...** link in the **Security** dialog and then click **Restore inheritance to parent document permissions**.

7.10.6 Security

7.10.6.1 Secured website areas

Kentico CMS allows you to easily create secured website areas that are accessible only by authenticated users. When a non-authenticated (public) user comes to the secured section, they are redirected to the logon page specified for the site at **Site Manager -> Settings -> Security -> Website logon page URL**.

You can mark any section of the website as a secured site area by setting **Properties -> Security -> Requires authentication** to:

- **Yes** - page is secured, authentication is required to access it
- **No** - authentication is not required to access the page
- **Inherits** - value of the setting is required from the parent page

Page Design Form **Properties**

General
URLs
Template
Metadata
Categories
Menu
Workflow
Versions
Related docs
Linked docs
Security
Attachments

Permissions

This document inherits permissions from the parent document.
[Change permission inheritance...](#)

Users and Roles:

Access rights:

| | Allow | Deny |
|--------------------|--------------------------|--------------------------|
| Full control | <input type="checkbox"/> | <input type="checkbox"/> |
| Read | <input type="checkbox"/> | <input type="checkbox"/> |
| Modify | <input type="checkbox"/> | <input type="checkbox"/> |
| Create | <input type="checkbox"/> | <input type="checkbox"/> |
| Delete | <input type="checkbox"/> | <input type="checkbox"/> |
| Destroy | <input type="checkbox"/> | <input type="checkbox"/> |
| Browse tree | <input type="checkbox"/> | <input type="checkbox"/> |
| Modify permissions | <input type="checkbox"/> | <input type="checkbox"/> |

Add users **Add roles** **Remove** **OK**

Access

Requires authentication:

Yes
 No
 Inherits

Requires SSL:

Yes
 No
 Inherits
 Never

OK

Configuration of a secured site area

This example explains how to secure the Products section in the sample Corporate Site.

1. Sign in as administrator to **CMS Desk**. Go to the **Content** section and click the **Products** document in the content tree.
2. Click **Properties -> Security**. Set the value of the **Requires authentication** attribute to **Yes** and click **OK**.
3. Go to **Site Manager -> Settings -> Security** and choose the *Corporate Site* site in the drop-down list. Make sure the **Secured areas logon page** is set to *~/logon.aspx*. This is the URL of the logon page. You can either use the system logon page *~/cmspages/logon.aspx* or you can define your own as it's defined in the Corporate Site sample.
4. Go to **CMS Desk -> Content**, click the *Log-on Page* document and click **Design**. As you can see, the page is based on page template *Log-on page with registration form* that contains the *Logon form web part* and the *Registration form web part*.

The screenshot shows a web application interface. At the top left is the "CompanyLogo" with a "Company" link below it. At the top right, it shows "Global Administrator (administrator)" with a "Sign out" button, and links for "Shopping cart", "My account", and "My wishlist". Below these links, it says "Your shopping cart is empty". A search bar is located below the navigation menu. The navigation menu includes: Home, Product list, Services, Products, News, Partners, Company, Blogs, Forums, Events, Images, Wiki, Examples. Below the navigation menu, there is a breadcrumb trail: "/Special pages/Logon page - page template: Logon page". Underneath, there is a "zoneTop" section. The main content area is divided into two zones: "zoneLeft" and "zoneRight". The "zoneLeft" zone contains a "LogonForm" web part with fields for "User name:", "Password:", a "Remember me" checkbox, a "Log on" button, and a "Forgotten password" link. The "zoneRight" zone contains a "RegistrationForm" web part with fields for "First name:", "Last name:", "E-mail:", "Password:", and "Confirm password:", and a "Register" button.

5. Sign out and click **Products** in the main menu. You are redirected to the logon form:

6. Sign in as administrator and you will see the Products section.



Checking access to page content

The page content is not secured by default, even if the current user is denied to read the given page. You need to configure this either by setting **Check permissions** to true in the Editable region web part properties (local configuration) or globally by setting the value in **Site Manager -> Settings -> Security -> Check page permissions** to one of the following values:

- NO - doesn't check any permissions.
- ALL - checks permissions for all pages, including public pages.
- SECUREDAREAS - checks permissions only for pages within a secured area.

When the user is not authorized to read the page, they are displayed with the *Access denied* page. You can configure custom access denied page URL in the **Site Manager -> Settings -> Security -> Access denied page URL** property.

7.10.6.2 SSL (HTTPS) support

Kentico CMS allows you to specify which pages of the website can be displayed only over the secured SSL (HTTPS) protocol. When a user tries to open such a page with standard HTTP protocol, they are redirected to the secured (HTTPS) URL of the same page.

Please note: Kentico CMS doesn't configure your website for SSL/HTTPS, you need to do this manually using standard IIS settings as described in IIS documentation or in this article: [http://msdn.microsoft.com/cs-cz/magazine/cc301946\(en-us\).aspx](http://msdn.microsoft.com/cs-cz/magazine/cc301946(en-us).aspx)

In order to specify which pages should be available only through the SSL protocol, you need to go to **CMS Desk -> Content** and select the document in the content tree. Then you can choose one of the following option in **Properties -> Security -> Requires SSL**:

- **Yes** - users trying to access the page will be redirected to the HTTPS URL of the page
- **No** - users trying to access the page will access the page via the protocol from that they are coming (i.e. they will not be explicitly redirected to the secured URL, but if they are coming from a secured URL, they will access the page via secured URL)
- **Inherits** - settings of the parent page will be used
- **Never** - users trying to access the page will be explicitly redirected to the non-secured version of the page

Page Design Form Master page **Properties**

General
URLs
Template
Metadata
Categories
Menu
Workflow
Versions
Related docs
Linked docs
Security
Attachments

Permissions

This document does NOT inherit permissions from the parent document.

Users and Roles:

Access rights:

| | Allow | Deny |
|--------------------|--------------------------|--------------------------|
| Full control | <input type="checkbox"/> | <input type="checkbox"/> |
| Read | <input type="checkbox"/> | <input type="checkbox"/> |
| Modify | <input type="checkbox"/> | <input type="checkbox"/> |
| Create | <input type="checkbox"/> | <input type="checkbox"/> |
| Delete | <input type="checkbox"/> | <input type="checkbox"/> |
| Destroy | <input type="checkbox"/> | <input type="checkbox"/> |
| Browse tree | <input type="checkbox"/> | <input type="checkbox"/> |
| Modify permissions | <input type="checkbox"/> | <input type="checkbox"/> |

Add users **Add roles** **Remove** **OK**

Access

Requires authentication:

Yes
 No
 Inherits

Requires SSL:

Yes
 No
 Inherits
 Never

OK

7.10.6.3 Cross site scripting (XSS)

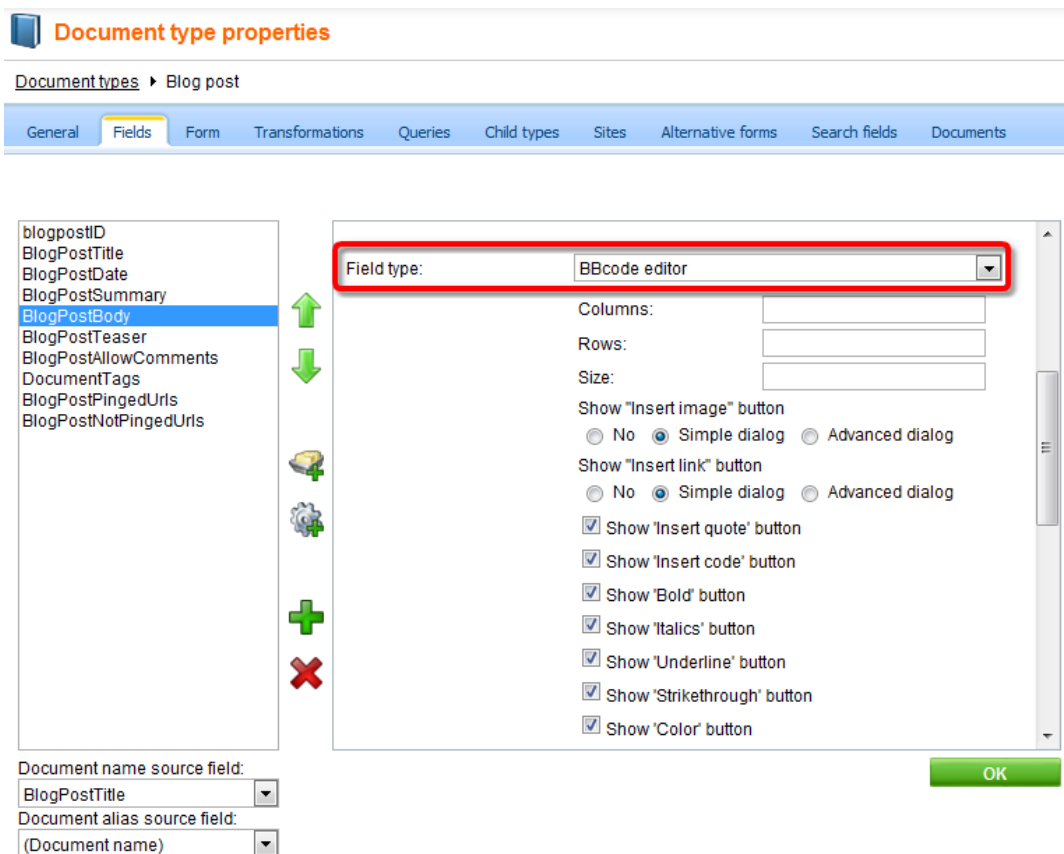
For your websites to be [Cross site scripting \(XSS\)](#) safe, the following rules need to be followed:

1. **Do not use the built-in WYSIWIG editor (HTML area (Formatted Text) field type)** to enable users enter text into the site (e.g. user profiles, forums, etc.). Instead use the **BBcode editor**.

```
Hello again,
even though our site has been launched only a few days ago,
my mailbox has become full of your questions, for that I'd
like to thank you. As most of them are asked again and
again, I decided to write this short FAQ for you.

Q: Who are the people standing behind the site?
A: Well, it's basically me and Josh. While I am the one who
got the idea of creating and launching a site like this,
Josh is the guy with the knowledge, taking care of the
technical part of the whole thing. And last but not least,
it's you, our users, who create most of the content and
help our site live and grow.
```

This editor is displayed by selecting **BBcode editor** as the value of the Field type attribute when defining document type fields:



Document type properties

Document types ▶ Blog post

General Fields Form Transformations Queries Child types Sites Alternative forms Search fields Documents

blogpostID
BlogPostTitle
BlogPostDate
BlogPostSummary
BlogPostBody
BlogPostTeaser
BlogPostAllowComments
DocumentTags
BlogPostPingedUrls
BlogPostNotPingedUrls

Field type: BBcode editor

Columns:
Rows:
Size:

Show "Insert image" button
 No Simple dialog Advanced dialog

Show "Insert link" button
 No Simple dialog Advanced dialog

Show "Insert quote" button
 Show "Insert code" button
 Show "Bold" button
 Show "Italics" button
 Show "Underline" button
 Show "Strikethrough" button
 Show "Color" button

Document name source field:
BlogPostTitle

Document alias source field:
(Document name)

OK

2. When writing your transformations, use the following method to resolve text entered via the BBcode editor:

```
CMSHelper.CMSContext.ResolveDiscussionMacros(string inputText)
```

3. When writing your transformations, use the `Eval(string columnName, bool encode)` method with the second parameter enabled to display content of any field whose content was entered by the users, e.g.:

```
<%# Eval("PostSubject", true) %>
```

7.10.6.4 Configuration of allowed request parameters

In some cases, you may need to use super-secure configuration where any non-standard GET or POST parameter sent to your website results in an error. This allows you to avoid some of the possible vulnerabilities, including cross-site scripting and SQL injection.

This functionality is only used for the website, not for the administration interface.

How to configure the allowed parameters

First, you need to enable allowed parameter checking in the `web.config` file by setting the value `CMSCheckParameters` to true:

```
<add key="CMSCheckParameters" value="true" />
```

If you're not sure which parameters cause the problem, you can turn on reporting using the following `web.config` key:

```
<add key="CMSReportCheckParameters" value="true" />
```

All parameters are defined in the `~/parameters.config` file. The schema of the file is described in the file itself and it's rather simple. For every page or site section, you need to define a new `<location>` section with path specifying the page and allowed form (POST) and query (GET) parameters. The following example allows URL parameter `pagenumber` in the whole products section of the website:

```
<location path="/products/%">
  <queryparameters>
    <allow param="pagenumber" />
  </queryparameters>
</location>
```

The **path** location specifies the path of the pages based on their alias path in Kentico CMS, while the **page** location is used for single pages that are not part of the Kentico CMS content (custom applications, etc.). The page location starts at the root of the web application and is used without slash

(/) at the beginning.

Default allowed parameters

The common parameters of ASP.NET web forms and URL parameters **aliaspath** and **lang** are allowed by default.

7.10.6.5 Managing security using .NET code (API)

You can manage the users, roles and permissions using your own .NET code. Please see the [Security Management](#) API examples for more details.

7.10.7 UI personalization

7.10.7.1 Overview

UI personalization enables you to provide certain users of the website with **simplified user interface**. This is useful **typically for business users** who don't need to see all the **tabs, menu items, actions** and **parts of UI pages** which they don't use. Instead, they have the possibility to see only the things that they need for their job and are not overwhelmed by loads of other options.

Setting up personalized UI can significantly decrease the learning time for new end-users and makes the system generally easier to use and understand for them.

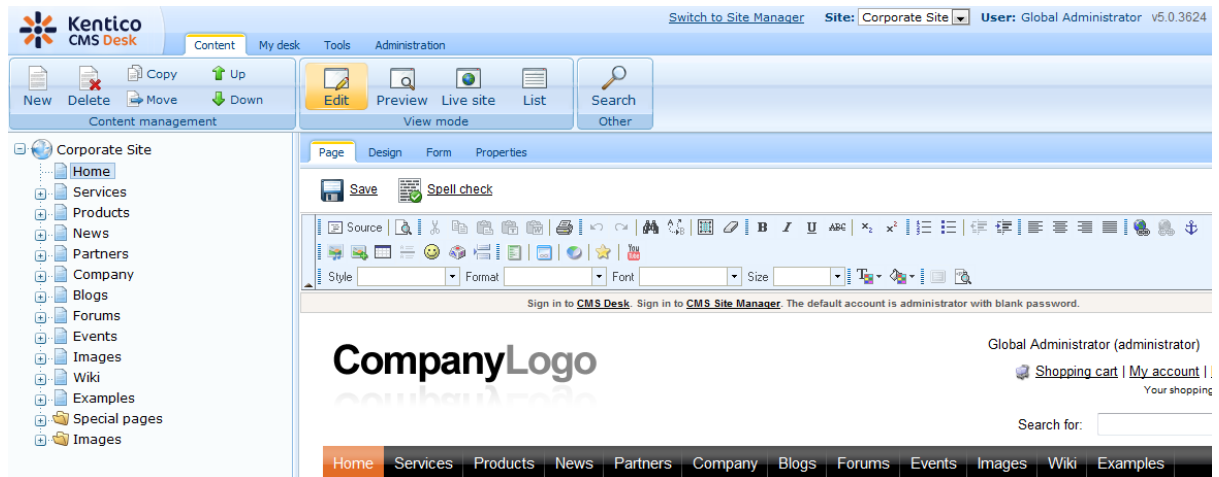
If you are new to UI personalization in Kentico CMS, we recommend you to take the following steps to fully understand it:

1. For UI personalization to be functional, you first need to enable it as described [here](#).
2. It is a good idea to start with the [Quick example](#) topic, where you can instantly see what UI personalization is good for.
3. With some basic information from the Quick example, you can get deeper knowledge of the terminology, concept and internals in the [How does it work](#) chapter.
4. Finally, you can learn what parts of CMS Desk can be hidden in [Personalizable parts of CMS Desk](#).

With the knowledge gained in the chapters above, you can start making UI personalization settings for particular roles as described in [Configuring UI personalization for a role](#). You can also modify or even create your custom UI elements as described in [UI elements management](#) and the related [example](#).

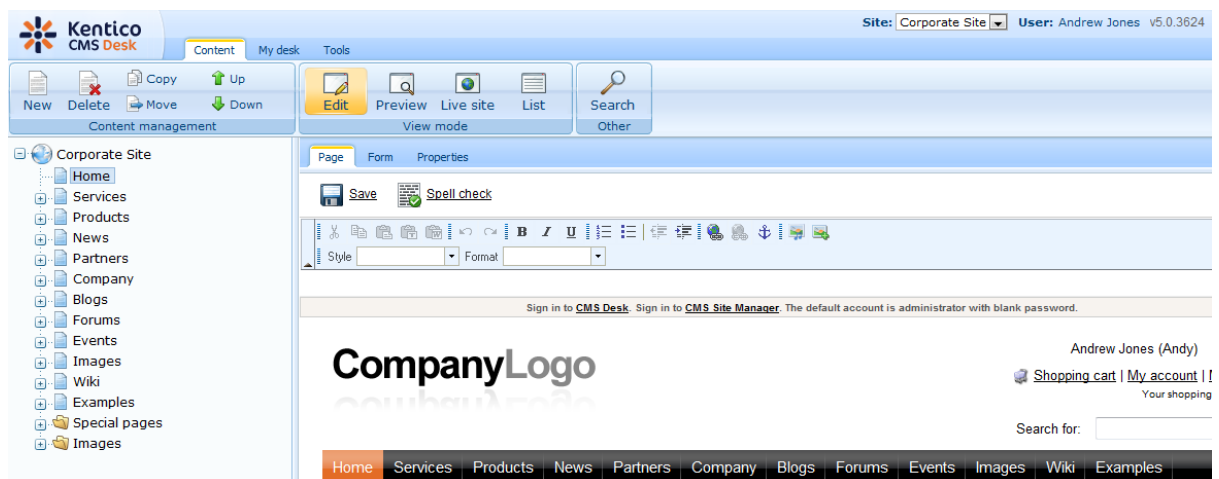
7.10.7.2 Quick example

To see UI personalization in practice, first enable UI personalization as described [here](#). Install one of the sample sites (e.g. Corporate Site) and try logging in to CMS Desk as the **Global Administrator** (login *administrator* with blank password). You will see the full-featured user interface as in the screenshot below.

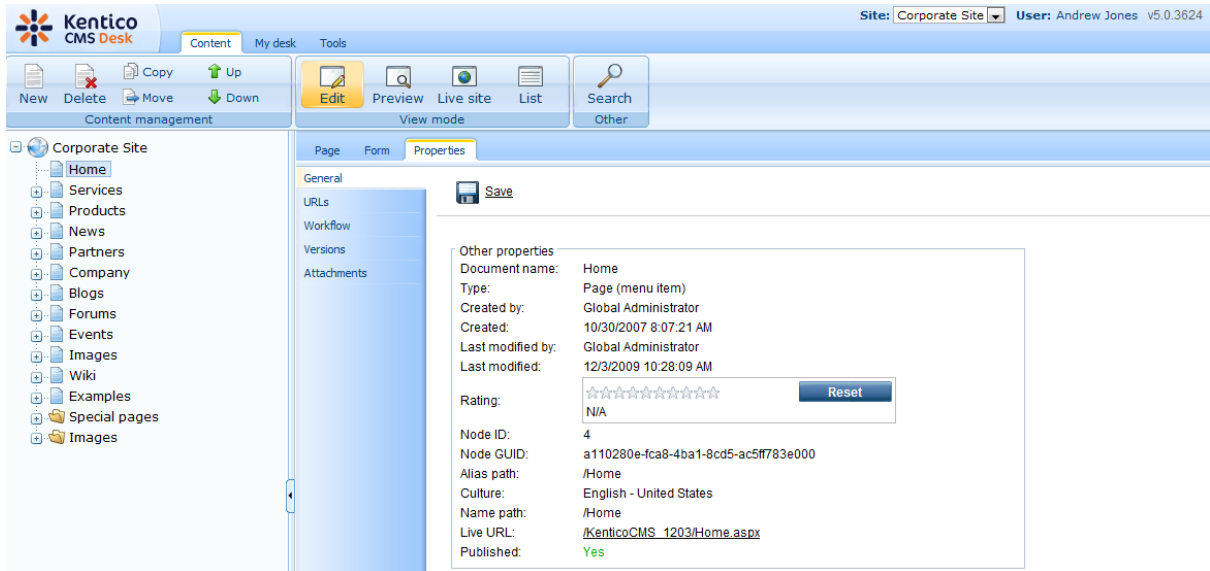


Now log out and try logging in as **Andrew Jones** (login *andy* with blank password). Andy is a member of the **CMS Basic users** role only. This is a role which was added to Kentico CMS to demonstrate the capabilities of UI personalization and its members see only simplified user interface.

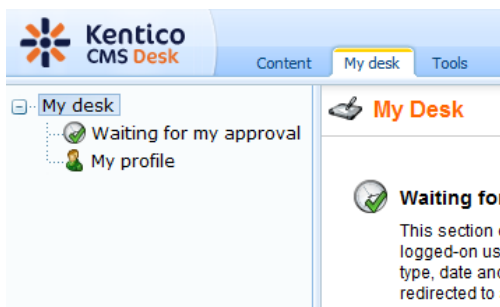
As you can see in the screenshot below, the **Administration** tab in the top menu is not present. The **Design** tab in **Edit** mode is missing too. You can also notice the **WYSIWYG editor**, which offers only a limited number of actions.



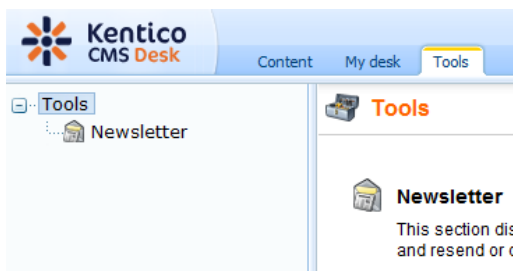
If you switch to the **Properties** tab, you can notice the limited number of items in the left menu. Particular sections accessible via the menu also do not contain all the options available for administrators.



The **My desk** tab contains only two items.



The **Tools** tabs offers only the **Newsletters** module.



It is obvious that this UI is much easier to understand for an end user who only needs to send out newsletters and does not need to do anything else with the CMS.

To see a full overview of which parts of the UI can be hidden, please see [Personalizable parts of CMS Desk](#).

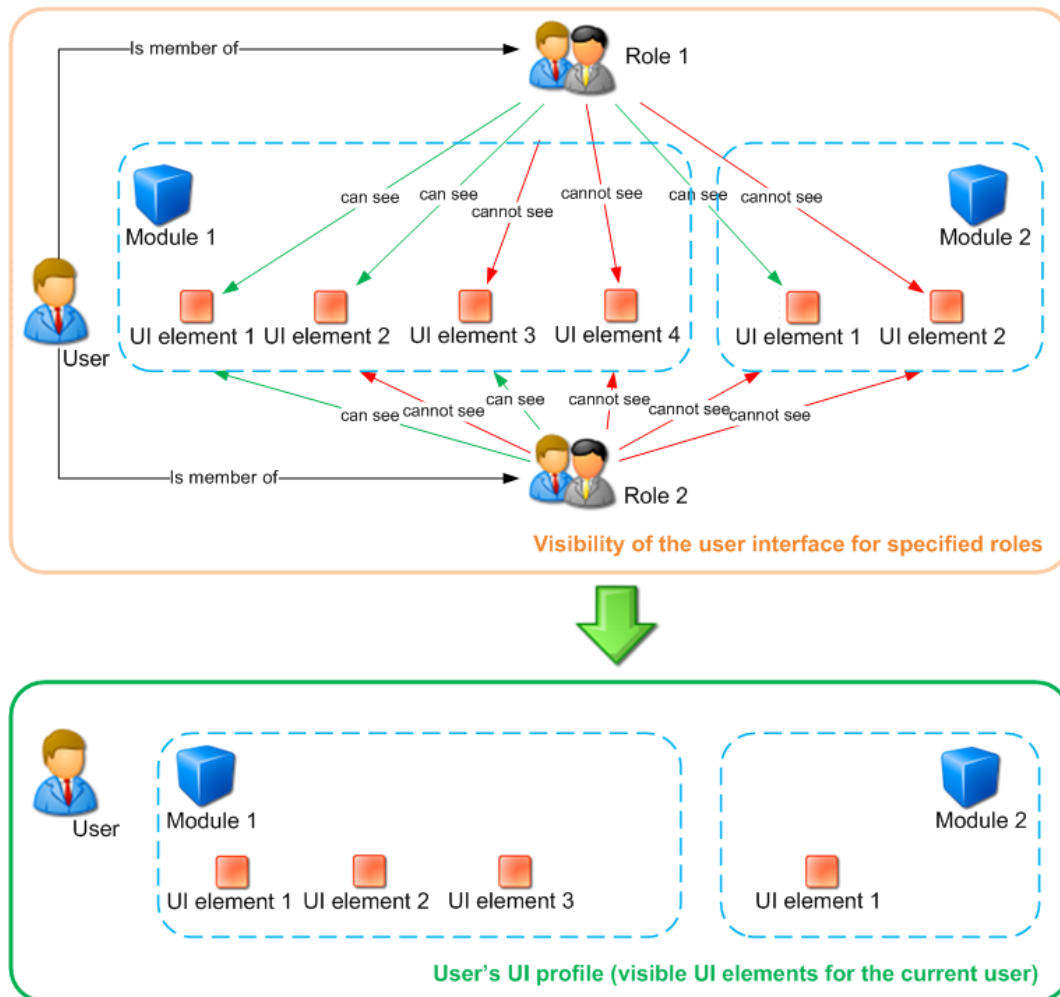
7.10.7.3 How does it work

This chapter explains the principles behind Kentico CMS UI personalization. It is important to get familiar with the following two terms in order to fully understand the concept:

- **UI element** - page or part of a page in CMS Desk which can be hidden from a specified user; it can be a **tab**, a **menu item** or a **group of controls**
- **UI profile** - visibility of specified UI elements for a particular role; it is defined as a set of (role) x (UI element) relationships

Each user's UI profile is defined by UI profiles of their roles. If a user wants to see a UI element, at least one role where the user is member needs to have the UI element set as visible.

The following diagram illustrates how UI personalization settings from two roles are merged to create a user's UI profile.

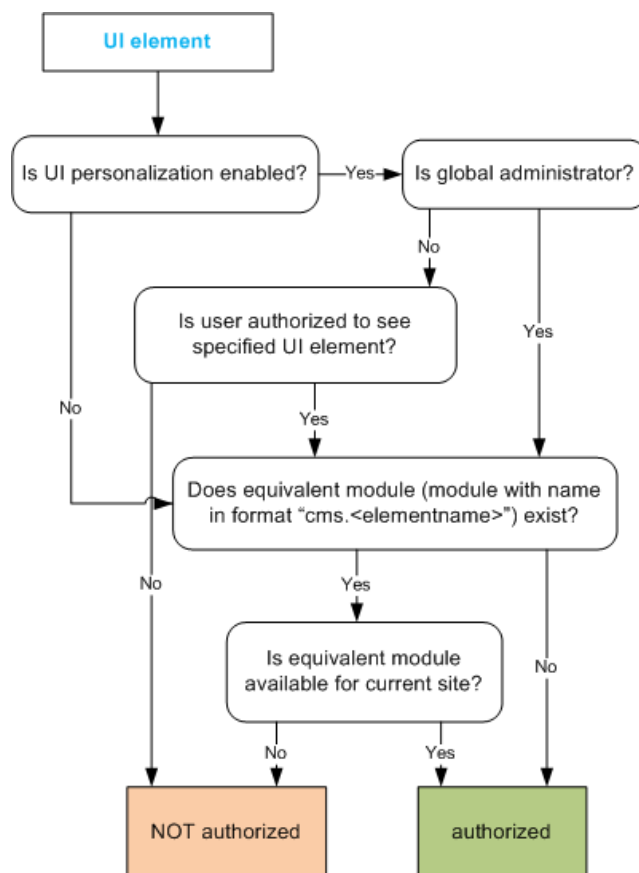


Please note: User's UI profile is **site-related**. This means that the user can see some personalized UI when editing one site and a completely different UI when editing another site. This is possible because a user's UI profile is dependent on the roles. Roles are site-related and a user can be a member of any number of roles across all sites in the system.

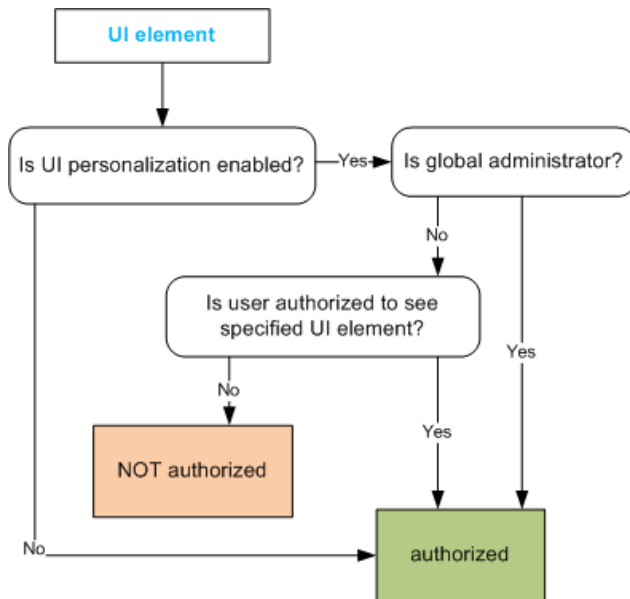
UI element display authorization

The diagram below shows the process of authorization when deciding if a single UI element should be displayed to a user. This process is applied to UI elements in the following parts of the UI:

- main tabs in CMS Desk (Content, MyDesk, Tools, Administration - only the tabs, not their content!)
- left menu in CMS Desk -> MyDesk
- left menu in CMS Desk -> Tools
- left menu in CMS Desk -> Administration



This diagram shows the same authorization process in the remaining tabs and parts of pages:



UI element definitions vs. UI elements in the real user interface

The relation between the UI element definition in **Site Manager -> Modules -> edit (✎) a module -> User interface** and the UI elements in the real UI is different according to the type of UI element.

There are three basic types of UI elements: **tabs**, **menu items** and **groups of controls**.

Tabs in the following locations are **generated dynamically** from the defined UI elements, which means that when a new UI element is defined, the element gets instantly displayed in the UI:

- main tabs in CMS Desk (Content, My desk, ...)
- tabs in CMS Desk -> Edit (Page, Design, ...)
- vertical tabs in CMS Desk -> Edit -> Properties (General, Metadata, ...)
- tabs in CMS Desk -> My desk -> My profile

Menu items in the following menus are also **generated dynamically**:

- CMS Desk -> My desk -> left menu
- CMS Desk -> Tools -> left menu
- CMS Desk -> Administration -> left menu

Groups of controls on particular UI pages (e.g. the Design, Other properties, Owner and Cache sections in CMS Desk -> Content -> Properties -> General) are **pre-defined** and their UI elements are bound to them. You can not define a new group of controls on a page just by defining a new UI element.

More information related to this topic can be found in [Personalizable parts of CMS Desk](#).

7.10.7.4 Personalizable parts of CMS Desk

7.10.7.4.1 Overview

UI personalization can be applied to **CMS Desk only**. Site Manager can not be personalized as it is typically used by administrators and developers who need the full rather than a simplified UI.

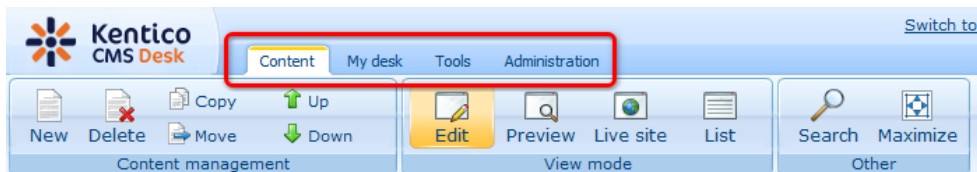
As for CMS Desk, you can personalize the UI elements in the following parts of CMS Desk. Module names in parentheses show which module represents these parts of CMS Desk:

- [CMS Desk main tabs](#) (module CMS Desk)
- [CMS Desk -> Content tab](#) (module Content)
- [CMS Desk -> My desk tab](#) (module My desk)
- [CMS Desk -> Tools tab](#) (module Tools)
- [CMS Desk -> Administration tab](#) (module Administration)
- [WYSIWYG editor](#) (module WYSIWYG editor)
- [Media dialog](#) (module Media dialog)

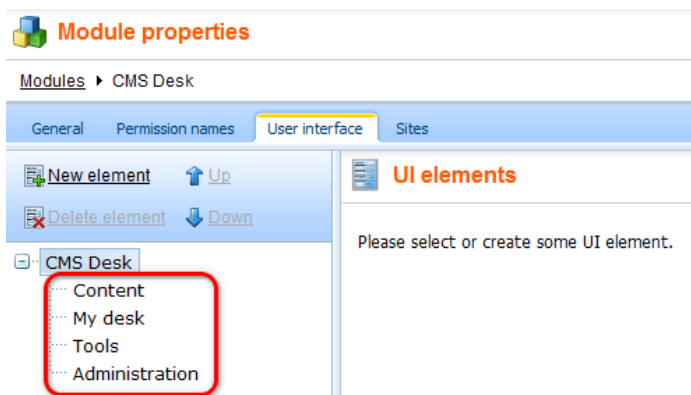
Click particular sections to learn more.

7.10.7.4.2 CMS Desk main tabs

You can hide each of the four main tabs - **Content**, **My desk**, **Tools** and **Administration** - as highlighted in this screenshot:



As you can see, the **CMS Desk** module has UI elements with exactly the same names as the tabs above:

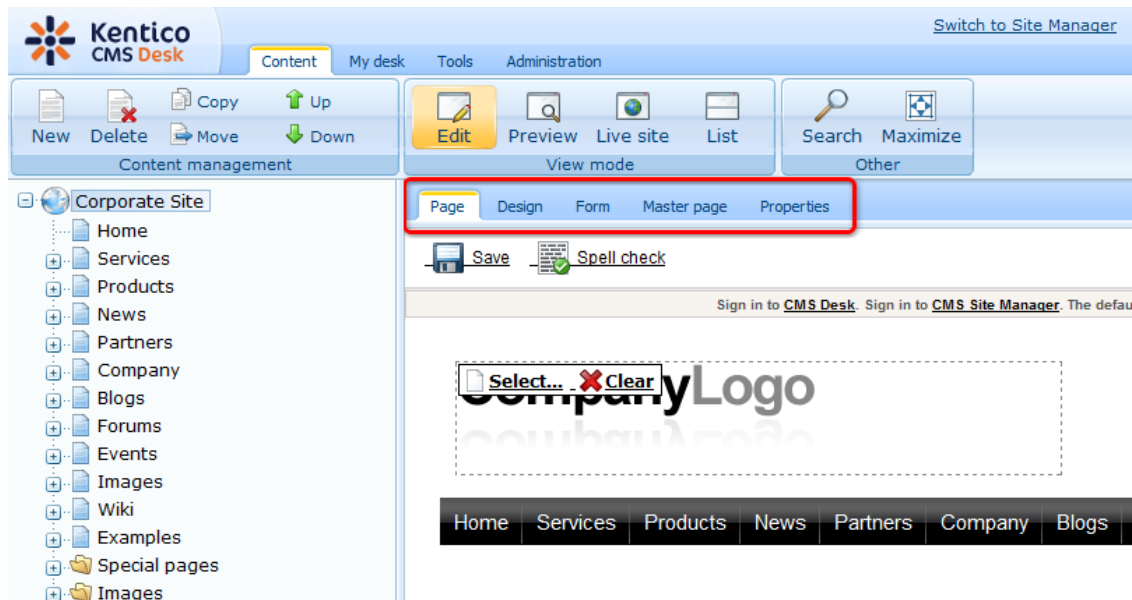


7.10.7.4.3 CMS Desk -> Content tab

The **Content** tab provides vast possibilities of UI personalization. For easier explanation, we will divide them in **three groups**: **Edit mode** tabs, **Design** tab and **Properties** tab.

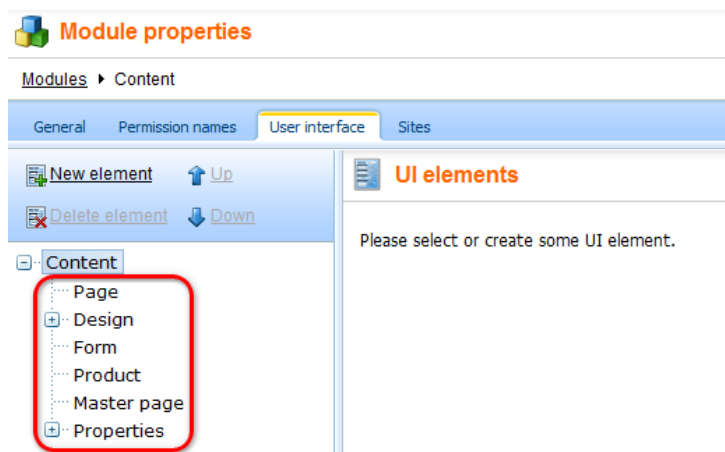
Edit mode tabs

You can hide any of the main tabs displayed in **Edit** mode as highlighted in the screenshot below.



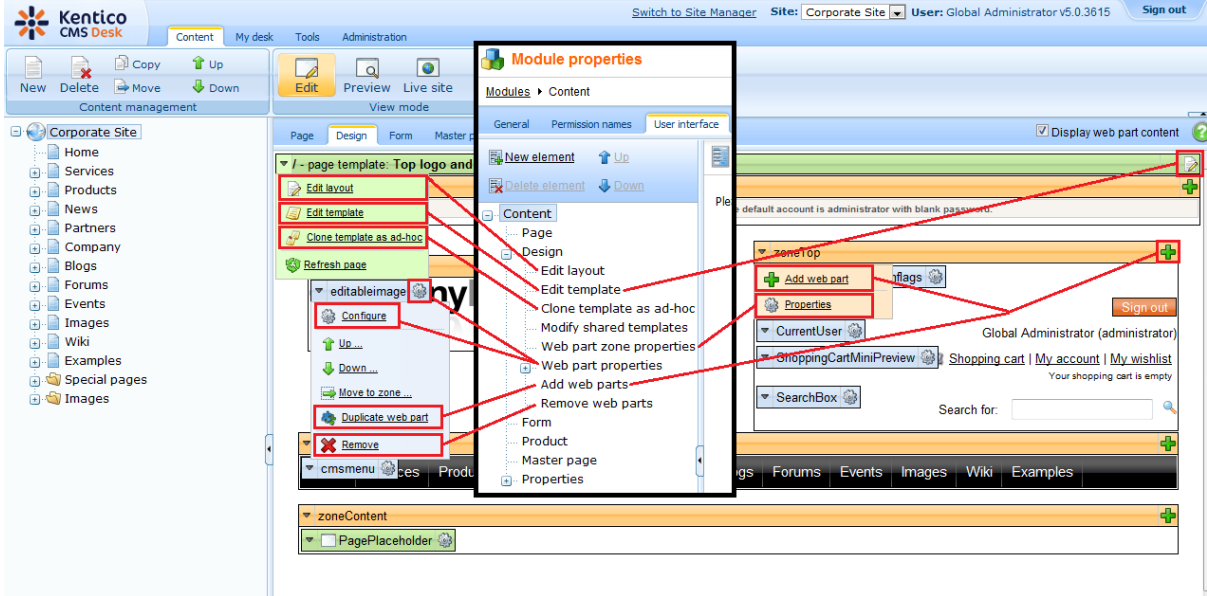
These main tabs are represented by the first-level UI elements of the **Content** module as highlighted below.

Please note that the **Product** tab is not displayed in the screenshot above as it is only displayed when a product type document is selected in the content tree. This is also the case of the **Master page** tab, which is displayed only when you are using Portal engine and the root of the content tree (the master page) is selected.



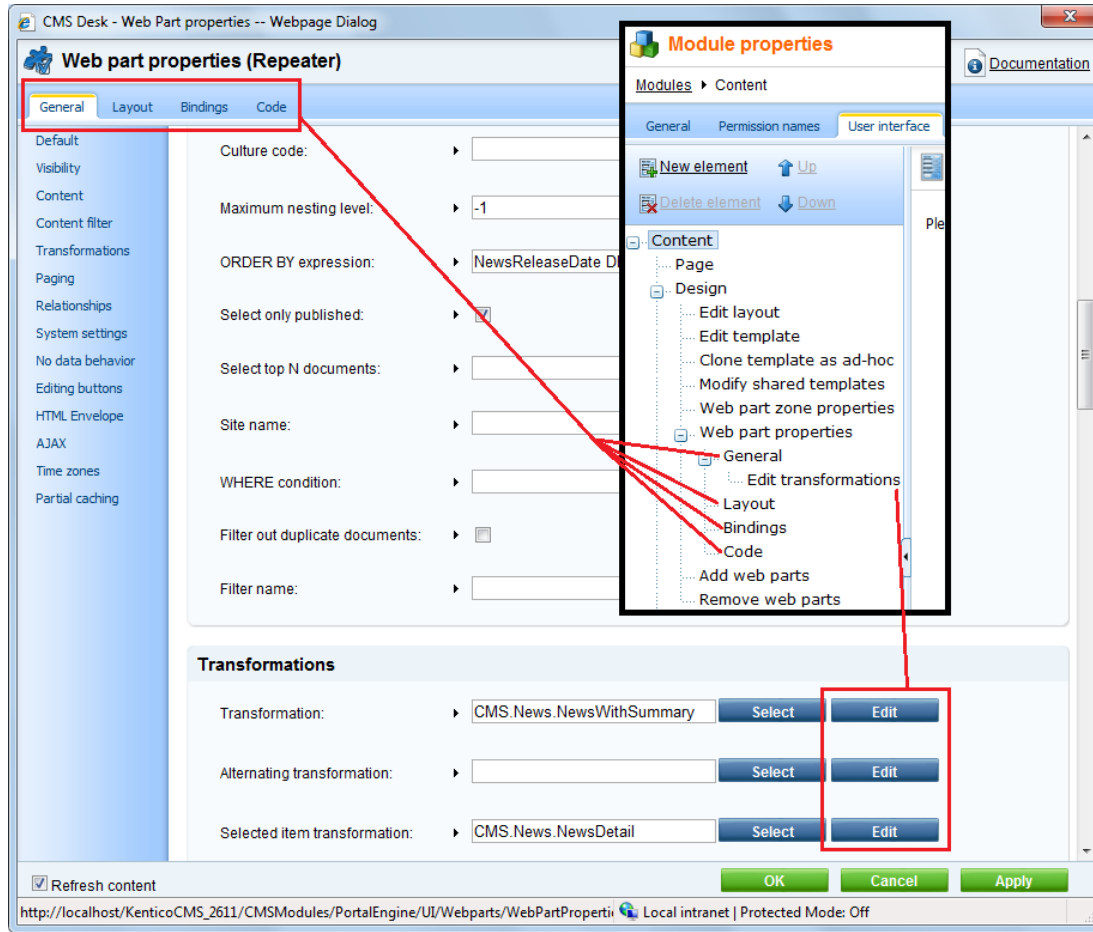
Design tab

On the **Design** tab, you customize all the essential editing actions highlighted in the screenshot below. The corresponding UI elements can be found under the **Design** node of the **Content** module's UI elements tree.



Web part properties dialog

You can hide the four main tabs - **General**, **Layout**, **Bindings** and **Code** - in the **Web part properties** dialog.



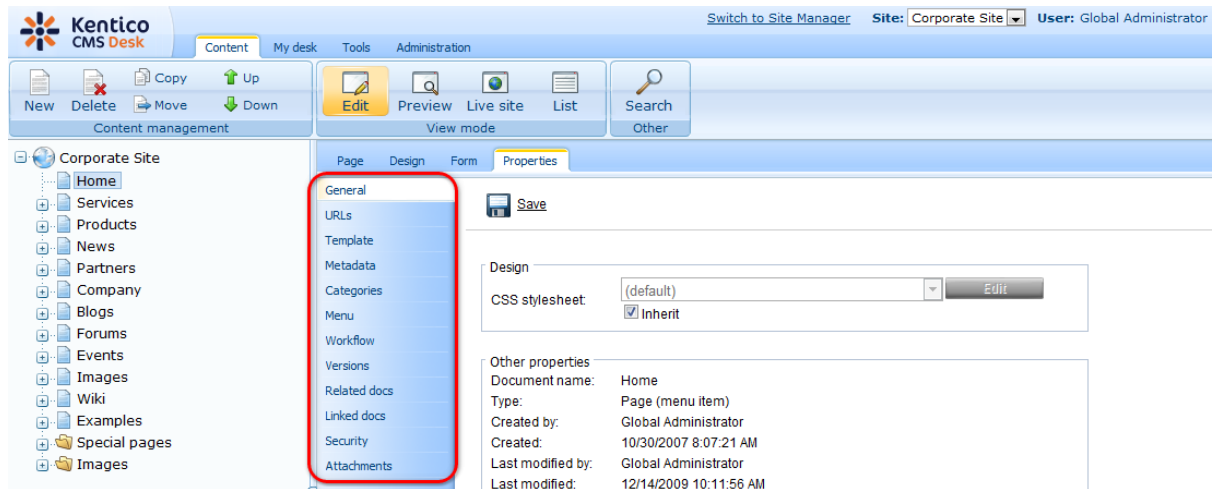
Properties tab

You can hide all items in the left menu on the **Properties** tab. You can also hide particular parts of the **General**, **URLs**, **Template**, **Metadata**, **Menu** and **Security** pages. More information can be found on [this page](#).

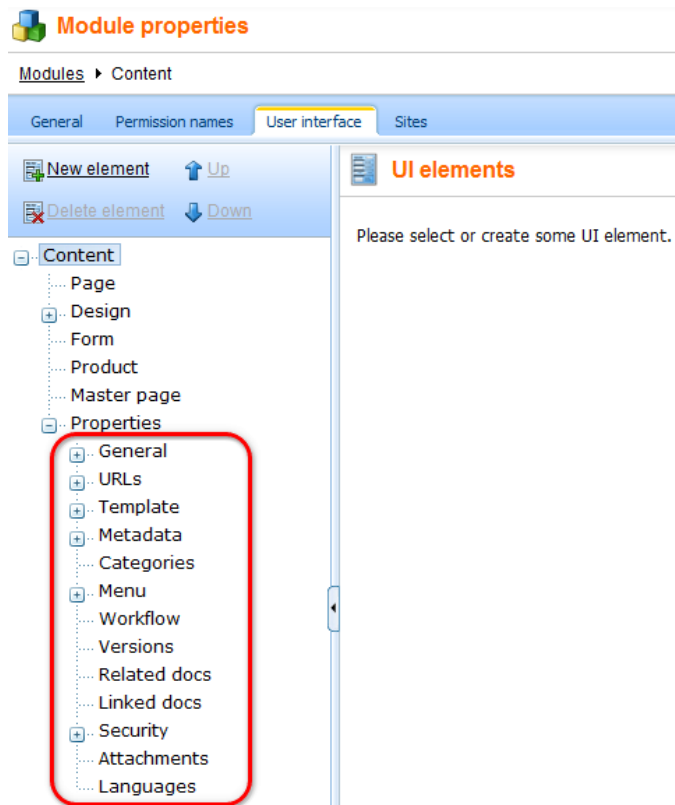
7.10.7.4.4 CMS Desk -> Content -> Edit -> Properties tab


This chapter describes UI personalization possibilities for the **Content -> Edit -> Properties** tab of a document.

First of all, you can hide all items in the left menu on the **Properties** tab as highlighted in the screenshot below.



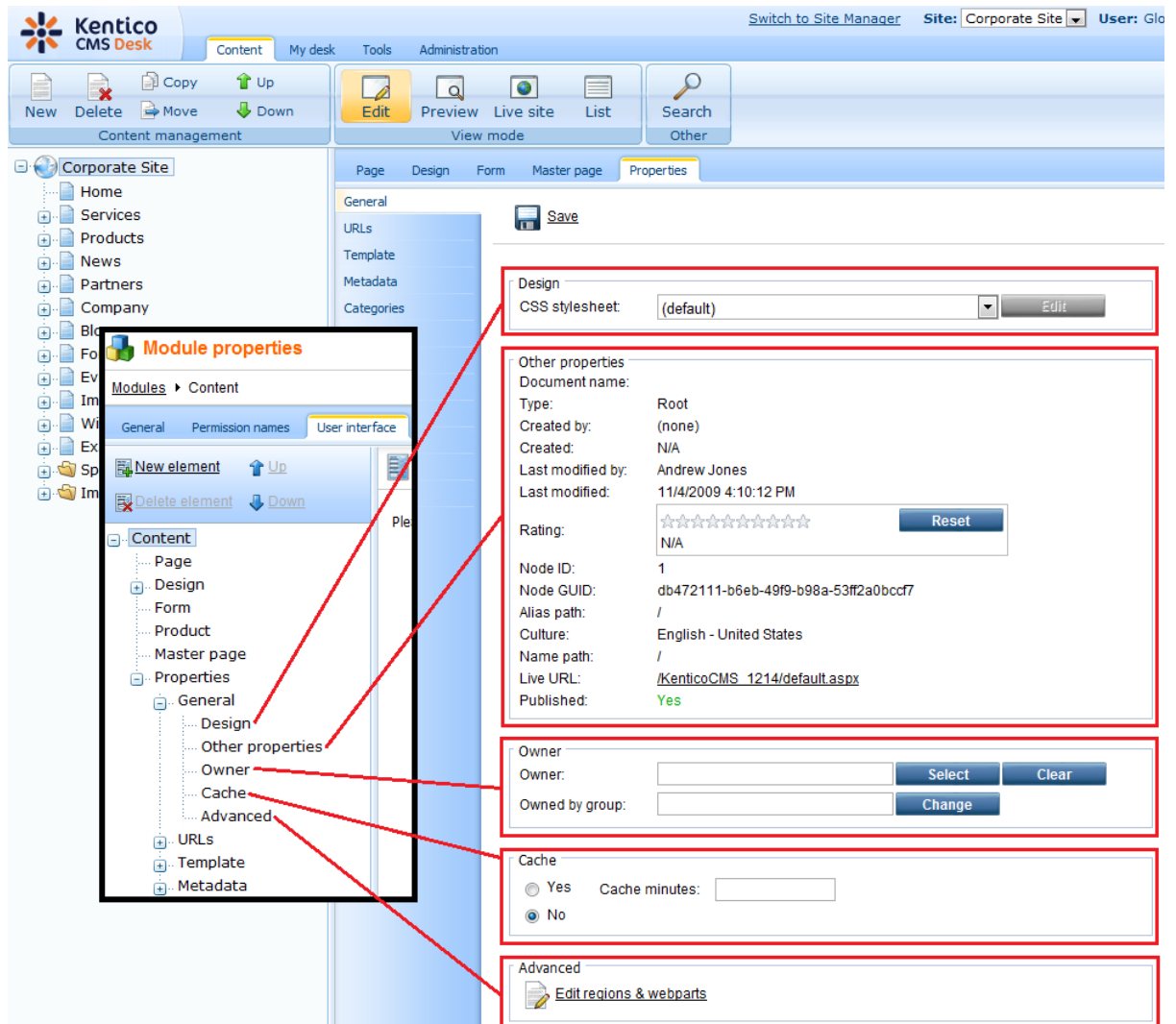
In the **Content** module, you can find the relevant UI elements under the **Properties** node. These elements have the same names as the names of particular menu items.



You can also expand the **General**, **URLs**, **Template**, **Metadata**, **Menu** and **Security** UI elements using the  icon in order to display their child UI elements. These child UI elements represent parts of the relevant pages as described in the text below:

General tab

The **General** tab consists of the **Design**, **Other properties**, **Owner**, **Cache** and **Advanced** sections. The related UI elements have the same names as these sections, as you can see in the following screenshot:

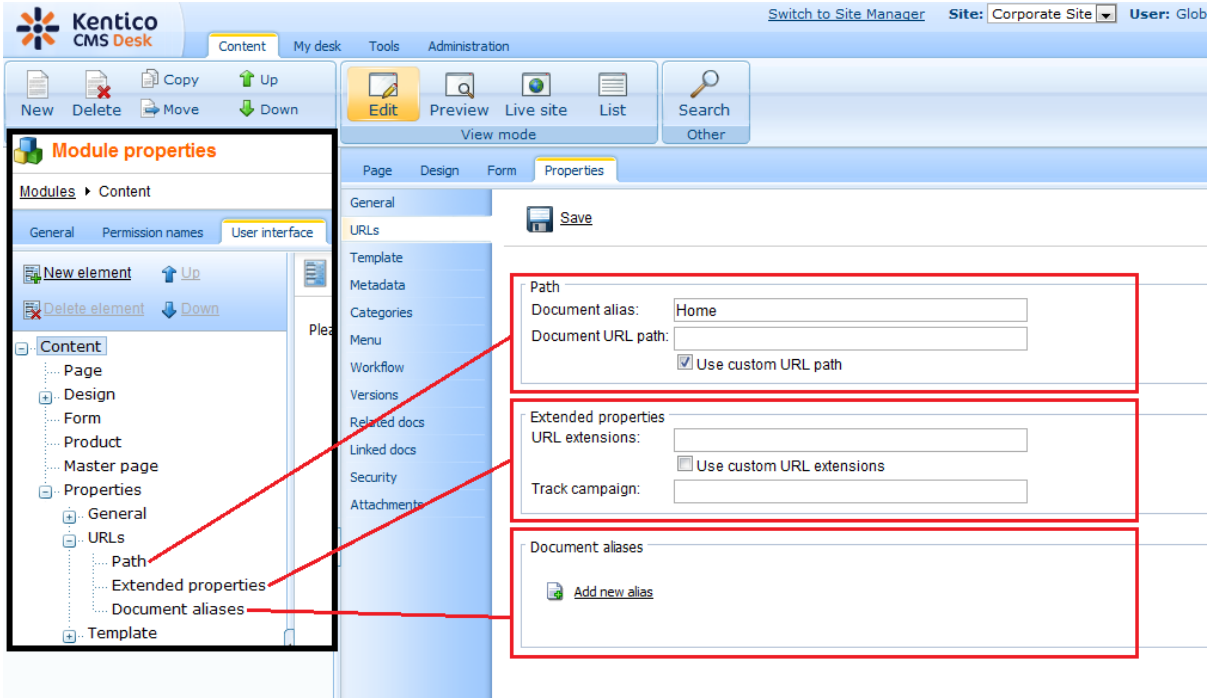


The screenshot displays the Kentico CMS 5.5 Developer's Guide interface. The 'Module properties' dialog box is open, showing the 'Content' module. The dialog is divided into several sections, each highlighted with a red box and connected to the 'Module properties' tree on the left by a red arrow:

- Design:** CSS stylesheet: (default) [Edit]
- Other properties:** Document name: Root; Type: Root; Created by: (none); Created: N/A; Last modified by: Andrew Jones; Last modified: 11/4/2009 4:10:12 PM; Rating: [Reset]; Node ID: 1; Node GUID: db472111-b6eb-49f9-b98a-53ff2a0bcc7; Alias path: /; Culture: English - United States; Name path: /; Live URL: /KenticoCMS_1214/default.aspx; Published: Yes
- Owner:** Owner: [Select] [Clear]; Owned by group: [Change]
- Cache:** Yes Cache minutes: []; No
- Advanced:** [Edit regions & webparts]

URLs tab

The URLs tab consists of the **Path**, **Extended properties** and **Document aliases** sections. The related UI elements have the same names as these sections, as you can see in the following screenshot:



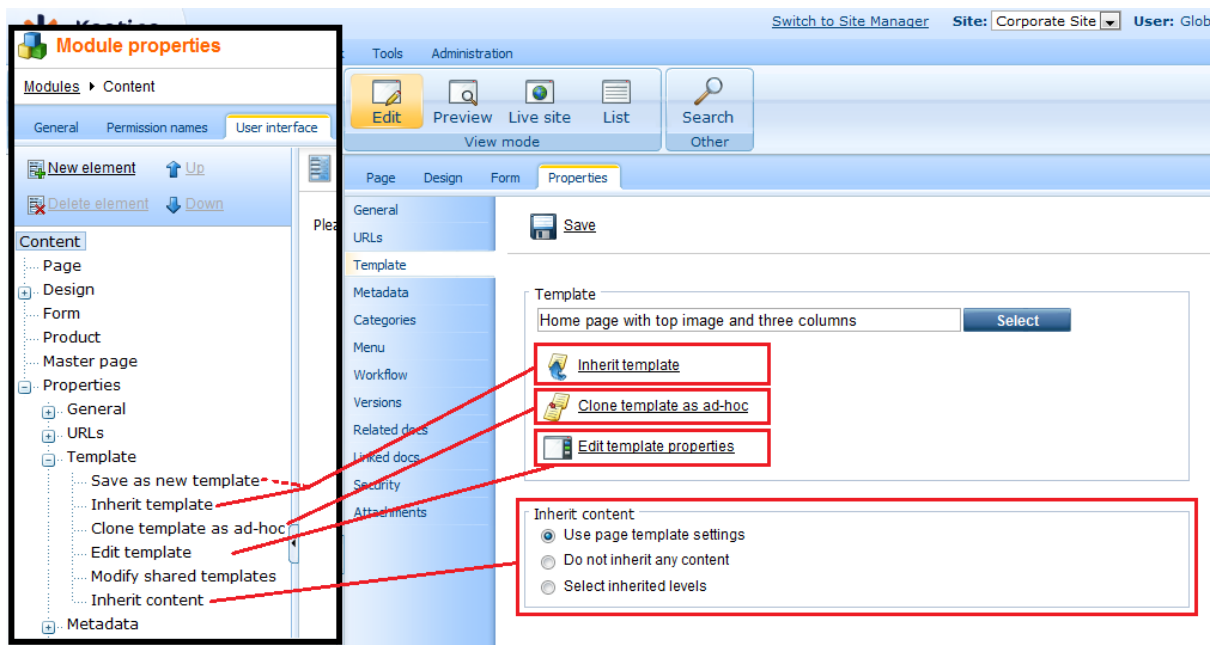
Template tab

On the **Template** tab, you can hide the **Save as new template**, **Inherit template**, **Clone template as ad-hoc** and **Edit template properties** actions. These actions are represented by the UI elements with the same names, as you can see in the screenshot below.

You can also hide the whole **Inherit content** section using the UI element with the same name.

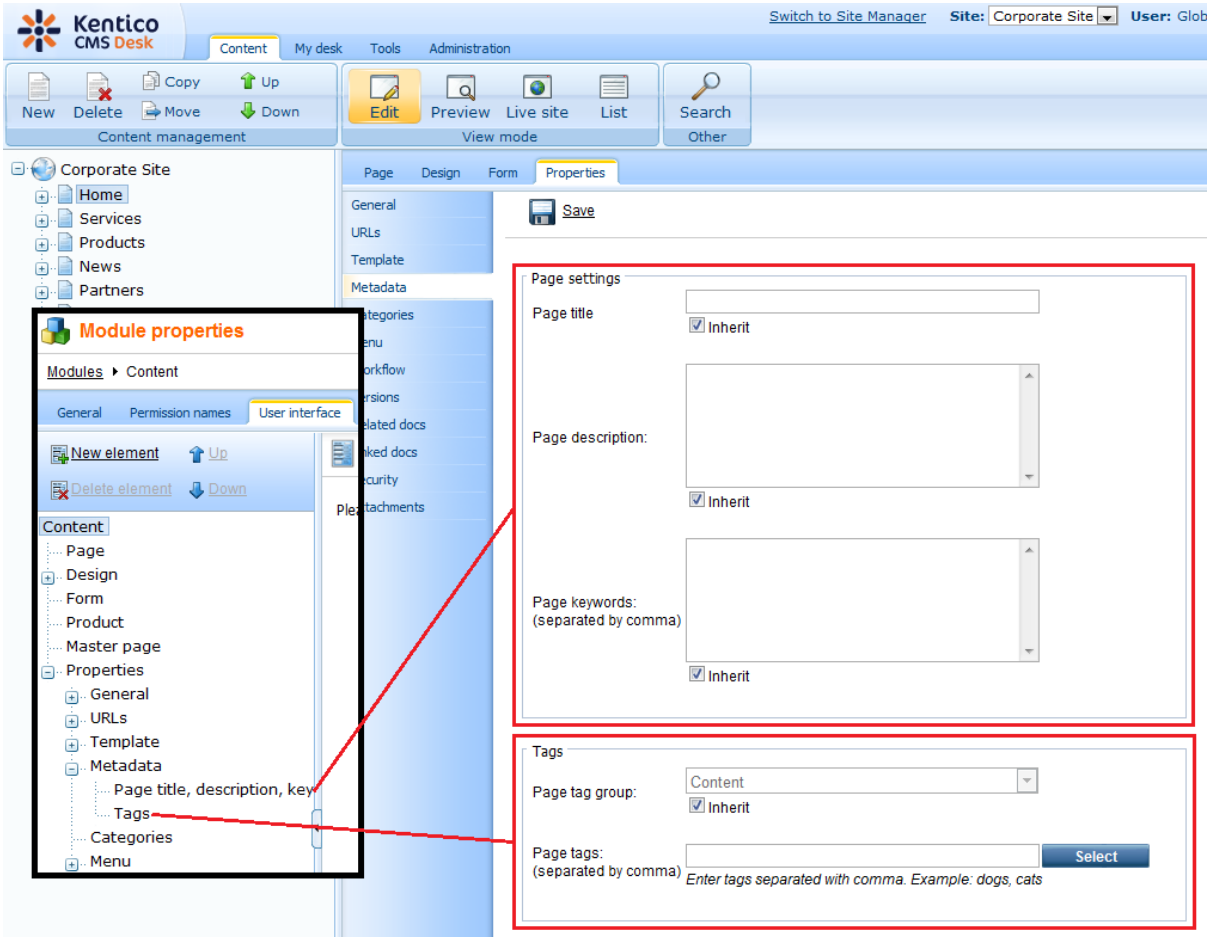
The **Modify shared templates** UI element works as a permission: it determines if the users can modify shared page templates both from here and on the **Design** tab.

Please note that the **Save as new template** action is not displayed in the screenshot because it is available only for ad-hoc or reusable templates. If displayed, the action is positioned instead of the **Inherit template** action. This is why the UI element is connected by a dotted line with the action button.



Metadata tab

The Metadata tab consists of two main sections. The **Page settings** section is represented by the **Page title, description, keywords** UI element. The **Tags** section is represented by the **Tags** UI element.



Menu tab

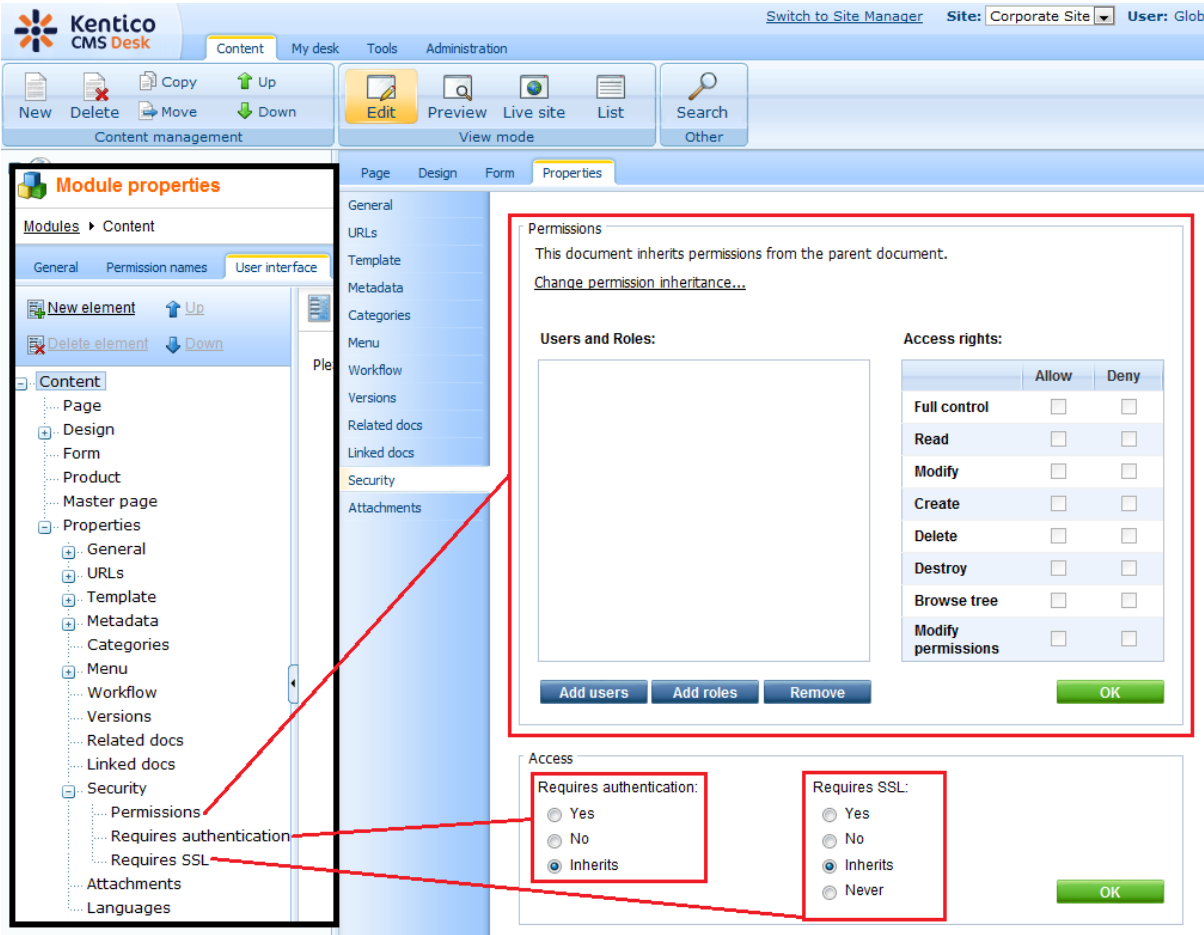
The **Menu** tab consists of three sections - **Basic properties**, **Menu actions**, **Menu design** - while these sections are represented by UI elements with the same names as shown in the following screenshot:

The screenshot displays the Kentico CMS 5.5 Developer's Guide interface. The top navigation bar includes the Kentico CMS Desk logo, a 'Switch to Site Manager' link, and site/user information (Site: Corporate Site, User: Glob). The main toolbar contains icons for New, Delete, Move, Up, Down, Edit, Preview, Live site, List, Search, and Other. The 'Content management' section is active, showing a tree view of the 'Content' module. The 'Menu' tab is selected, and its configuration is shown in the right-hand pane. The configuration is divided into three sections:

- Basic properties:** Includes a text field for 'Menu caption', a checked checkbox for 'Show in navigation', and a checked checkbox for 'Show in sitemap'.
- Menu actions:** Includes radio buttons for 'Standard behavior' (selected), 'Inactive menu item', and 'Javascript command'. The 'Javascript command' field has an example: `alert('hello');return false;`. There is also a 'URL redirection' field with an example: `http://www.mydomainxy.com or ~/products.aspx`.
- Menu design:** Includes a sub-section 'Menu item design' with five text input fields: 'Menu item style', 'Menu item CSS class', 'Menu item left image', 'Menu item image', and 'Menu item right image'.

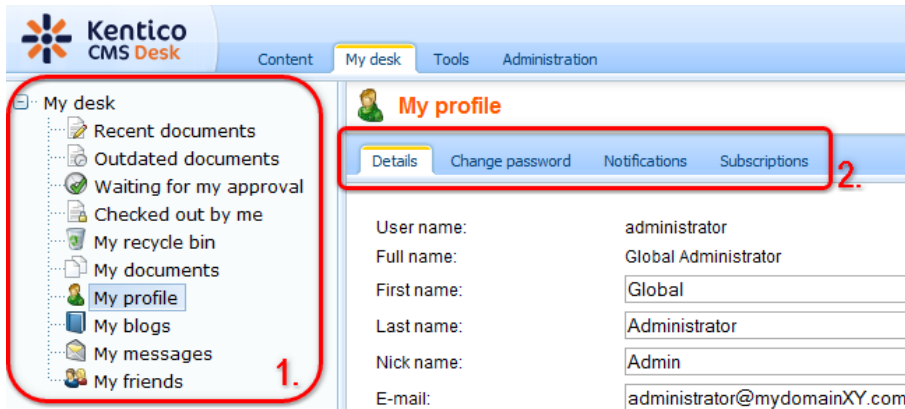
Security tab

The **Security** tab consists of the **Permissions** section, which is represented by the **Permissions** UI element, and the **Access** section, which is divided into two UI element - **Requires authentication** and **Requires SSL**:

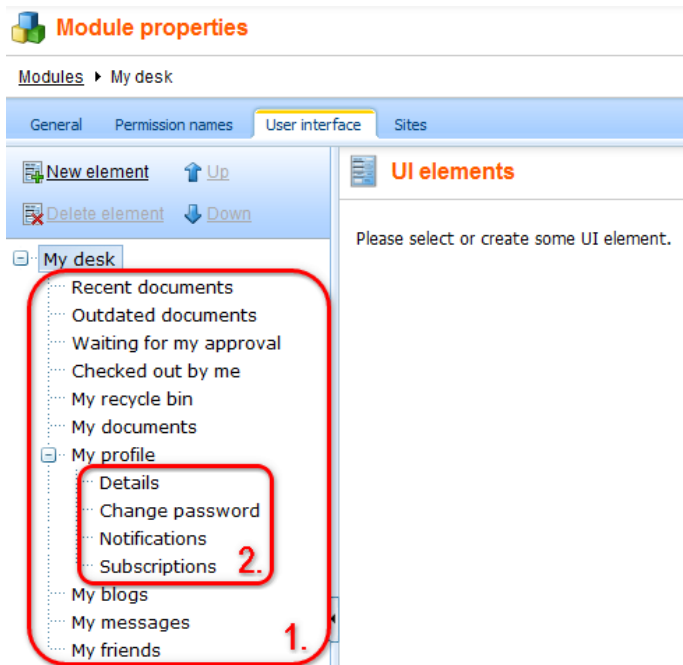


7.10.7.4.5 CMS Desk -> My desk tab

You can hide each item in the left menu (1.). Additionally, you can also hide all four tabs on the **My profile** page (2.).

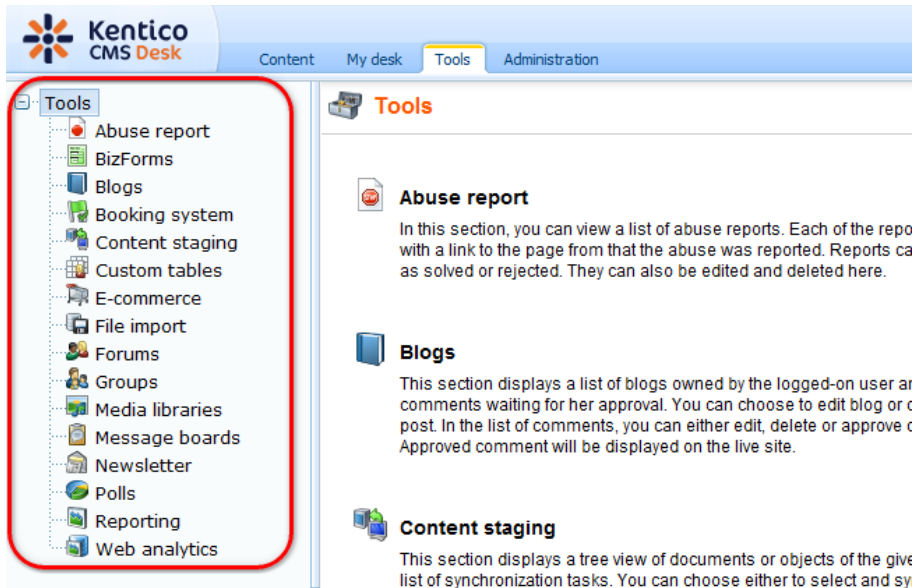


In the screenshot below, you can see UI elements of the **My desk** module. Their names match the names of the menu items and tabs on the screenshot above.



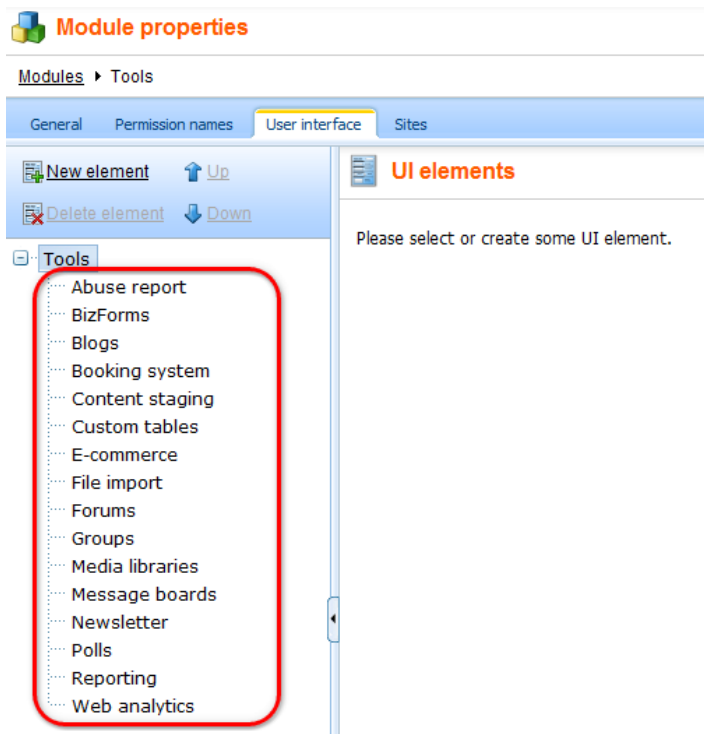
7.10.7.4.6 CMS Desk -> Tools tab

You can hide each item in the left Tools menu as highlighted in the following screenshot:



The screenshot shows the Kentico CMS Desk interface. The top navigation bar includes 'Content', 'My desk', 'Tools' (highlighted), and 'Administration'. On the left, a 'Tools' menu is displayed with a red box highlighting the following items: Abuse report, BizForms, Blogs, Booking system, Content staging, Custom tables, E-commerce, File import, Forums, Groups, Media libraries, Message boards, Newsletter, Polls, Reporting, and Web analytics. The main content area is titled 'Tools' and contains three sections: 'Abuse report' (with a description of viewing and managing reports), 'Blogs' (with a description of managing user blogs and comments), and 'Content staging' (with a description of synchronization tasks).

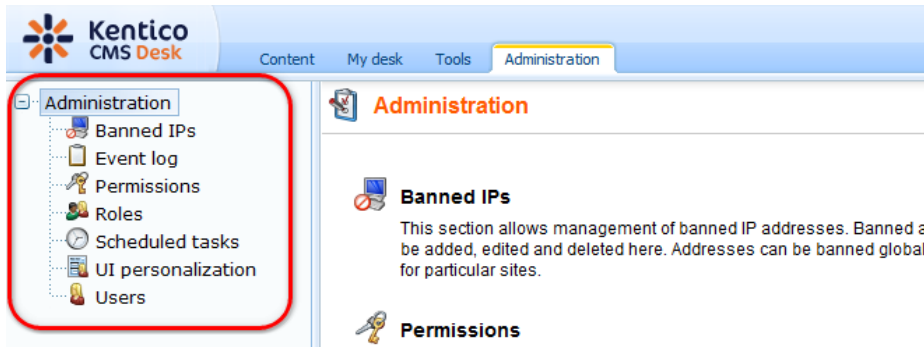
The **Tools** module has UI elements with the same names as the menu items in the screenshot above.



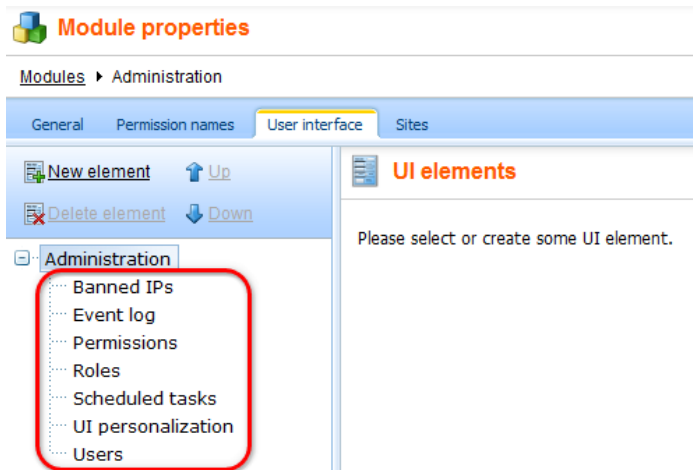
The screenshot shows the 'Module properties' page for the 'Tools' module. The page has tabs for 'General', 'Permission names', 'User interface' (selected), and 'Sites'. Below the tabs, there are buttons for 'New element' (with an 'Up' arrow), 'Delete element' (with a red 'X'), and 'Down' (with a 'Down' arrow). The 'Tools' menu is displayed on the left, with a red box highlighting the same list of items as in the previous screenshot: Abuse report, BizForms, Blogs, Booking system, Content staging, Custom tables, E-commerce, File import, Forums, Groups, Media libraries, Message boards, Newsletter, Polls, Reporting, and Web analytics. The main content area is titled 'UI elements' and contains the text: 'Please select or create some UI element.'

7.10.7.4.7 CMS Desk -> Administration tab

You can hide all items in the left Administration menu.

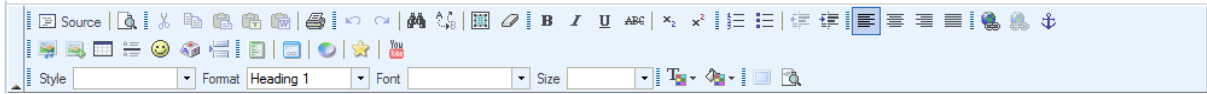



The **Administration** module has UI elements with the same names as the menu items in the screenshot above.



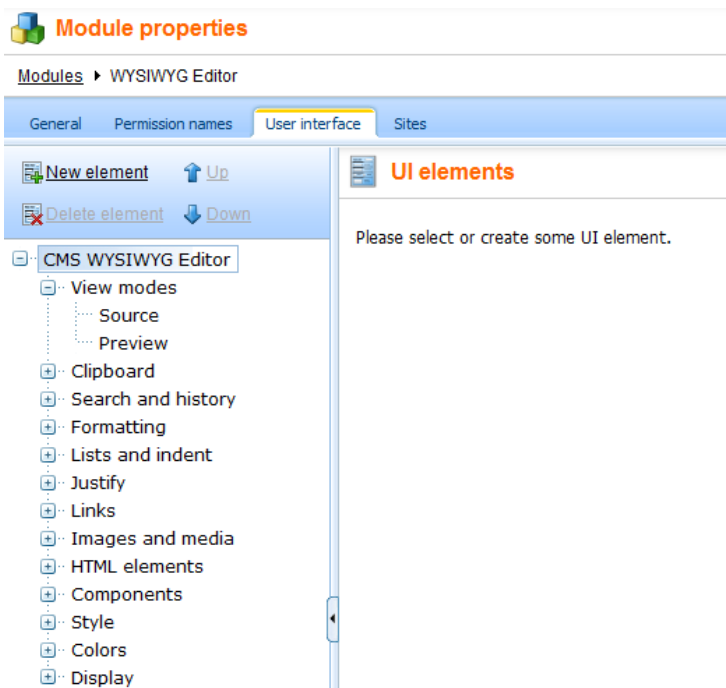
7.10.7.4.8 WYSIWYG editor

All action buttons on the [WYSIWYG editor](#) toolbar can be hidden. This can be particularly useful for content editors who do not need to use all these actions.



The **WYSIWYG editor** module has many UI elements grouped under several parent UI elements. The parent elements serve only for categorization purposes and do not represent any action buttons in the toolbar. You can display the sub-elements by clicking the  icon next to a particular UI element.

UI element names match tooltips displayed when you place your cursor over a particular button in the WYSIWYG editor toolbar.



Custom toolbar actions

If you use your custom plug-in in the WYSIWYG editor and want its action button to be displayed or hidden based on UI profile settings, you need to create a new UI element in the WYSIWYG Editor module with the same code name as the code name of the plug-in.

How it works

1. Action buttons are loaded into the toolbar based on the [toolbar definition](#).
2. If UI personalization is enabled, action buttons get filtered according to the user's UI profile.

This means that only such UI elements are displayed in the toolbar that are available both in the user's UI profile and in the toolbar definition.

Toolbar personalization on the live site

Toolbar personalization on the live site is disabled by default. To change this, you need to enable it in your web.config file by adding the following key to the `/configuration/appSettings` section:

```
<add key="FCKEditor:PersonalizeToolbarOnLiveSite" value="true" />
```

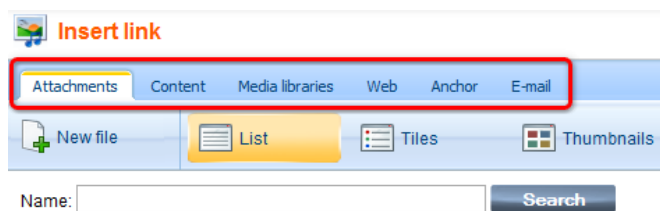
Once this is done, all UI personalization settings will be applied to the WYSIWYG editor on the live site.

More web.config settings can be found in [Appendix C - Web.config parameters -> WYSIWYG editor settings](#).

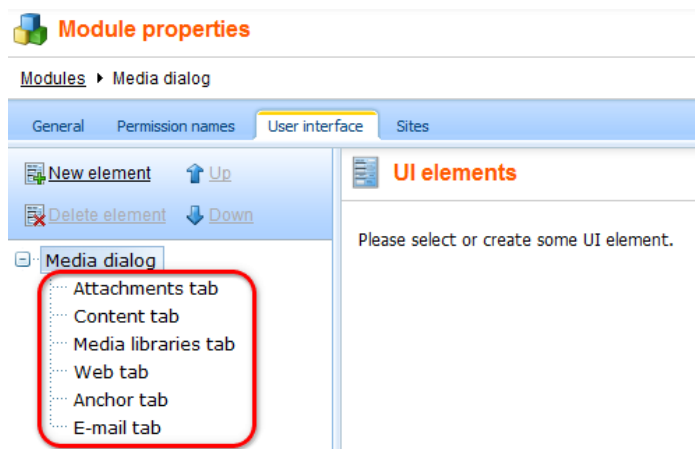
7.10.7.4.9 Media dialog

This dialog is displayed e.g. when using the [Insert image or media](#) or [Insert link](#) actions in the WYSIWYG editor or when selecting an image in the **Editable image** web part.

You can hide the dialog's tabs - **Attachments, Content, Media libraries, Web, Anchor** and **E-mail**.



UI elements are defined centrally in the **Media dialog** module. They are applied to all occurrences and versions of the dialog, even though some of these tabs are not displayed in all cases (e.g. the E-mail tab is not displayed in Insert image or media dialog).



7.10.7.5 Enabling UI personalization

For UI personalization to be functional, you need to go to **Site Manager -> Settings -> Security** and enable it using the **Enable UI personalization** check-box.

Using the **Site** drop-down, you can decide if you want to turn it on globally, or just for some particular sites in the system.

The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The 'Settings' tab is active, and the 'Security' sub-tab is selected. The left sidebar shows a tree view of settings categories, with 'Security' highlighted. The main content area displays the 'Security' settings for the 'global' site. The settings are as follows:

| Setting Name | Value |
|--------------------------------------|-------------------------------------|
| Send password e-mails from | admin@mydomainXY.com |
| Password format | SHA1 |
| Use SSL for administration interface | <input type="checkbox"/> |
| Check page permissions | Secured areas |
| Website logon page URL | ~/cmspages/logon.aspx |
| Access denied page URL | |
| Enable banned IPs | <input checked="" type="checkbox"/> |
| Redirect banned IPs to URL | ~/CMSMessages/BannedIP.aspx |
| Enable flood protection | <input type="checkbox"/> |
| Flood interval | 20 |
| Enable UI personalization | <input checked="" type="checkbox"/> |

The 'Enable UI personalization' setting is highlighted with a red box. Below the settings, there is a link to 'Export these settings'.

7.10.7.6 UI profile configuration

In the following step-by-step example, you will learn how to define UI profile for a new role in **Site Manager -> Administration -> UI personalization**.

Let's presume that we want some users to be **Forum administrators** of our website. This means that they will not need to use the **Content** or **Administration** tabs at all, all they will be concerned about is the [Forums module](#) administration interface in the **Tools** menu and a few parts of the **My desk** section.

How to achieve it? We will create a new role and a new user who will be a member of this role only. Then we will define UI profile settings for this role and try logging in as the new user to see the simplified UI.

1. Install some of the sample sites or your own site and enable UI personalization for the site as described [here](#).

2. Go to **Site Manager -> Administration -> Roles**, choose your site in the **Site** drop-down and click the **New role** (👤) icon. In the following dialog, enter these details:

- **Role display name:** Forum Administrators
- **Role code name:** ForumAdministrators
- **Role description:** some text describing the role
- **Is domain role:** leave the field blank

Click **OK**.

The screenshot shows the 'New Role' dialog box in the Kentico CMS Site Manager. The dialog is titled 'New Role' and is part of the 'Roles' section. It contains the following fields and options:

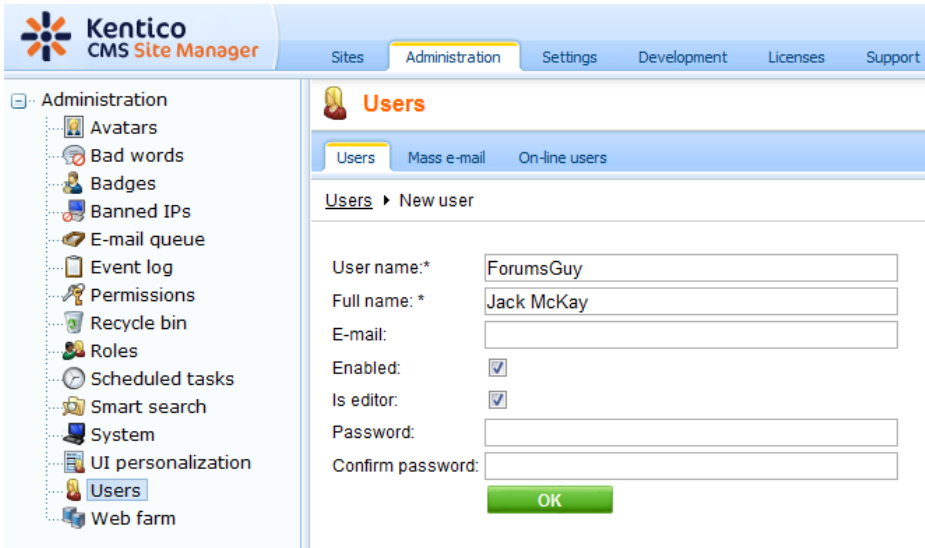
- Role display name:** Forum Administrators
- Role code name:** ForumAdministrators
- Role description:** Members of this role will administrate discussion forums.
- Is domain role:**

A green 'OK' button is located at the bottom of the dialog. The background shows the 'Administration' menu with 'Roles' selected.

3. Now let's create the user. Go to **Site Manager -> Administration -> Users** and click the **New user** () icon. Enter the following details in the New user dialog:

- **User name:** ForumsGuy
- **Full name:** Jack McKay
- **Enabled:** enabled
- **Is editor:** enabled

Click **OK**.



Kentico CMS Site Manager

Sites Administration Settings Development Licenses Support

Administration

- Avatars
- Bad words
- Badges
- Banned IPs
- E-mail queue
- Event log
- Permissions
- Recycle bin
- Roles
- Scheduled tasks
- Smart search
- System
- UI personalization
- Users
- Web farm

Users

Users Mass e-mail On-line users

Users ▾ New user

User name:* ForumsGuy

Full name: * Jack McKay

E-mail:

Enabled:

Is editor:

Password:

Confirm password:

OK

4. You are redirected to the new user's editing interface. We first need to assign the user to our site. Go to the **Sites** tab and add the site using the **Add sites** button.



Kentico CMS Site Manager

Sites Administration Settings Development Licenses Support

Administration

- Avatars
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- Permissions
- Recycle bin
- Roles
- Scheduled tasks
- Smart search
- System
- UI personalization
- Users
- Web farm

Users

Users Mass e-mail On-line users

Users ▾ ForumsGuy

General Password Settings Sites Roles Departments Notifications Categories

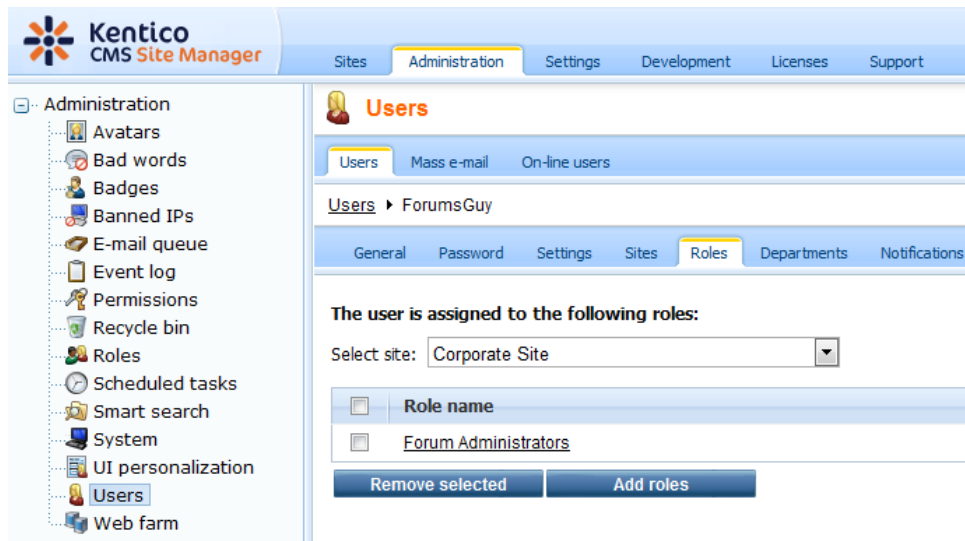
The changes were saved.

The user is available for the following web sites:

| | |
|--------------------------|----------------|
| <input type="checkbox"/> | Site name |
| <input type="checkbox"/> | Corporate Site |

Remove selected Add sites

5. Now that the user belongs to our site, we can assign her to the **Forum Administrators** role, which also belongs to the site. Switch to the **Roles** tab and use the **Add role** button to add the Forum Administrators role.



6. Now that the user belongs to our role, we can set up UI personalization for the role. Go to **Site Manager -> Administration -> UI personalization** and chose:

- **Site:** your site
- **Role:** Forum Administrators

Please note: UI personalization settings are **site-related**. This means that members of one role can see some personalized UI when editing one site and a completely different UI when editing another site. More information on how UI personalization works can be found [here](#).

You can choose the module whose UI elements you want to set up using the **Module** drop-down. Full reference on the personalizable parts of CMS Desk and the appropriate modules can be found [here](#).

7. Let's start with the main tabs in CMS Desk, where we want only the **My desk** and **Tools** tabs visible. Choose **Module**: CMS Desk and make the following settings:

- **Content**: disabled
- **My desk**: enabled
- **Tools**: enabled
- **Administration**: disabled

The screenshot shows the Kentico CMS Site Manager Administration interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The left sidebar lists various administration categories, with 'UI personalization' selected. The main content area is titled 'UI personalization' and has two tabs: 'Dialogs' and 'Editor'. Under the 'Editor' tab, there are three dropdown menus: 'Site' (set to 'Corporate Site'), 'Role' (set to 'Forum Administrators'), and 'Module' (set to 'CMS Desk'). Below these are 'Expand all' and 'Collapse all' buttons. At the bottom, there is a section for 'CMS Desk (select all, unselect all)' with a tree view of modules: 'Content' (unchecked), 'My desk' (checked), 'Tools' (checked), and 'Administration' (unchecked).

8. On the My desk tab, we will need only the My profile, My messages and My friends sections, all others are not needed for forum administrators. Choose **Module**: My Desk and enable only the UI elements listed below, do not enable the rest.

- **My profile**: enabled
 - **Details**: enabled
 - **Change password**: enabled
 - **Notifications**: enabled
 - **Subscriptions**: enabled
- **My messages**: enabled
- **My friends**: enabled

The screenshot shows the Kentico CMS Site Manager Administration interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The left sidebar lists various administration categories, with 'UI personalization' selected. The main content area is titled 'UI personalization' and has two tabs: 'Dialogs' and 'Editor'. Under the 'Editor' tab, there are three dropdown menus: 'Site' (Corporate Site), 'Role' (Forum Administrators), and 'Module' (My desk). Below these are 'Expand all' and 'Collapse all' buttons. The main area displays a tree view of UI elements for the 'My desk' module. The 'My desk' folder is expanded, showing several sub-items with checkboxes. The 'My profile' folder is also expanded, and its sub-items are checked: 'Details', 'Change password', 'Notifications', and 'Subscriptions'. Other items like 'Recent documents', 'Outdated documents', 'Waiting for my approval', 'Checked out by me', 'My recycle bin', 'My documents', 'My blogs', 'My messages', and 'My friends' are also visible with their respective checkboxes.

9. Finally, we need only the Forums option in the Tools menu. Choose **Module**: Tools and enable only the **Tools** UI element as you can see in the screenshot below. Leave all the remaining UI elements disabled.

The screenshot displays the Kentico CMS Site Manager Administration interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The left sidebar shows a tree view of administration options, with 'UI personalization' selected. The main content area is titled 'UI personalization' and has two tabs: 'Dialogs' and 'Editor'. The 'Editor' tab is active, showing three dropdown menus: 'Site' (Corporate Site), 'Role' (Forum Administrators), and 'Module' (Tools). Below these are 'Expand all' and 'Collapse all' buttons. A 'Tools' section is expanded, showing a list of tool categories with checkboxes. The 'Forums' checkbox is checked, while all other checkboxes are unchecked.

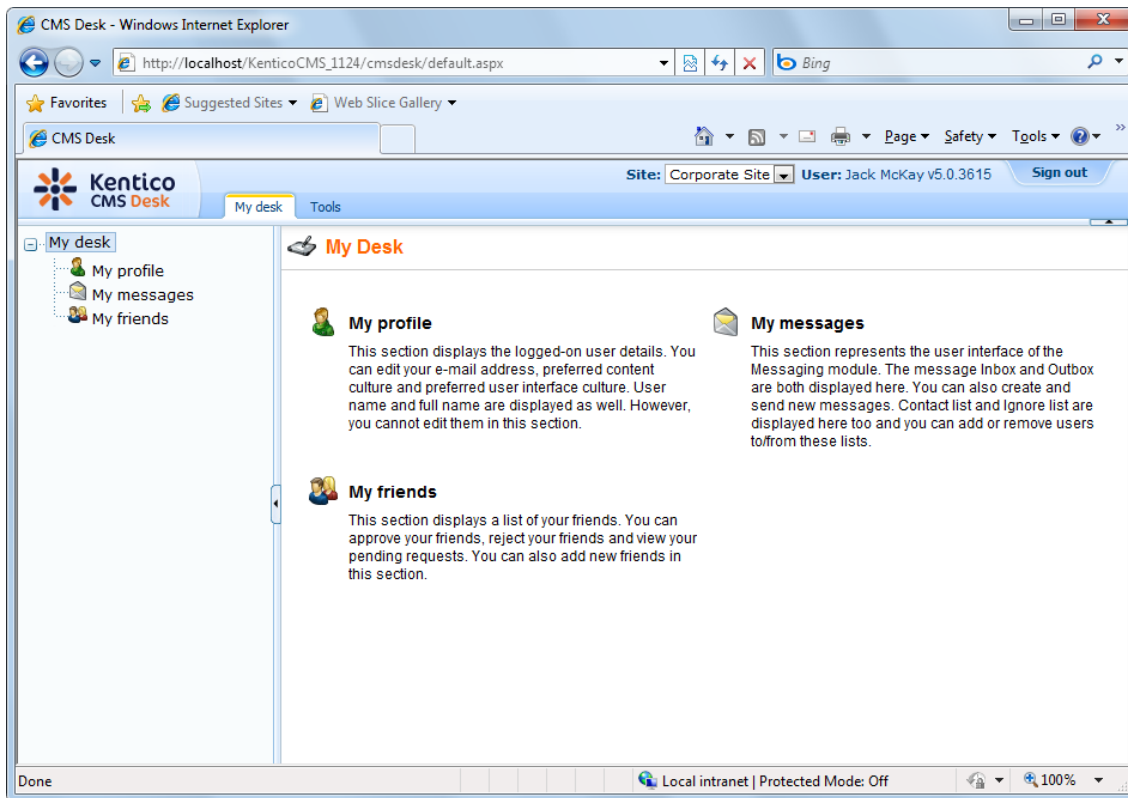
| Site | Role | Module |
|----------------|----------------------|--------|
| Corporate Site | Forum Administrators | Tools |

Expand all Collapse all

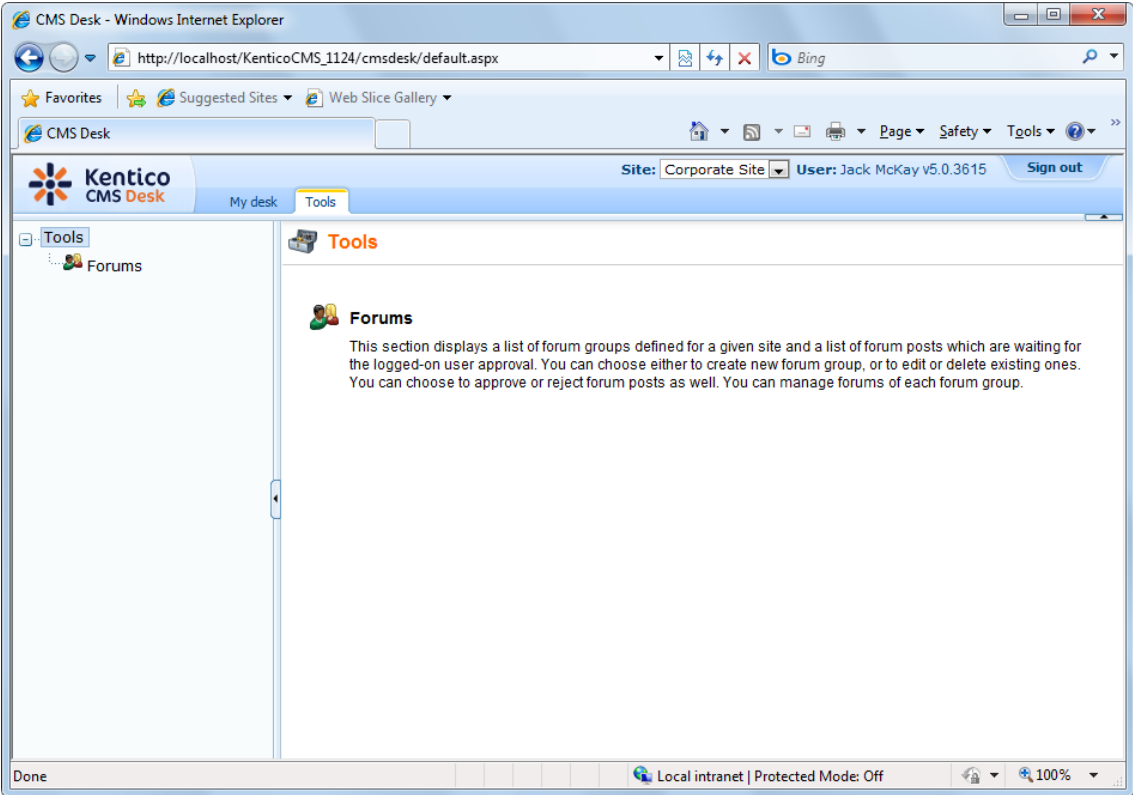
Tools (select all, unselect all)

- Abuse report
- BizForms
- Blogs
- Booking system
- Content staging
- Custom tables
- E-commerce
- File import
- Forums
- Groups
- Media libraries
- Message boards
- Newsletter
- Polls
- Reporting
- Web analytics
- My module

10. We can now verify what we have achieved. Log out of **Site Manager** and log back in to **CMS Desk** as the *ForumsGuy* user created in step 3. You will see the a simplified user interface as in the following screenshot.



If you switch to the **Tools** tab, there is only the **Forums** menu item present. It is evident that this UI is much easier to understand for a first-time end user.



7.10.7.7 UI elements management

7.10.7.7.1 UI elements management overview

The user interface of Kentico CMS consists of modules. Modules contain particular UI elements. UI element is a page or part of a page in CMS Desk which can be hidden from a specified user. It can be:

- tab
- menu item
- group of controls

UI elements of a particular modules can be edited or added in **Site Manager -> Development -> Modules**. This is where you can see a list of all modules in the system. For information on which module represents which parts of the CMS, please read [Personalizable parts of CMS Desk](#).

| Actions | Module name |
|---------|-----------------|
| | Abuse report |
| | Administration |
| | Bad words |
| | Badges |
| | Banned IPs |
| | BizForms |
| | Blogs |
| | Booking system |
| | CMS Desk |
| | Content |
| | Content staging |

If you want to manage UI elements of some module, click the **Edit** () icon next to the module and switch to the **User interface** tab. On the **User interface** tab, you can see all UI elements of the module in the tree on the left.

- You can re-order UI elements using the **Up** () and **Down** () buttons. This order will then be reflected in the real UI for tabs and menu items. Parts of pages (groups of controls) can not be re-ordered this way.
- You can delete existing elements using the **Delete element** () button.
- New elements can be created using the **New element** () button (see the [example](#)), while the new element is always created under the currently selected node.

Settings for each UI element are divided into two tabs - **General** and **Roles**.

On the **General** tab, you can set the following properties of the UI element.

- **Display name:** name of the element displayed in the administration interface (i.e. in the settings, not in the final UI); can be entered either as plain text or as a localizable string in the `{$mystringname$}` format
- **Code name:** name of the element used by developers in website code, it must be unique within a module
- **Parent element:** using this drop-down list, you can change the hierarchical position of the element in the UI elements tree for this module; you can select either the name of the module (which places the element under the root) or some of the other UI elements (which places the element under the selected element)
- **Element is custom:** if false, the element is a native part of Kentico CMS; set this value to true for your custom UI elements
- **Caption:** caption of the UI element displayed in the final UI; can be entered either as plain text or as a localizable string in the `{$mystringname$}` format
- **Target URL:** URL of the page which is the content of the UI element; you can enter both absolute (e.g. `http://www.google.com`) and relative (e.g. `~/CMSModules/Content/CMSDesk/Default.aspx`) URLs
- **Icon path:** icon displayed next to element caption - applicable **only for menu items**; you can enter either a full relative path beginning with `~` (e.g. `~/App_Themes/Default/Images/CMSModules/list.png`) or a short path beginning under the `Images` folder of the current skin (e.g. `CMSModules/list.png`)

The screenshot displays the Kentico CMS Site Manager Administration interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development' (selected), 'Licenses', and 'Support'. A 'Switch to CMS Desk' link is visible in the top right. The left sidebar shows a tree view of the 'Development' section, with 'Modules' expanded to show 'Content', 'My desk', 'Tools', and 'Administration'. The main area is titled 'Module properties' and shows the 'Content' module selected. The 'User interface' tab is active, displaying the 'UI elements' tree with 'Content' selected. The 'General' tab is active, showing the following settings:

- Display name: `{$cmsdesk.ui.content$}`
- Code name: Content
- Parent element: CMS Desk
- Element is custom:
- Menu item settings:
 - Caption: `{$cmsdesk.ui.content$}`
 - Target URL: `~/CMSModules/Content/CMSDesk/Default.aspx`
 - Icon path: (empty)

An 'OK' button is located at the bottom right of the settings area.

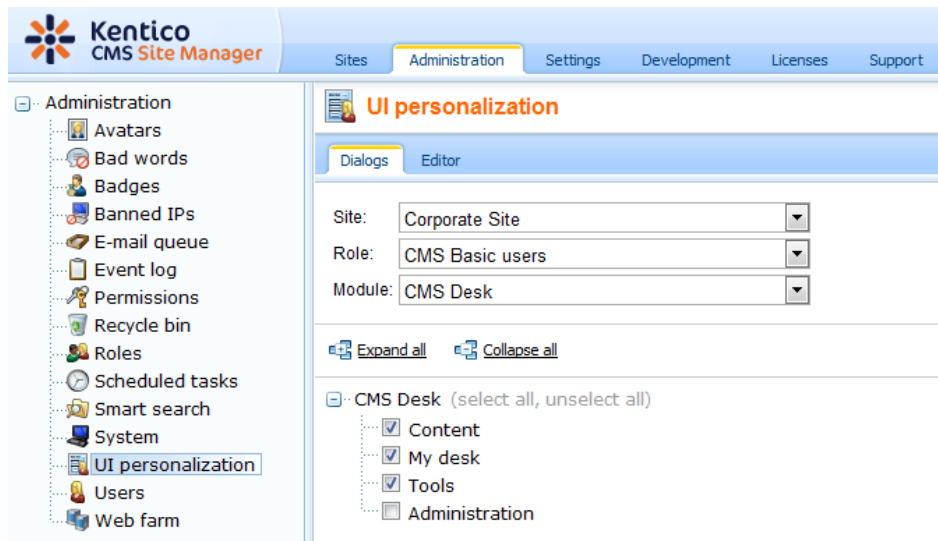
If you switch to the **Roles** tab, you can directly configure access to the selected UI element for particular roles.

- If you enable () a check-box, the UI element will be visible to members of the role.
- If you disable () a check-box, members of the role will not see the UI element (unless they are members of some other role which has it allowed).

The screenshot displays the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development' (selected), 'Licenses', and 'Support'. A 'Switch to CMS Desk' link is visible in the top right. The left sidebar shows a tree view of the site structure, with 'Modules' expanded to show 'Content'. The main area is titled 'Module properties' and shows the 'Content' module selected. The 'User interface' tab is active, and the 'Roles' sub-tab is selected. A dropdown menu shows 'Corporate Site' as the selected site. Below this is a table with columns for roles and a 'Content' checkbox.

| | Content |
|------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> |
| CMS Basic users | <input checked="" type="checkbox"/> |
| CMS Community Administrators | <input checked="" type="checkbox"/> |
| CMS Designers | <input checked="" type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> |
| CMS Editors | <input checked="" type="checkbox"/> |
| CMS Readers | <input checked="" type="checkbox"/> |
| Everyone | <input type="checkbox"/> |
| Forum Administrators | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> |

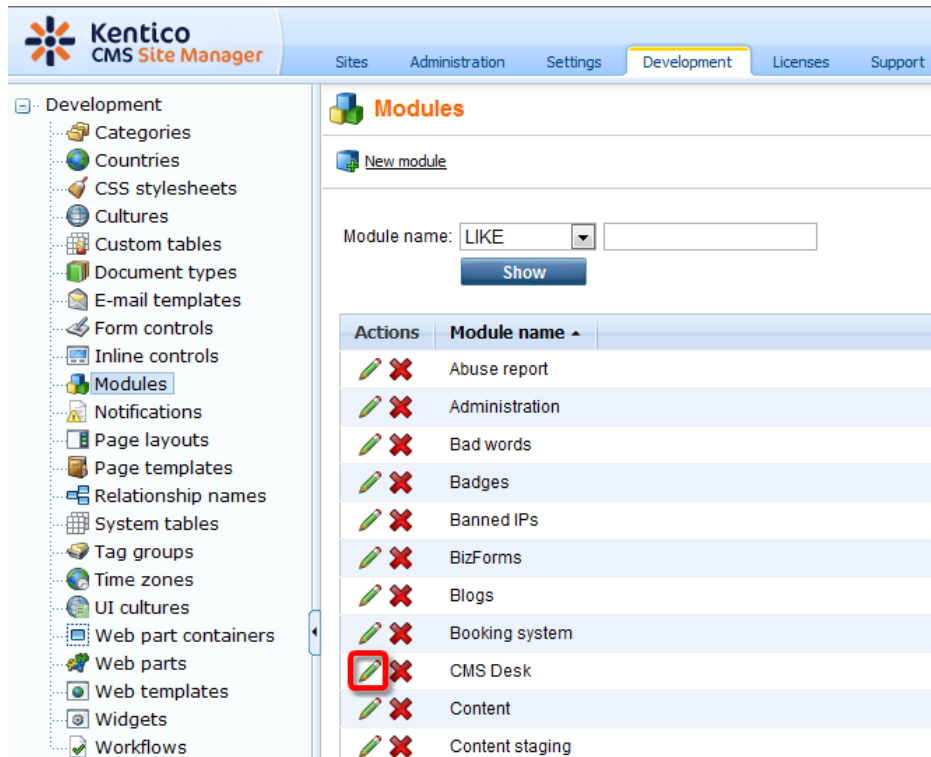
This is just another way how to make the same configuration as described in [UI profile configuration](#), i.e. settings made here are reflected in **Site Manager -> Administration -> UI personalization** (see the screenshot below) and vice-versa.



7.10.7.7.2 Example: Adding a new main tab to CMS Desk


In this example, you will see how to add another tab next to the **Content**, **My desk**, **Tools** and **Administration** tabs in **CMS Desk**. This procedure can be used to add your custom UI elements to any other [personalizable part](#) of the CMS. You can also integrate your custom modules into the UI this way as described [here](#).

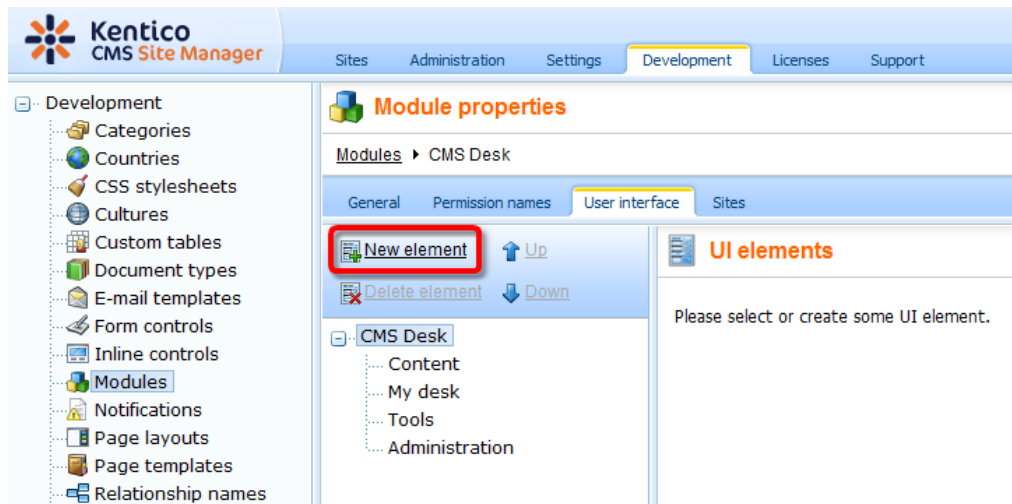
1. We know from [this chapter](#) that the main tabs belong to the **CMS Desk** module. Go to **Site Manager** -> **Development** -> **Modules** and **Edit** (✎) the **CMS Desk** module.



The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development' (selected), 'Licenses', and 'Support'. The left sidebar shows a tree view of 'Development' modules, with 'Modules' selected. The main content area is titled 'Modules' and contains a 'New module' button and a 'Module name' dropdown menu set to 'LIKE'. Below this is a table listing various modules with edit and delete icons.

| Actions | Module name |
|---------|-----------------|
| | Abuse report |
| | Administration |
| | Bad words |
| | Badges |
| | Banned IPs |
| | BizForms |
| | Blogs |
| | Booking system |
| | CMS Desk |
| | Content |
| | Content staging |

2. In the module's administration interface, switch to the **User interface** tab. You can see the four UI elements representing the tabs in the tree on the left. Select the root of the tree and click the **New element** () button.



The screenshot displays the Kentico CMS Site Manager administration interface. The top navigation bar includes tabs for Sites, Administration, Settings, Development (selected), Licenses, and Support. On the left, a tree view shows the 'Development' category expanded, with 'Modules' selected. The main content area is titled 'Module properties' and shows the 'CMS Desk' module selected. The 'User interface' tab is active, displaying a 'New element' button (highlighted with a red box), a 'Delete element' button, and 'Up' and 'Down' navigation buttons. Below these buttons is a tree view showing the 'CMS Desk' structure with sub-items: Content, My desk, Tools, and Administration. On the right, a section titled 'UI elements' contains the text 'Please select or create some UI element.'

3. In the **New element** dialog, enter the following details:

- **Display name:** Google
- **Code name:** Google
- **Element is custom:** true
 - **Caption:** Go to Google
 - **Target URL:** <http://www.google.com>
 - **Icon path:** leave blank (icons can be used only for left menu items, not for tabs)

and click **OK**. The new UI element will be added to the tree as in the screenshot below.

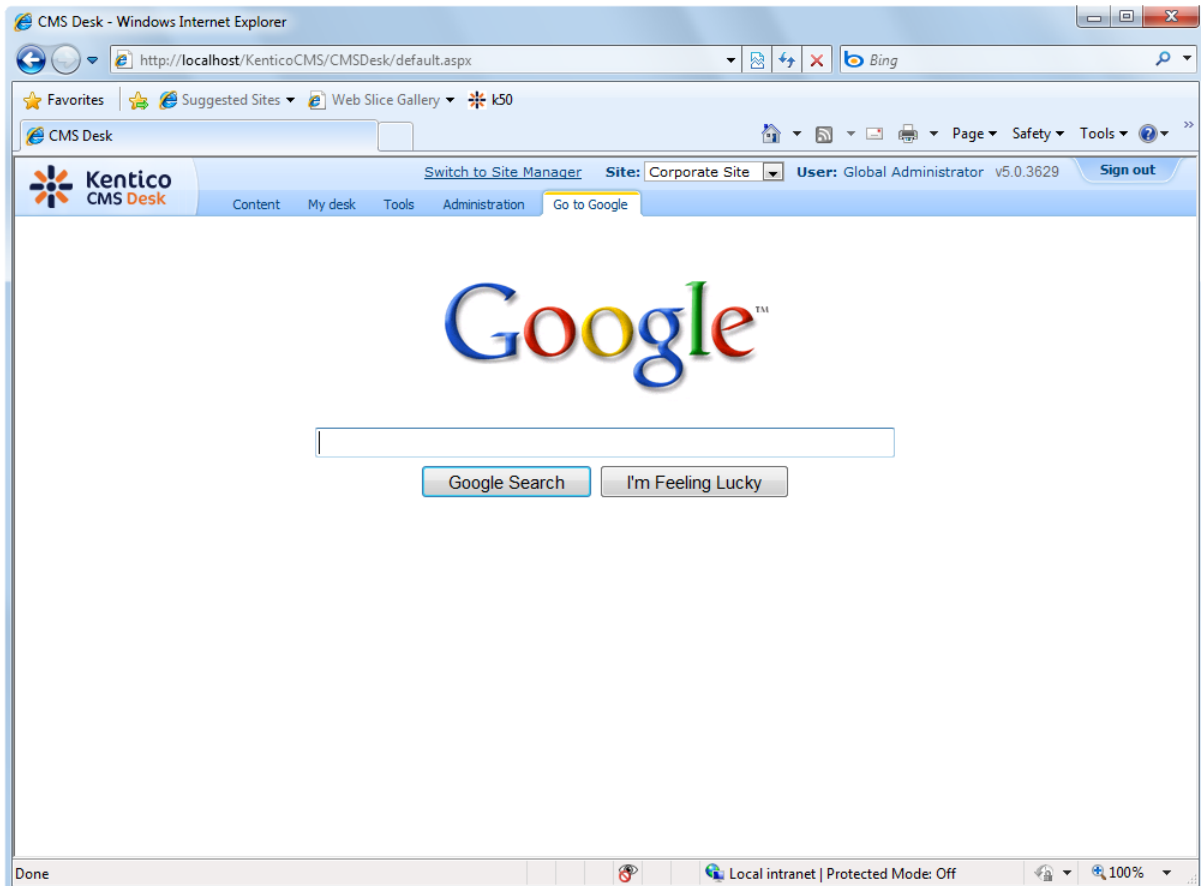
The screenshot displays the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development' (selected), 'Licenses', and 'Support'. A 'Switch to CMS Desk' link is visible in the top right. The left sidebar shows a tree view of the site structure, with 'Modules' expanded to show 'CMS Desk' containing 'Content', 'My desk', 'Tools', 'Administration', and 'Google'. The main area is titled 'Module properties' and shows the 'User interface' tab. The 'UI elements' list includes 'Google'. The 'General' tab is active, showing the following fields: 'Display name' (Google), 'Code name' (Google), 'Parent element' (CMS Desk), 'Element is custom' (checked), 'Caption' (Go to Google), 'Target URL' (http://www.google.com), and 'Icon path' (empty). A green 'OK' button is at the bottom.

4. Switch to the **Roles** tab and enable the UI element for the desired roles.

The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a tree view of the site structure, with 'Modules' expanded to show 'CMS Desk' and its sub-items: 'Content', 'My desk', 'Tools', 'Administration', and 'Google'. The 'Google' item is selected. The main area displays the 'Module properties' dialog for the 'Google' UI element. The 'User interface' tab is active, and the 'Roles' sub-tab is selected. The 'Site' dropdown is set to 'Corporate Site'. Below, a table lists various roles with checkboxes to enable or disable the UI element for each role.

| | Google |
|------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> |
| CMS Community Administrators | <input checked="" type="checkbox"/> |
| CMS Designers | <input checked="" type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> |
| CMS Editors | <input checked="" type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> |
| Everyone | <input type="checkbox"/> |
| Forum Administrators | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> |

5. Now switch to **CMS Desk** logged in as a member of one of the roles enabled in the previous step. You will see our new **Go to Google** tab present next to the original four tabs as you can see below. By clicking it, you get the Google title page displayed within the CMS UI.



7.10.8 User registration

7.10.8.1 Available registration web parts

There are three different ways how you can let site visitors register to your site:

- Using the **Registration form** web part. Read more [here](#).
- Using the **Custom registration** form web part. Read more [here](#).
- Via **Windows Live ID**. Learn more [here](#).

7.10.8.2 Registration form web part

The Registration form web part is a ready-made web part that can be used right out of the box. You can just place it to any page of your website without setting any web part properties. However, if you want to modify the default behavior of the web part, you can set a number of web part properties. You can find a detailed description of these properties in **Kentico CMS WebParts** reference guide.

| | |
|---|--------------------------|
| First name: | <input type="text"/> |
| Last name: | <input type="text"/> |
| E-mail: | <input type="text"/> |
| Password: | <input type="password"/> |
| Confirm password: | <input type="password"/> |
| <input type="button" value="Register"/> | |

7.10.8.3 Creating a custom registration form

The **Custom registration form** web part can be used in situations when you want to use a different registration form than the default one provided by the **Registration form** web part. This is typically when you want users to provide different details or when you want to customize the form's layout.

In the following example, you will learn how to use a custom registration form on your site. You will create an **alternative form** and use it for registration via the **Custom registration form** web part. If you are not familiar with the **Alternative forms** concept, please refer to the [Alternative forms](#) chapter first.

1. Go to **Site Manager -> Development -> System tables** and choose to **Edit** (✎) the **User** system table.

The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a tree view of the 'Development' section, with 'System tables' selected. The main content area displays a table of system tables. The 'User' table is highlighted, and its edit icon (a pencil) is circled in red.

| Actions | Class display name ^ | Class name | Table name |
|---------|--------------------------------|----------------------------|-----------------------|
| | Ecommerce - Customer | ecommerce.customer | COM_Customer |
| | Ecommerce - Order | ecommerce.order | COM_Order |
| | Ecommerce - Order item | ecommerce.orderitem | COM_OrderItem |
| | Ecommerce - Shopping cart | ecommerce.shoppingcart | COM_ShoppingCart |
| | Ecommerce - Shopping cart item | ecommerce.shoppingcartitem | COM_ShoppingCartSKU |
| | Ecommerce - SKU | ecommerce.sku | COM_SKU |
| | Group | Community.Group | Community_Group |
| | Media file | media.file | Media_File |
| | Newsletter - Subscriber | newsletter.subscriber | Newsletter_Subscriber |
| | User | cms.user | CMS_User |
| | User - Settings | cms.usersettings | CMS_UserSettings |

2. Switch to the **Alternative forms** tab and click the **Create new form** link above the list.

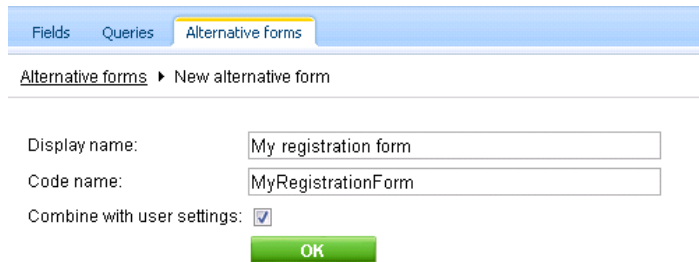
The screenshot shows the 'Alternative forms' tab in the Kentico CMS Site Manager. The 'Create new form' link is highlighted with a red box. Below the link is a table of alternative forms.

| Actions | Display name ^ | Code name |
|---------|--------------------------|----------------------|
| | Display profile | DisplayProfile |
| | Edit profile | EditProfile |
| | Edit profile (Community) | EditProfileCommunity |
| | Edit profile (MyDesk) | EditProfileMyDesk |
| | Registration form | RegistrationForm |

3. Fill in the following details:

- **Display name** - My registration form
- **Code name** - MyRegistrationForm
- **Combine with user settings** - make checked; this ensures that all user's fields will be available

and click **OK**.



Fields Queries **Alternative forms**

Alternative forms ▶ New alternative form

Display name:

Code name:

Combine with user settings:

OK

4. Your new form is now created and you are redirected to the editing interface of it. Switch to the **Fields** tab.

On this tab, you can see the attributes defined in the **User** system table. You can select an attribute from the list on the left. In the right part, you can modify its properties. We will want our registration form to contain the following fields:

- **UserName**
- **FirstName**
- **Email**
- **UserPassword**

Go through the attributes and check the **Display attribute in the editing form** check-box for those mentioned above, which makes them visible on our registration form. Uncheck the check-box for the rest. For the **UserPassword** attribute, change also the value of the **Field type** drop-down list to **Password with confirmation**.

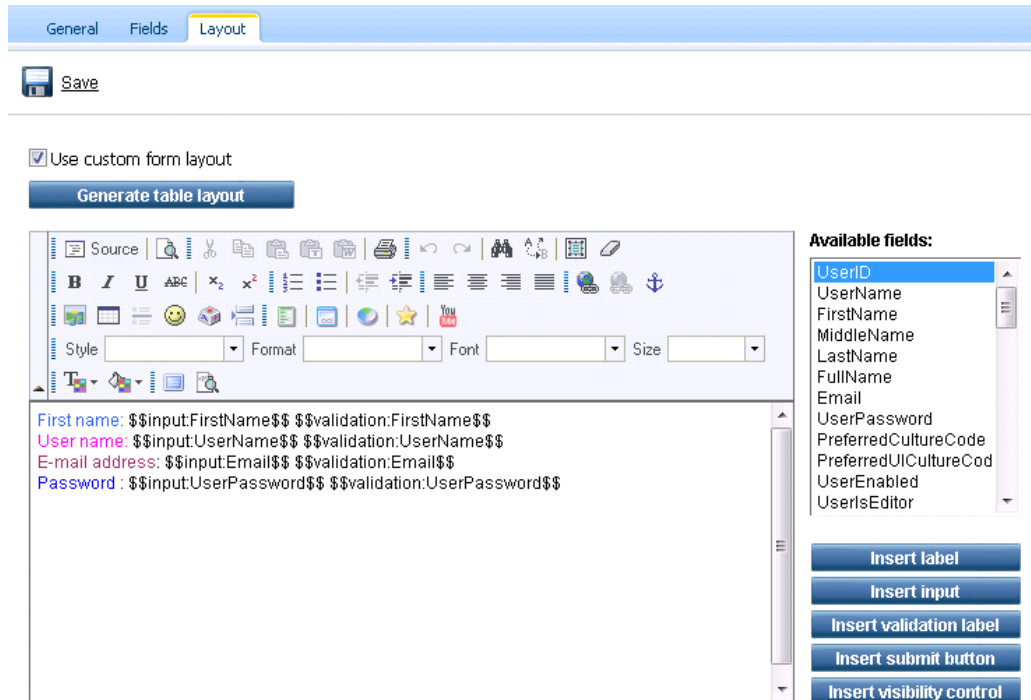
The screenshot shows the 'Fields' configuration window for the 'UserPassword' attribute. The 'Fields' tab is selected, and the 'UserPassword' attribute is highlighted in the left-hand list. The main configuration area contains the following settings:

- Display attribute in the editing form
- Field**
- Default visibility: Display to none
- Visibility control: Visibility (drop down list)
- Allow user to change field visibility:
- Field caption: UserPassword
- Field type: Password with confirmation
- Field description: (empty text area)

An 'OK' button is located at the bottom right of the configuration window.

5. You can also switch to the **Layout** tab and define the registration form's layout using the built-in WYSIWYG editor.

To do it, check the **Use custom layout** check box and click the **Generate table layout** button. A default layout will appear in the editor. Try playing around a bit with the layout or just create something similar to what you see in the screenshot below. Click **Save** when you are finished.



6. Now switch to **CMS Desk**. Choose or create a page where you want to add the registration form and select it in the content tree. Switch to the **Design** tab and add (+) the **Membership -> Custom registration form** web part to the page. Set the following property of the web part:

- **Alternative form** - cms.user.MyRegistrationForm

7. If you switch to the live site now and go to your page with the Custom registration form web part, you should see the custom registration form that you created. You can now try to register to your website using the form and verify that the user has been created in **Site Manager -> Administration -> Users**.

Home MyPage Services Products N

First name:
Name

User name:
User1

E-mail address:
user1@localhost.local

Password :

Register

7.10.8.4 Registration approval and double opt-in

By default, users can sign-in to the site immediately after successful registration. However, the two options highlighted in the following screenshot can be enabled in **Site Manager -> Settings -> Membership**. By enabling these options, you can include additional steps in the registration procedure.

Kentico CMS Site Manager Switch to CMS Desk User: Global Admin

Sites Administration **Settings** Development Licenses Support

Site: (global)

Settings

- Web site
- Content management
- Files
- Membership**
- Security
- URLs and SEO
- Output filter
- System
- E-mails
- Avatars
- Bad words
- Blogs
- Booking system
- Community
- Content staging
- Forums
- Media libraries
- Message boards
- Messaging
- Web analytics
- Windows LiveID
- E-commerce
- Payment gateway - Authorize.NET
- Payment gateway - PayPal

Membership

Save Reset these settings to default

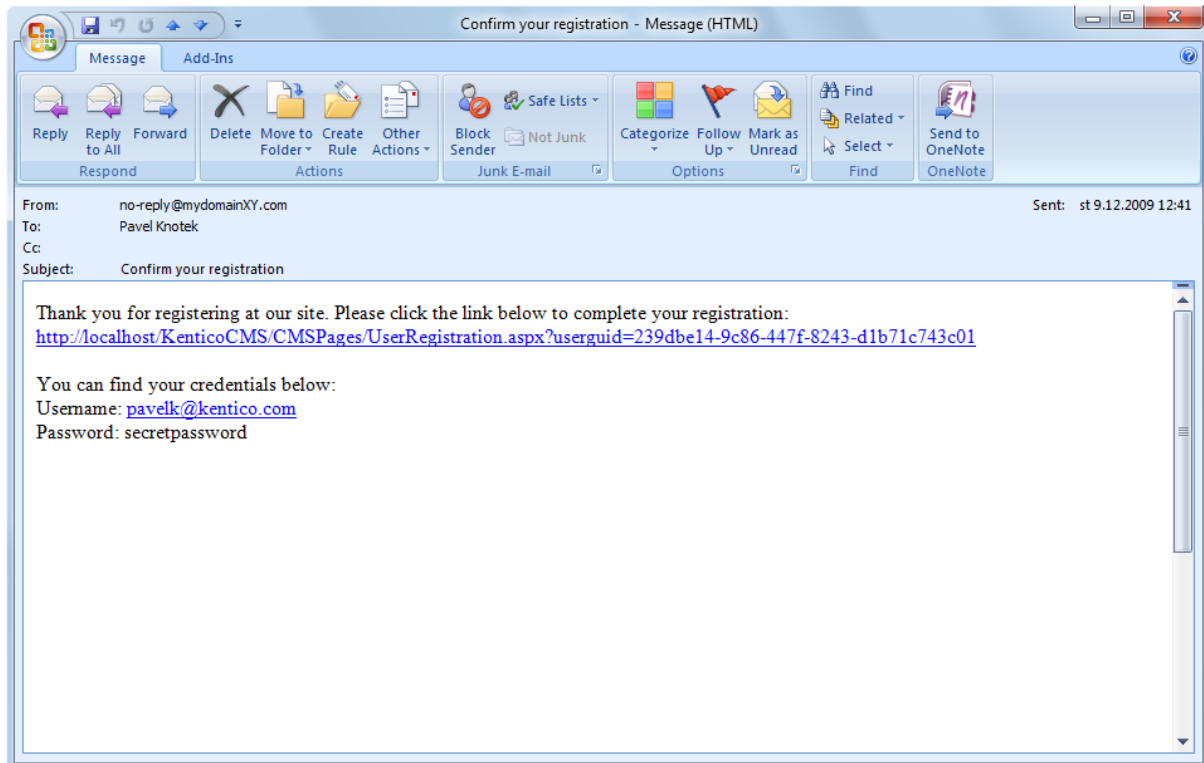
These settings are global, they can be overridden by the local site settings. Please select the site to see or change the site settings.

| | |
|--|---|
| Administrator's e-mail | <input type="text" value="admin@mydomainXY.com"/> |
| Monitor online users | <input checked="" type="checkbox"/> |
| Store online users in database | <input checked="" type="checkbox"/> |
| Deny login interval | <input type="text" value="10"/> |
| Update online users (minutes) | <input type="text" value="1"/> |
| Reserved user names | <input type="text" value="admin;root;administrator;sysadmin;sa"/> |
| Registration requires e-mail confirmation | <input type="checkbox"/> |
| Registration requires administrator's approval | <input type="checkbox"/> |
| Delete non-activated user after (days) | <input type="text" value="5"/> |
| Shared user accounts | <input checked="" type="checkbox"/> |
| Require unique user e-mails | <input checked="" type="checkbox"/> |

[Export these settings](#)

Registration requires e-mail confirmation

If checked, newly registered user will receive confirmation e-mail to the e-mail address specified on registration. This e-mail contains a confirmation link that has to be clicked in order to activate the account. The e-mail is based on the **Membership - Registration** e-mail template.



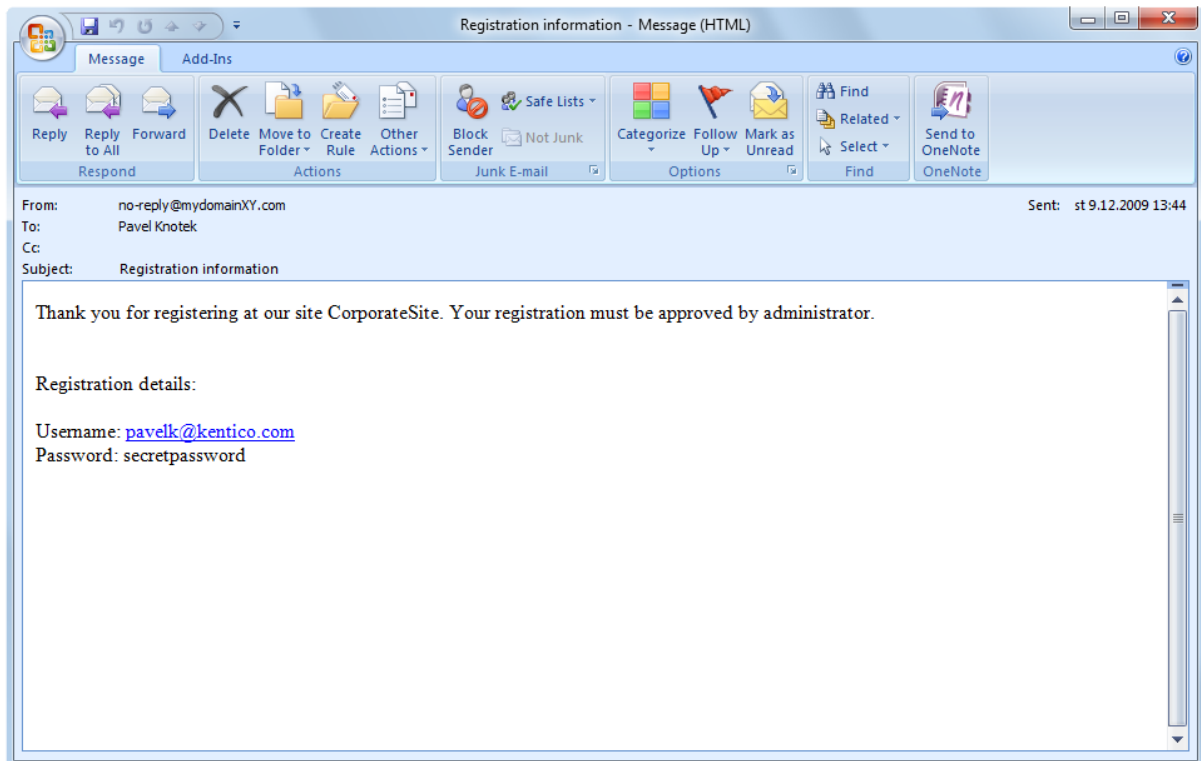
After clicking the link, a special page will be opened in user's web browser, displaying the following message:

Your user account is now active. You can sign in using your user name and password. [Click here to continue.](#)

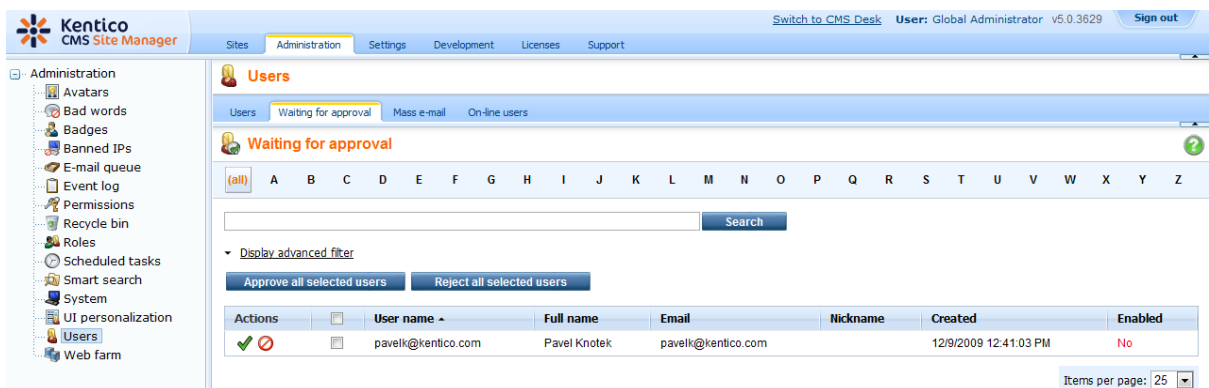
The link at the end of the message will redirect the user to the title page of the website. The user can then log in using the registration details received in the e-mail.

Registration requires administrator's approval

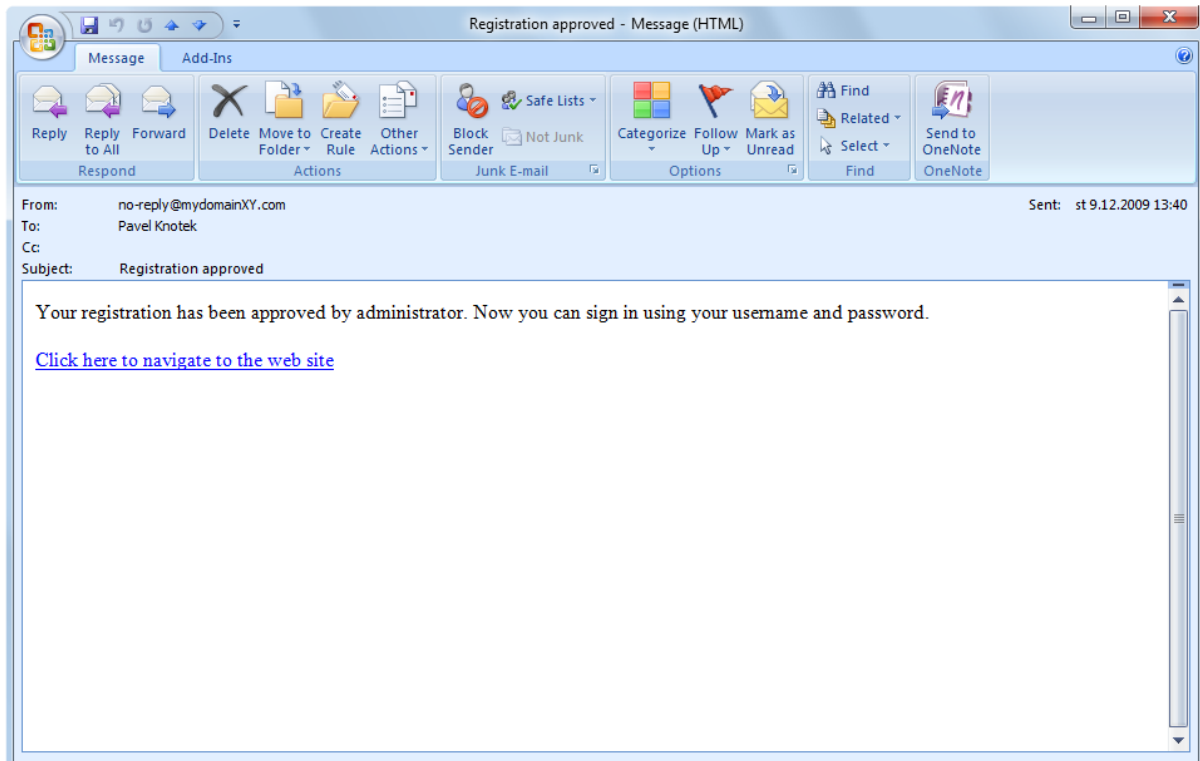
If this option is enabled, users will not be able to sign-in immediately after registration. Their registration will have to be approved by the site administrator. At this point, users will receive an e-mail based on the **Membership - Registration waiting for approval** e-mail template. You can see the default version of the e-mail in the screenshot below.



In case that the option is enabled, the **Waiting for approval** tab will be displayed in **Site Manager -> Administration -> Users**. On this tab, site administrators can **Approve** (✓) or **Reject** (✗) user's registration.



After the administrator's approval, users receive another e-mail, confirming that their account has been approved and can be used. The e-mail is based on the **Membership - Registration approved** e-mail template. You can see the default appearance of the e-mail in the screenshot below.



Enabling both options

In case that you enable both of the options mentioned above, e-mail with the confirmation link will be sent first. After user's confirmation, registration will have to be approved by the administrator.



Please note

If you have one or both of the options enabled, it is important to set the **Redirect to URL** property of the registration web part properly. This means that users should not be redirected to any page displaying information about their user account (just as the Members -> Profile page on the sample Community Starter site). Because the account is not active yet (it is waiting for e-mail activation or approval), such page would display an error message, which might be misleading for the users.

7.10.8.5 Shared user accounts

User accounts can be shared among all sites running on one Kentico CMS installation. This means that if a user creates an account on one site, they can automatically log-on to the other sites running on the same installation using the same credentials.

This behaviour can be switched on or off in **Site Manager -> Settings -> Membership**, using the **Shared user accounts** check-box.

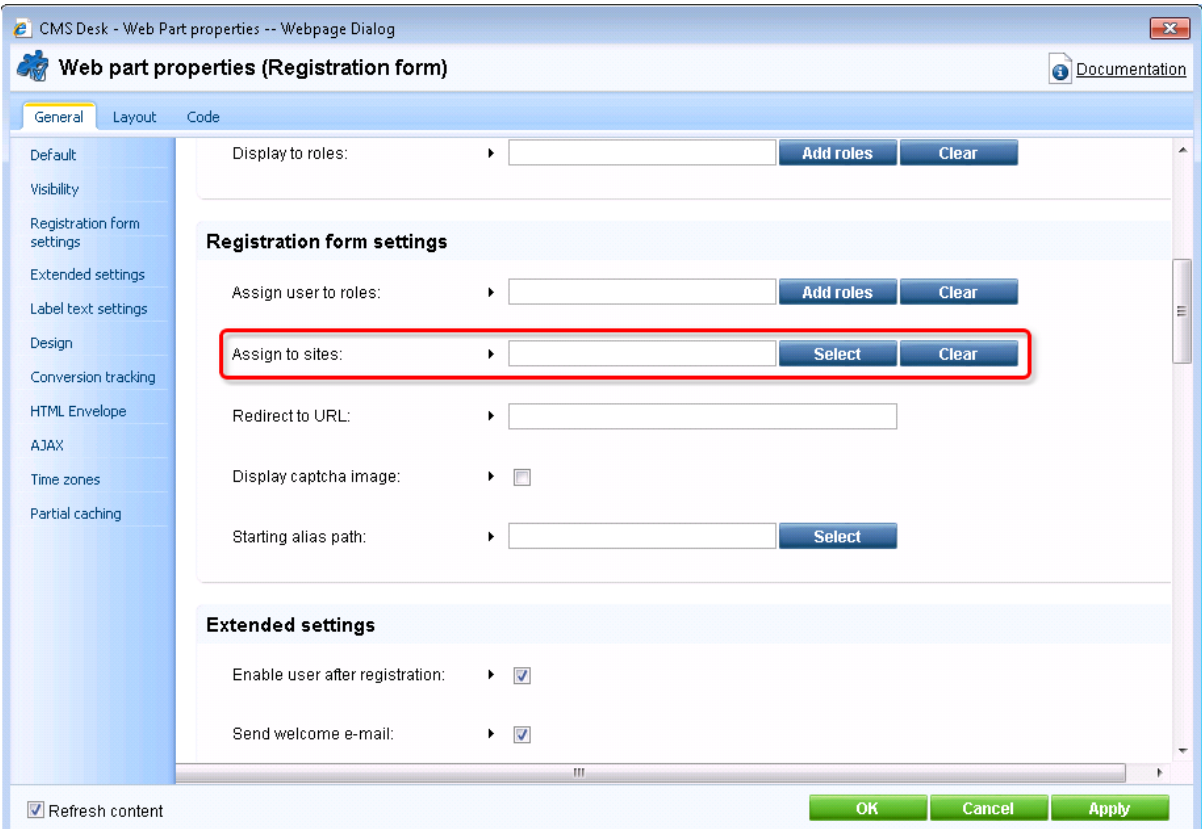
- If the check-box is enabled, user accounts created on one site will be shared among all the sites running on the installation.
- If the check-box is disabled, new accounts will be assigned only to the current site and not the others.

The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The 'Settings' tab is active, and the 'Membership' section is selected in the left-hand navigation tree. The main content area displays the 'Membership' settings for the 'global' site. The settings are as follows:

| Setting | Value |
|--|--------------------------------------|
| Administrator's e-mail | admin@localhost.local |
| Monitor online users | <input type="checkbox"/> |
| Store online users in database | <input type="checkbox"/> |
| Deny login interval | 10 |
| Update online users (minutes) | 1 |
| Reserved user names | admin;root;administrator;sysadmin;sa |
| Registration requires e-mail confirmation | <input type="checkbox"/> |
| Registration requires administrator's approval | <input type="checkbox"/> |
| Delete non-activated user after (days) | 5 |
| Shared user accounts | <input checked="" type="checkbox"/> |
| Require unique user e-mails | <input checked="" type="checkbox"/> |

The 'Shared user accounts' setting is highlighted with a red box. Below the settings, there is a link to 'Export these settings'.

However, registration web parts have the **Assign to sites** property. Using this property, you may determine which sites will the user accounts created via the web part be assigned to.



7.10.9 Badges

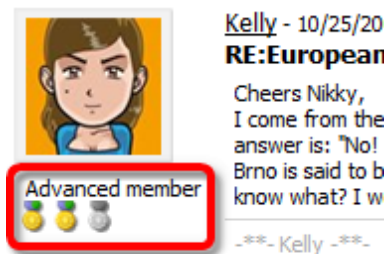
7.10.9.1 Badges

Users can be labeled with badges. These are images with a short text, expressing a user's activity level, importance or role in the context of the website. They are displayed in forum posts, on user public profiles or in your own custom controls.

There are two types of badges:

- **Automatic badges** - these are assigned to users based on the number of gained [activity points](#)
- **Non-automatic badges** - these are assigned to users manually by site administrators and are assigned permanently, regardless of the number of gained activity points

In the screenshot below, you can see one of the pre-defined badges in a forum post.



7.10.9.2 Defining badges

Badges can be defined in **Site Manager -> Administration -> Badges**. On this page, you can see a list of currently defined badges. You can **Edit** (✎) or **Delete** (✖) badges in the list or define a new badge by clicking the (👤) **New badge** link at the top part of the page.

| Actions | Name | Top limit | Is automatic | Image preview |
|---------|-----------------|-----------|--------------|---------------|
| ✎ ✖ | Advanced member | 100000 | Yes | 🌟🌟🌟 |
| ✎ ✖ | Valued member | 30 | Yes | 🌟🌟🌟 |
| ✎ ✖ | Member | 10 | Yes | 🌟🌟🌟 |
| ✎ ✖ | Site admin | 0 | No | 🌟🌟🌟 |

When creating a new badge, the following properties can be defined:

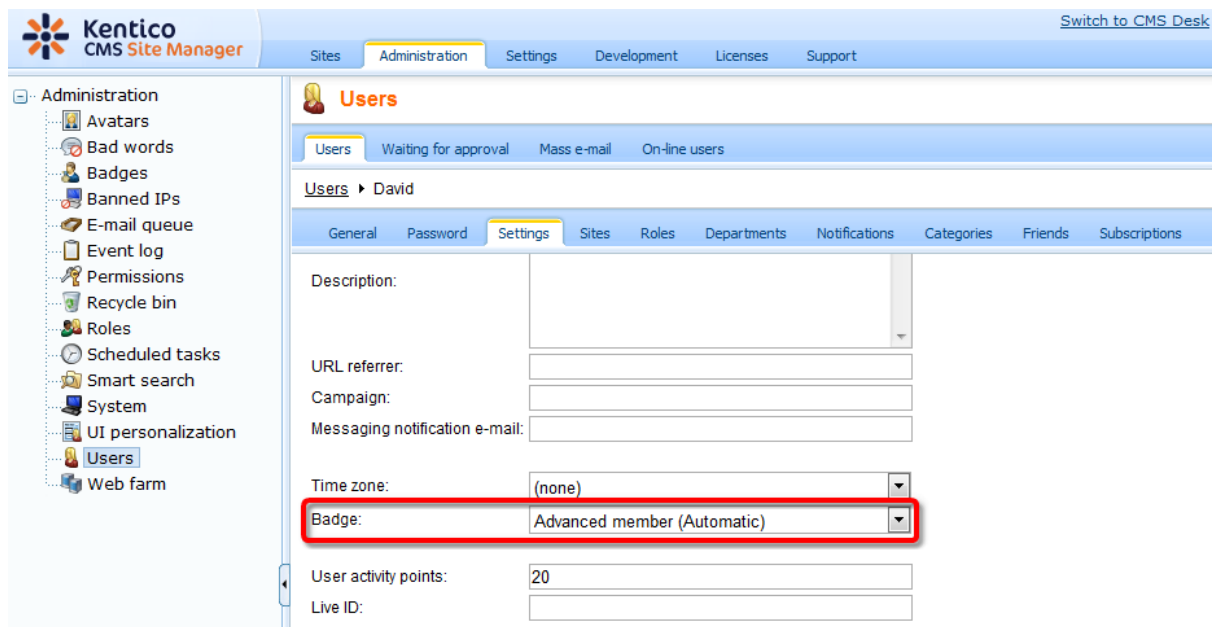
- **Display name** - name of the badge displayed in the administration interface and on the site

- **Code name** - name of the badge used in code
- **Image URL** - URL of the badge's image
- **Is automatic** - if checked, the badge will be assigned to users automatically based on the number of gained activity points; if unchecked, the badge can be assigned to users by site administrator and will remain assigned permanently, regardless of the number of gained activity points
- **Top limit** - number of activity points required for the user to get the badge; applies only for automatic badges

7.10.9.3 Assigning badges to users

Site administrators can assign badges to users in **Site Manager -> Administration -> Users -> Edit () user -> Settings**. It can be done by the **Badge** drop-down list.

This is typically used to assign users with non-automatic badges. However, automatic badges can be assigned to users this way too.



The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a navigation tree with 'Users' selected. The main content area is titled 'Users' and shows the 'Settings' tab for a user named 'David'. The 'Settings' tab is active, and the 'Badge' dropdown menu is highlighted with a red box, showing 'Advanced member (Automatic)' selected. Other fields visible include 'Description', 'URL referrer', 'Campaign', 'Messaging notification e-mail', 'Time zone', 'User activity points', and 'Live ID'.

7.10.9.4 Activity points

Users can gain activity points for their activity on the site. Based on the number of gained activity points, user can be assigned with automatic badges. For this feature to be functional, you have make the following settings in **Site Manager -> Settings -> Community**:

- **Enable user activity points** - enables the activity points feature
- **Activity points for blog posts** - number of activity points that users receive for adding a blog post
- **Activity points for blog comment post** - number of activity points that users receive for adding a blog post comment
- **Activity points for forum post** - number of activity points that users receive for adding a forum post
- **Activity points for message board post** - number of activity points that users receive for adding a message board post

The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a tree view of settings categories, with 'Community' selected. The main content area is titled 'Community' and contains several settings. A red box highlights the following settings:

| Setting | Value |
|--|-------------------------------------|
| Enable user activity points | <input checked="" type="checkbox"/> |
| Activity points for blog post | 3 |
| Activity points for blog comment post | 1 |
| Activity points for forum post | 1 |
| Activity points for message board post | 1 |
| Group invitation expires after (days) | 0 |

7.10.9.5 Available form controls

The following form controls can be used in your custom controls to display users' badges:

- **Viewer - Badge image (ViewBadgeImage)** - used for displaying image of a badge
- **Viewer - Badge text (ViewBadgeText)** - used for displaying 'Display name' of the badge

7.10.10 Custom fields visibility

7.10.10.1 How it works

The visibility controls functionality is designed to enable registered users decide which fields of their public profile will be visible to other users. You can find an example of how this works on the sample **Community site**.

1. Run the **Community site** and sign out of the administration interface. Log on to the site using the **Sign in** form on the right. Enter *David* with blank password and click **Log on**.

2. Once logged in, **Shortcuts** menu will be displayed where the Sign in form previously was. Click the **Edit my profile** link, you will be redirected to the user's profile editing page.

3. You can see a drop down list next to the **E-mail** field, as in the screenshot below. Using this control, users can define to whom will the e-mail address be displayed. The following four options are available:

- **Display to none** - the field will not be displayed to anyone
- **Display to all** - the field will be displayed to everyone
- **Display to authenticated** - the field will be displayed only to authenticated users
- **Display to friends** - the field will be displayed only to the user's friends

Choose **Display to authenticated** and click **OK**.

Personal settings | Change password | Notifications

Username: David

Full name: David Silver

Email: david.silver@localhost.local


Display to authenticated

Nickname: David

Signature: * * D-a-v-i-d * *

Messaging notification e-mail:


Time zone: (none)

Avatar: 

Upload: Browse...

Select pre-defined avatar

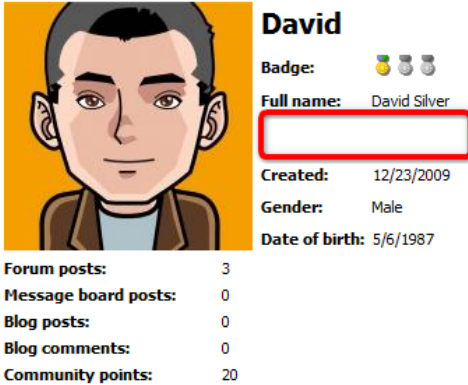
Gender: Male Female

Date of birth: 5/6/1987  Now

OK

4. You have just configured the user's profile so that only authenticated users can see their e-mail address. Let's verify that it really works. Sign out and visit David's profile as an unauthenticated site visitor. From the site's main menu, select Members and click David's icon in the list below. You should see his profile, but the e-mail address is not present.

Member profile




David
Badge: 
Full name: David Silver
Created: 12/23/2009
Gender: Male
Date of birth: 5/6/1987

Forum posts: 3
Message board posts: 0
Blog posts: 0
Blog comments: 0
Community points: 20

The email address field is redacted with a white box.

5. Now sign in the same way as you did in step one, but use *Mia* with blank password instead. This signs you in as another registered member of the site. And these are the ones who should see the e-mail address, aren't they? So once signed in, view David's profile again. And ... Bingo!!! ... the e-mail address is visible.

Member profile



David
Badge: 
Full name: David Silver
Email: david.silver@localhost.local
Created: 12/23/2009
Gender: Male
Date of birth: 5/6/1987

Forum posts: 3
Message board posts: 0
Blog posts: 0
Blog comments: 0
Community points: 20

The email address is visible and highlighted with a red box.

7.10.10.2 Enabling visibility controls

The visibility selection drop-down list can be added to any field of the user's profile, not only the e-mail field as show in the example in chapter [How it works](#). This can be changed in **Site Manager -> Development -> System tables**. Choose to **Edit** (✎) the **User (CMS_User)** system table and switch to the **Alternative forms** tab.

If you are not familiar with the **Alternative forms** concept, please read the [Module Alternative forms](#) chapter first.

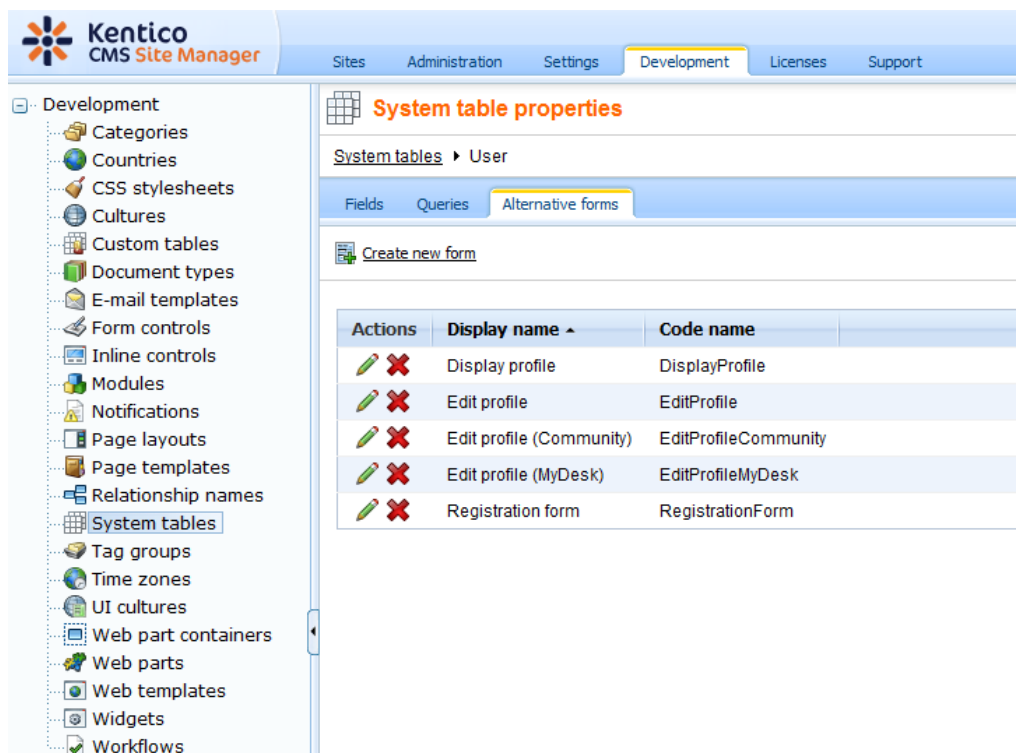
The **CMS_User** system table is the database table where information about registered users is stored. Each of the four alternative forms that you see in the list is used in a specific situation when the system accesses the table:

- **Registration form** - when registering a new user using the **Custom registration form** web part
- **Display profile** - displaying user's public profile using **User public profile** web part
- **Edit profile** - when editing user's profile using the **My account** web part
- **Edit profile (MyDesk)** - when editing user profile in **CMS Desk -> My Desk -> My profile**

The **Community_Group** system table is the database table where information about groups is stored. The table has the following alternative form:

- **Display profile** - displaying group's public profile using **Group public profile** web part

Field visibility can be set in each of these forms.



The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a tree view of system tables, with 'System tables' selected. The main content area is titled 'System table properties' and shows the 'User' system table. The 'Alternative forms' tab is active, displaying a table of actions for the 'User' system table.

| Actions | Display name ^ | Code name |
|---------|--------------------------|----------------------|
| ✎ ✖ | Display profile | DisplayProfile |
| ✎ ✖ | Edit profile | EditProfile |
| ✎ ✖ | Edit profile (Community) | EditProfileCommunity |
| ✎ ✖ | Edit profile (MyDesk) | EditProfileMyDesk |
| ✎ ✖ | Registration form | RegistrationForm |

Let's presume that we want the **Full name** to be optionally hidden in users' public profiles, based on the users' decisions made in their profile editing section.

1. Choose to **Edit** (✎) the **Edit profile (Community)** alternative form, which is the form that is used by the My profile web part on the Community site. Switch to the **Fields** tab and select **FullName** from the list on the left. Select **Visibility (radio buttons - horizontal)** from the **Visibility control** drop-down. Check the **Allow user to change field visibility** check-box and click **OK**.

The screenshot displays the Kentico CMS Site Manager interface. The left sidebar shows a tree view of system tables, with 'System tables' expanded and 'FullName' selected. The main content area is titled 'System table properties' and shows the configuration for the 'User' system table, specifically for the 'Edit profile (Community)' alternative form. The 'Fields' tab is active, and the 'FullName' field is selected. The configuration panel for 'FullName' includes the following settings:

- Default visibility: Display to all
- Visibility control: Visibility (radio buttons - horizontal)
- Allow user to change field visibility:
- Field caption: Full name
- Field type: Text box
- Field description: (empty text area)
- Validation: Regular expression: (empty text box)

An 'OK' button is visible at the bottom right of the configuration panel.

2. Switch to the **Layout** tab. We will need to create another line in the table and add the visibility control into it.

Place the cursor into the FullName line (where the `$$label:FullName$$` value is). Right-click and choose **Row -> Insert Row After** from the context menu. Into the first column of the new row, enter *Display my full name to:*.

Now we will add the visibility control itself. Place the cursor into the second column, select **FullName** from the **Available fields** list and click the **Insert visibility control** button. The result should look as in the screenshot below.

When you are finished, click **Save**.

The screenshot shows the Kentico CMS Site Manager interface. The main content area displays the 'System table properties' for the 'User' system table. The 'Alternative forms' section is expanded to 'Edit profile (Community)', and the 'Layout' tab is selected. A table is being edited, and a new row has been added with the text 'Display my full name to:' in the first column and '\$\$visibility:FullName\$\$' in the second column. The 'Available fields' list on the right includes 'FullName', and the 'Insert visibility control' button is highlighted in red.

| Fields | Queries | Alternative forms |
|--|-----------------------------|----------------------------------|
| Alternative forms -> Edit profile (Community) | | |
| General Fields Layout | | |
| Save | | |
| <input checked="" type="checkbox"/> Use custom form layout | | |
| Generate table layout | | |
| <div style="display: flex; justify-content: space-between;"> <div> <p>Source</p> <p>Style: [] Format: [] Font: [] Size: []</p> </div> <div> <p>Available fields:</p> <ul style="list-style-type: none"> UserName FullName Email UserVisibility UsersDomain UserHasAllowedCulture testfield UserNickName UserSignature UserMessagingNotifical UserTimeZoneID UserAvatarID UserGender </div> </div> | | |
| \$\$label:UserName\$\$ | \$\$input:UserName\$\$ | \$\$validation:UserName\$\$ |
| \$\$label:FullName\$\$ | \$\$input:FullName\$\$ | \$\$validation:FullName\$\$ |
| Display my full name to: | \$\$visibility:FullName\$\$ | |
| \$\$label:Email\$\$ | \$\$input:Email\$\$ | \$\$validation:Email\$\$ |
| Display my e-mail to: | \$\$visibility:Email\$\$ | |
| \$\$label:UserNickName\$\$ | \$\$input:UserNickName\$\$ | \$\$validation:UserNickName\$\$ |
| \$\$label:UserSignature\$\$ | \$\$input:UserSignature\$\$ | \$\$validation:UserSignature\$\$ |

3. Now sign out of the administration interface and sign in to the website as *David* with blank password. Click the **Edit** my profile link in the right **Shortcuts** menu. You should see a drop-down list next to the full name field, so that now the users can determine the visibility of the Full name field.

7.10.10.3 Use in custom form layouts

If you want to define custom form layout and use the visibility drop-down list for some field, you have to do the following two things:

- the **Allow user to change visibility** check-box must be enabled for each field that you want to use the drop-down list for. In case it is not enabled, the drop-down list will not be functional.
- add the drop-down list manually to the form, using the **Insert visibility control** button:
 1. Go to **Site Manager -> Development -> System tables**. Choose to **Edit** (✎) the **User** system table and switch to the **Alternative forms** tab. Choose to **Edit** (✎) the **Edit profile** alternative form and switch to the **Layout** tab. Check the **Use custom form layout** check-box.
 2. Click the **Generate form layout** button. A default form layout will be generated and you can make modifications to it.

3. Enter the visibility controls by placing the cursor to the desired location, selecting the appropriate field and clicking the **Insert visibility control** button. Click **Save** when you are finished.

The screenshot shows the Kentico CMS Site Manager interface. The main window displays the 'System table properties' for the 'User' table. The 'Alternative forms' section is active, showing 'My registration form'. The 'Layout' tab is selected, and the 'Generate table layout' button is visible. A table of form fields is displayed, with the 'UserID' field highlighted in red. To the right, an 'Available fields' list is shown, also with 'UserID' highlighted. Below the list are buttons for 'Insert label', 'Insert input', 'Insert validation label', 'Insert submit button', and 'Insert visibility control', with the last one highlighted in red.

7.10.10.4 Configuring the web parts

If you want to enable visibility controls in these web parts, you have to add the controls to the appropriate alternative forms and set the following properties of the web parts:

User public profile

- **Form name** - specify the full name of the desired alternative form (*cms.user.DisplayProfile* by default)
- **Apply user's visibility settings** - check this to enable the visibility controls
- **Use visibility settings from form** - if left blank, the form entered in Form name will be used to get visibility settings; if filled, the form specified here will be used (*cms.user.EditProfile* by default);

Custom registration form

- **Alternative form** - specify the full name of the desired alternative form (*cms.user.RegistrationForm* by default)

My account

- **Form name** - specify the full name of the desired alternative form (*cms.user.EditProfile* by default)
- **Allow user to edit field visibility** - check to enable the visibility controls

7.10.11 Authentication

7.10.11.1 Authentication overview

The system supports both forms and Windows authentication. The **forms authentication** stores user names and passwords in the database and requires user to log on. The **Windows authentication** gets user identity from the network credentials and creates the user automatically in the database, including user's roles (if they exist in the CMS database).



Accessing current user information in code

When the user is authenticated, a `CMS.CMSHelper.CurrentUserInfo` object representing the current user is stored in the session variable `CMSCurrentUser` and is accessible through the `CMSHelper.CMSContext.CurrentUser` property. All operations after authentication then use the user profile and user roles from this object.

[C#]

```
// getting user name  
string userName = CMS.CMSHelper.CMSContext.CurrentUser.UserName;
```


Configuring forms authentication

The forms authentication is configured by default. It uses the standard ASP.NET forms authentication and its settings. You can find the settings in the web.config file:

```
<system.web>
  <authentication mode="Forms">
    <forms loginUrl="CMSPages/logon.aspx" defaultUrl="Default.aspx" name=".
ASPXFORMSAUTH" timeout="60000" slidingExpiration="true" />
  </authentication>
</system.web>
```

Password Encryption

You can also configure the **password encryption** in **Site Manager -> Settings -> Security**, in the **Password format** key. By default, the passwords are stored in plain text. If you want to use SHA1 hash format, please set the value to **SHA1**. Then, you need to set all password again so that they are stored in the new format - thus, it's recommended that you make the change after the installation, before you create user accounts.

Membership provider and ASP.NET 2.0 Membership support

Kentico CMS contains an ASP.NET 2.0 Membership provider for the Kentico CMS user database. It means you can use ASP.NET 2.0 Membership API and controls, such as Login control. However, Kentico CMS uses its own user information database instead of the ASP.NET 2.0 Membership tables.



Forgotten administrator's password

If you happen to lost your administrator's password, you can still recover from this:

- If you're using plain text passwords, you can change the password directly in the CMS_User table.
- If you're using hashed passwords, you need to set the password in the CMS_User table to an empty string. Then, you can sign in to **Site Manager** with an empty password and change the password.

Configuring Windows authentication

Please see the chapter [Configuring Windows authentication](#).

Configuring custom authentication

If you want to use user and role information from an external source (such as custom database), you need to configure the system as described in chapter [Configuring custom authentication](#).

7.10.11.2 Windows authentication (Active Directory)

7.10.11.2.1 Configuring Windows authentication (Active Directory)

Kentico CMS supports Windows integrated authentication. It means that when a user signs in to a Windows domain, Kentico CMS automatically recognizes their identity without requiring a user name and password.

Moreover, Kentico CMS is able to automatically import the authenticated users from domain (Active Directory) into the user database, including their roles.

Configuration

1. Before you configure the application for Windows authentication, you need to create a user account that will be the same as your current domain name and assign this user account with administrator permissions. This will allow you to access all features as an administrator once you sign in using Windows authentication.
2. Sign in as an Administrator to the **Site Manager** and go to **Administration -> Users**. Create a new user with following values:
 - **User name**: your domain user name in format *domain-username*, example: *office-johns*
 - **Full name**: your full name
3. Click **OK**. On the **General** tab, set the following values:
 - **Is global administrator**: yes
 - **Is external user**: yes
 - **Is domain user**: yesClick **OK**.
4. Now you can switch the application to the Windows authentication mode. Edit the web.config file of the web project and change the following line:

```
<authentication mode="Forms">
```

to:

```
<authentication mode="Windows">
```

When using the Windows authentication, you also need to have the following settings in your web.config file so that the authentication is required for the live site:

```
<location path="">
  <system.web>
    <authorization>
      <deny users="?" />
    </authorization>
  </system.web>
</location>
```

5. Save the modified web.config file. Close all browsers with Kentico CMS and open the website in a new browser. Try to go to `<web project>\cmssitemanager` to make sure you are recognized as a global administrator.

With this configuration, when an authenticated user comes to the site, their user account is created in Kentico CMS database automatically and their domain groups are imported as roles into Kentico CMS database. It means that the users and roles are not imported on some regular basis, but they are imported when the user comes to Kentico CMS website.

If you are experiencing the 401 error on Windows 7 or Windows Server 2007, learn the solution to the problem [here](#).

Forbidden characters replacement on Active Directory import

When importing users and roles, forbidden characters in them are replaced by the character defined in **Site Manager -> Settings -> URLs -> Forbidden characters replacement**.

Dash "-" is the default value and therefore it is used in this example (*domain-username* instead of *domain\username*). If you are using a different character, please change the entered user name accordingly.

You can override this setting by using the following keys in the *AppSettings* section of your *web.config* file. In both cases, the value must be exactly one character which will be used as the replacement character:

- `<add key="CMSForbiddenUserNameCharactersReplacement" value="-" />`
- `<add key="CMSForbiddenRoleNameCharactersReplacement" value="-" />`

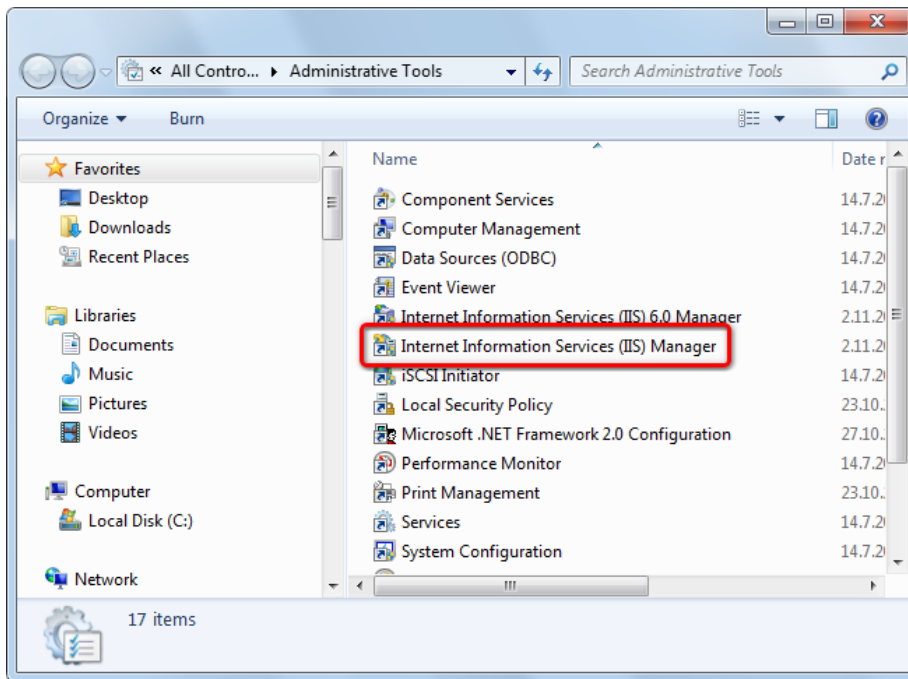
If you want to achieve the same functionality as in **older versions** of Kentico CMS (**office\username**), forbidden characters replacement can be turned off completely using the following two keys. This may cause problems when using wildcard URLs with user names in the wildcard part and is therefore not recommended.

- `<add key="CMSEnsureSafeUserNames" value="false" />`
- `<add key="CMSEnsureSafeRoleNames" value="false" />`

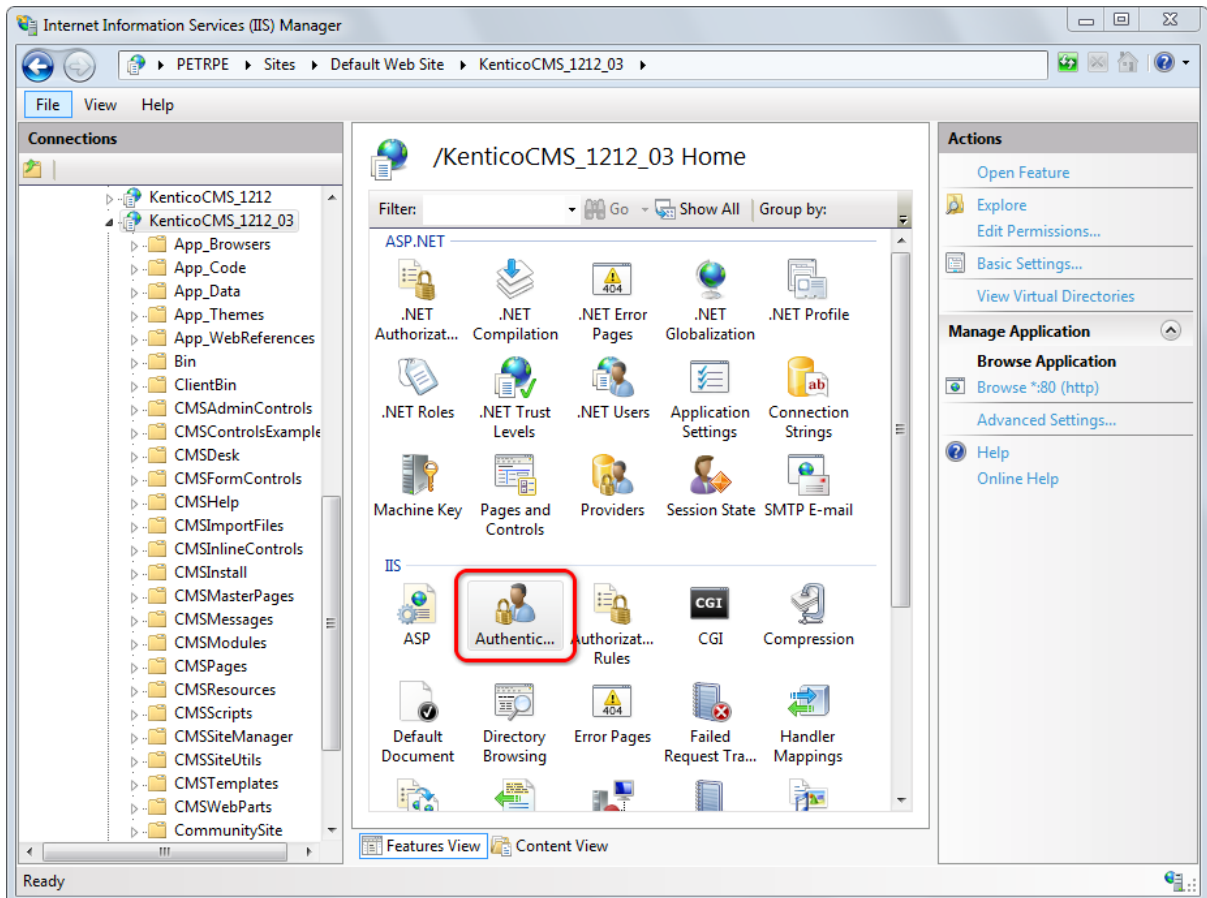
7.10.11.2.2 Windows authentication on Windows 7/2008 R2/Vista (IIS7 or higher)

If you are experiencing the **401 error** with Windows authentication on **Windows 7, Windows Server 2008 R2 or Windows Vista**, you have to **set up your IIS** the following way:

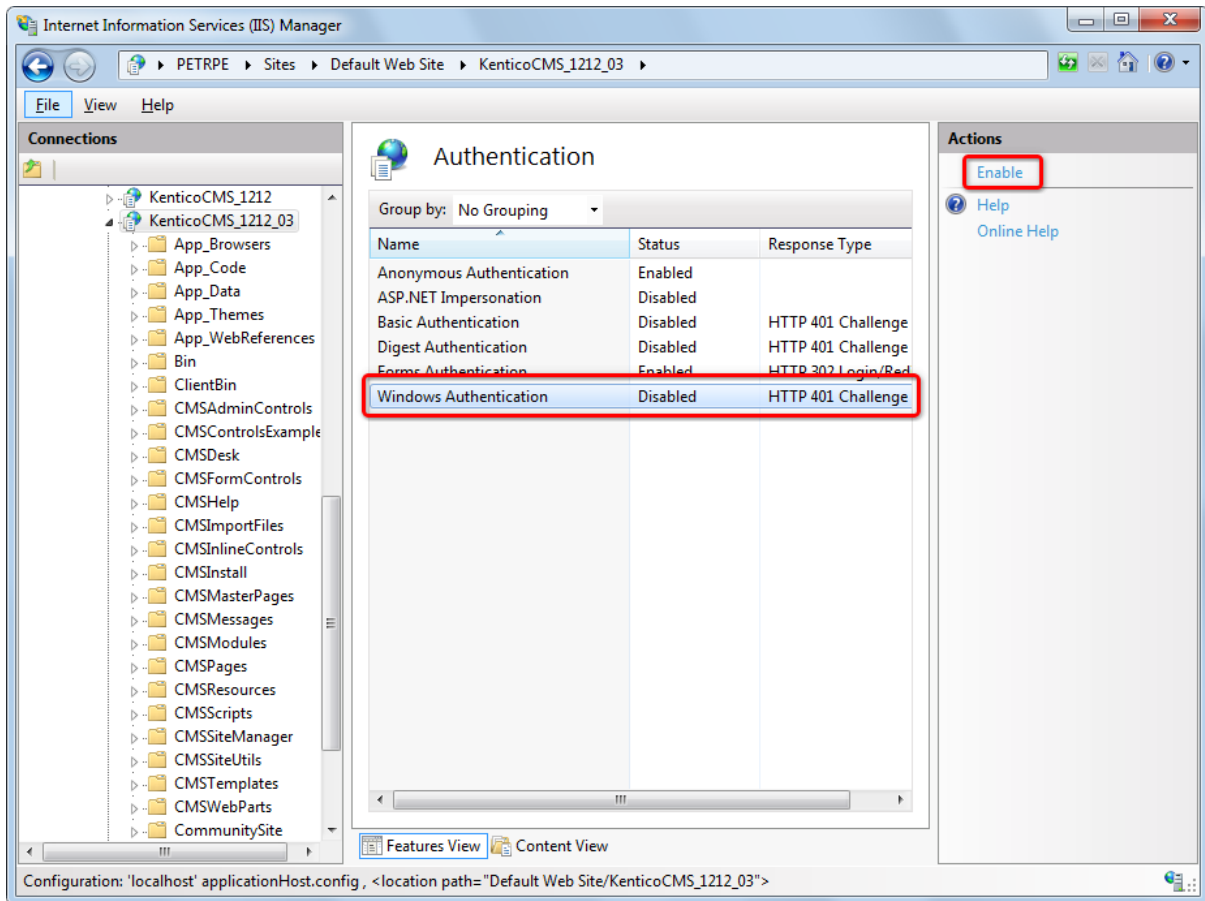
1. Go to **Start -> Control Panel -> Administrative Tools** and start the **Internet Information Services (IIS) Manager**.



2. Locate and select your site in IIS tree and click on the **Authentication** icon.



3. Enable **Windows Authentication** by clicking on the **Enable** link in the **Actions** menu.



Windows Authentication missing in the list

The default installation of Windows 7, Windows 2008 R8 and Windows Vista does not contain Windows Authentication by default. If it is missing in the list in step 3 above, you need to install it.

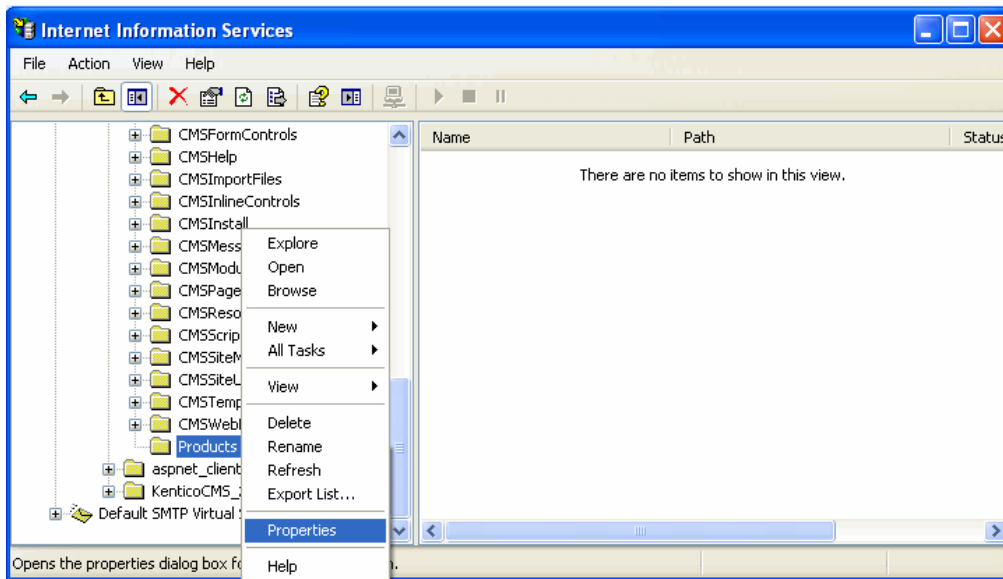
To do it, go to **Control Panel -> Programs and Features -> Turn windows features on or off**. Scroll down to *IIS*, expand all of the nodes to find the *Security* node and under it, check the Windows Authentication check-box. Click **OK** to save the settings.

7.10.11.2.3 Securing a web site section using Windows authentication

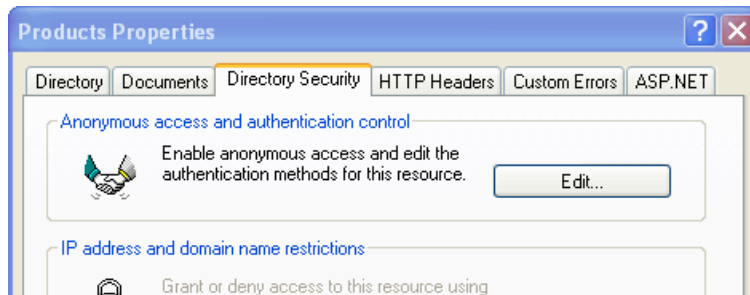
It is also possible to secure only a certain section of your website using Windows authentication. In the following example, you will learn how to set the **Products** section of our sample **Corporate site** to be secured by the Windows authentication:

1. Locate your web project on the disk (typically *c:\inetpub\wwwroot\<web project>*). Create a new directory in your web project's folder and give it the same name as the filename in the document's URL. In this case, the filename is *Products.aspx*, so we will create a folder named **Products**.

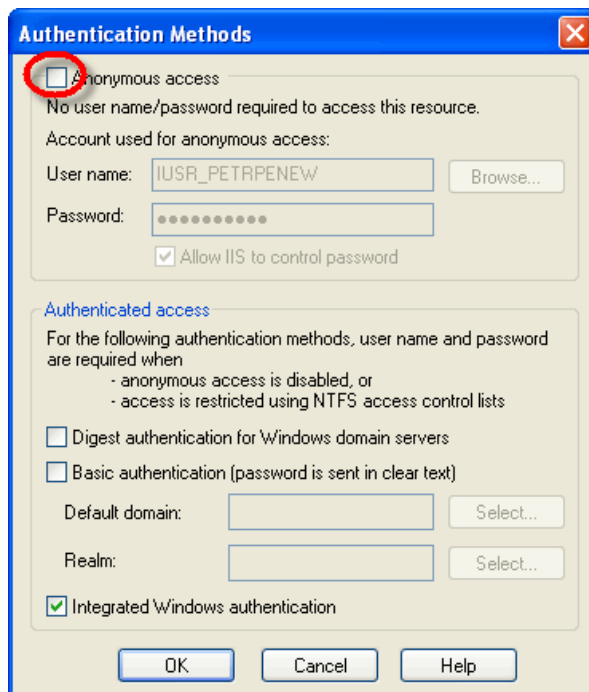
2. Open the IIS and locate the directory in the tree. Right click it and choose **Properties**.



3. Switch to the **Directory security** tab and click the **Edit** button placed in the **Anonymous access and authentication control** section.



4. Uncheck the **Anonymous access** check-box and click **OK**. Check the same setting for the root of the web and make sure that Anonymous access is allowed for it.



5. Open the web.config file of your web project and change value of the **mode** attribute of the **authentication** tag to **Windows**. Also find the section marked with **Windows authentication BEGIN** and change the path parameter of the location tag to the name of the created directory, which will be **Products** in our case:

```
...
<authentication mode="Windows">
...

<!-- Windows authentication BEGIN -->
<location path="Products">
  <system.web>
    <authorization>
      <deny users="?" />
      <allow users="*" />
    </authorization>
  </system.web>
</location>
<!-- Windows authentication END -->
```

6. The authentication is now configured. If you try to access any of the menu items placed under the **Products** section, **Windows authentication** will be required. However, if you also want the authentication to be required for the **Products** main page (which is obviously not located under itself, hence requires no authentication now), you will have to use the following workaround.

Create a new page under the Products section, give it the same content as the main page has got and redirect the Products link in the menu to this new page. Because the new page is located under the Products section, windows authentication will be required for it.

The screenshot shows the Kentico CMS Desk interface. The left sidebar displays a tree view of the site structure, with the 'Products' folder selected. The main content area shows the 'Properties' tab for a menu item. Under the 'Menu actions' section, the 'URL redirection' option is selected and highlighted with a red box. The text input field next to it contains the path '~ /Products/Main.aspx'. Below this field, an example is provided: 'Example: http://www.mydomainxy.com or ~/products.aspx'.

7.10.11.2.4 Active Directory Import Utility

7.10.11.2.4.1 AD Import Utility overview

Introduction

Kentico CMS Active Directory Import Utility is a standalone Windows application which allows importing of users and groups (roles) from Active Directory (AD) into Kentico CMS and assigning users to roles depending on AD settings. The application also provides the possibility of updating already imported users and roles so that their properties are the same as in the current AD.

What it can do?

- Import users from AD into Kentico CMS.
- Import roles (groups) from AD into Kentico CMS.
- Assign users to appropriate roles based on AD settings.
- Update already imported users and roles according to current AD.

What it can't do?

- Import from multiple ADs or domains at once.
- Import the tree structure of roles, since Kentico CMS does not support hierarchical roles.
- Since there is no hierarchy in the CMS roles, import cannot keep the tree structure of AD groups.

Terminology

- **Import profile** – XML file with import settings; this file can be created using the wizard mode, or even written manually; it is necessary to have an import profile prepared when you want to use the console mode of the tool
- **SAM Account Name** - logon name used to support clients and servers on older versions of the operating system, such as Windows NT 4.0, Windows 95, Windows 98, and LAN Manager.
- **UPN (User Principal Name)** - Internet-style login name for a user. It is based on the RFC 822 standard. The UPN is shorter than the distinguished name and easier to remember. By convention, the name should map to the user's e-mail name. The value set for this attribute is equal to the length of the user's ID and the domain name. (Sample UPN: username@subdomain.domain.tld)
- **Role or Group** - these two terms have almost identical meaning, while ,group' comes from AD terminology and ,role' is used in Kentico CMS

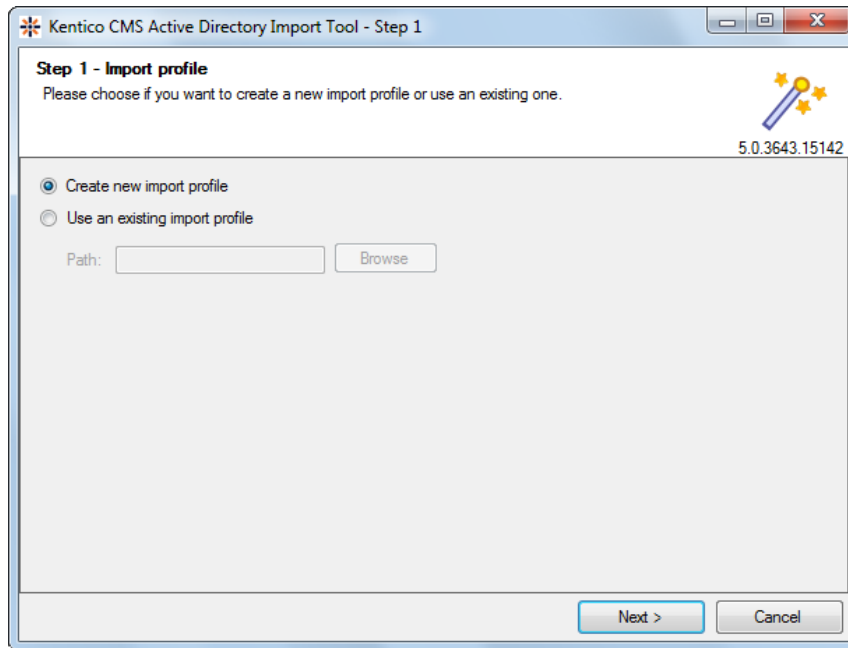
Requirements

- **Kentico CMS 5.0** or higher
- **Ultimate edition** or any edition with the **Advanced package**

7.10.11.2.4.2 Using the utility

Step 1 – Import profile settings

In the first step, you need to choose if you want to create a new import profile or use an existing XML profile. If you select an existing profile, values will be pre-filled in the following steps based on the profile settings.

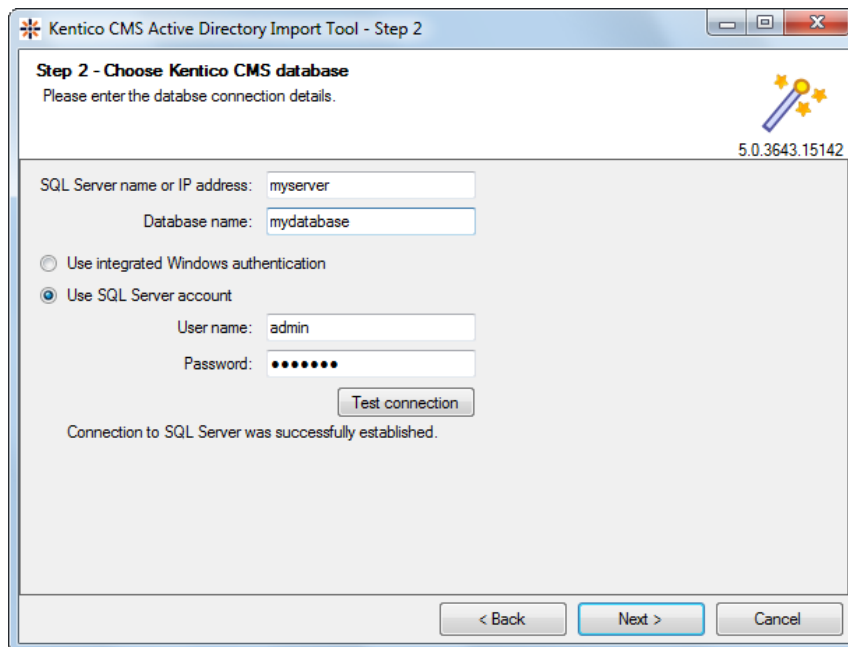


Step 2 – Kentico CMS DB Setup

In the second step, specify the target database of the CMS where the users and roles will be imported:

- **SQL Server name or IP address:** name or IP address of the server where the target database is stored
- **Database name:** name of the target database
- **Use integrated Windows authentication:** choose this option if you want to log on to the server using Windows authentication
- **Use SQL Server account:** choose this option if you want to log on to the server using credentials filled in the fields below

It is a good idea to test the specified connection using the **Test connection** button before proceeding to the next step.



The screenshot shows a Windows-style dialog box titled "Kentico CMS Active Directory Import Tool - Step 2". The main heading is "Step 2 - Choose Kentico CMS database" with the instruction "Please enter the database connection details." in the top left. In the top right corner, there is a small icon of a pencil and three stars, and the version number "5.0.3643.15142".

The form contains the following fields and controls:

- SQL Server name or IP address:
- Database name:
- Authentication options:
 - Use integrated Windows authentication
 - Use SQL Server account
- User name:
- Password:
-

Below the "Test connection" button, a status message reads: "Connection to SQL Server was successfully established."

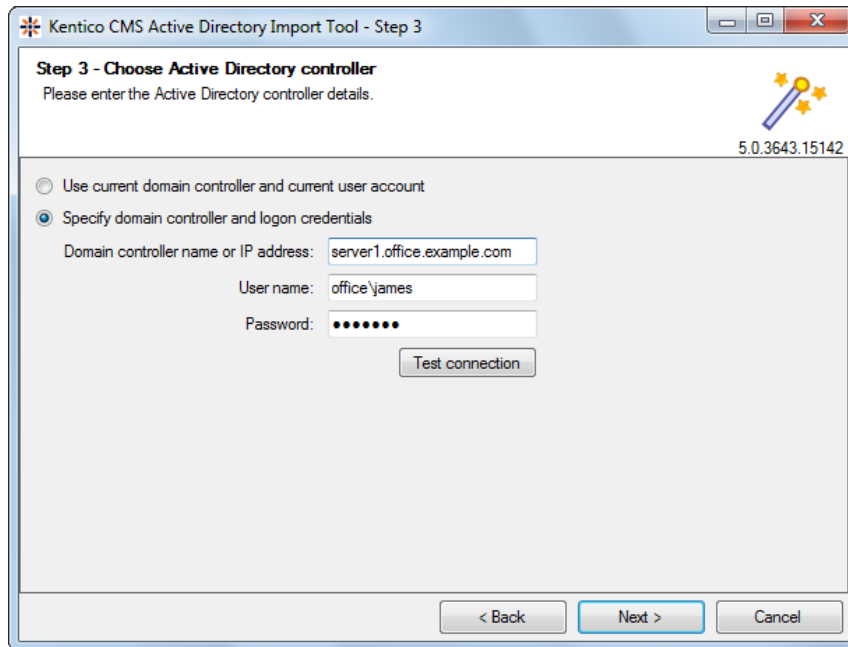
At the bottom of the dialog, there are three buttons: "< Back", "Next >" (which is highlighted in blue), and "Cancel".

Step 3 – Active directory connection

In the third step, specify the source AD's domain controller. You have two options:

- **Use current user account:** uses the domain where the current user belongs
- **Specify domain controller and logon credentials:** if you choose this option, you can enter the logon details manually into the fields below

Here again, it is recommended to test the specified connection using the **Test connection** button.



The screenshot shows a dialog box titled "Kentico CMS Active Directory Import Tool - Step 3". The main heading is "Step 3 - Choose Active Directory controller" with the instruction "Please enter the Active Directory controller details." in the top left. In the top right, there is a decorative graphic of a blue pencil and three yellow stars, and the version number "5.0.3643.15142".

There are two radio button options:

- Use current domain controller and current user account
- Specify domain controller and logon credentials

Under the selected option, there are three input fields:

- Domain controller name or IP address:
- User name:
- Password:

A "Test connection" button is located below the password field.

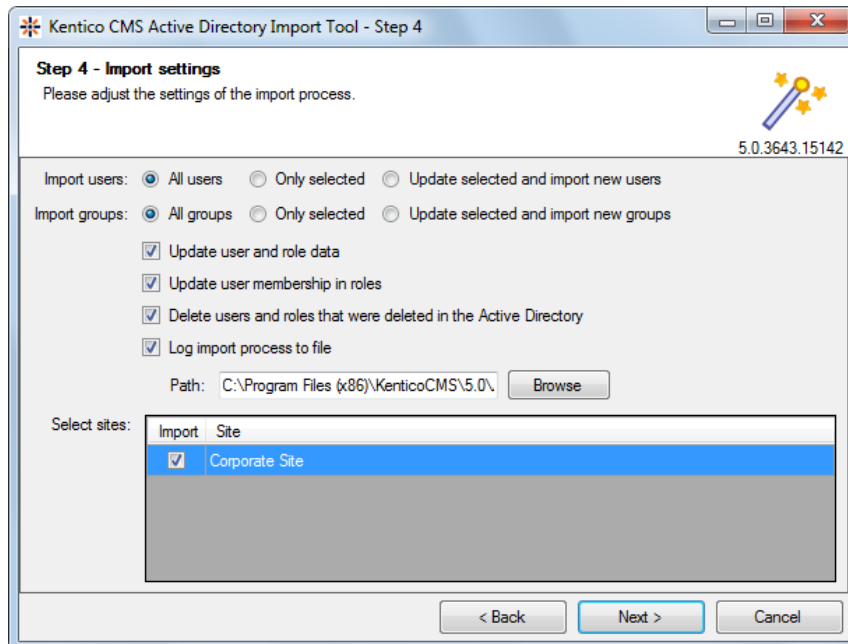
At the bottom of the dialog, there are three buttons: "< Back", "Next >" (which is highlighted in blue), and "Cancel".

Step 4 – Import settings

In this step, you can adjust some general settings of the import process:

- **Import users/groups:** determines which users or groups (roles) will be pre-selected in Step 6, you have the following options:
 - **All:** all users or groups will be pre-selected
 - **Only selected:** when using an existing import profile, selection stored in the profile will be used; otherwise, nothing will be pre-selected
 - **Only selected and new:** same as above, while new users and groups will be selected as well
- **Update user and role data:** if enabled, properties of users and roles already imported from the AD will be updated in the CMS based on the current values in AD
- **Update user membership in roles:** if enabled, membership of users imported from the AD will be updated in the CMS based on the current membership settings in AD
- **Delete users and roles that were deleted in the Active directory:** if enabled, users who were previously imported from the Active Directory but were deleted on the source server since then will be deleted in the CMS
- **Log import process to file:** if enabled, you can specify a file where the import log will be stored
- **Select sites:** choose the sites to which the imported users and roles will be assigned

Please note: If you do not choose any site in this step, the rest of the wizard will leave out steps related to roles (groups) import. This happens because roles are site-related in Kentico CMS (i.e. each role must belong to some site).



Step 5 – Import properties

In this step, you are asked to define user name and role name format and to bind AD user properties to CMS user properties. The following options can be defined:

- **User name format:** choose one of the three possible formats:
 - Domain\SAM (e.g. intranet\joe)
 - SAM account name (e.g. joe)
 - UPN (joe@intranet.mycompany.com)
- **Configure user as CMS editor:** if enabled, all imported users will have the Is editor option enabled (this option is located in Administration -> Users -> user edit -> General)
- **Target/Source:** you can choose which properties from AD (Source) will be mapped to particular properties of the CMS_User role
- **Role display name format:** choose one of the two possible formats:
 - Domain\SAM (intranet\DB Admins)
 - SAM (DB Admins)
- **Role code name format:** choose one of the following formats:
 - Domain\SAM (intranet\DB Admins)
 - SAM (DB Admins)
 - Guid (16-byte number)
- **Import description:** indicates if role description should be imported from the AD

Step 5 - Field mapping
Please choose the user name and role name format and specify mapping of user fields.
5.0.3643.15142

Users
User name format: UPN (joe@intranet.mycompany.com) ▾
Configure user as CMS editor:

| Target | Source |
|------------|----------------------------|
| LastName | Last name (sn) ▾ |
| LastName | Last name (sn) ▾ |
| LastName | Last name (sn) ▾ |
| MiddleName | Middle name (middleName) ▾ |
| MiddleName | Middle name (middleName) ▾ |

Roles
Role display name format: Domain\SAM (intranet\DB admins) ▾
Role code name format: Guid (16-byte number) ▾
Import description:

< Back Next > Cancel

Step 6 – Select users & groups to be imported

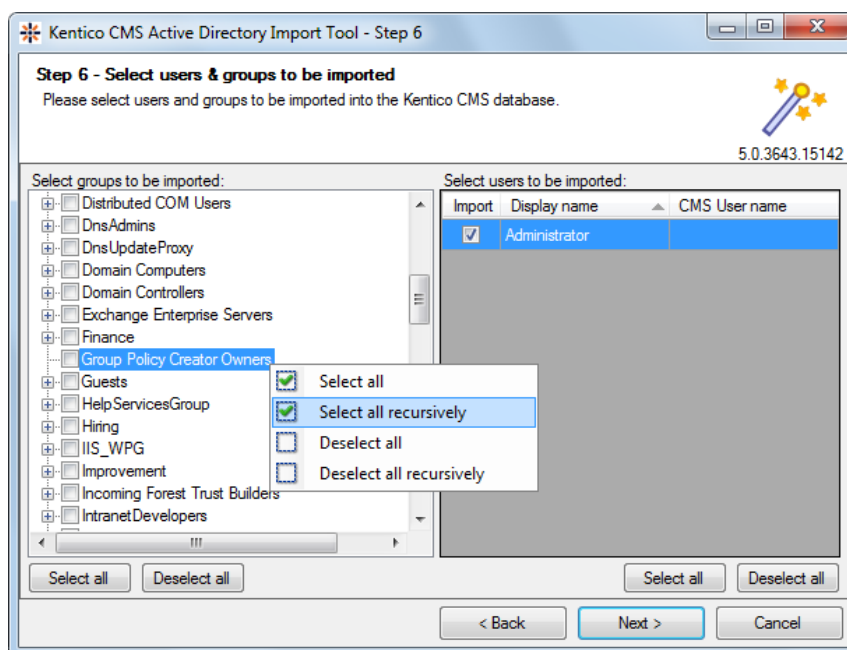
In the sixth step, you can select which roles and users will be imported. It will be possible to adjust the settings made here in the following two steps.

On the left, you can see all groups (roles) found on the source server. If you select a group, its members are displayed in the list on the right. You can define which users and roles will be imported using the appropriate check-boxes.

By right-clicking a group, you can display a context menu with the following actions:

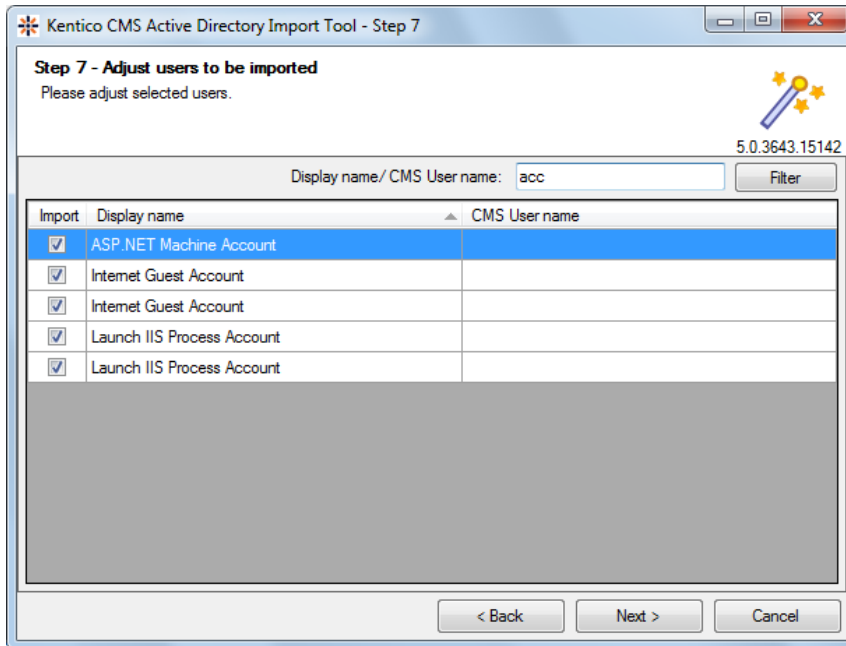
- **Select all:** selects all child groups directly under the selected group
- **Select all recursively:** selects all child groups under the selected group until the last level
- **Deselect all:** selects all groups directly under the selected group
- **Deselect all recursively:** selects all group under the selected group until the last level

All users in a role or all roles can be selected or deselected in one click using the **Select all** and **Deselect all** buttons.



Step 7 – Adjust users to be imported

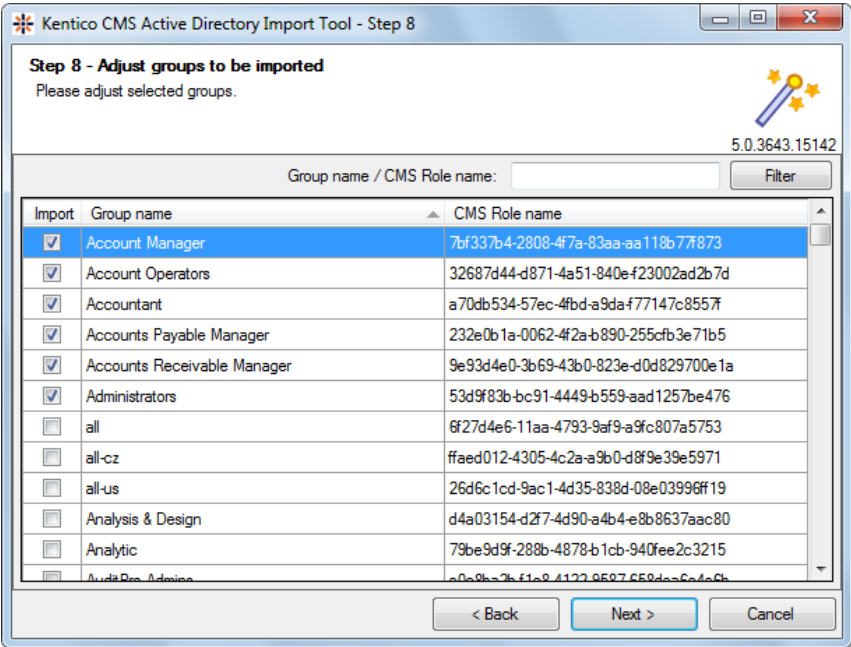
In this step, you can adjust the users to be imported. Users are selected based on settings made in the previous step, while you can adjust the selection using the check-boxes. You can also filter the listed users by *Display name* and *User name* using the filter above the list.



Step 8 – Adjust groups to be imported

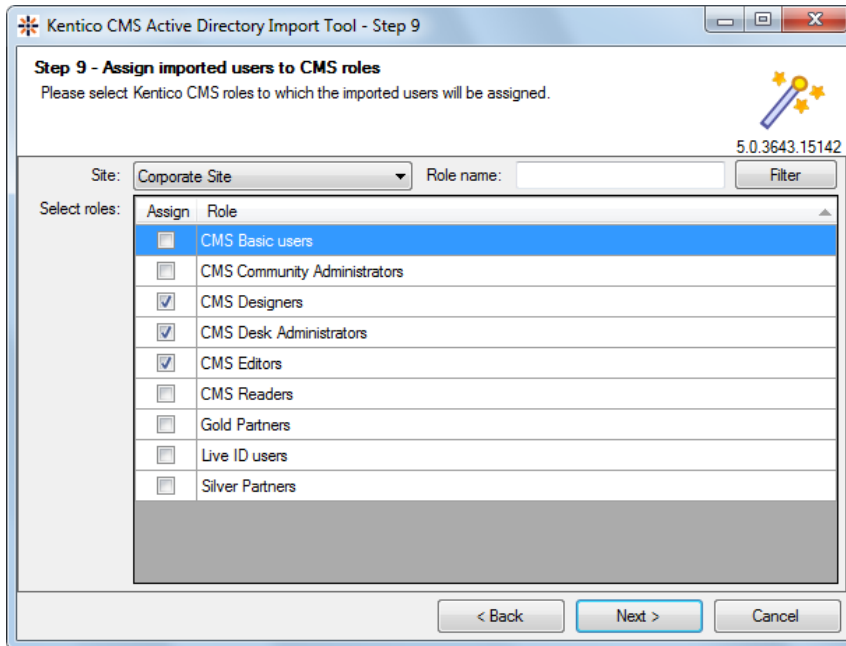
This step is similar to the previous one, while groups (roles) to be imported can be adjusted here using the check-boxes.

Listed groups can be filtered by *Group name* using the filter above the list.



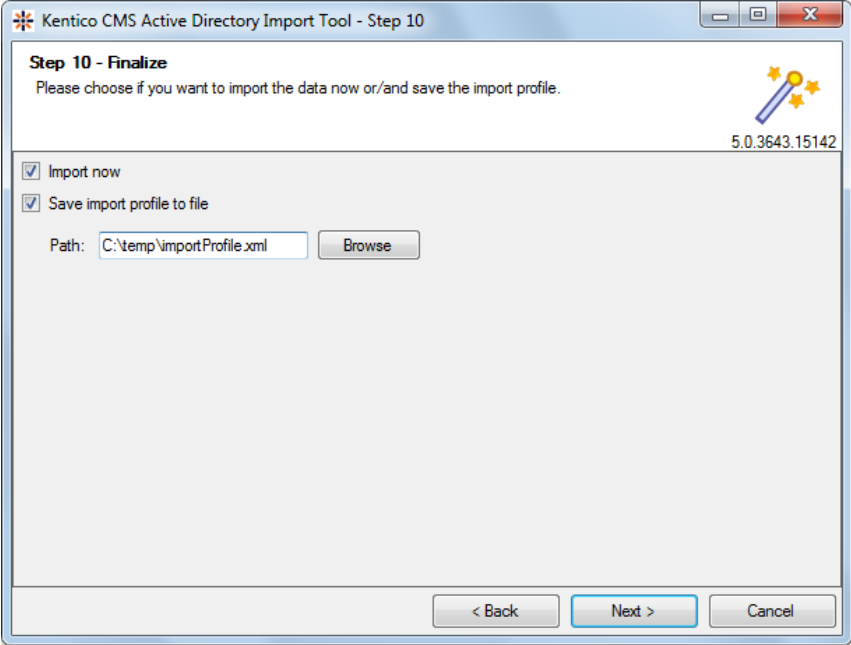
Step 9 – Assign to CMS roles

In the sixth step, you can select roles to which the imported users will be assigned. If you are importing to multiple sites, you first need to choose the site whose roles should be displayed using the **Site** drop-down.



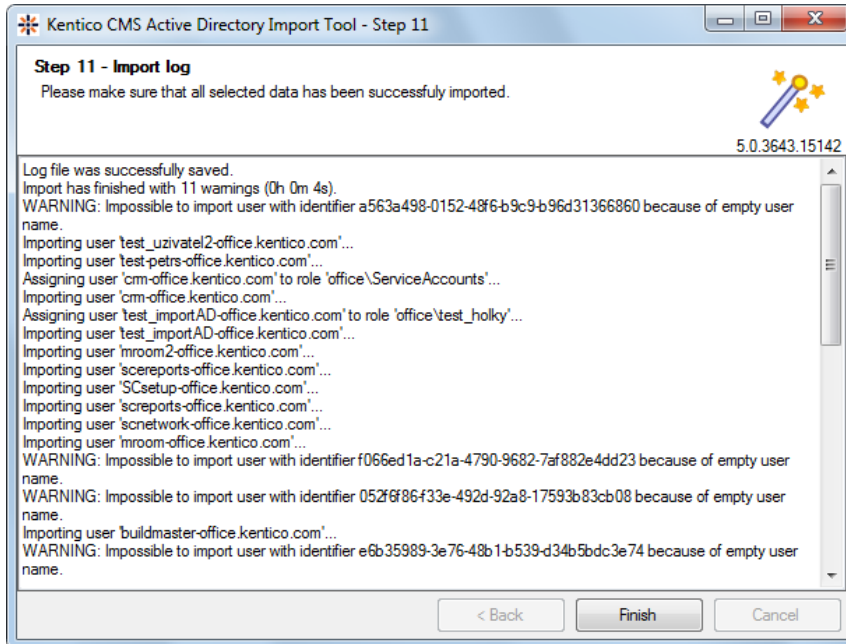
Step 10 - Finalize

Now you have your import profile configured. You can execute it immediately, save it into a file or perform both of these actions, depending on which of the **Import now** and **Save import profile to file** check-boxes is enabled.



Step 11 – Import log

The last step displays an import log, showing the progress of the import process. When the import finishes, you can close the wizard using the **Finish** button.



7.10.11.2.4.3 How to recognize imported users

In the CMS, you can recognize users imported from AD by the **Is domain user** check-box on a user's **General** tab, as you can see in the screenshot below.

When editing roles, you can see the **Is domain role** check-box, which has the same meaning for roles.

These check-boxes reflect the values of the following Boolean fields in the database tables:

- **CMS_User** -> **UserIsDomain**
- **CMS_Role** -> **RoleIsDomain**

The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a navigation menu with items like Avatars, Bad words, Badges, Banned IPs, E-mail queue, Event log, Permissions, Recycle bin, Roles, Scheduled tasks, Smart search, System, UI personalization, Users, and Web farm. The main content area is titled 'Users' and shows the 'administrator' user selected. The 'General' tab is active, displaying a form with the following fields:

| | |
|--------------------------|-------------------------------------|
| User name:* | administrator |
| Full name: * | Global Administrator |
| First name: | Global |
| Middle name: | |
| Last name: | Administrator |
| E-mail: | administrator@localhost.local |
| Enabled: | <input checked="" type="checkbox"/> |
| Is editor: | <input type="checkbox"/> |
| Is global administrator: | <input checked="" type="checkbox"/> |
| Is external user: | <input type="checkbox"/> |
| Is domain user: | <input type="checkbox"/> |
| Is hidden: | <input checked="" type="checkbox"/> |

The 'Is domain user' checkbox is highlighted with a red box.

7.10.11.3 Configuring mixed mode authentication

Mixed mode authentication enables signing-in using both Windows authentication and standard forms authentication at the same time.

To enable this authentication mode, you have to modify your *web.config* file so that the *connectionStrings*, *membership* and *roleManager* sections are the same as the code sample below:

```
<connectionStrings>
  <add name="CMSADConnectionString" connectionString=" "
    <LDAP connection=" " string=" " " />
</connectionStrings>

<membership defaultProvider="CMSProvider" userIsOnlineTimeWindow="30">
  <providers>
    <clear/>
    <add name="CMSProvider" type="CMS.MembershipProvider.CMSMembershipProvider"
      connectionStringName="CMSConnectionString" enablePasswordRetrieval="false"
      enablePasswordReset="true" requiresQuestionAndAnswer="false" requiresUniqueEmail="
      true" passwordFormat="Hashed"/>
    <add name="CMSADProvider" type="CMS.MembershipProvider.CMSADMembershipProvider"
      " connectionStringName="CMSADConnectionString" connectionUsername="username"
      connectionPassword="password" />
  </providers>
</membership>

<roleManager defaultProvider="CMSRoleProvider" enabled="true" cacheRolesInCookie="
true" cookieName=".ASPROLES" cookieTimeout="30" cookiePath="/" cookieRequireSSL="
false" cookieSlidingExpiration="true" cookieProtection="All">
  <providers>
    <clear/>
    <add name="CMSRoleProvider" type="CMS.MembershipProvider.CMSRoleProvider"
      connectionStringName="CMSConnectionString" applicationName="SampleApplication"
      writeExceptionsToEventLog="false" />
    <add name="CMSADRoleProvider" type="CMS.MembershipProvider.CMSADRoleProvider"
      connectionStringName="CMSADConnectionString" connectionUsername="username"
      connectionPassword="password" />
  </providers>
</roleManager>
```

The LDAP connection string should be entered in the following format, where the first part is the full domain and in the second part, this domain is divided into parts using the DC parts:

```
LDAP://mydomain.example.com/DC=mydomain,DC=example,DC=com
```

User name and password need to be entered only on Windows XP, in the following format:

- **Username:** <domain name>\user
- **Password:** relevant password

When you have entered this code to your *web.config*, users can log in using their Active Directory user name (without domain) and password, or using their standard Kentico CMS user name and password.

You can also enable users to sign-in using their full Active Directory user name (e.g. *MyName@office.example.com*). For this to work, you also have to add the following key to the AppSettings section of your *web.config* file:

```
<add key="CMSADDefaultMapUserName" value="userPrincipalName" />
```

7.10.11.4 Integrating authentication with external systems

Kentico CMS allows you to write a custom authentication provider. In this way, the provided user name and password are checked against an external user profile source/authentication source and if the user is successfully authenticated, the user account is automatically created/updated in the Kentico CMS database, without copying the user password.

You can learn more about custom authentication in chapter [Security handler \(CustomSecurityHandler class\)](#).

7.10.11.5 Single sign-on

Single sign-on is supported for the following scenarios:

Forms Authentication

You are using Forms authentication and you need to share user identity across applications that run on the same domain and all of them use the standard ASP.NET 2.0 Forms authentication. You need to ensure that:

1. All applications use the same user database or at least the same user names. You may need to integrate the authentication using a [custom security handler](#).
2. The web.config file of all applications uses the same authentication cookie name and the path is set to "/":

```
<forms name=".ASPXFORMSAUTH" path="/" ...="" />
```

3. The web.config file of all applications uses the same machine key that is used for cookie encryption. You can find the machine key in the <system.web> section and it's defined like this:

```
<machineKey validationKey="ABCD0708..." decryptionKey="DDFF8943..." validation="SHA1" />
```

4. If your applications run on different sub-domains, such as www.mywebsite.com and forums.mywebsite.com, you need to set the domain attribute of the authentication cookie to the main domain so that it's shared across domains:

```
<forms name=".ASPXFORMSAUTH" path="/" domain=".mywebsite.com" ...="" />
```

Windows Authentication

You are using Windows authentication. In this case, the user identity is shared within the Windows domain. No additional configuration is required.

7.10.11.6 Displaying personalized content

Kentico CMS allows you to personalize the displayed content based on the current user.



Personalization in short

1. If you want to customize the content displayed to the users, you need to grant or deny the READ permission to these users and turn on the **Check permissions** attribute of the appropriate web parts.
2. When the user is not authenticated, the system uses a special user **Public anonymous User (public)**.

Example: Personalizing the Products menu

In this example, you will learn how to display the Products section only to members of the **Customers** and **Partners** roles and how to display the PDAs category only to the members of the **Partners** role.

1. Sign in to **CMS Desk** as administrator.
2. Go to **Administration -> Roles** and create new roles **Customers** and **Partners**.
3. Go to **Administration -> Users** and create a new user **Customer1** with following values:
 - **User name:** Customer1
 - **Full name:** Testing Customer
 - **Enabled:** true
 - **Is editor:** no

Click **OK**. Go to the **Sites** tab and assign the user to Corporate Site. Go to the **Roles** tab and add the user to the **Customers** role.

4. Create another user **Partner1** with following values:
 - **User name:** Partner1
 - **Full name:** Testing Partner
 - **Enabled:** true
 - **Is editor:** no

Click **OK**. Go to the **Sites** tab and assign the user to **Corporate Site**. Go to the **Roles** tab and add the user to the **Partners** role.

5. Switch to **CMS Desk -> Content** and click the root of the content tree. Switch to **Properties -> Security**.

First, we need to grant the **Public anonymous user (public)**, **Customers** and **Partners** roles with **Read** permission for the whole website.

Click **Add users**, select these the three users and click **OK**. When the users are added, grant each of them with the Read permissions using the check-box () as in the screenshot below. You need to

click **OK** in order to save the settings.

The screenshot shows the Kentico CMS 5.5 interface. The top navigation bar includes 'Content', 'My desk', 'Tools', and 'Administration'. The left sidebar shows the 'Corporate Site' tree with folders like Home, Services, Products, News, etc. The main area displays the 'Properties' dialog box for a document. The 'Permissions' tab is selected, showing a list of users and roles: Customer1 (Customer1), Partner1 (Partner1), and Public Anonymous User (public). The 'Access rights' table is shown with columns for 'Allow' and 'Deny'. The 'Read' permission is checked for the 'Public Anonymous User (public)' role. The 'Add users' button is highlighted with a red box.

| | Allow | Deny |
|--------------------|-------------------------------------|--------------------------|
| Full control | <input type="checkbox"/> | <input type="checkbox"/> |
| Read | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Modify | <input type="checkbox"/> | <input type="checkbox"/> |
| Create | <input type="checkbox"/> | <input type="checkbox"/> |
| Delete | <input type="checkbox"/> | <input type="checkbox"/> |
| Destroy | <input type="checkbox"/> | <input type="checkbox"/> |
| Browse tree | <input type="checkbox"/> | <input type="checkbox"/> |
| Modify permissions | <input type="checkbox"/> | <input type="checkbox"/> |

6. Now we will hide the product categories from public users. In the content tree, click **/Products/Cell Phones** and switch to the **Properties -> Security** tab.

The permissions that you configured for the root of the content tree are inherited by this document. We need to break the inheritance. Click the **Change permission inheritance** link. In the following dialog, choose **Break inheritance and copy parent permissions**.

The screenshot shows the 'Permissions' dialog box. The text 'This document inherits permissions from the parent document.' is displayed. A link labeled 'Change permission inheritance...' is highlighted with a red box. Below this, the 'Users and Roles' list shows 'Customer1 (Customer1)', 'Partner1 (Partner1)', and 'Public Anonymous User (public)'. The 'Access rights' table is shown with columns for 'Allow' and 'Deny'. The 'Read' permission is checked for the 'Public Anonymous User (public)' role.

| | Allow | Deny |
|--------------------|-------------------------------------|--------------------------|
| Full control | <input type="checkbox"/> | <input type="checkbox"/> |
| Read | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Modify | <input type="checkbox"/> | <input type="checkbox"/> |
| Create | <input type="checkbox"/> | <input type="checkbox"/> |
| Delete | <input type="checkbox"/> | <input type="checkbox"/> |
| Destroy | <input type="checkbox"/> | <input type="checkbox"/> |
| Browse tree | <input type="checkbox"/> | <input type="checkbox"/> |
| Modify permissions | <input type="checkbox"/> | <input type="checkbox"/> |





7. Now select the **Public Anonymous User (public)** and deny the **Read** permission.
8. Repeat the last two steps for categories **Laptops** and **PDA**s. Deny the **PDA**s category also for the **Customers** role.
9. The permissions are not checked by web parts by default, so we need to configure the web parts so that they check the **Read** permission of the current user.

Choose the root in the content tree and click the **Design** tab. Configure the **cmsmenu** web part and set its property **Check permissions** to true (). Click **OK**. Repeat the same for the **LeftTreeMenu** and **ProductDataList** web parts on the **/Products** page.
10. Sign out. If you mouse-over the **Products** menu item, you will see that the sub-categories are no longer displayed.
11. Sign in as user **Customer1** (use the My account link at the top right part of the page) and click **Products** in the main menu. You will see a page like the one below. As you can see, the PDA's section and PDA products are not displayed to this user.

Home Services **Products** News Partners Company Blogs Forums Events Images Wiki Examples

• Cell phones
• Laptops

Products

| | | | |
|---|---|---|---|
|  |  |  |  |
| Samsung SGH E250 | Nokia N73 | Acer Aspire 3105WLMi | Asus F3U AP059C |
| Our price: \$249.00 | Our price: \$399.00 | Our price: \$490.00 | Our price: \$999.00 |
| Add to shopping cart | Add to shopping cart | Add to shopping cart | Add to shopping cart |







Site map | Disclaimer

Now sign out and sign in again as user **Partner1**. You will all categories and products:

Home Services **Products** News Partners Company Blogs Forums Events Images Wiki Examples

- Cell phones
- PDAs
- Laptops

Products

| | | | |
|--|---|---|---|
| 
Samsung SGH E250
Our price: \$249.00
Add to shopping cart | 
HP iPAQ 114
Our price: \$389.00
Add to shopping cart | 
Nokia N73
Our price: \$399.00
Add to shopping cart | 
Asus A639
Our price: \$470.00
Add to shopping cart |
| 
Acer Aspire 3105WLMi
Our price: \$490.00
Add to shopping cart | 
Asus F3U AP059C
Our price: \$999.00
Add to shopping cart | | |

[Site map](#) | [Disclaimer](#)

You have learned how to personalize the content displayed to users based on their permissions.

7.10.12 Third-party authentication services

7.10.12.1 Overview

Third-party authentication services provide an alternative way how users can log in and register to your site. This way, they do not need to go through the registration process and create a new username and password for your site. Instead, they can use some username and password that they already use on some popular site (like Windows Live, Facebook, Google, Yahoo!, etc.). Even new users can log on to your site like this, in which case a new user account is created.

Kentico CMS supports the following three authentication providers:

- [Windows Live ID](#)
- [OpenID](#)
- [Facebook Connect](#)

Click the links above to learn more about how to set up authentication using the particular provider.

7.10.12.2 Windows Live ID

7.10.12.2.1 Overview

Windows LiveID is a single sign-on service provided and maintained by Microsoft. By integrating LiveID into your website, you can allow site visitors to log in to your website using their LiveID login and password.

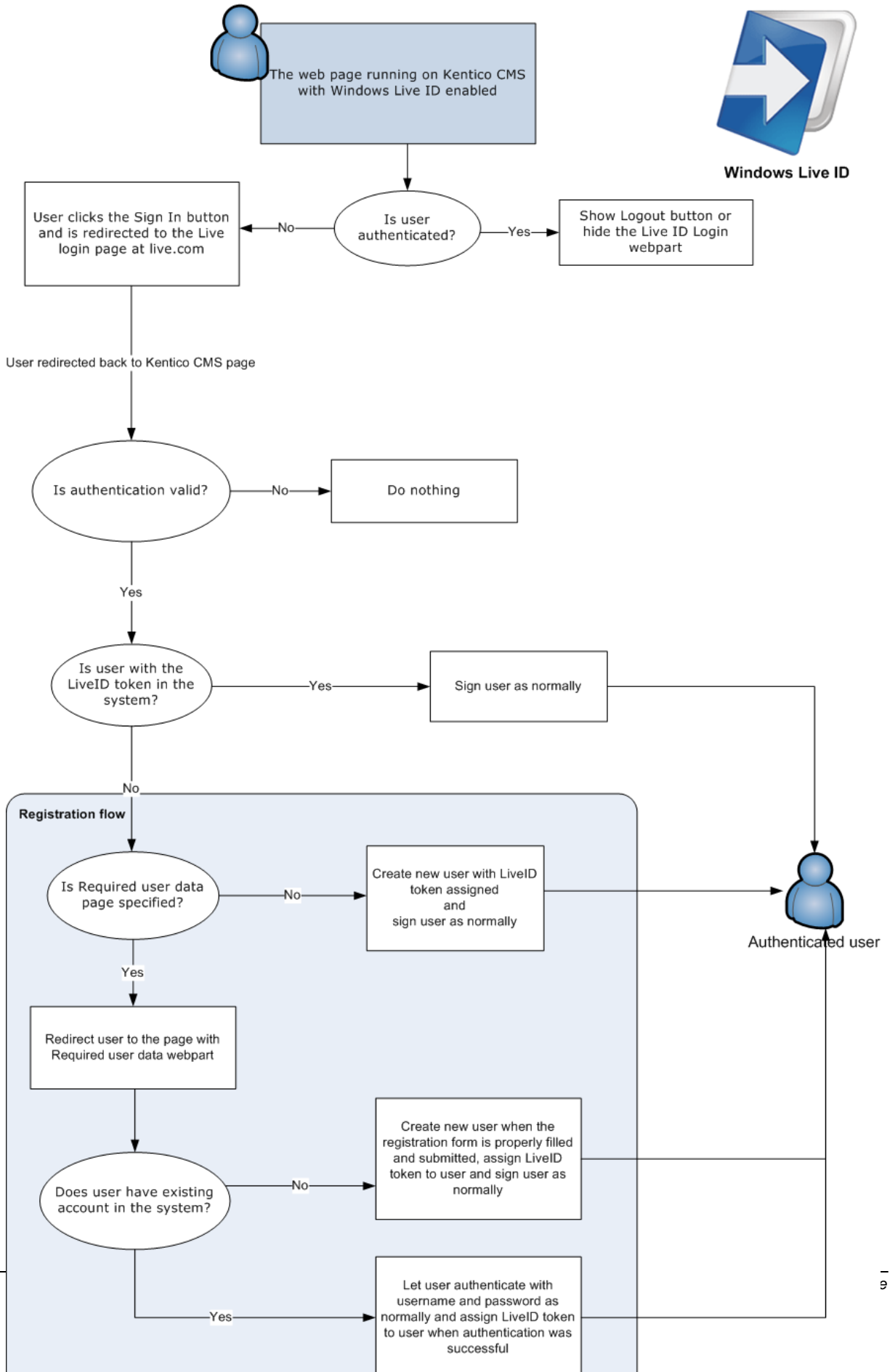
How to start using it

For this to work on your site, you have to do the following things:

1. Register your website at <https://msm.live.com/app> - to learn how to do it click [here](#)
2. Set up Kentico CMS for LiveID authentication - for more details click [here](#)
3. Use one of the LiveID web parts on any page of your site - info [here](#)

How it works

The following diagram shows how the process of LiveID login works.



7.10.12.2.2 Registering your application

To enable the LiveID logon for your site, you must register your website at the following address: <https://msm.live.com/app>.

1. Once on the page, make sure that you are logged in (you may need to create a Live account if you don't have one) and click the **Register an Application!** link as highlighted in the screenshot below. You will be redirected to the application registration page.

Windows Live ID Sign Out

Home
Developer Center
Windows Live ID

Application Center
Register an Application
Manage My Applications
Documentation
Custom Pages
Customize Sign-in
Customize Registration

Get Help
Forums
Support

Use Windows Live ID for Your Web Site

Windows Live™ ID is the authentication system for all Windows Live services. Millions of users sign in to their Windows Live ID accounts to check their mail, chat with their friends, schedule meetings, and interact within our network.

Now, by easily integrating the Windows Live ID authentication system with your Web site, you can:

- Incorporate authenticated Windows Live services and data by using Windows Live gadgets and controls.
- Implement Windows Live ID authentication without having to install components or software on the server.
- Enable Windows Live accounts to sign in directly to your site, letting millions of Windows Live ID users become users of your site.

Getting Started

You can immediately start to use Windows Live ID. You can do it in 2 steps:

1. **Register your Web site with Windows Live.**
Use your developer Windows Live ID to create an application. During the registration process, you will provide a friendly name for your Web site, your Web site URL, and a secret key. At the end of the process, you will retrieve a unique identifier that will be used to refer to your application. We call this an Application ID.
2. **Change your Web site to use Windows Live ID for authentication.**
We have tried to keep the integration process easy and developer-friendly. We have provided libraries and samples for you to use and made the source code available.

Get started now by registering an application.
Register an Application!

Do you already have one or more applications?
To view and manage your applications, see [Manage My Applications](#).

2. On the page where you get redirected, accept the terms of use by clicking the **I Accept** button.

Live Services Search MSDN [bing](#) [p](#) [Web](#)

[New Service](#)

Summary Help and Resources

Windows Azure
SQL Azure
.NET Services
Live Services

Create a Service Component

Terms of Use

Please review and accept the following Terms of Use:

- Terms of Use for [Live Services Existing APIs](#)

3. In the next step, you are asked to enter the following details:

- **Service Component Label** - this is simply an identifying name of your web application used on the LiveID site and has no effect on functionality
- **Service Component Description** - text describing your web application; has no effect on functionality

- **Domain** - enter the fully qualified domain name of your website
- **Return URL** - enter a URL in the following format: **http://<yourdomain>/CMSPages/liveidlogin.aspx** where <yourdomain> should be replaced with the domain name of your site entered in the Domain field

Click **Create** to register the application with the entered details.

Summary Help and Resources

Create a Service Component

Service Component Properties

Provide a convenient label and description for the service component. The information is used only on the Developer Portal.

Service Component Label:
My Web Application

Service Component Description:
This is a sample web application for testing LiveID logon in Kentico CMS.

You can use Windows Live ID to identify users to your Web site, or request access to user's data. If you request access to user's data, users will be asked to agree to allow your domain to access their data.
[Learn More about Windows Live ID Authentication](#)

Domain:

Return URL:

4. You will be displayed with a screen with important information about the newly registered application. The most important here are the **Application ID** and **Secret Key** values. Note these down as you will need them later in Kentico CMS [settings](#).

Summary Help and Resources

My Web Application

Description Edit

This is a sample web application for testing LiveID logon in Kentico CMS.

Live Services and Active Directory Federation Edit

Application ID: 000000044033C8D

Domain(s): www.mytestingdomain.com

Return URL: <http://www.mytestingdomain.com/CMSPages/liveidlogin.aspx>

Secret Key: 4TMFDnaKRaGgbVLDM89mXbV9BKAjIFw1

More Information: [Learn more about Windows Live ID Authentication](#)

7.10.12.2.3 Settings

LiveID authentication settings are located in **Site Manager -> Settings -> Windows LiveID**. Before you start making the settings, make sure you have the right site selected using the **Site** drop-down list at the top left part of the page.

- **Enable Windows Live ID** - indicates if Windows Live ID authentication is enabled
- **Application ID** - identifier of your website; you were given this ID when registering your website to LiveID
- **Application secret** - secret code that will be used for encryption of messages transferred between your website and the LiveID server; you entered this key when registering your website to LiveID
- **Security algorithm** - algorithm used for encryption of messages transferred between your website and the LiveID server; it is recommended to use *wsignin1.0*
- **Assign new users to roles** - new users registered via LiveID login will be assigned to these roles
- **Required user data page** - URL of a page containing the *Required LiveID user data* web part; if entered, then when a new LiveID user logs in to the site, their user account is not created automatically, but they are redirected to this page and required to enter some additional data (or merge with an existing account) using the web part

The screenshot displays the Kentico CMS Site Manager interface. At the top, the navigation bar includes 'Sites', 'Administration', 'Settings' (selected), 'Development', 'Licenses', and 'Support'. A 'Switch to CMS Desk' link is visible in the top right. The left sidebar shows a tree view of settings categories, with 'Windows LiveID' selected. The main content area is titled 'Windows LiveID' and contains the following settings:

- Enable Windows Live ID:**
- Application ID:**
- Application secret:**
- Security algorithm:**
- Assign new users to roles:**
- Required user data page:**

Additional controls include 'Save' and 'Reset these settings to default' buttons at the top, and an 'Export these settings' link at the bottom.

7.10.12.2.4 Available web parts

After registering your web at <https://msm.live.com/app> and making the necessary settings, you can use the following two web parts on your website to allow authentication via Windows LiveID. The web parts are located under the **Membership** category in the web part catalog.

Windows LiveID

This webpart can be used to let site visitors sign in to your website using their Live ID. It can be placed on any page of your website. The web part is hidden to authorized users and will be displayed only to unauthorized public site visitors. With default settings, the web part appears as in the following screenshot.



Although the web part works fine without setting any of its properties, the following can be set:

- **Sign in text** - if entered, link with the entered text will be used instead of the default sign in image
- **Sign out text** - if entered, link with the entered text will be used instead of the default sign out image
- **Show sign out** - if checked, sign out link will be displayed after the user logs in
- **Show as button** - if checked, buttons will be used instead of links
- **Sign in image** - if set, the image will be used as sign in link
- **Sign out image** - if set, the image will be used as sign out link

Live ID required data

In some cases, you may want the new users to provide some extra details before creating the new account. This can be achieved using the *Live ID user data* web part. The web part must be placed on a page specified by the **Required user data page** in **Site Manager -> Settings -> Windows LiveID**.

The following properties of the web part are the most important:

- **Allow forms authentication** - if checked, new users will be able to enter a password for their new account so that they can log in the usual way as well as via LiveID
- **Allow existing user** - if enabled, users are allowed to join their existing account with their LiveID
- **Default target URL** - if no return URL is passed, users will be redirected to URL entered here after merging or creating the account
- **Hide for no LiveID** - if checked, the web part will be hidden if the page with it is displayed not after LiveID logon (e.g. when accessed by entering its URL into the browser)

Other specific web part properties are explained in [Kentico CMS Web Parts Reference](#) or after clicking the **Documentation** (📖) link in the top right corner of the web part properties window.

Existing user

User name:
Password:

New user

User name:
E-mail:
Password:
Confirm password:

The screenshot above shows how the web part looks with both the **Allow forms authentication** and **Allow existing user** options enabled. In the left part, an existing site users can merge their current user account with the LiveID by just entering thier user name and password. In this case, the LiveID Token will be added to the LiveID field of the existing user account. New users can enter the required details in the right part of the web part.

7.10.12.3 OpenID

7.10.12.3.1 Overview

[OpenID](#) is an open, decentralized standard for authenticating users. It is currently being used by popular websites like [Google](#), [Yahoo!](#), [MySpace](#), [Flickr](#) and many more. Logon credentials used on all of these sites can be used to log on to your Kentico CMS site.

How to start using it

OpenID is the easiest to use of the three supported third-party authentication services. For it to work on your site, you don't need to register your site, all you need to do is take the following two steps:

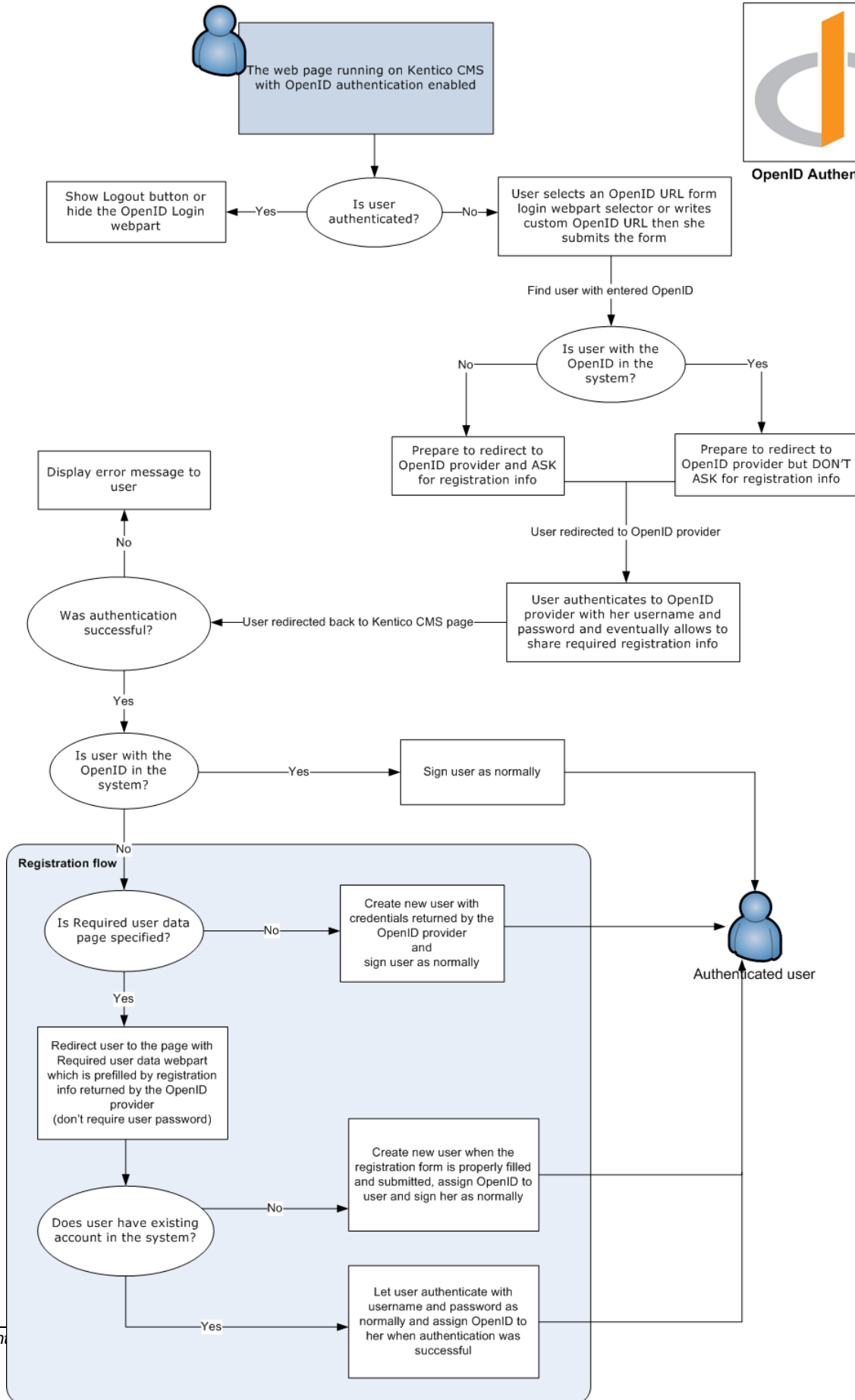
1. Set up Kentico CMS for OpenID authentication - learn [here](#)
2. Use one of the OpenID web parts on any page of your site - info [here](#)

How it works

The following diagram shows how the process of OpenID login works:



OpenID Authentication



7.10.12.3.2 Settings

First of all, you need to find the `~/Bin/DotNetOpenId.dll.rename` file and rename it to `DotNetOpenId.dll`. The library is renamed in the default installation because it doesn't support [medium-trust environment](#). Then you need to configure OpenID settings in the administration interface of the CMS.

OpenID authentication settings are located in **Site Manager -> Settings -> OpenID**. Before you start making the settings, make sure you have the right site selected using the **Site** drop-down list at the top left part of the page.

- **Enable OpenID** - indicates if OpenID authentication is enabled
- **Assign new users to roles** - new users registered via OpenID will be assigned to these roles
- **Required user data page** - URL of the page where the *OpenID required data* web part resides; if entered, then when a new OpenID user logs in to the site for the first time, their user account is not created automatically, but they are redirected to this page and required to enter some additional data (or merge with an existing account) using the web part

The screenshot displays the Kentico CMS Site Manager administration interface. The top navigation bar includes the Kentico logo, "CMS Site Manager", and tabs for "Sites", "Administration", "Settings" (selected), "Development", "Licenses", and "Support". A "Switch to CMS Desk" link is visible in the top right corner. On the left, a "Site:" dropdown menu is set to "(global)". Below it is a tree view of settings categories, with "OpenID" selected. The main content area is titled "OpenID" and contains the following settings:

- Enable OpenID**: A checkbox that is checked.
- Assign new users to roles**: A text input field containing "CMSOpenIDUsers", with "Select" and "Clear" buttons to its right.
- Required user data page**: An empty text input field.

At the top of the settings area, there are "Save" and "Reset these settings to default" buttons. A note states: "These settings are global, they can be overridden by the local site settings. Please select the site to see or change." Below the settings, there is a link for "Export these settings".

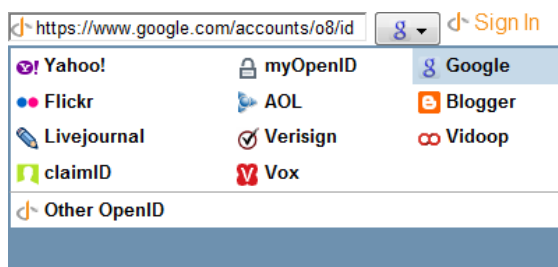
7.10.12.3.3 Available web parts

After configuring the [settings](#), you can use the following two web parts on your website to allow OpenID authentication. The web parts are located under the **Membership** category in the web part catalog.

OpenID logon

This web part can be used to let site visitors sign in to your website using their OpenID. It can be placed on any page of your website. With default settings, the web part appears as in the screenshot below.

It lets you choose from a number of websites which support OpenID and where you might already have an account. If you choose one and click Sign In, you will be redirected to the logon page on that site. After successful logon, you will be redirected back to the Kentico CMS site where you came from, but you will be authenticated and a new account will be created in case that this is your first logon.



Even though the web part works fine with default settings, it has the following specific properties to fine-tune its behavior:

- **Providers** - Providers used for OpenID login. Each provider must be specified on a single line. Total number of 3 parameters should be included for each provider:

- 1 - provider display name
- 2 - provider login URL
- 3 - provider icon name placed in `~/CMSWebParts/Membership/OpenID/OpenID_files/`.

Each parameter must be separated by '|'. Third parameter is optional and if not supplied then default OpenID icon will be displayed. Provided URL must be login URL of the OpenID provider. If username (or blog name, user id, etc.) is part of the URL, then use the `##username##` macro to replace the username part of the URL.

Example: `myOpenID|http://##username##.myopenid.com/|myopenid.ico`

- **Display textbox** - indicates if OpenID provider textbox should be visible; if disabled then only the sign in button will be visible
 - **Sign in text** - if entered, link with the entered text will be used instead of the default sign in image
 - **Sign out text** - if entered, link with the entered text will be used instead of the default sign out image
 - **Show sign out** - if checked, sign out link will be displayed after the user logs in
 - **Show as button** - if checked, buttons will be used instead of links
 - **Sign in image** - if set, the image will be used as sign in link
 - **Sign out image** - if set, the image will be used as sign out link
- **Required data for new users** - using these settings, you can request additional data from the OpenID provider, which will be added to the newly created user account; in case that you are using the *OpenID required data* web part, the requested data will be pre-filled in the web part; due to the fact

that we do not use the latest version of the OpenID library, data may not be obtained successfully from some providers

OpenID required data

In some cases, you may want the new users to provide some extra details before creating the new account. This can be achieved using the *Open ID user data* web part. The web part must be placed on a page specified by the **Required user data page** value in **Site Manager -> Settings -> OpenID**.

The following properties of the web part are the most important:

- **Allow forms authentication** - if checked, new users will be able to enter a password for their new account so that they can log in the usual way as well as via OpenID
- **Allow existing user** - if enabled, users are allowed to join their existing account with OpenID
- **Default target URL** - if no return URL is passed, users will be redirected to URL entered here after merging or creating the account
- **Hide for no OpenID** - if checked, the web part will be hidden if the page with it is displayed not after OpenID logon (e.g. when accessed by entering its URL into the browser)

Other specific web part properties are explained in [Kentico CMS Web Parts Reference](#) or after clicking the **Documentation** (🔗) link in the top right corner of the web part properties window.

| Existing user | New user |
|------------------------------------|--|
| User name: <input type="text"/> | User name: <input type="text"/> |
| Password: <input type="password"/> | E-mail: <input type="text"/> |
| <input type="button" value="OK"/> | Password: <input type="password"/> |
| | Confirm password: <input type="password"/> |
| | <input type="button" value="OK"/> |

The screenshot above shows how the web part looks with both the **Allow forms authentication** and **Allow existing user** options enabled. In the left part, an existing site users can merge their current user account with the OpenID by just entering their user name and password. In this case, the OpenID will be added to the OpenID field of the existing user account. New users can enter the required details in the right part of the web part.

7.10.12.4 Facebook Connect

7.10.12.4.1 Overview

Facebook is one of the most popular social networking sites in the world. With its continuously growing number of registered users, it is quite likely that visitors who come to your site will already have a Facebook account. In this case, it is much more convenient for them to use their Facebook logon details than to go through yet another registration on your site. That's why you should consider using Facebook Connect authentication.

How to start using it

For Facebook Connect to work on your site, you need to register the site, all you need to do is take the following two steps:

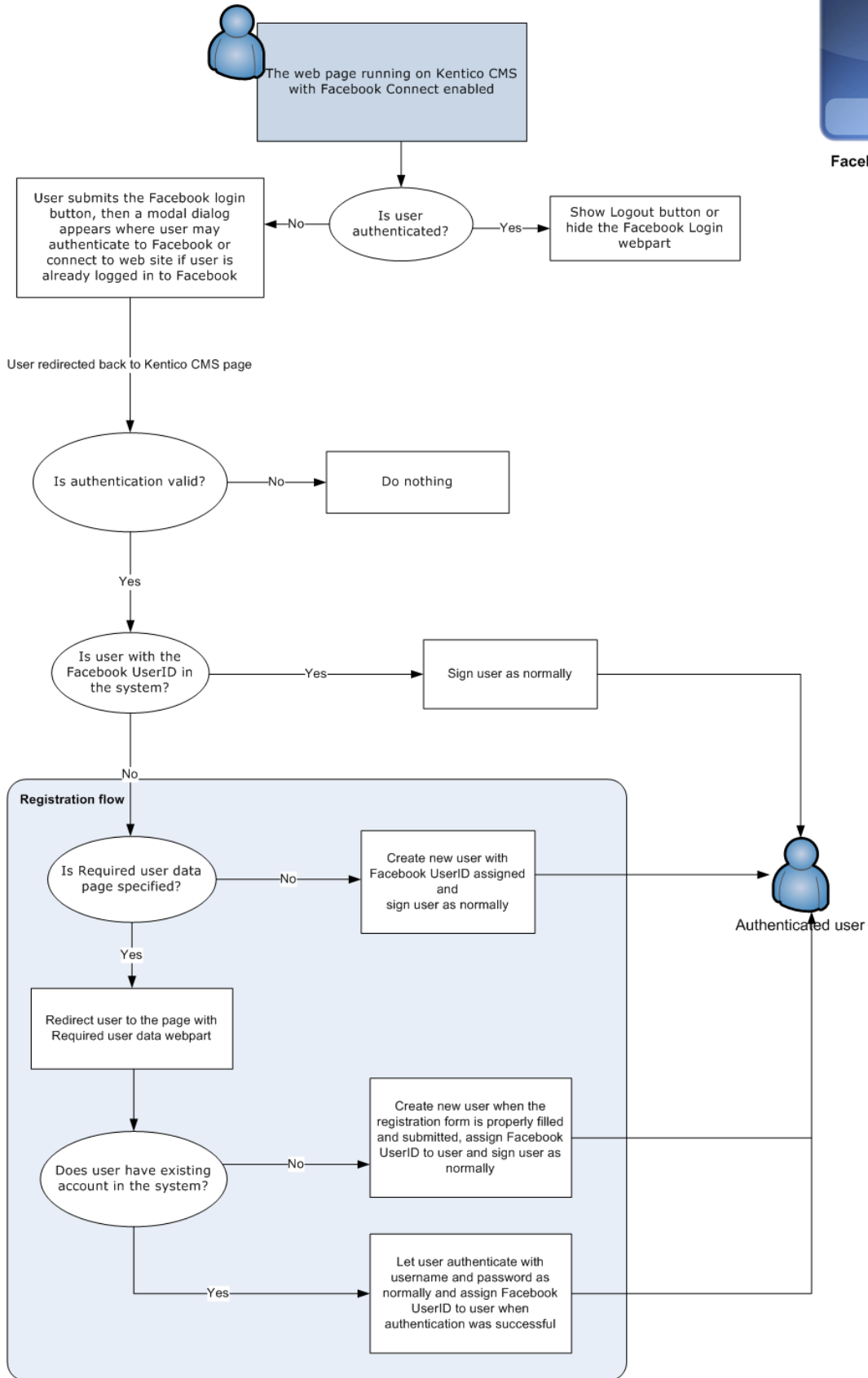
1. Register your website at <http://www.facebook.com/developers/createapp.php> - for more info ready [here](#)
2. Set up Kentico CMS for Facebook Connect authentication - learn [here](#)
3. Use one of the Facebook Connect web parts on any page of your site - info [here](#)

How it works

The following diagram shows how the process of Facebook Connect login works:



Facebook Connect



7.10.12.4.2 Registering your application

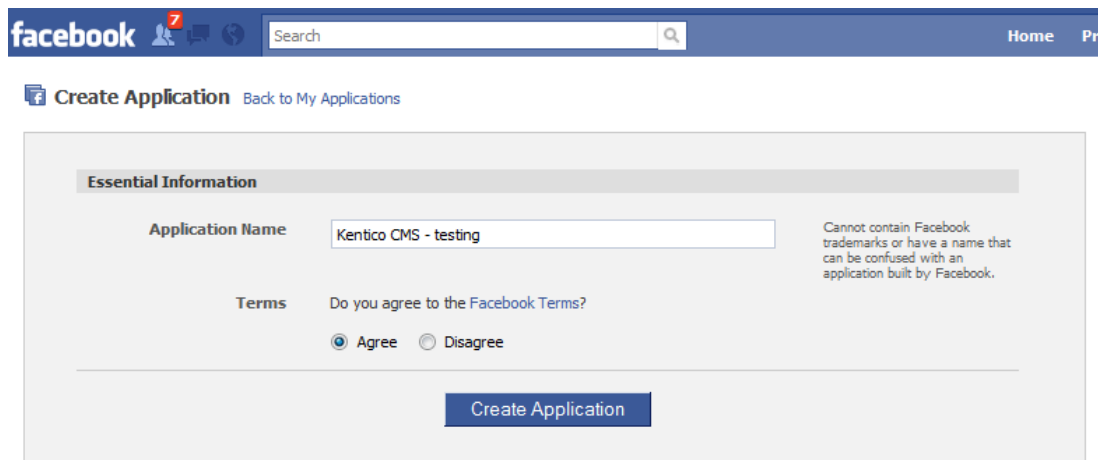
To use Facebook Connect authentication on your website, you need to register the site at <http://www.facebook.com/developers/createapp.php>. You need to have a Facebook account to get to the page, so if you don't have one yet, please create it [here](#) (you would be prompted to do so otherwise).

The following text describes the registration procedure and points out important information that you obtain during it. Please note that the design of the screenshots below may not be identical as Facebook changes its design quite often.

1. With a Facebook account created and logged in, visit <http://www.facebook.com/developers/createapp.php>. Enter the following details into the form:

- **Application Name:** enter the name of your website, e.g. Kentico CMS - testing

Read and **Agree** to the *Facebook Terms* and click **Create Application**.



facebook 7 Search Home Pr

Create Application [Back to My Applications](#)

Essential Information

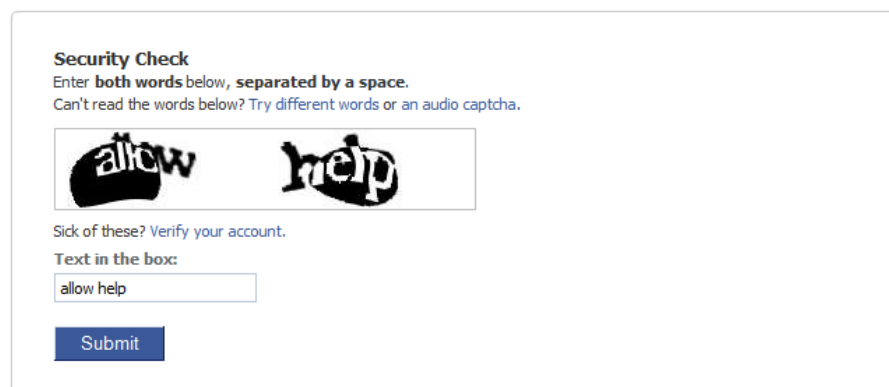
Application Name Cannot contain Facebook trademarks or have a name that can be confused with an application built by Facebook.

Terms Do you agree to the Facebook Terms?


Agree Disagree

Create Application

2. Retype the CAPTCHA on and click **Submit**.



Security Check
Enter **both** words below, **separated by a space**.
Can't read the words below? [Try different words](#) or an [audio captcha](#).



Sick of these? [Verify your account](#).

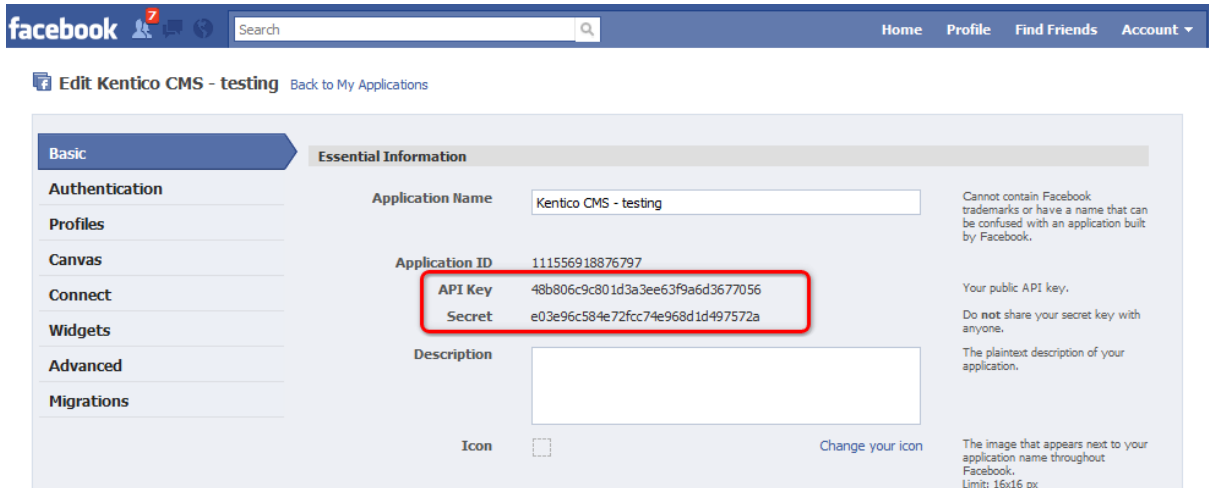
Text in the box:

Submit

3. Your application will be registered and you will see the **Basic** tab of its editing interface. Here, you should focus on the two keys highlighted in the screenshot below, you will need to enter them in **Site Manager -> Settings -> Facebook Connect**:

- **API Key** - this is what you will enter into the **API Key** field
- **Secret** - this is what you will enter into the **Application secret** field

Note them down and set them accordingly in your Kentico CMS instance as described in the [Settings](#) chapter.



The screenshot shows the Facebook Developer console interface. At the top, there is a navigation bar with the Facebook logo, a search bar, and links for Home, Profile, Find Friends, and Account. Below this, the page title is "Edit Kentico CMS - testing" with a "Back to My Applications" link. The main content area is titled "Essential Information" and contains several fields:

- Application Name:** Kentico CMS - testing
- Application ID:** 111556918876797
- API Key:** 48b806c9c801d3a3ee63f9a6d3677056
- Secret:** e03e96c584e72fcc74e968d1d497572a
- Description:** (empty text area)
- Icon:** (empty square icon)

On the right side of the form, there are several informational notes:

- Cannot contain Facebook trademarks or have a name that can be confused with an application built by Facebook.
- Your public API key. Do not share your secret key with anyone.
- The plaintext description of your application.
- The image that appears next to your application name throughout Facebook. Limit: 16x16 px.

A red box highlights the API Key and Secret fields.

4. Now switch to the **Connect** tab. Here, you need to enter the URL of your website into the **Connect URL** field. Click **Save Changes**.



Please note!

Using Facebook Connect authentication on **localhost** may result in incorrect behavior of the authentication. This behavior is by design of the Facebook Connect API. To achieve the required functionality, a standard domain name must be used and the domain name entered in this step must match the domain where your web application is really running.

The screenshot shows the Facebook Connect Settings interface. On the left is a navigation menu with options: Basic, Authentication, Profiles, Canvas, Connect (highlighted), Widgets, Advanced, and Migrations. The main content area is titled 'Facebook Connect Settings' and contains several input fields: 'Connect URL' (with a red box around it and the value 'http://localhost/KenticoCMS_0416/'), 'Facebook Connect Logo' (with a 'Change your logo' link), 'Account Preview URL', 'Base Domain', and 'Account Reclamation URL'. To the right of these fields are explanatory notes: 'Your Connect site's main URL.', 'The image that appears in the Facebook Connect dialog. Limit: 99px wide and 22px tall.', 'Facebook pulls the content from here and displays it to the user in a Facebook Connect request.', 'Use this to enable your Facebook Connect implementation to span multiple subdomains (e.g., using example.com would enable foo.example.com and bar.example.com).', and 'A URL that will be provided to a user that deactivates their Facebook account, to allow an independent account to be set up. See further documentation.' A 'Save Changes' button is located at the bottom right of the settings area.

Your web application is now registered at Facebook. With proper [settings](#) and [web parts](#), users should now be able to authenticate to your site using their Facebook logon details.

7.10.12.4.3 Settings

Facebook Connect authentication settings are located in **Site Manager -> Settings -> Facebook Connect**. Before you start making the settings, make sure you have the right site selected using the **Site** drop-down list at the top left part of the page.

- **Enable Facebook Connect** - indicates if Facebook Connect authentication is enabled
- **API key** - key obtained during registration of your application on Facebook (as described [here](#))
- **Application secret** - key obtained during registration of your application on Facebook
- **Assign new users to roles** - new users registered via Facebook Connect will be assigned to these roles
- **Required user data page** - URL of the page where the *Facebook Connect required data* web part resides; if entered, then when a new Facebook Connect user logs in to the site, their user account is not created automatically, but they are redirected to this page and required to enter some additional data (or merge with an existing account) using the web part

The screenshot displays the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings' (highlighted), 'Development', 'Licenses', and 'Support'. A 'Switch to CMS Desk' link is visible in the top right. On the left, a 'Site:' dropdown menu is set to '(global)'. Below it is a tree view of settings categories, with 'Facebook Connect' selected at the bottom. The main content area is titled 'Facebook Connect' and features a 'Save' button and a 'Reset these settings to default' link. A note states: 'These settings are global, they can be overridden by the local site settings. Please select the site to see or ch'. The settings are as follows:

| | |
|---------------------------|--|
| Enable Facebook Connect | <input checked="" type="checkbox"/> |
| API key | <input type="text" value="48b806c9c801d3a3ee63f9a6d3677056"/> |
| Application secret | <input type="text" value="e03e96c584e72fcc74e968d1d497572a"/> |
| Assign new users to roles | <input type="text" value="CMSFacebookUsers"/> <input type="button" value="Select"/> <input type="button" value="Clear"/> |
| Required user data page | <input type="text"/> |

Below the settings is a link: [Export these settings](#)

7.10.12.4.4 Available web parts

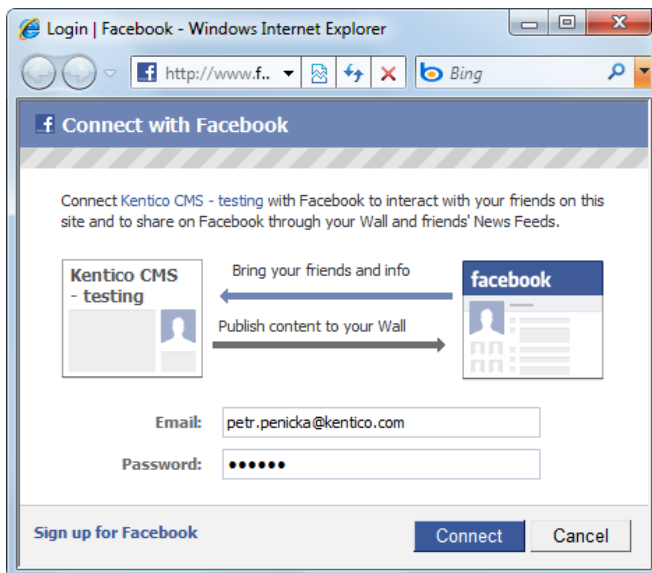
After configuring the [settings](#), you can use the following two web parts on your website to allow Facebook Connect authentication. The web parts are located under the **Membership** category in the web part catalog.

Facebook Connect logon

This web part can be used to let site visitors sign in to your website using their Facebook username and password. It can be placed on any page of your website. The web part is hidden to authorized users and will be displayed only to unauthorized public site visitors. With default settings, the web part appears as in the screenshot below.



If you click the button, a new pop-up window opens, letting you log on using your Facebook username and password.



After successful logon, you will be redirected back to the Kentico CMS site where you came from, but you will be authenticated and a new account will be created in case that this is your first logon.

Even though the web part works fine with default settings, it has the following specific properties to fine-tune its behavior:

- **Sign in text** - if entered, link with the entered text will be used instead of the default sign in image
- **Size** - you can choose from 5 pre-defined sizes of the button
- **Length** - specifies which text label to use on a button with size specified as *small*, *medium*, *large*, or *xlarge*; specify short for the text label *Connect* only or long for the text label *Connect with Facebook*
- **Use latest version** - check this box if you want to use the latest Facebook Connect login buttons; don't check this box if you need to use the original Facebook Connect login buttons
- **Show sign out** - if checked, sign out link will be displayed after the user logs in
- **Sign out text** - if entered, link with the entered text will be used instead of the default sign out image

- **Show as button** - if checked, buttons will be used instead of links
- **Sign out image** - if set, the image will be used as sign out link

Facebook Connect required data

In some cases, you may want the new users to provide some extra details before creating the new account. This can be achieved using the *Facebook Connect user data* web part. The web part must be placed on a page specified by the **Required user data page** in **Site Manager -> Settings -> Facebook Connect**.

The following properties of the web part are the most important:

- **Allow forms authentication** - if checked, new users will be able to enter a password for their new account so that they can log in the usual way as well as via LiveID
- **Allow existing user** - if enabled, users are allowed to join their existing account with their Facebook user ID
- **Default target URL** - if no return URL is passed, users will be redirected to URL entered here after merging or creating the account
- **Hide for no Facebook user ID** - if checked, the web part will be hidden if the page with it is displayed not after Facebook Connect logon (e.g. when accessed by entering its URL into the browser)

Other specific web part properties are explained in [Kentico CMS Web Parts Reference](#) or after clicking the **Documentation** (🔗) link in the top right corner of the web part properties window.

| Existing user | New user |
|------------------------------------|--|
| User name: <input type="text"/> | User name: <input type="text"/> |
| Password: <input type="password"/> | E-mail: <input type="text"/> |
| <input type="button" value="OK"/> | Password: <input type="password"/> |
| | Confirm password: <input type="password"/> |
| | <input type="button" value="OK"/> |

The screenshot above shows how the web part looks with both the **Allow forms authentication** and **Allow existing user** options enabled. In the left part, an existing site user can merge their current user account with the Facebook user ID by just entering their user name and password used on your site. In this case, the Facebook user ID will be added to the **Facebook user ID** field of the existing user account. New users can enter the required details in the right part of the web part.

7.10.12.5 Managing imported users

When a user signs in through a third-party authentication service for the first time, Kentico CMS automatically creates a new user account for them. If you edit such account in **Site Manager -> Administration -> Users**, you can see that it has the following specific settings:

General tab

On the General tab, you can notice that the **User name** and **Full name** fields have been filled automatically with a string in the following format:

User name

- **Live ID:** *liveid_<liveidtoken>*
- **OpenID:** *openid_<openid>*
- **Facebook Connect:** *facebookid_<facebookuserid>*

Full name

- **Live ID:** *LiveID - <liveidtoken>*
- **OpenID:** *OpenID - <openid>*
- **Facebook Connect:** *Facebook ID - <facebookuserid>*

These values can be changed manually without any effects on the functionality.

You can also notice that the **Is external user** check-box is enabled. It indicates that the user account is imported from some external user database and disables forms authentication for the user, i.e. the user can only log in using the third-party authentication service. When merging an existing account with third-party authentication using one of the **<provider> required user data** web parts, the existing account that you want to merge must not have this option enabled (because forms authentication using the web part would not work).

The screenshot shows the 'General' tab of a user account in Kentico CMS. The 'User name' and 'Full name' fields are highlighted with a red box, containing the values 'openid_bd7d25fe-d9de-442c-a195-4307ad0889c1' and 'OpenID - bd7d25fe-d9de-442c-a195-4307ad0889c1' respectively. Below these fields are input boxes for 'First name', 'Middle name', 'Last name', and 'E-mail'. At the bottom, there are several checkboxes: 'Enabled' (checked), 'Is editor' (unchecked), 'Is global administrator' (unchecked), 'Is external user' (checked and highlighted with a red box), 'Is domain user' (unchecked), and 'Is hidden' (unchecked).

If you switch to the **Settings** tab, you can notice the **Live ID**, **Facebook user ID** and **OpenID** fields. This is where the user's ID from the particular provider is stored.

You can change the values manually if you need. You just need to make sure that the entered ID is valid. In such case, the newly entered ID will be used when the user logs in. You can also delete the value, in which case no ID will be assigned to the user. In this case, please remember to disable the **Is external user** option on the **General** tab so that the user can log in using forms authentication.

| General | Password | Settings | Sites | Roles | Departments | Notifications | Categories |
|--------------------------------|----------|---|-------|-------|-------------|---------------|------------|
| | | | | | | | |
| URL referrer: | | | | | | | |
| Campaign: | | | | | | | |
| Messaging notification e-mail: | | | | | | | |
| Time zone: | | (none) | | | | | |
| Badge: | | Member (Automatic) | | | | | |
| User activity points: | | 0 | | | | | |
| Live ID: | | | | | | | |
| Facebook user ID: | | | | | | | |
| OpenID: | | https://www.google.com/accounts/o8/id?id=AltOaw | | | | | |
| Activation date: | | | | | | Now | |
| Activated by user: | | N/A | | | | | |
| Registration info: | | N/A | | | | | |

7.11 Microsoft Silverlight integration

7.11.1 Overview

Kentico CMS comes with native support of **Microsoft Silverlight 2.0**. Microsoft Silverlight is a new cross-browser, cross-platform technology for building and delivering the next generation of media experiences and Rich Interactive Applications (RIA) for the Web.

Silverlight applications run in the internet browser. All you need is a small plug-in installed in your browser. The plug-in is free and in case that users access a site containing a Silverlight application without this plug-in installed, install banner leading to download link will be offered automatically.

You can find an example of a Silverlight application of the sample **E-commerce** site, in the **Silverlight** section.

The screenshot displays an e-commerce website interface. At the top left, the logo reads "E-commerce starter site". A navigation bar includes links for "Home", "News", "Products", "How to buy", "Company", and "Silverlight", with the "Silverlight" link highlighted by a red box. A shopping cart icon in the top right corner shows "Your shopping cart is empty".

The main content area features a "Products" dropdown menu set to "(all)". A large product card for the "Apple iPhone" is prominently displayed, showing a photo of the phone and a description: "iPhone is a revolutionary new mobile phone that allows you to make a call by simply tapping a name or number in your address book, a favorites list, or a call log. It also automatically syncs all your contacts from a Windows PC, Mac, or Internet service. And it lets you select and listen to voicemail messages in whatever order you want @ just like email." The price is listed as "Our price: \$499.00".

Below the iPhone card, two other products are visible: "Nokia 6300" with a price of "\$129.00" and "Nokia N82" with a price of "\$490.00".

The left sidebar contains a search bar, a "Products" category list (Cameras, Cell phones, MP3 Players, Notebooks, PDAs, PCs), a poll titled "How did you find this site?" with radio button options for "Referred by a friend", "Print advertising", "Link from another web site", and "Search engine", and a "Vote" button. Below the poll are "Quick links" for "How to buy", "Company", "News", and "Home".

The right sidebar includes a "Latest news" section with two entries dated "2/13/2008" and a "Newsletter subscription" form with an "E-mail:" input field and an "OK" button.

At the bottom center, there is a logo for "POWERED BY Kentico".

How it works in general

1. Developer creates a website with a built-in Silverlight application.
2. Site visitor navigates to that site using an internet browser.
3. If the user does not already have the required plug-in installed in the browser, they are automatically prompted to install it.
4. The Silverlight application is executed.

Creating Silverlight applications

Silverlight is a **.NET Framework** based technology, so if you are familiar with development using **Visual Studio** and one of the **.NET Framework languages** like **C#**, it will be much easier for you to learn Silverlight. For developing Silverlight 2.0 applications, you will need at least **Microsoft Visual Studio 2008 SP1** with **Silverlight Tools**. There is one more powerful tool for designers - **Expression Blend**, which enables you to create application design in a really comfortable way. We also strongly recommend installing **Silverlight Toolkit**, which brings many new controls that can be used in your Silverlight applications.

Visit the [Silverlight community](#) site where you can download all the required components. Moreover, there you can find valuable tutorials which can help you get started developing Silverlight applications.

We also recommend reading the official [Microsoft Silverlight documentation](#).

7.11.2 Adding Silverlight application to your site

To add your Silverlight application to your site, you will need to use the **Silverlight application** web part, which is a container for Silverlight applications. You can find a live example of use of this web part on the sample **E-commerce site**, in the **Silverlight** section.

The following steps need to be taken to add your Silverlight application to a website.

1. Go to **CMS Desk** and choose the page where you want to add your Silverlight application from the content tree.
2. Switch to the **Design** tab and click the **Add web part** (+) icon at the top-right corner of the web part zone where you want to place the application.
3. Choose the **Silverlight** -> **Silverlight application** web part and click **OK**.
4. In the web part properties window which pops-up, you can set the following web-part-specific properties:
 - **Application path** - path to your Silverlight application; e.g. `~/ClientBin/MyApplication.xap`
 - **Minimum version** - minimal required version of Silverlight required by the silverlight application run by this web part
 - **Container width** - width of the application container; can be entered either as an integer value (e.g. 315) or as a percentage value (e.g. 59%)
 - **Container height** - height of the application container; can be entered either as an integer value (e.g. 315) or as a percentage value (e.g. 59%)
 - **Container background** - background of the application container; can be entered in hexadecimal (e.g. #323232) format or selected from a Color picker, which is displayed after clicking the Select button; if no value is entered, white color is used
 - **Endpoint address** - web service endpoint address the client application can connect to; if specified, its value is added as parameter with 'endpoint' key to the application parameters collection; you need to handle this parameter in your Silverlight application for it to take effect
 - **Parameters** - Silverlight application parameters in the following format: `<key1>=<value1>, <key2>=<value2>,...`
 - **Alternate content** - custom HTML content which is displayed to users when Silverlight plug-in is not installed; leave blank if you want the default alternate content to be displayed

Click **OK**, switch to the **Live site** and enjoy your Silverlight application running on your Kentico CMS website.

7.11.3 IIS configuration

Silverlight introduces two new file extensions:

- **.xaml** for XAML files
- **.xap** for the zip-based binary packaging format

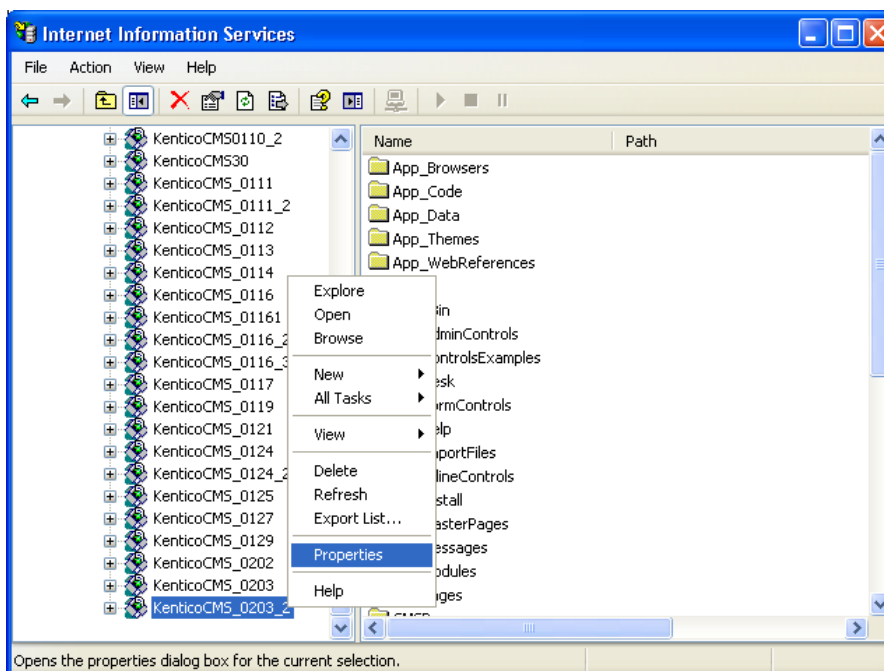
For your application to work correctly, you need to add the MIME types for these file extensions to your web server so that it recognizes Silverlight content appropriately:

- **Extension:** .xaml
- **MIME type:** application/xaml+xml

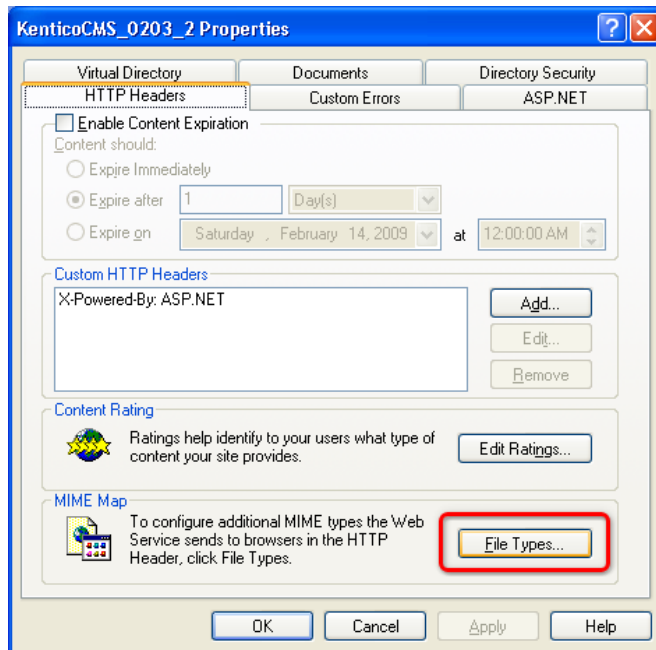
- **Extension:** .xap
- **MIME type:** application/x-silverlight-app

Here is a step-by-step guide on how to do it on IIS 5.1:

1. Open IIS, right-click your website and choose **Properties**.



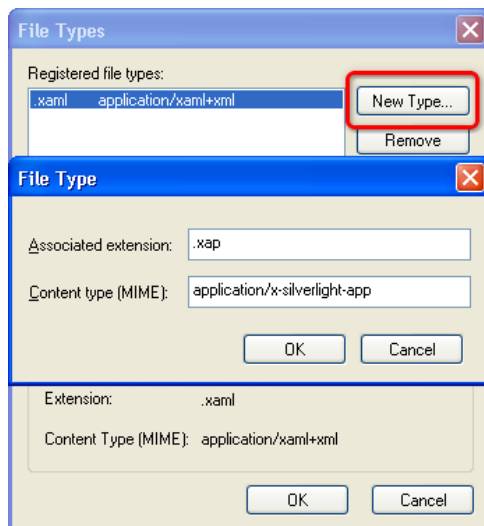
2. Switch to the **HTTP Headers** tab and choose **File Types** in the **MIME Map** section.



3. Using the **New Type** button, add the following MIME types:

- **Associated extension:** .xaml
- **Content type (MIME):** application/xaml+xml

- **Associated extension:** .xap
- **Content type (MIME):** application/x-silverlight-app



7.12 Multilingual and international support

7.12.1 Overview

Language settings of Kentico CMS can be performed on two levels: **User interface culture** defines the language of the administration interface (CMS Desk and Site Manager), while **Content culture** is used to define the language of your website content.

User interface culture

The user interface culture represents language of the administration interface - CMS Desk and Site Manager. UI cultures can be managed and added in **Site Manager -> Development -> UI Cultures**.

UI cultures can be set for each user in **Site Manager -> Administration -> Users -> edit (✎) a user -> General -> Preferred user interface culture**.

The default UI culture can be set by adding the following key to the `<appSettings>` section of your site's `web.config` file:

```
<add key="CMSDefaultUICulture" value="en-nz" />
```

If you use this key, you also need to rename the `~\CMSResources\CMS.resx` file to **CMS.en-us.resx** and the **CMS.en-nz.resx** file to **CMS.resx**. This is needed because the `CMS.resx` file is used when the *(default)* option is selected in users' *Preferred user interface culture*.

When this key is used and the `CMS.resx` file contains the en-nz dictionary, for the user who has their **Preferred user interface culture** set to **(default)**, the UI culture will be `en-nz`.

Learn more about configuring multilingual UI [here](#).

Content culture

The content culture determines the actual culture of the website content stored in Kentico documents. In a multilingual site, there are multiple versions of a document for each culture.

The list of all content cultures available in Kentico CMS can be found in **Site Manager -> Development -> Cultures**. All major cultures are provided in the list.

The default content culture can be set the following ways:

- **Site Manager -> Sites -> Edit -> Default content culture**
- **Site Manager -> Settings -> (select site from the drop-down list) -> website -> Default culture of the content**

See the example on [this page](#).

Based on the settings of the user's **Preferred content culture** in the **Site Manager -> Administration -> Users -> edit (✎) a user -> General** tab the user will either see the content in the default culture - if the setting is to **(default)** - or in the preferred culture.

It is also possible to set the default culture separately for anonymous visitors of the site. This again can be set on two levels:

- generally for a site in **Site Manager -> Sites -> edit (✎) a site -> General -> Default visitor culture**
- for a particular domain alias of a site in **Site Manager -> Sites -> edit (✎) a site -> Domain Aliases -> edit (✎) an alias -> Default visitor culture**

It is either set to **(Automatic)** in which case the **user's browser settings** will be used, or it can be set manually to one of the available cultures. The list of available cultures can be found in **Site Manager -> Sites -> edit (✎) a site -> Cultures**.

7.12.2 Configuring multilingual content

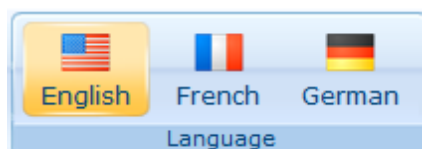
This chapter explains how to configure website for displaying content in multiple languages. When you create a new website, it uses the culture you specify during the [New site wizard](#).

The following example shows how to add extra language versions to the standard Corporate Site:

1. Go to **Site Manager -> Sites** and click the **Edit site (✎)** icon next to the Corporate Site. Go to the **Cultures** tab. Click the **Add cultures** button and add the following cultures: French - France and German - Germany. Click **Save**.



2. Switch to the CMS Desk. You can see there's a new section with language selection in the main toolbar:



3. Click root document and choose **French** culture. Since the French version of the document doesn't exist yet, you're offered with two options:
 - **create empty document** - this option creates a new document of the same type without any content.
 - **copy content from another language** - this option creates a new document of the same type and

copies the content from the English version

Choose to copy content from the English version and click **Create document**:

 **New culture version (fr-FR)**

The document does not exist in the current culture. You can create a new culture version of the document.



- Create empty document
 Copy content from another language

English - United States

Create document

4. You are redirected to the editing form of the new version:

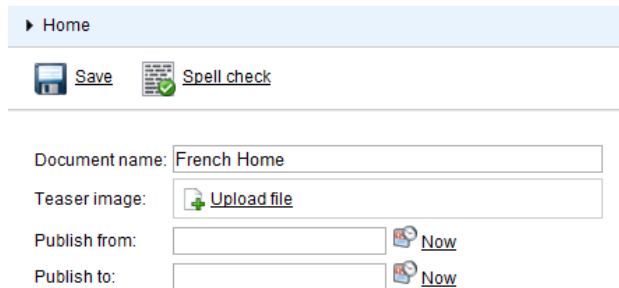
Corporate Site

 [Save](#)  [Spell check](#)

Document name:

The root cannot have any name, so the box is now disabled. Click **Save**. The new document culture version is created.

5. Now repeat the same for the **Home** page. On the editing form, change the document name to: French Home.



The screenshot shows the editing interface for the 'Home' page. At the top, there is a blue header bar with a right-pointing arrow and the text 'Home'. Below this, there are two buttons: 'Save' with a floppy disk icon and 'Spell check' with a document icon and a green checkmark. A horizontal line separates this header from the main form area. The form contains several fields: 'Document name:' with a text box containing 'French Home'; 'Teaser image:' with a text box containing a plus icon and the text 'Upload file'; 'Publish from:' with a text box and a 'Now' button with a clock icon; and 'Publish to:' with a text box and a 'Now' button with a clock icon.

Click **Save**.

6. Change the heading text in the **MainContentText** web part to "Welcome to the French version of the Sample Corporate Site".



Click **Save**.

7. Sign out. Now, you can see the live site in French version:



8. As you can see, you can switch between languages using the language selection links at the top. They are displayed automatically using the **Language selection** web part.
9. Now sign in as administrator to **Site Manager and go to Settings -> website**. Choose the Corporate Site in the drop-down list and set the value **Combine with default culture** to **true**. Click **Save**. Sign out and see the French version of the live website now:



As you can see, the documents (menu items) that are not translated to French, are now displayed in the default culture (English).



Creating content for another language version

Every time you create content for another language version, please be sure you "translate" at least the **root** document and the **home page**. Otherwise, the website will not be displayed correctly.

The documents that are not translated yet are displayed with a little cross icon on the right so that you know what needs to be translated.

7.12.3 Configuring multilingual and RTL UI

Kentico CMS allows you to manage content in any language, including double-byte (eastern) languages, such as Chinese, and right-to-left languages (such as Hebrew or Arabic). All content is stored and published in UNICODE.

Translating the administration interface

If you want the administration interface to be displayed in a different language or at least with different culture settings (e.g. calendar and numeric format), go to **Site Manager -> Development -> UI cultures** and create a new UI culture:

- **UI culture name:** Hebrew (example - you can use any other culture)
- **UI culture code:** he-IL (example - you can use any other culture code)

Click **OK**.

Now create a copy of file `<web project>\CMSResources\cms.resx` under name `cms.he-IL.resx` (generally `cms.<culture code>.resx`) in the same folder and translate the strings.

Please note: when you make changes to the .resx file, you need to restart the web application using the **Site Manager -> Administration -> System -> Restart application** button so that the changes are updated in the user interface.

Modifying standard strings

If you want to modify some text in the user interface (including web parts), you can create a **custom.resx** file and put your strings to this file. The name of the string must be the same as in the `cms.resx` file. This procedure allows you to modify the strings without worrying that your changes will be overwritten during an upgrade to a newer version.

If you need to customize strings in non-english resource file, your custom file must use a name like `custom.fr-fr.resx` for French.

How to add your own strings

If you need to translate your own website strings, such as form labels or other static text into several languages, you can create custom string in **Site Manager -> Development -> UI cultures** either in English or only in some specific language. Please be sure to check the **Custom string** box in this case so that the string is automatically exported with your website.

Then, you can retrieve the string using the **CMS.GlobalHelper.ResHelper.GetString** method in your custom code.

Please see chapter [Localization Expressions](#) to see how you can insert localized strings into text values throughout the CMS.



Priority of the resource strings

When looking for a localized strings, the system uses the following priority:

1. database (Site Manager -> Development -> UI Cultures)
2. custom.resx
3. cms.resx

It means if there are duplicate strings with same name in all three files, the system will use the one stored in the database.

To change the priorities, you can add the following key to your web.config:

```
<add key="CMSUseSQLResourceManagerAsPrimary" value="false" />
```

When the key is added, the priorities are the following:

1. custom.resx
2. cms.resx
3. database (Site Manager -> Development -> UI Cultures)

Applying selected culture to the user interface

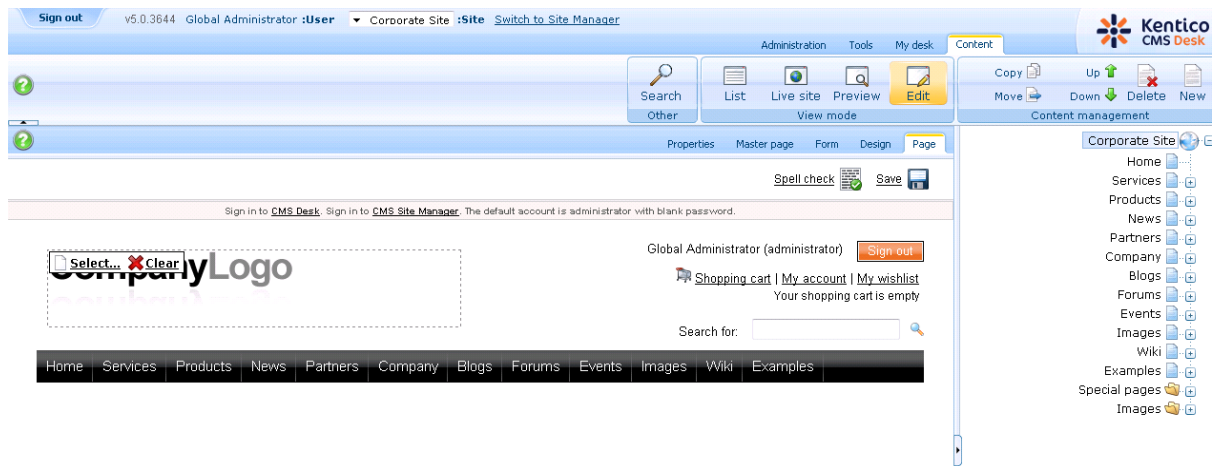
Now if you want to view the user interface in a different culture, you need to go to **Site Manager -> Administration -> Users ->** edit your user profile and set the **Preferred user interface culture** to the required value:

The screenshot shows a web interface for managing users. At the top, there's a 'Users' header with a sub-menu containing 'Users', 'Waiting for approval', 'Mass e-mail', and 'On-line users'. Below this, a breadcrumb trail shows 'Users > Mia'. A secondary menu includes 'General', 'Password', 'Settings', 'Sites', 'Roles', 'Departments', 'Notifications', and 'Categories'. A 'Log in as this user' link is visible. The main form contains the following fields:

| | |
|-----------------------------------|-------------------------------------|
| User name:* | Mia |
| Full name: * | Mia Lee |
| First name: | Mia |
| Middle name: | |
| Last name: | Lee |
| E-mail: | mia.lee@mydomainXY.com |
| Enabled: | <input checked="" type="checkbox"/> |
| Is editor: | <input type="checkbox"/> |
| Is global administrator: | <input type="checkbox"/> |
| Is external user: | <input type="checkbox"/> |
| Is domain user: | <input type="checkbox"/> |
| Is hidden: | <input type="checkbox"/> |
| Preferred content culture: | English - United States |
| Preferred user interface culture: | Czech |
| Created: | 12/8/2009 3:09:21 PM |
| Last logon: | N/A |
| Last logon information: | N/A |
| Starting alias path: | |

An 'OK' button is located at the bottom of the form.

When you sign out and sign in again, the user interface is displayed with the new culture settings and translated strings (after you translate them):



7.12.4 RTL languages

If the website is displayed in language that uses right-to-left direction of written text (typically arabic languages), the CSS style of the BODY element is set to RTL (<body class="RTL">). You may need to add right-to-left specific CSS styles modifications.



RTL in UI culture vs. content culture

The **user interface direction** (RTL or LTR) is driven by the **preferred UI culture** of the current user. The **content direction** is driven by the **preferred (content) culture** of the current user.

Example:

Original LTR style:

```
.xxx
{
text-align: left;
float: left;
border-right: solid 1px #cccccc;
}
```


RTL style:

```
.RTL .xxx
{
text-align: right;
float: right;
border-right: none;
border-left: solid 1px #cccccc;
}
```

Adding culture-specific fonts

If your culture uses specific fonts that are not available in the WYSIWYG editor, you need to configure it:

1. Open file <web project>\CMSAdminControls\FCKeditor\fckconfig.js in notepad.
2. Add your font names on the following line:

```
FCKConfig.FontNames = 'Arial;Comic Sans MS;Courier New;Tahoma;Times New Roman;
Verdana';
```

3. Save the file.
4. Clear the cache of your web browser (Internet Explorer: Tools -> Internet Options -> General -> Delete files..., check the "delete all off-line content" box and click OK).
5. Close the browser and sign in to Kentico CMS Desk again. Now you should see the new font(s) in the WYSIWYG editor's font list.

7.12.5 Languages and URLs

When you're using multilingual support, all language versions of the given document use the same URL (based on the alias path) by default. E.g. the home page always has this URL: `/Home.aspx`

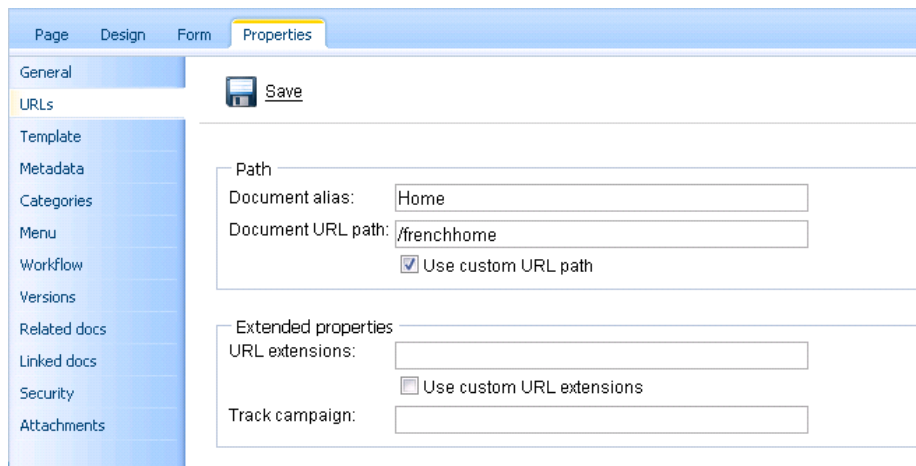
If you want to see the same page in French, you need to go to: `/Home.aspx?lang=fr-fr`

Once the language is changed, the selected language is stored in the visitor browser's cookie and when the user comes back to the `/Home.aspx` URL (without any parameters), the French version is displayed to them.

Using custom URL path for different culture versions

If you want the French home page to have different URL than the English version, you need to go to **CMS Desk -> Content** -> choose the French language, select /Home in the content tree and click **Properties** -> **General**.

Check the **Use custom URL path** box and set the **Document URL Path** value to: **/frenchhome**



The screenshot shows the 'Properties' dialog box for a document in Kentico CMS. The 'General' tab is selected, and the 'URLs' section is active. A 'Save' button is visible at the top. The 'Path' section contains the following fields and options:

- Document alias: Home
- Document URL path: /frenchhome
- Use custom URL path

The 'Extended properties' section contains the following fields and options:

- URL extensions: [empty field]
- Use custom URL extensions
- Track campaign: [empty field]

Now sign out, switch to the English version and go to URL: `<web project>/frenchhome.aspx` page. The website culture is automatically switched to French and you're displayed with French version.

You can also find some information on using Wildcard URLs on multi-lingual sites in [this topic](#).

7.12.6 Default language selection

When a user first comes to the website, their content language is selected and stored in a cookie. You can specify for every domain and domain alias which culture should be used by default.

Go to **Site Manager -> Sites** and edit site Corporate Site. On the **General** tab, you can see the **Default visitor culture** field. You can choose either some particular language that will be used by default or you can choose the option **(Automatic)** that displays the content based on the preferred language of visitor's web browser (in Internet Explorer, you can set the default language in Tools -> Internet Options -> Languages). It automatically selects the nearest content culture that is available for the given website.

Language selection based on the domain

You can configure the system to use different default languages based on the current domain. If you use the following domains:

- example.com (main domain)
- example.de (domain alias)
- example.fr (domain alias)

you need to set the default cultures English, German and French to the domains/domain aliases (respectively). Now, when a visitor comes first to e.g. *example.fr* domain, the content is automatically displayed in French.

7.12.7 Localization Expressions

If you need to supply a localized value into web part property or to some other setting where localization expressions are supported, you can use expressions in following formats:

| Format | Description | Sample Value |
|--|--|--|
| Basic format:
<code>{ \$key\$ }</code> | Displays value of the given string specified in the Site Manager -> Development -> UI Cultures section or in the resx files in the CMSResources folder. | <code>{ \$myform.firstname\$ }</code> |
| In-place localization:
<code>{ \$=default_string culture_code=translation culture_code=translation etc.\$ }</code> | <p>Displays the strings defined in the expression.</p> <p>On the left, you can see an example that displays Hallo for German culture, Ciao for Italian and Hello for all other cultures (default value).</p> | <code>{ \$=Hello de-de=Hallo it-it=Ciao\$ }</code> |

See also: [Appendix A - Macro expressions](#)

7.12.8 Translation management

7.12.8.1 Overview

The translation management features brings various improvements aimed to facilitate website localization. There is a large number of improvements planned to be implemented. Due to the complexity, only the first implementation phase can be found in this version of Kentico CMS. The full functionality is supposed to be implemented in one of the following versions.

What is already available?

- [Culture-dependent workflow scopes](#) - each language version can have its own workflow defined
- [Translation status overview on the List tab](#) - you can see which language versions of documents under the selected node are translated, missing or outdated
- [New Properties -> Languages tab](#) - for each document, this tab displays information about all language versions of the current document
- [Language-bound editors](#) - you can specify which users can edit particular language versions of documents

7.12.8.2 Culture-dependent workflow scopes

Workflows can now be defined separately for each language version of your documents by using culture-dependent workflow scopes. A workflow scope defines which documents should a particular workflow be applied to. If you are not familiar with the workflow functionality of Kentico CMS, please refer to the **Workflow and versioning** chapter of this guide and especially [this topic](#), where the process of defining a workflow is described step-by-step.

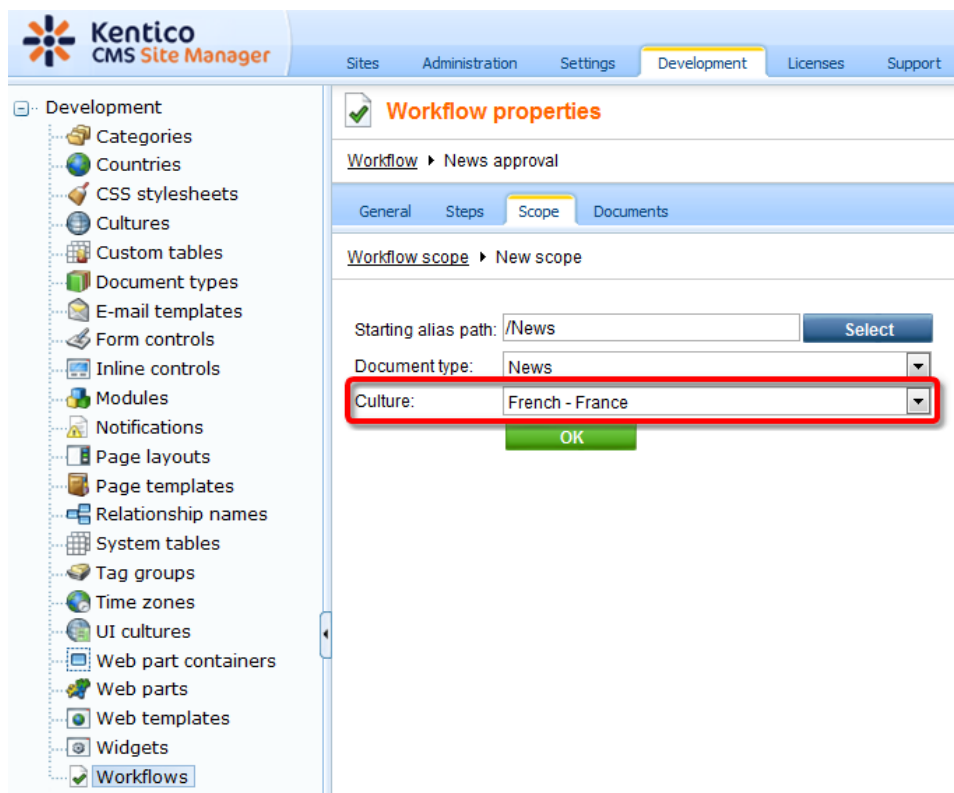
When defining a workflow scope, you can now specify the **Culture** property. Using this property, you can specify that the workflow will be applied only to the specific language versions of the documents.

The three workflow scope properties work as the following:

- **Starting alias path** - the workflow will be applied only to documents stored under the entered alias path
- **Document type** - the workflow will be applied only to documents of the selected document type
- **Culture** - the workflow will be applied only to the selected language versions of documents specified by the two properties above; choose (all) for the workflow to be applied to all cultural versions

Workflow scopes are applied with the following priorities (from highest to lowest):

1. Scope with specified document type and culture
2. Scope with specified document type
3. Scope with specified culture
4. Scope without specified document type and culture



7.12.8.3 Translation status overview

CMS Desk's **List** tab provides a useful overview of language versions of the documents. By selecting a node from the content tree and switching to this tab, you can see a list of documents placed under the selected node.

As you can see in the screenshot below, there is the **Languages** column with flags on different colored backgrounds. This column is displayed only on multi-language sites. The flags represent the particular language versions of each document.

The colors indicate the following translation statuses with respect to the default site culture:

- **Green - Translated** - the document is translated and up-to-date
- **Orange - Outdated** - the document is translated but outdated, which means that the default language version has been modified (or published when using workflow) more recently than the translated version
- **Red - Not available** - the document's version in the language does not exist

If you click a **Translated** or **Outdated** flag, you are redirected to the **Edit -> Page** tab of the appropriate language version of the document. If you click a **Not available** flag, you are redirected to the language version's creation dialog.

Another thing you may notice in the screenshot below is the **(en-US)** string attached to some document's names. The **Name** column displays names of the documents in the currently edited culture (which is French in the screenshot). If the document in this language version **does not exist**, the column displays the name from the **default culture** with the default culture code appended in brackets.

The screenshot shows the Kentico CMS Desk interface. The top navigation bar includes 'Content', 'My desk', 'Tools', and 'Administration'. The main content area displays a 'Document listing' table for the 'Corporate Site'. The table has the following columns: Actions, Document name, Document type, Modified, Published, Version, and Languages. The 'Languages' column shows flags for different cultures, with some flags being green (translated), orange (outdated), or red (not available). The 'Document name' column shows names like 'Home', 'Services (en-US)', 'Products', etc. The 'Languages' column shows flags for Czech, English, and French.

| Actions | Document name | Document type | Modified | Published | Version | Languages |
|---------|-----------------------|------------------|------------------------|-----------|---------|-----------|
| | Home | Page (menu item) | 12/23/2009 2:16:12 PM | Yes | - | |
| | Services (en-US) | Page (menu item) | 7/7/2009 1:54:05 PM | Yes | - | |
| | Products | Page (menu item) | 12/23/2009 2:16:18 PM | Yes | - | |
| | News (en-US) | Page (menu item) | 9/29/2008 1:59:20 PM | Yes | - | |
| | Partners (en-US) | Page (menu item) | 8/6/2009 12:50:42 PM | Yes | - | |
| | Company (en-US) | Page (menu item) | 11/25/2008 5:37:23 PM | Yes | - | |
| | Blogs (en-US) | Page (menu item) | 4/21/2008 3:15:44 PM | Yes | - | |
| | Forums (en-US) | Page (menu item) | 4/21/2008 3:19:08 PM | Yes | - | |
| | Events (en-US) | Page (menu item) | 4/21/2008 3:19:44 PM | Yes | - | |
| | Images (en-US) | Page (menu item) | 4/21/2008 3:20:27 PM | Yes | - | |
| | Wiki (en-US) | Page (menu item) | 5/21/2009 8:39:40 AM | Yes | - | |
| | Examples (en-US) | Page (menu item) | 9/4/2008 4:16:42 PM | Yes | - | |
| | Special pages (en-US) | Folder | 12/13/2007 11:42:41 AM | Yes | - | |
| | Images (en-US) | Folder | 11/12/2009 4:29:51 PM | Yes | - | |

If you hover a flag with the mouse cursor, an info box will be displayed, giving additional information about the language version.

The tooltip shows the following information:

- Yes
- Language: Czech - Czech Republic
- Status: Outdated
- Last modified: 12/23/2009 2:17:40 PM

The Languages tab

The same statuses can be shown separately for each document. You can view them by selecting the document from the content tree and switching to the **Properties -> Languages** tab.

By clicking the **Edit culture version** (✎) icon, you can be redirected to the **Edit -> Page** tab of the selected culture version. By clicking the **Add new culture version** (📄) icon of a not-available version, you can proceed to creating the new culture version of the document.




| Action | Name | Language | Status | Modified | Version | Published |
|--------|------|-------------------------|---------------|-----------------------|---------|-----------|
| ✎ | Home | English - United States | Translated | 12/23/2009 2:17:52 PM | - | Yes |
| ✎ | Home | French - France | Outdated | 12/23/2009 2:16:12 PM | - | Yes |
| 📄 | - | Czech - Czech Republic | Not available | - | - | No |

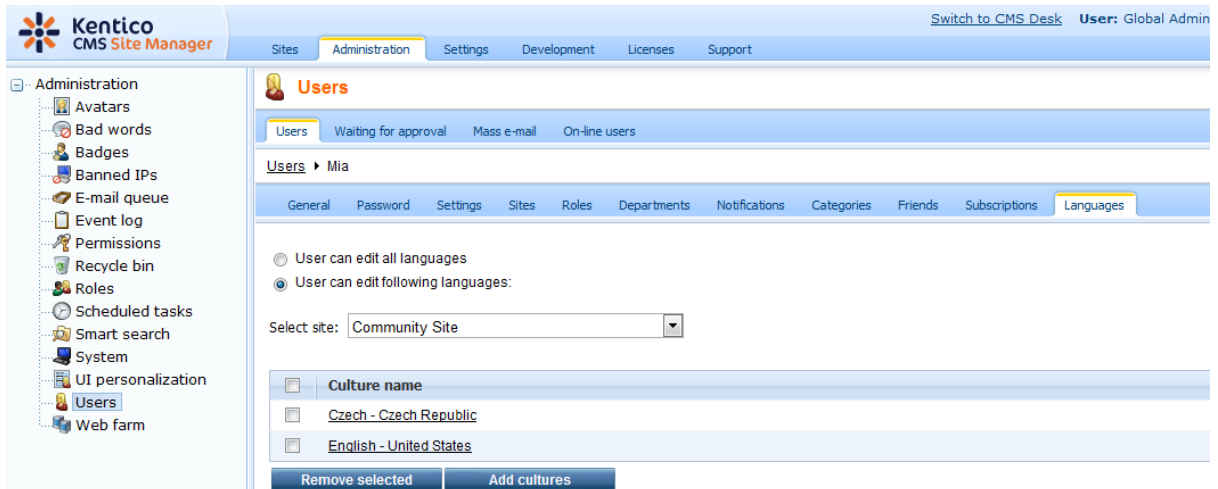
Hiding the Languages tab

The **Languages** tab can be displayed or hidden to members of particular roles. This can be set up using UI personalization as described [here](#).

7.12.8.4 Language-bound editors

You can also specify who will be able to edit which language versions of documents. This setting can be done separately for each user. If you go to **Site Manager -> Administration -> Users**, choose to **Edit** () a particular user and switch to the **Languages** tab, you have the following two options:

- **User can edit all languages** - if selected, the currently edited user can edit documents in all language versions of all sites in the system
- **User can edit following languages** - if selected, you can specify which language versions can be edited by the user by checking the check-boxes in the list of language versions; this can be set separately for each site in the system using the **Select site** drop-down list



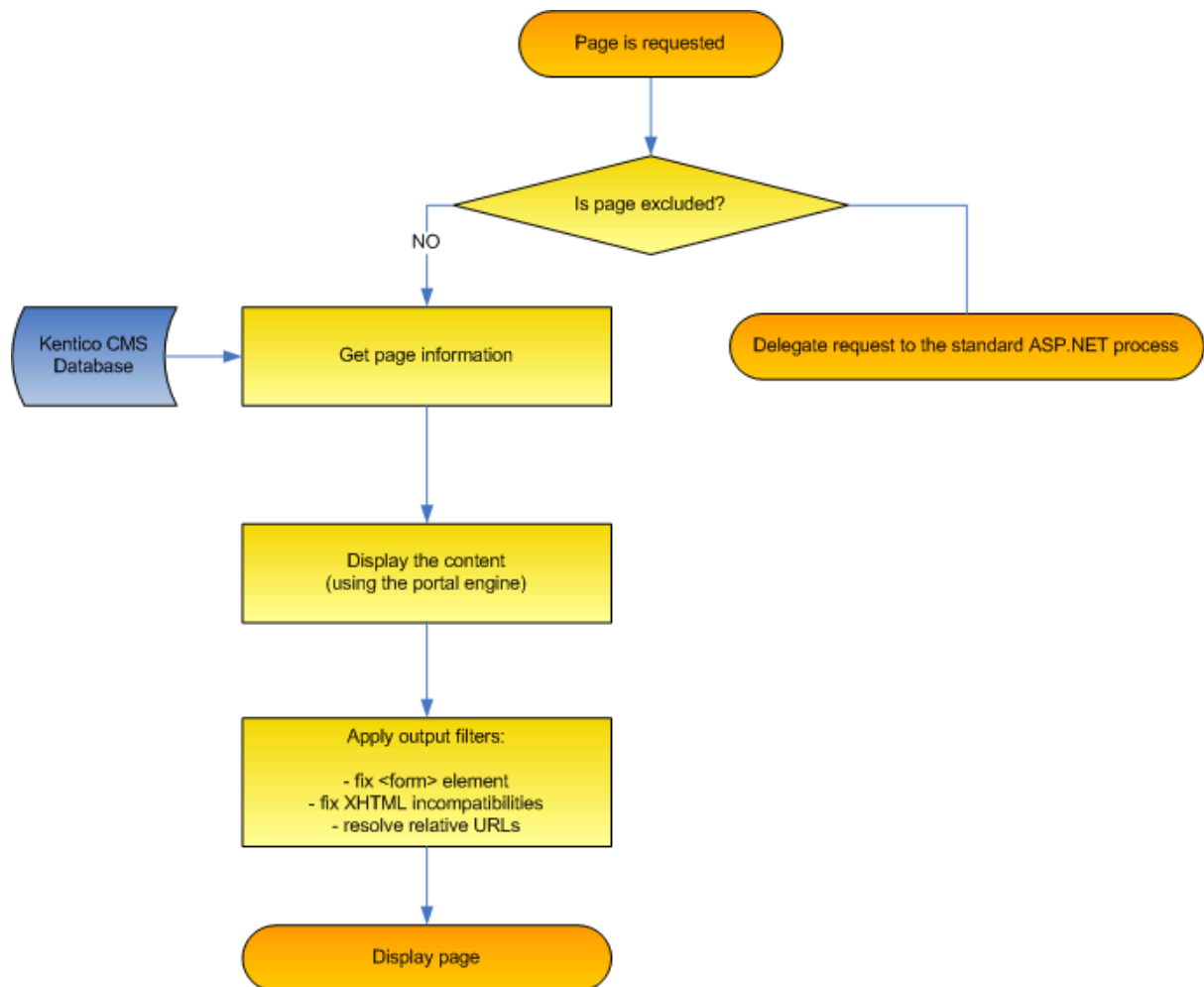
The screenshot displays the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The 'Administration' section is expanded, showing a list of administrative tasks such as 'Avatars', 'Bad words', 'Badges', 'Banned IPs', 'E-mail queue', 'Event log', 'Permissions', 'Recycle bin', 'Roles', 'Scheduled tasks', 'Smart search', 'System', 'UI personalization', 'Users', and 'Web farm'. The 'Users' section is active, showing a list of users with tabs for 'Users', 'Waiting for approval', 'Mass e-mail', and 'On-line users'. The user 'Mia' is selected, and the 'Languages' tab is active. The 'Languages' tab shows two radio button options: 'User can edit all languages' (unselected) and 'User can edit following languages:' (selected). Below these options is a 'Select site:' dropdown menu set to 'Community Site'. A table lists culture names with checkboxes: 'Czech - Czech Republic' and 'English - United States'. At the bottom of the table are buttons for 'Remove selected' and 'Add cultures'.

7.13 Page processing and URLs

7.13.1 Overview

Kentico CMS processes URLs using a **URL rewriting engine**. This engine ensures displaying of the correct page based on the required friendly (smart) URL. After the page is processed by the URL rewriting engine, it is run through the output filters that ensure additional changes in the rendered HTML code.

The following figure shows the page processing step-by-step:



7.13.2 URL rewriting

Kentico CMS uses a system of friendly URL addresses. It allows you to use URLs like:

```
http://www.example.com/products/kentico-cms.aspx
```

instead of

```
http://www.example.com/products.aspx?id=527
```

Every document has its own URL. When multiple languages are used, the document is recognized either using its **URL path** (if specified) or using a combination of **alias path and preferred culture** that is stored in a cookie.

URL processing

1. The system gets the incoming request `http://www.example.com/products/kentico-cms.aspx` and looks up the website based on the domain name (either on the main domain name or domain aliases). If it doesn't find any running website, it displays the page `/cmsmessages/invalidwebsite.aspx`. If the domain name with required port number is not found, it also tries to find a site with the same domain name without any port number.
2. Then it looks up a document with alias path equal to `/products/kentico-cms` and with current culture. It can optionally search also for other default culture version of the same document in case the required culture version is not available - this can be set in Site Manager -> Settings -> website -> Combine with default culture.
3. If such URL path is not found, the system tries to find a document with URL path `/products/kentico-cms`.
4. If no document is found for the requested URL, the system doesn't process the request and the web server displays the standard 404 – Page not found error.
5. If the requested document is found, the URL rewriting engine looks up which page template should be used for its displaying and call the appropriate page template like `/products.aspx?aliaspath=/products/kentico-cms`. The page template is responsible for displaying of the document. If the document doesn't have any page template specified, the URL rewriting engine tries to find the page template of the parent and use it. If the page is managed by a portal engine, the page called is `/cmspages/portaltemplate.aspx` which is a page that renders the page from web parts.

The system of “friendly” or “smart” URLs provides several benefits:

- They are easy to remember and easy to write into the browser address bar.
- They are friendly to search engines (SEO friendly).
- They show users where they are located on the website.
- You can easily send the URL of the document to your friends and they will see the same page with the particular document.

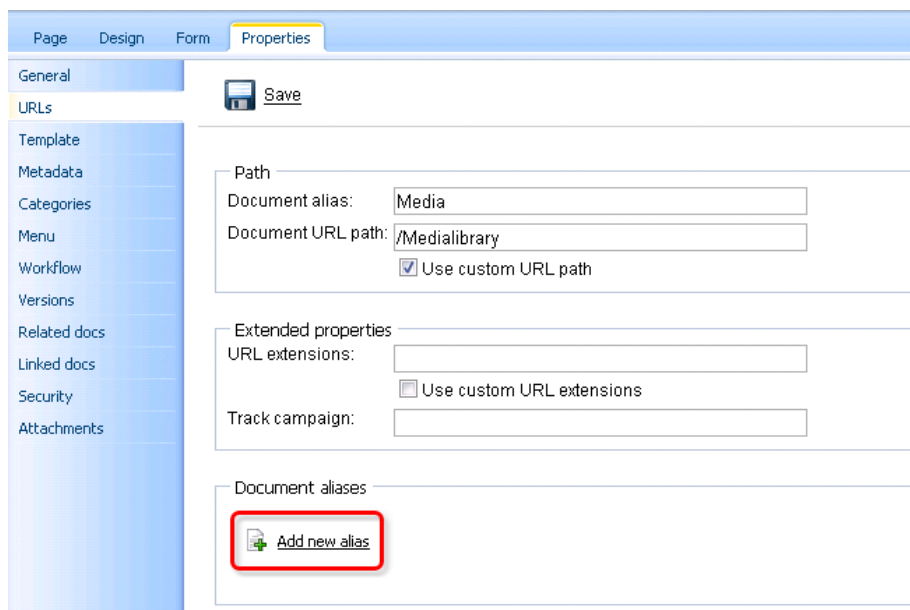
7.13.3 Multiple document aliases

In versions prior to Kentico CMS 4.0, you could have two URLs leading to one document. Both of these could be set in CMS Desk, on the **Properties -> URLs** tab of each document:

- **Document alias** - this is the unique name of the document in the given section of the website; if *Media* is the value, then *<domain>/Media.aspx* is the URL under which the document can be accessed by default
- **Document URL path** - this is the URL alias that could be used in the versions preceding 4.0; if you enter */Medialibrary*, the page will also become accessible through *<domain>/Medialibrary.aspx*

Kentico CMS 4.0 brings the possibility of having an unlimited number of aliases for each document. Adding new document aliases can be done the following way:

1. Sign in to CMS Desk, select some document from the content tree and switch to its **Properties -> URLs** tab.
2. Click the **Add new alias** link in the **Document aliases** section.



The screenshot displays the 'Properties -> URLs' configuration interface in Kentico CMS. The left sidebar contains a navigation menu with options: General, URLs (selected), Template, Metadata, Categories, Menu, Workflow, Versions, Related docs, Linked docs, Security, and Attachments. The main content area is divided into sections: 'Path' with fields for 'Document alias' (containing 'Media') and 'Document URL path' (containing '/Medialibrary'), and a checked 'Use custom URL path' checkbox; 'Extended properties' with a 'URL extensions' field and an unchecked 'Use custom URL extensions' checkbox; and 'Track campaign' with an empty field. At the bottom, the 'Document aliases' section features a red-bordered button labeled '+ Add new alias'.

3. Enter the following details:

- **URL path** - URL of the alias
- **Culture** - cultural version of the document that will be displayed when accessing the page through this URL
- **URL extensions** - additional supported extensions of the URL; for these to work, you will have to configure the system as described in [Configuration of custom URL extensions](#); optional field
- **Track campaign** - name of a web analytics campaign that will be created on the first access through this URL alias and that will be used for tracking access to the document through the alias; optional field

General | URLs ▶ Add new alias

URLs

Template

Metadata

Categories

Menu

Workflow

Versions

Related docs

Linked docs

Security

Attachments

URL path: /Mediagallery

Culture: English - United States

URL extensions: .asp

Track campaign: MyCampaign

OK

Click **OK** to create the alias.

4. Now if you switch back to the **Properties -> URLs** tab of the document, you should see the newly created alias present in the list in the **Document aliases** section, as depicted in the screenshot below. Like this, you can add an unlimited number of aliases.

Document aliases

+ Add new alias

| Actions | URL path | URL extensions | Track campaign | Language |
|---------|---------------|----------------|----------------|-------------------------|
| | /Mediagallery | .asp | MyCampaign | English - United States |

Wildcard URLs

Wildcard URLs can also be used in these additional document aliases. For more information on wildcard URLs, please refer to the [Wildcard URLs](#) chapter of this guide.

7.13.4 URL format and configuration

Defining the extension of URLs

The URLs can use various extensions. By default, all URLs end with `.aspx`, such as: `http://www.example.com/products/kentico-cms.aspx`.

You can also use **custom extensions**, such as `.htm`, `.html` or any custom extension. Alternatively, you can even use **URLs without extensions**, such as `http://www.example.com/products/kentico-cms`. However, in this case, you need to configure the system as described in [Configuration of custom URL extensions](#).

Excluding URLs from the CMS engine

If you need to add your own pages to the website, you may need to exclude them from CMS engine processing. You can do that by adding the page URL (without extension) to the **Site Manager -> Settings -> URLs and SEO -> Excluded URLs** value (you can enter several URLs separated with a semicolon (;)).

Forbidden URL characters

The URLs (alias paths and URL paths) cannot contain some special characters. By default, these are the forbidden characters:

`\ / : * ? " ' < > | & % . ' # []` and a space.

You can add additional forbidden characters by entering them (without any separator) into the **Site Manager -> Settings -> URLs and SEO -> Forbidden URL Characters** value.

The forbidden characters are removed by default. You can specify the character that will replace forbidden characters in the **Site Manager -> Settings -> URLs and SEO -> Forbidden Characters Replacement** value.

Using URL Prefix

If you need to add some prefix to all URLs (e.g. for search engine optimization), you can specify it in the **Site Manager -> Settings -> URLs and SEO -> Default Url Path Prefix** field.

The URLs will then look like this: `http://www.example.com/myprefix/products/kentico-cms.aspx`.

Automatic creation of new document aliases

If you check the **Site Manager -> Settings -> URLs and SEO -> Remember original URLs when moving documents** check-box, new document aliases will automatically be created when a new extension or URL path is set.

URL related settings

The above configuration tasks can be performed in **Site Manager -> Settings -> URLs and SEO**. The following table contains these settings and provides descriptions for them:

| | |
|--------------------------|--|
| Forbidden URL characters | List of additional characters that can't be used in the document alias |
|--------------------------|--|

| | |
|--|---|
| | and in the file system. The following characters are forbidden by default: ' \ / : * ? " < > & amp ; % . ' # [] + = . |
| Forbidden characters replacement | Character that will be used as a replacement of forbidden characters in the document alias and in the file system. |
| Friendly URL extension | Specifies the extension of friendly URLs. The extension should be preceded by a dot when entered, such as: <i>.aspx</i> or <i>.html</i> . When you omit this value, the friendly URLs will be the same as the alias path (e. g. <i>'/products/nokia'</i>).
Please note: The system of “friendly” or “smart” URLs provides several benefits. They are easy to remember and easy to write into the browser address bar. They are search engine friendly (SEO friendly). They show users where they are located on the website. You can easily send the URL of the document to your friend and she will see the same page with the particular document. |
| Files friendly URL extension | Specifies the extension for files that will be used in friendly URLs, such as ".aspx" or ".html".

Example: <code>getfile/<node alias>/myimage.aspx</code>

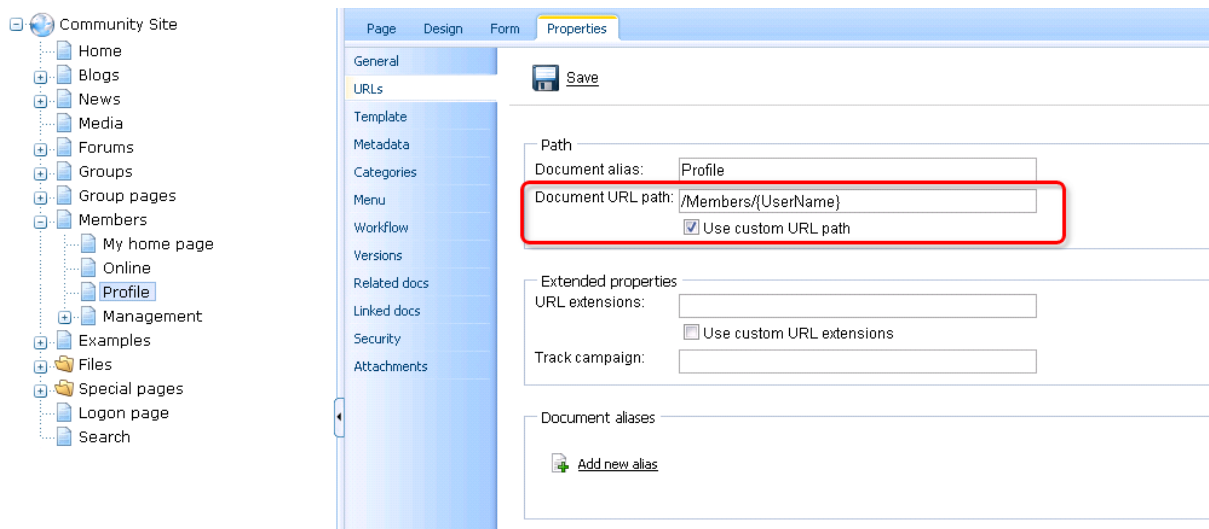
When you omit this value, the file friendly URLs will end with no extension: <code>getfile/<node alias>/myimage</code> |
| Excluded URLs | List of URLs (without domain) that should be excluded from the CMS engine. You can enter several paths separated by a semicolon (;). |
| Default URL path prefix | Defines a default URL path prefix that will be used for all URLs of the content pages. This prefix is rewritten to 'urllpathprefix' query string parameter. |
| Use name path for URL path | If checked, this key indicates that a document's name path will automatically be copied to its URL path. |
| Use permanent URLs | If enabled, URLs of documents and document attachments will be generated in permanent format; if disabled, friendly URLs will be used. Learn more at Linking pages and files . |
| Remember original URLs when moving documents | Determines if new document aliases should be created when a new document URL path or extension is set. |
| Google sitemap URL | URL that will be automatically rewritten to the physical location of the Google Sitemap. The physical location is <code>~/CMSPages/GoogleSiteMap.aspx</code> . More information can be found at Google Sitemap . |
| Allow permanent (301) redirection | If enabled, the system uses permanent (301) redirection instead of standard (302) redirection for SEO purposes. |
| Use URLs with trailing slash | Specifies how URLs with trailing slash should be handled. Possible options: Leave the URL as is, Always use URLs with trailing slash, Always use URLs without trailing slash. |
| Redirect document aliases to main URL | If enabled, every document always has only one valid URL and other aliases are redirected to this main URL, for SEO purposes. |

| | |
|--|--|
| Redirect invalid case URLs to their correct versions | Checks the URL letter case, and if configured, redirects to their correct version. Options: Do not check the URLs case, Use exactly the URL of the document, Redirect all requests to lower case URLs, Redirect all requests to upper case URLs. |
|--|--|

7.13.5 Wildcard URLs

Wildcard URLs provide a way of loading content dynamically depending on the page URL. You can find an example of how this works on the sample Community starter site. The **Members -> Profile** page uses wildcard URLs to display users' profiles. As you can see, it is only one single page that can display profiles of various site users.

How is it achieved? If you go to CMS Desk, select the **Members -> Profile** page from the content tree and switch to its **Properties** tab, you should see **/Members/{UserName}** in the **Document URL path** field. The **{UserName}** part of the URL is the actual wildcard.



If you type **<domain>/Members/David.aspx** into your browser, the Members -> Profile page will be displayed and the wildcard part of the URL (David) gets translated into a query string parameter, so that the translated URL looks like this: **<domain>/Members/Profile.aspx?username=David**. As you can see, the name of the parameter is taken from the name of the wildcard, while the value is the matching part of the entered URL. The **User public profile** web part that is used on the page recognizes the username parameter in the rewritten URL and displays David's profile.

Using wildcard URLs on multi-language sites

The **Document URL path** is unique for each language version of a document. Because of this fact, you may encounter problems when referring to a page using a wildcard URL on multi-lingual sites. Let's explain the situation using the following example:

On the sample **Community Starter site**, the **Members/Profile** page has its Document URL path set to **/Members/{UserName}**. If you created a version of this page in another language, its Document URL path would get changed to **/Members/{UserName}-1** automatically. This happens because the Document URL paths need to be unique.

Now let's presume that you have the following link leading to the page: **<domain>/Members/David**.

.aspx. In the original version, it works fine. But if you tried to click the link in the second language version, you would get an error because the URL in this language version would be **<domain>/Members/David-1.aspx**.

If you want to keep such links functional in all language versions, you will need to define the **/Members/{UserName}** path via the **Document aliases** section, as described in the [Multiple document aliases](#) chapter. When creating the alias, select **(all)** in the **Culture** drop-down list. At the same time, you must erase the value from the original document's Document URL path. As it has higher priority, URL paths defined in the Document aliases section would have no effect. The result should look as in the following screenshot:

The screenshot shows the 'Properties' window for a document. The 'URLs' section is active, displaying the following configuration:

- Path**
 - Document alias: Profile
 - Document URL path: (empty field)
 - Use custom URL path
- Extended properties**
 - URL extensions: (empty field)
 - Use custom URL extensions
 - Track campaign: (empty field)
- Document aliases**
 - Buttons: Add new alias, Edit, Delete
 - Table:

| Actions | URL path | URL extensions | Track campaign | Language |
|---------|--------------------|----------------|----------------|-------------------------|
| | /Members{UserName} | | | English - United States |

Dots in wildcard URLs

You may encounter problems when a string containing a dot "." gets into the wildcard part of a URL. A typical example of this can be found on the Members -> Profile page of the sample Community Starter Site.

The page's Document URL path is set to **/Members/{UserName}**. Let's presume that you have the following user name: **jack.smith**. Then the user's profile page would be located at **http://<domain>/Members/jack.smith**. As the last part of the URL after the last dot ('smith' in this case) is understood as file extension, this URL would produce the 404 error in your browser.

To prevent this, registration on the sample Community Starter Site doesn't allow user names with dots. This is ensured by a validation of the **UserName** field in the **Registration form** alternative form of the **User** system table.

If you needed to allow dots in user names and use wildcard URLs with user names at the same time, you can achieve this by removing the validation and setting the page's Document URL path to something like **/Members/{UserName}/Profile**. In this case, the dot would be located in the middle of the URL and the URL should work fine.

7.13.6 Linking pages and files

Linking documents (pages)

If you need to create a permanent link to a document, you need to use a URL in the following format:

```
http://www.example.com/getdoc/016fad52-0d69-46d5-80dc-daec9173c0c7/Products.aspx
```

It's an equivalent of

```
http://www.example.com/company/products.aspx
```

- however, in the first case, the link keeps working even if you move the document to some other place.

The URL consists of the following parts:

```
<domain>/getdoc/<document GUID>/<document name><extension>
```

The `<document GUID>` value is a unique identifier of the document. You can find this value in CMS Desk -> Content -> Properties -> General, in field Node GUID.

The `<document name>` value may contain any value - it's not used by the system and it's only used for search engine optimization. By default, the system uses the document name for this value.

Linking a specific language version of the document

If you need to link to a specific language version of the document, you need to use a URL in the following format:

```
http://www.example.com/getdoc/8FG7-84E394-FABD-5678/our-services/fr-fr.aspx
```

It displays the given document in French (if the document is translated). It's an equivalent of

```
http://www.example.com/company/our-services.aspx?lang=fr-fr
```

The URL consists of the following parts:

```
<domain>/getdoc/<document GUID>/<document name>/<culture code><extension>
```

Linking attachments

If you need to create a permanent link to a file uploaded as a document attachment, you need to use a URL in the following format:

```
http://www.example.com/getattachment/763c8921-be94-4610-99b4-25e8d3be5b08/logo.aspx
```

The URL consists of the following parts:

```
<domain>/getattachment/<file GUID>/<filename><extension>
```

The `<file GUID>` value is not the same as document GUID. It's a GUID of the file in the CMS_Attachment table. You can find this GUID if you display the image in the CMS Desk and see its URL.

The `<file name>` value can contain any text.

You can find more details on available parameters in the following chapter [GetFile.aspx parameters](#)

7.13.7 GetFile.aspx parameters

The GetFile.aspx script is used in many cases to retrieve an uploaded file from the database. It is called whether you use /getdoc, /getattachment or direct URL based on alias path of the cms.file document.

The GetFile.aspx script accepts the following URL parameters:

| Parameter Name | Description | Sample Value |
|------------------|---|----------------------------|
| guid | Attachment GUID value | |
| nodeguid | Node GUID value | |
| versionhistoryid | Version history ID of the attachment. It can only be used together with guid parameter. | |
| width | Resizes the image to specified width (in pixels). | 100 |
| height | Resizes the image to specified height (in pixels). | 400 |
| maxsize | Resizes the image to the specified size of the longest side (in pixels). | 500 |
| disposition | Indicates the output disposition of the file. You can use either inline (opens the file in the browser window if possible) or attachment disposition (opens the "Save or Open" dialog). | inline
or
attachment |

7.13.8 Output filters

The output filters are applied to rendered HTML code. They make various changes to the HTML code before it is sent to the browser:

Form filter

The form filter fixes the issue with non-working postbacks on pages that use URL rewriting. It ensures that forms, dialogs and buttons will work correctly on Kentico CMS-managed pages.

You can exclude pages from this filter by adding them to **Site Manager -> Settings -> URLs -> Excluded Output Form Filter URLs** value, separated with a semicolon (;).

XHTML filter

The XHTML filter fixes some XHTML incompatibilities. It closes unclosed tags, invalid <script> tags, etc.

You can exclude pages from this filter by adding them to **Site Manager -> Settings -> URLs -> Excluded XHTML Filter URLs** value, separated with a semicolon (;).

The XHTML errors may also be fixed in the WYSIWYG editor when they are saved. This can be configured globally in the CMSWYSIWYGFixXHTML web.config parameter (supported values are "true" and "false").

Resolve filter

The resolve filter changes relative URL in format `~/mypage1/mypage2.aspx` to `/application/mypage1/mypage2.aspx` (application running in a subfolder) or `/mypage1/mypage2.aspx` (application running in the root). It changes only URLs inside `src` and `href` attributes.

You can exclude pages from this filter by adding them to **Site Manager -> Settings -> URLs -> Excluded Resolve Filter URLs** value, separated with a semicolon (;).

7.13.9 Google Sitemap

Kentico CMS comes with automatic support of the Google Sitemap Protocol. This is a protocol designed to help search engines with indexing of your site and can improve your site's position in search engines. Simply put, a Sitemap is an XML file where URLs of your site are stored. Detailed information about the Sitemap Protocol can be found at http://en.wikipedia.org/wiki/Site_map.

Kentico CMS creates your site's Sitemap automatically. Physically, it is located at `<domain>/CMSPages/googlesitemap.aspx`. It can also be accessed through the URL specified in **Site Manager -> Settings -> URLs -> Google Sitemap URL**. This value is set to `googlesitemap.xml` by default, which means that the site's Sitemap can also be accessed through `<domain>/googlesitemap.xml`. This is the URL that you enter into google when registering a new sitemap.

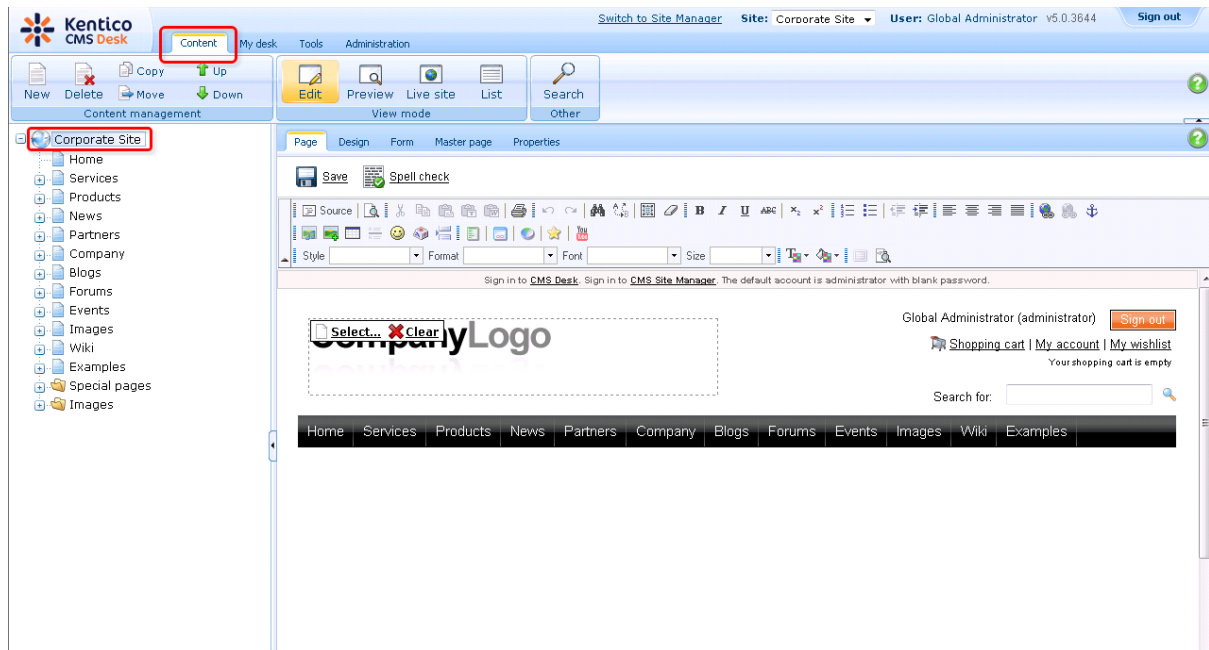
Please note that if you want the Sitemap to be accessible via the URL with `.xml` extension, you need to configure your IIS to handle the **404 error** by Kentico's **handler404**, as described in [this chapter](#). In this case, it is also necessary **not to set** the `.xml` extension to be processed by .NET.

The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The 'Settings' page is active, and the 'URLs and SEO' section is selected in the left-hand navigation tree. The main content area displays various settings for URLs and SEO, including 'Forbidden URL characters', 'Forbidden characters replacement', 'Friendly URL extensions', 'Files friendly URL extension', 'Excluded URLs', 'Default URL path prefix', 'Use name path for URL path', 'Use permanent URLs', 'Remember original URLs when moving documents', 'Google sitemap URL', 'Allow permanent (301) redirection', 'Use URLs with trailing slash', 'Redirect document aliases to main URL', and 'Redirect invalid case URLs to their correct versions'. The 'Google sitemap URL' field is highlighted with a red box and contains the value 'googlesitemap.xml'. Below the settings, there is an 'Export these settings' link.

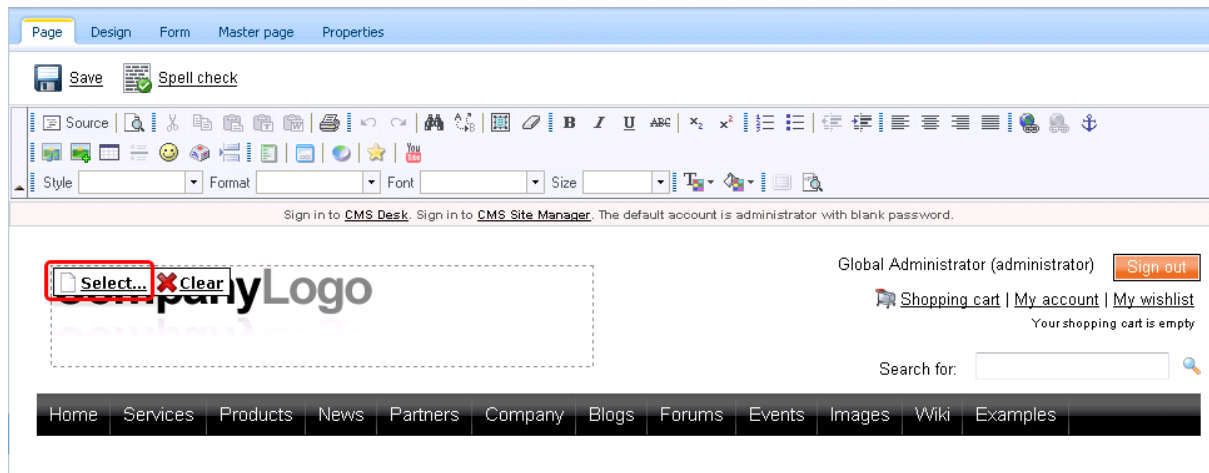
7.14 Rebranding

7.14.1 Changing a logo in the header

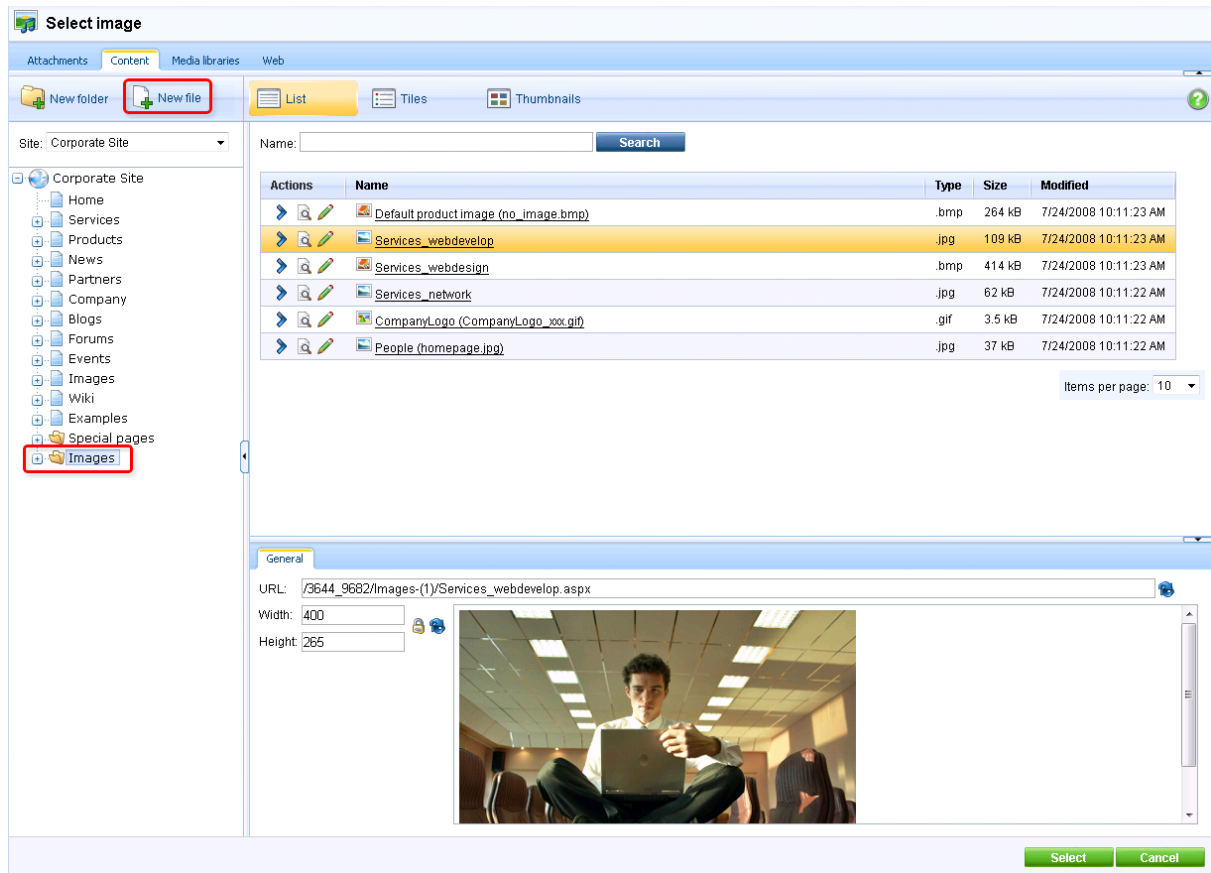
1. Go to **CMS Desk** -> **Content** -> **Corporate Site**.



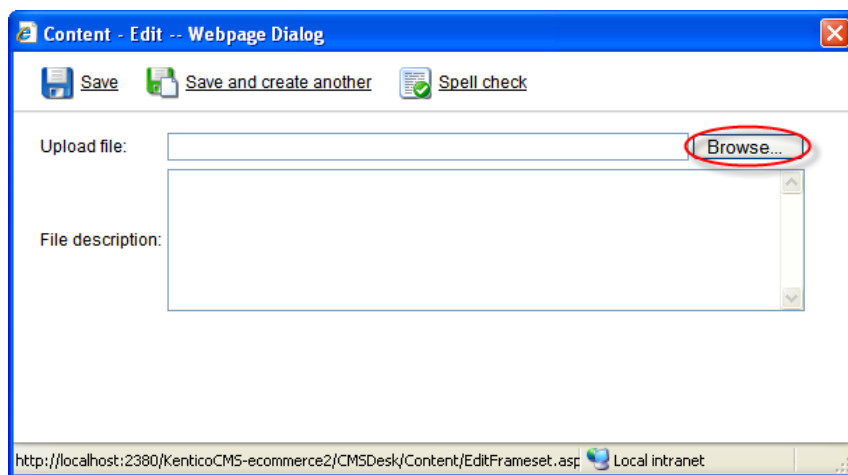
2. Click **Select ...** above the logo.



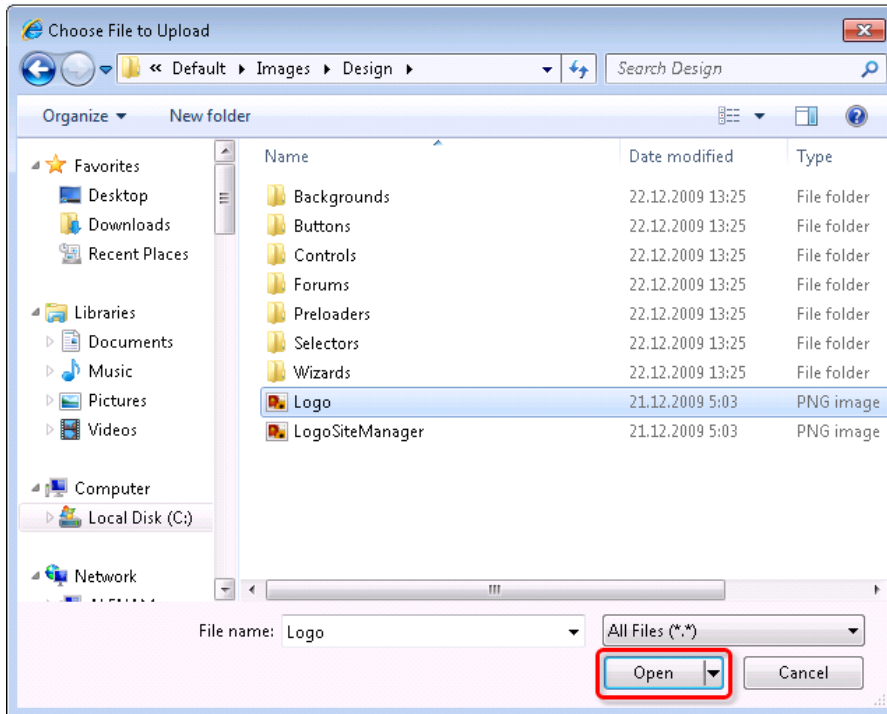
3. In the web page dialog, select **Images** in the content tree and click the **Upload file** button at the top.



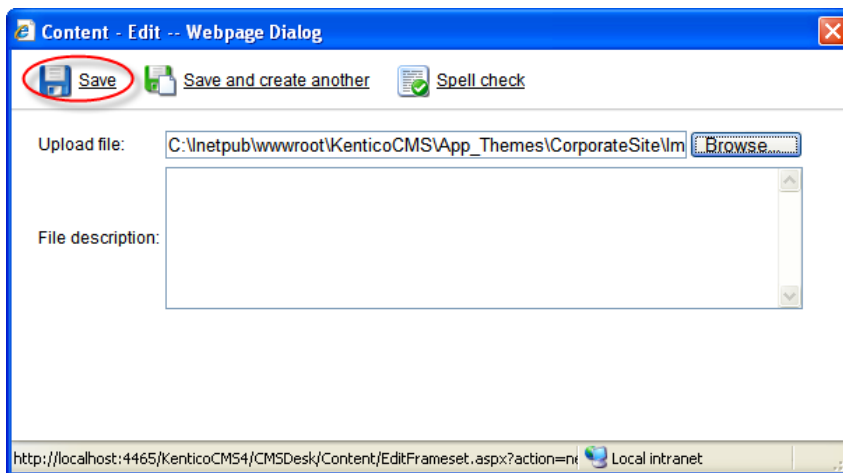
4. In the new dialog, click **Browse**.



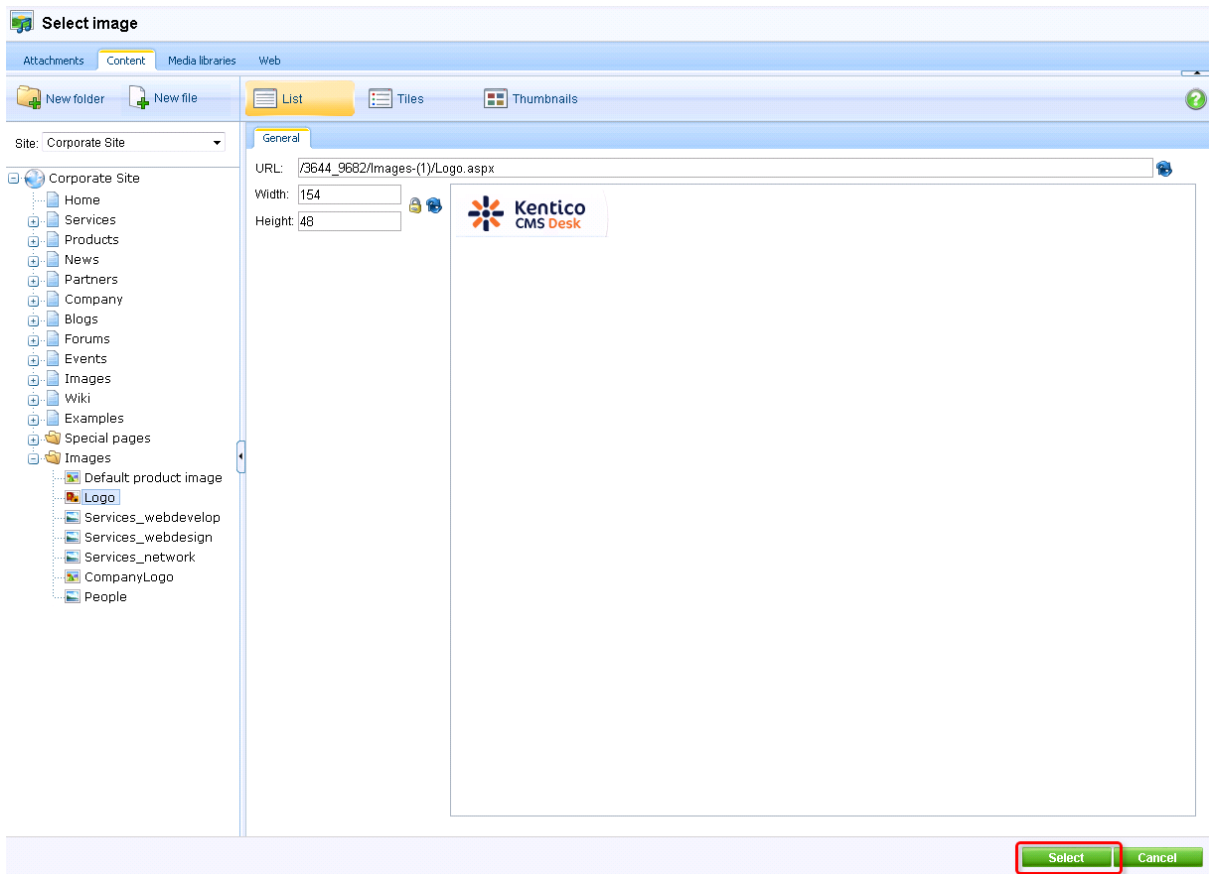
5. Find an image you want to upload and click **Open**.



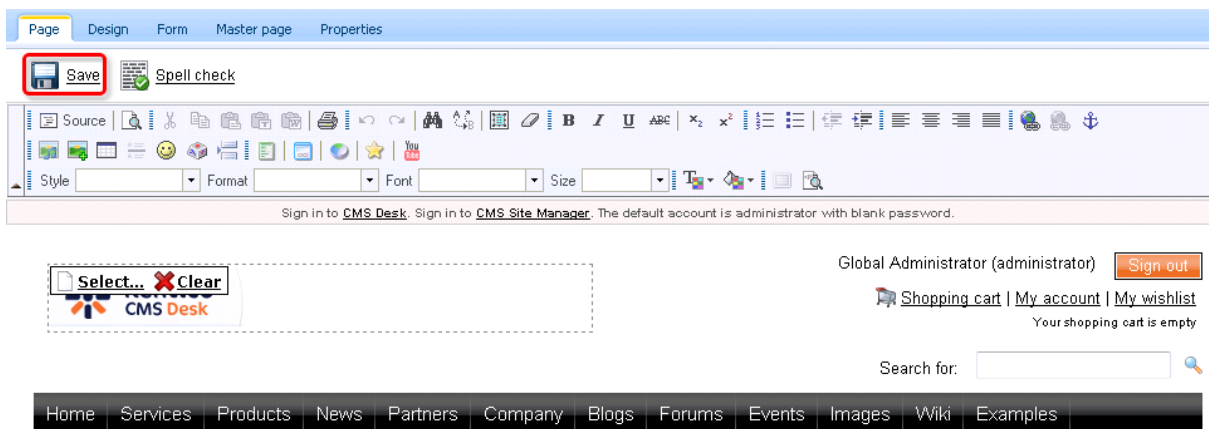
6. Click **Save**. Your new logo image is now ready to be posted on your website.



7. Click **Paste image** right above the picture.



8. Now click **Save**.



You've just publish a new logo on your website.



[Shopping cart](#) | [My account](#) | [My wishlist](#)
Your shopping cart is empty

Search for: 

Home
Services
Products
News
Partners
Company
Blogs
Forums
Events
Images
Wiki
Examples



Newsletter subscription

First Name:

Last Name:

E-mail:

[Subscribe](#)

Welcome to the Sample Corporate Site

This is a sample web site created with **Kentico CMS for ASP.NET**. You can use it as a starter kit for your own web site and to learn Kentico CMS.

Default user name and password

You can sign in to CMS Desk (the administration interface) using the link at the top of the page or by going to the following address <http://localhost/KenticoCMS/CMSDesk> (if you're using the default installation path). Use the following credentials:

User name: administrator
Password: *Leave the password blank.*

Getting Started

[Kentico CMS Tutorial](#) will guide you through Kentico CMS. You can also get help at <http://www.kentico.com/Support.aspx>.

Latest news

Your first news

1/10/2008

Here you can enter the summary of the news item. You can use WYSIWYG editor to format the text, insert links and images. The summary will be used in

Polls

Do you like our product?

Yes, I do. 28

No, I don't. 4

I don't know your product. 5

[Vote](#)

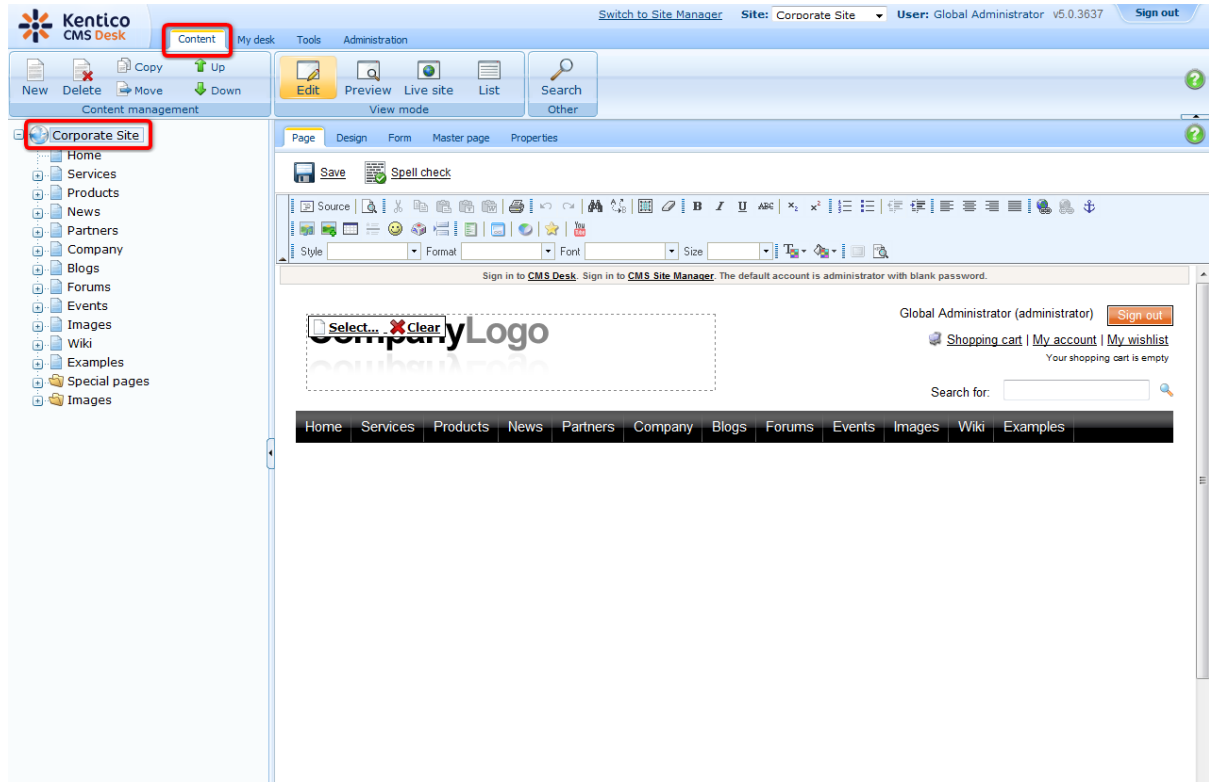
Featured product



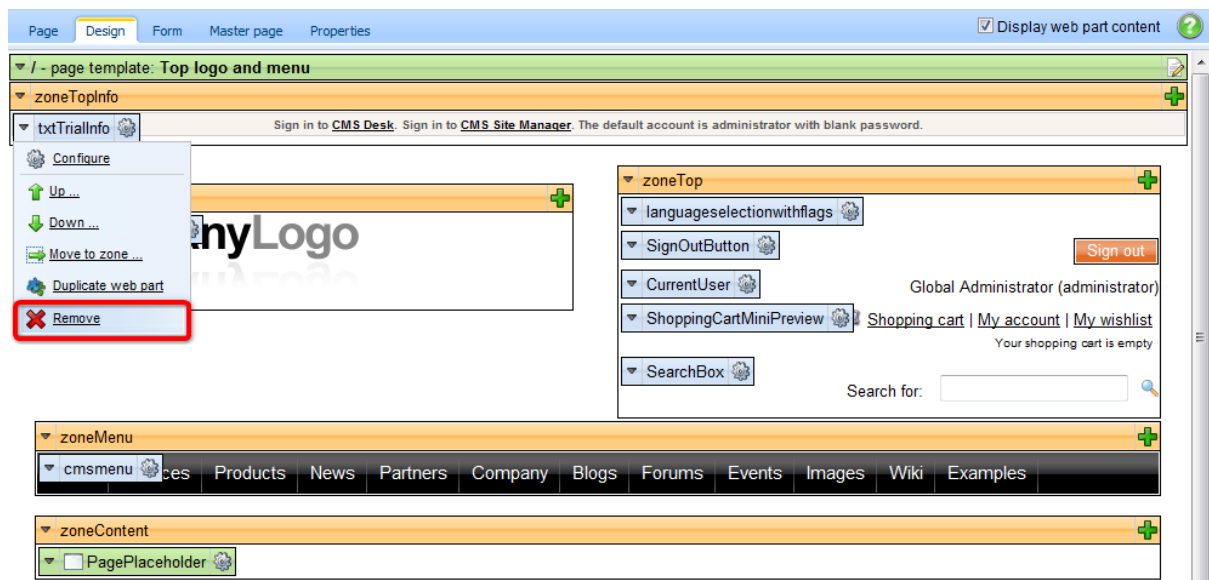
Price:
\$470.00

7.14.2 Removing the log-on bar

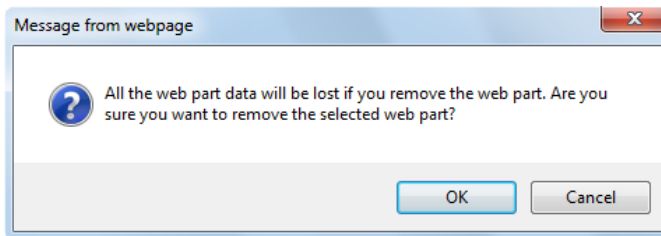
1. Go to **CMS Desk** -> **Content** -> **Corporate Site**.



2. Switch to the **Design** tab and right-clicked the **txtTrialInfo** webpart at the top-left and choose **Remove**.



3. Click **OK** to remove the bar from your website.



That's how you remove the signing-in bar from your website.

CompanyLogo

[Shopping cart](#) | [My account](#) | [My wishlist](#)
Your shopping cart is empty

Search for:

Home Services Products News Partners Company Blogs Forums Events Images Wiki Examples



Newsletter subscription

First Name:

Last Name:

E-mail:

Do you like our product?

Yes, I do. 28

No, I don't. 4

I don't know your product. 5

Welcome to the Sample Corporate Site

This is a sample web site created with **Kentico CMS for ASP.NET**. You can use it as a starter kit for your own web site and to learn Kentico CMS.

Default user name and password

You can sign in to CMS Desk (the administration interface) using the link at the top of the page or by going to the following address <http://localhost/KenticoCMS/CMSDesk> (if you're using the default installation path). Use the following credentials:

User name: administrator
Password: Leave the password blank.

Getting Started

[Kentico CMS Tutorial](#) will guide you through Kentico CMS. You can also get help at <http://www.kentico.com/Support.aspx>.

Latest news

Your second news

1/15/2008

Here you can enter the summary of the news item. You can use WYSIWYG editor to format the text, insert links and images. The summary will be used in

Featured product



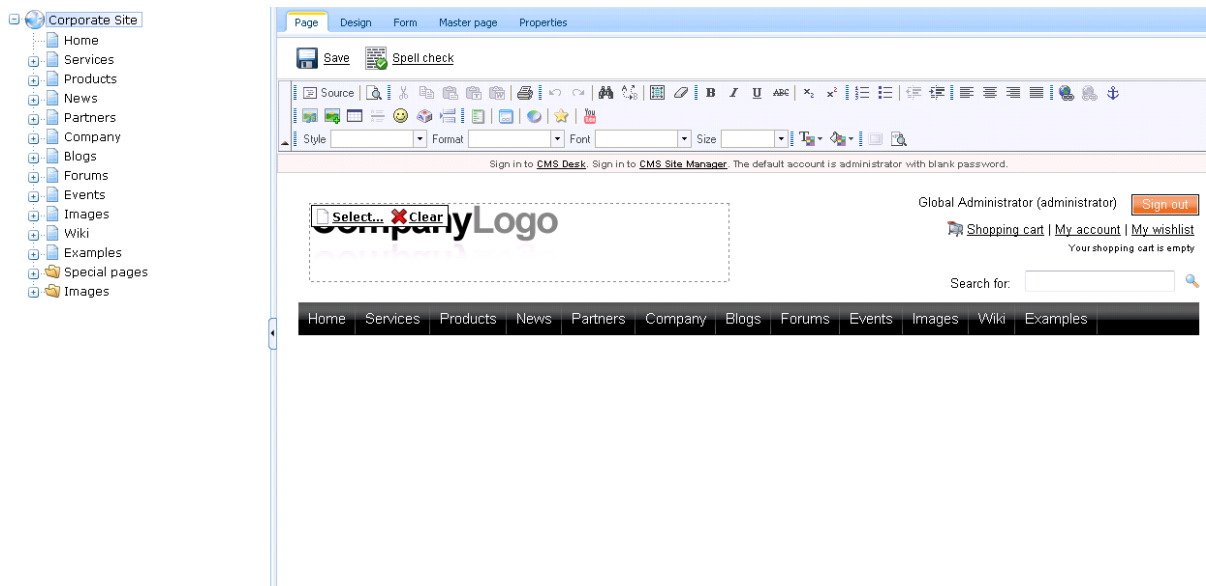
Price:
\$249.00

[Site map](#) | [Disclaimer](#)

7.14.3 Changing logo of CMS Desk and CMS Site manager

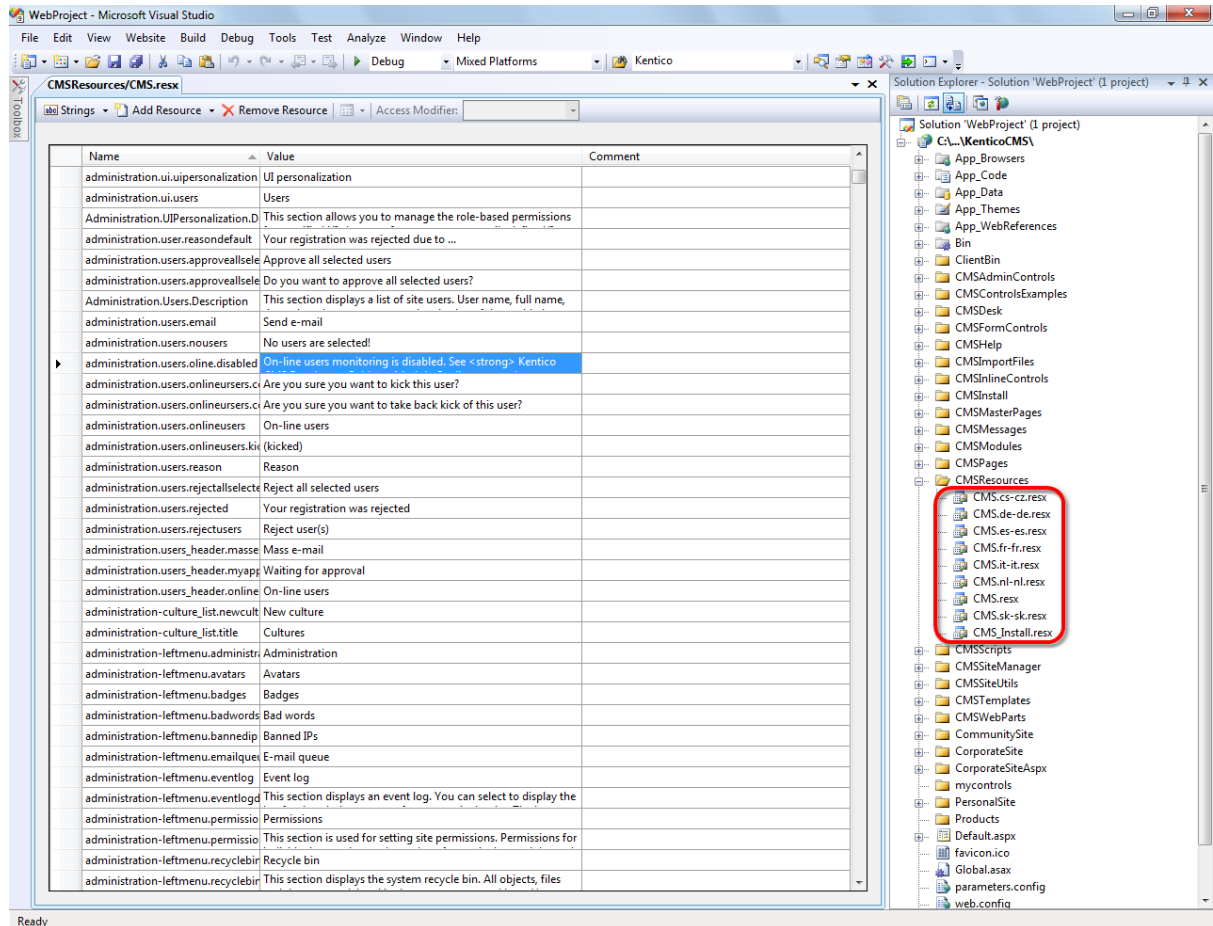
You may decide to change a logo displayed at the top-left in CMS Desk and CMS Site manager.

1. Go to **<your KenticoCMS directory>\App_Themes\Default\Images\CMSDesk** for changing the logo in CMS Desk or to **<your KenticoCMS directory>\App_Themes\Default\Images\CMSSiteManager** for changing the logo in CMS Site Manager.
2. In either directory, you can find **login.gif** file. All you have to do is to replace this file with your logo image. Please note that your image file has to be named **login.gif** as well.



7.14.4 Renaming resource strings

While re-branding Kentico CMS, you might need to check all the resource strings in the **.resx** files stored in the **~/CMSResources** folder and replace the occurrence of word **Kentico** with your own brand.



7.15 Scheduler

7.15.1 Overview

The Scheduler allows you to specify when specified scheduled tasks will be executed. This is useful when you want some tasks to be executed automatically in a specific time or time period. You can configure the scheduled tasks in **Site Manager -> Administration -> Scheduled tasks**.

Scheduled tasks

Site: Corporate Site Last timer run: 12/18/2009 8:59:34 AM [Restart timer](#) [Run ASAP](#)

[New task](#) [Refresh](#)

| Actions | Task name ^ | Last run | Next run | Last result | Server name | Executions |
|---------|---------------------------------|------------------------|------------------------|-------------|-------------|------------|
| | Content publishing | 12/18/2009 8:59:35 AM | 12/18/2009 9:00:35 AM | | | 93 |
| | Content synchronization | 1/31/2008 3:17:12 PM | 10/12/2009 8:01:54 PM | | | 0 |
| | Delete old shopping carts | 12/17/2009 12:06:04 PM | 12/18/2009 12:06:04 PM | | | 1 |
| | Users delete non activated user | 12/18/2009 8:52:23 AM | 12/18/2009 9:52:23 AM | | | 7 |

The **Site** drop-down list is used for selecting a site. After selecting a site, a list of tasks scheduled for the site will be displayed in the table below.

Next to the site selection drop-down list, you can find the following two buttons:

- **Restart timer** - restarts the internal timer
- **Run ASAP** - immediately executes all tasks that are ready to be executed

The **New task** link redirects you to a page where new tasks can be scheduled. The **Refresh** link refreshes the tasks' list below.

Using the three icons next to each of the tasks, you can **Edit**, **Delete** or immediately **Execute** any of the listed tasks.



Scheduling reliability

Since the scheduling process runs within the ASP.NET process, it may not be executed if your website is not running. This happens when the process is recycled without being started again (after a long period of website inactivity). It means that your scheduled tasks will not be executed in such cases.

If you want to run the scheduling reliably, it's necessary to ensure that your website is always running. You can do that by using some utility or an external service that requests the home page of your website on a regular basis.

7.15.2 Scheduling a custom code

The process of scheduling includes two steps: writing code to perform required action and creating the scheduled task.

Writing task code

Task code must be placed into a specific class method.

1. Create a new library (assembly) as a part of your solution and a new class inside this library. The following example uses assembly name **CMS.Ecommerce** and class **CMS.Ecommerce.ShoppingCartCleaner**, however, you will need to use your own names. References to these dlls must be added to the newly created project:

```
CMS.Scheduler.dll
CMS.Staging.dll
CMS.DataEngine.dll
CMS.SettingsProvider.dll
```

2. Define method **Execute(TaskInfo task)** which will be performed when task is executed:

[C#]

```
using CMS.Scheduler;
namespace CMS.Ecommerce
{
    /// <summary>
    /// Provides an ITask interface to delete old shopping carts.
    /// </summary>
    public class ShoppingCartCleaner : ITask
    {
        public string Execute(TaskInfo task)
        {
            try
            {
                // Here comes the task code

                return null;
            }
            catch (Exception ex)
            {
                return (ex.Message);
            }
        }
    }
}
```


3. Compile the library.

Creating a new task

1. Go to **Site Manager -> Administration -> Scheduled tasks**.
2. Select site the task should be scheduled for.
3. Click **New task**.
4. Specify task properties:

| | |
|---------------------------------------|--|
| Task display name | Name used for Scheduled Task. |
| Task name | Scheduled Task name used in code. |
| Task assembly name | Name of the assembly. |
| Task class name | Name of the class. |
| Task interval | Time interval when the task should be run. |
| Task data | Data which should be provided to assembly. |
| Task enabled | Indicates if the task is enabled. |
| Delete task after last run | Indicates if the task should be deleted after last run. |
| Server name | Name of the server where the task is run. |
| Create tasks for all web farm servers | If checked, tasks will be created for all web farm servers and the Server name field will be grayed out. |

5. Click OK.
6. The task is scheduled.

 **New task**

[Scheduled tasks](#) ▶ New task

Task display name:


Task name:

Task assembly name:

Task class name:

Task interval:

Period:

Start time:  Now

Every: Day

Days:

Monday Saturday

Tuesday Sunday

Wednesday

Thursday

Friday

Task data:

Task enabled:

Delete task after last run:

Server name:

7.16 SQL import

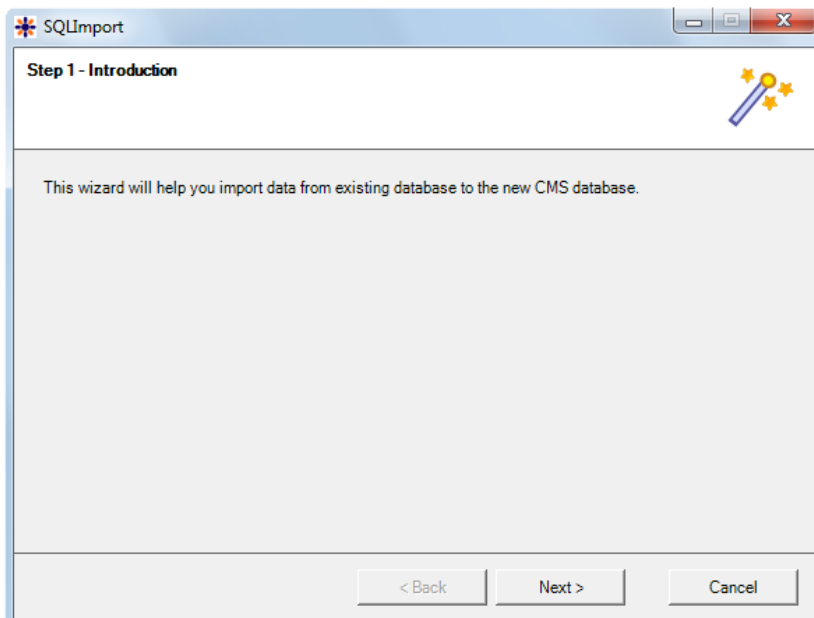
7.16.1 How to use the SQL import utility

The SQL Import utility allows you to import data from a Microsoft SQL Server database as new documents into Kentico CMS content repository. If your source data is in a different format, you may need to import them to some Microsoft SQL Server database using Microsoft SQL Server tools.

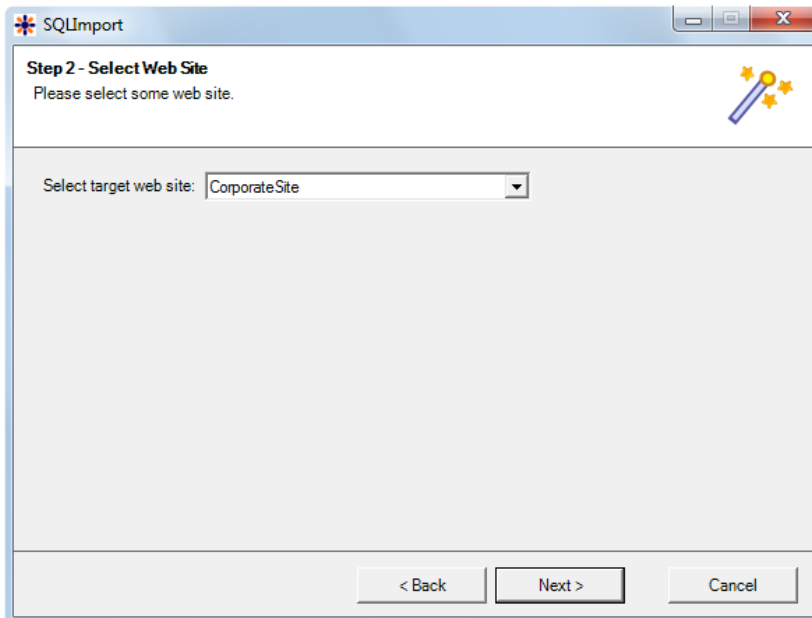
Before you run the SQL Import utility, you need to configure its parameters. The utility is stored in folder <Kentico CMS installation in Program Files>\SQLImport. Open the SQLImport.exe.config file and set the following values:

| Key | Description | Sample Value |
|----------------------------|---|--|
| SourceConnectionString | Connection string to the source database. | <pre><add name=" SourceConnectionString" connectionString="Persist Security Info=False; database=mysourcedb; server=myserver;user id=sa; password=myspassword;Current Language=English;Connection Timeout=120;" /></pre> |
| CMSConnectionString | Connection string to the Kentico CMS database. You can copy this value from the web.config file of your web project. | <pre><add name=" CMSConnectionString" connectionString="Persist Security Info=False; database=mycmsdb; server=myserver;user id=sa; password=myspassword;Current Language=English;Connection Timeout=120;" /></pre> |
| CMSDefaultUserID | UserID value of the user who will be author of the imported files. The default value is 53 for the administrator user account. You can find other values in the CMS_User table. | <pre><add key="CMSDefaultUserID" value="53" /></pre> |
| ImportFilesDiskPath | The physical disk path to the folder with files to be imported (in case you are importing files together with data). | <pre><add key="ImportFilesDiskPath" value="c:\Temp" /></pre> |
| WebApplicationPhysicalPath | Path to the root of the web project folder (in case the target site is set to save files to disk [Site Manager -> Settings -> File -> Store files in filesystem]). | <pre><add key=" WebApplicationPhysicalPath" value="C:\Website" /></pre> |

Now you can start the import utility using SQLImport.exe. The import wizard starts:

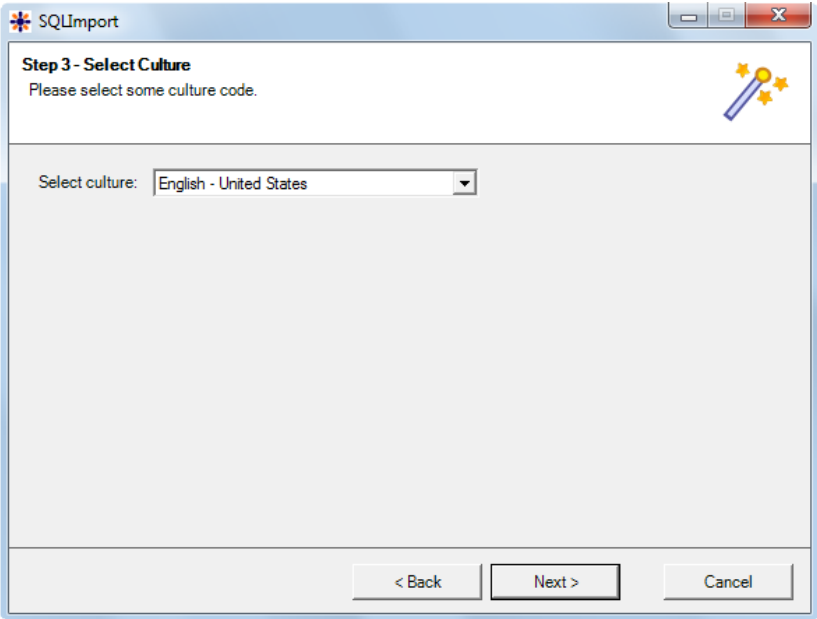


Click **Next**. Select the target website:

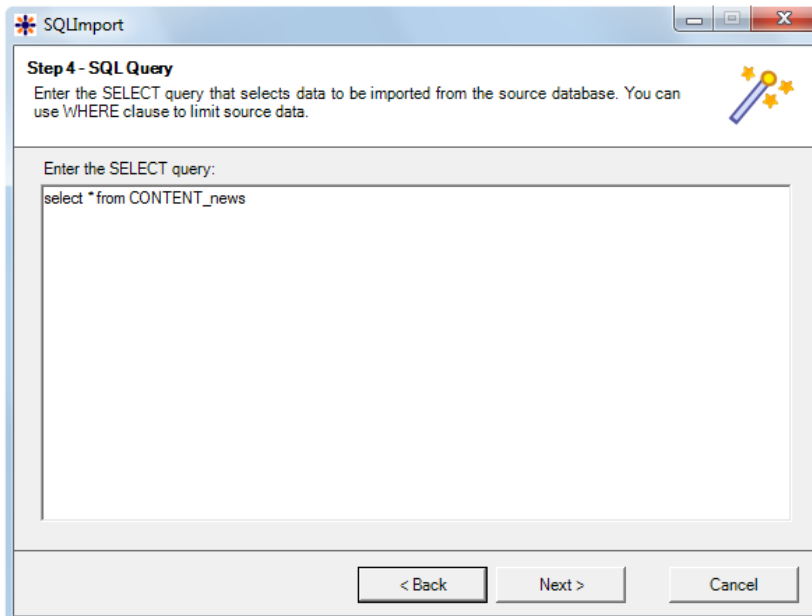


The screenshot shows a dialog box titled "SQLImport" with a standard Windows-style title bar (minimize, maximize, close buttons). The main content area is titled "Step 2 - Select Web Site" and contains the instruction "Please select some web site." in the top left corner. In the top right corner of the content area, there is a small icon of a blue pencil with three yellow stars. Below the instruction, there is a text label "Select target web site:" followed by a dropdown menu. The dropdown menu currently displays the text "CorporateSite". At the bottom of the dialog box, there are three buttons: "< Back", "Next >", and "Cancel".

Click **Next**. Select the target content culture:

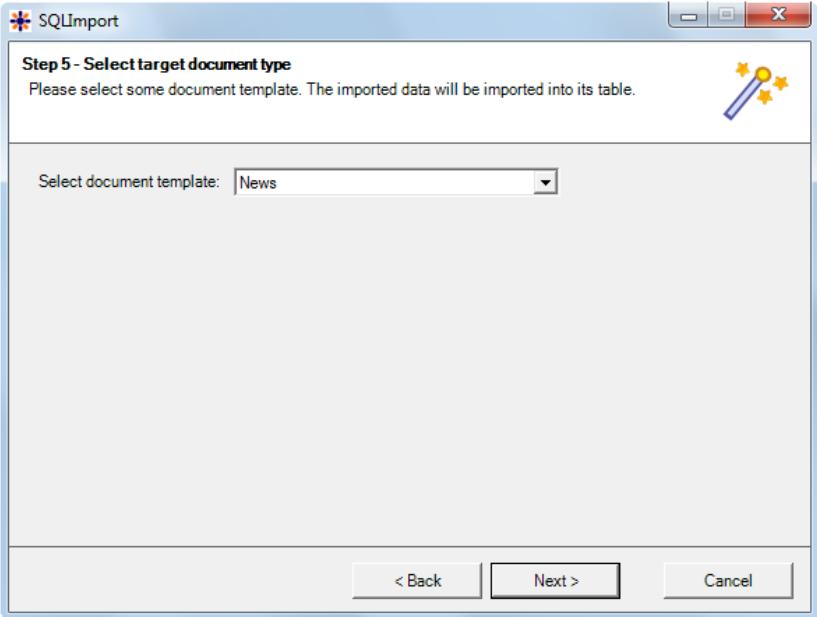


Click **Next**. Enter the SQL query that will return the data to be imported from the source database:



The screenshot shows a window titled "SQLImport" with a standard Windows-style title bar. The main content area is titled "Step 4 - SQL Query" and contains the following text: "Enter the SELECT query that selects data to be imported from the source database. You can use WHERE clause to limit source data." To the right of this text is a small icon of a wand with three stars. Below the text is a large text input field containing the SQL query: "select * from CONTENT_news". At the bottom of the dialog, there are three buttons: "< Back", "Next >", and "Cancel".

Click **Next**. Select the type of the imported documents.



Click **Next**. Map the source and target fields and check the fields that should be imported. You can add the source fields manually multiple times if you need to import one source field into several target fields.

If the source field contains the path to the file, check the box **Import file**. In this case, the source field must contain a relative path to the path in the ImportFilesDiskPath web.config parameter - both values are joined and the file is imported from the specified location.

SQLImport

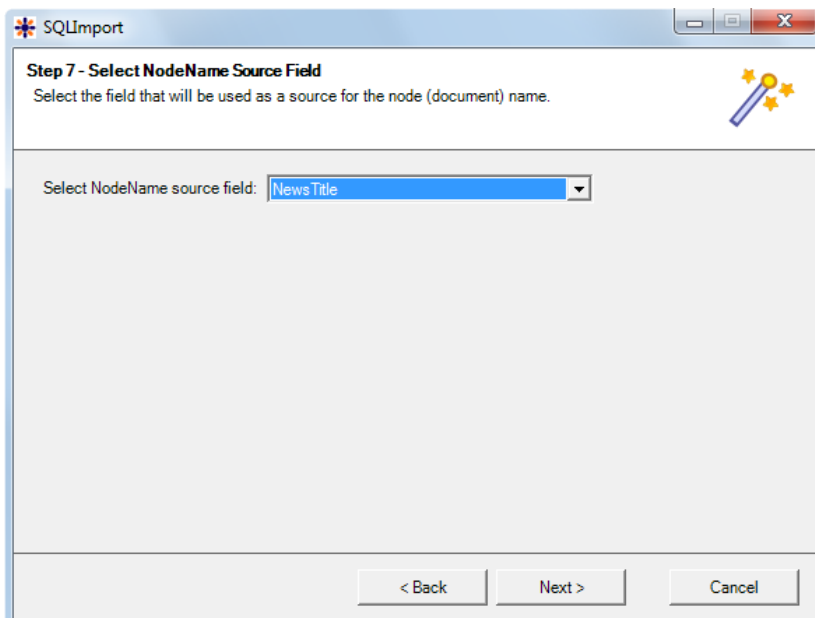
Step 6 - Map Fields
Please select which source fields should be imported and assign some target field for each imported field.

Field mapping:

| Selected | Source | Target | Import file |
|-------------------------------------|-----------------|-----------------|-------------------------------------|
| <input checked="" type="checkbox"/> | NewsReleaseDate | NewsReleaseDate | <input type="checkbox"/> |
| <input checked="" type="checkbox"/> | NewsSummary | NewsSummary | <input type="checkbox"/> |
| <input checked="" type="checkbox"/> | News Teaser | News Teaser | <input checked="" type="checkbox"/> |
| <input checked="" type="checkbox"/> | News Text | News Text | <input type="checkbox"/> |
| <input checked="" type="checkbox"/> | News Title | News Title | <input type="checkbox"/> |
| * | | | <input type="checkbox"/> |

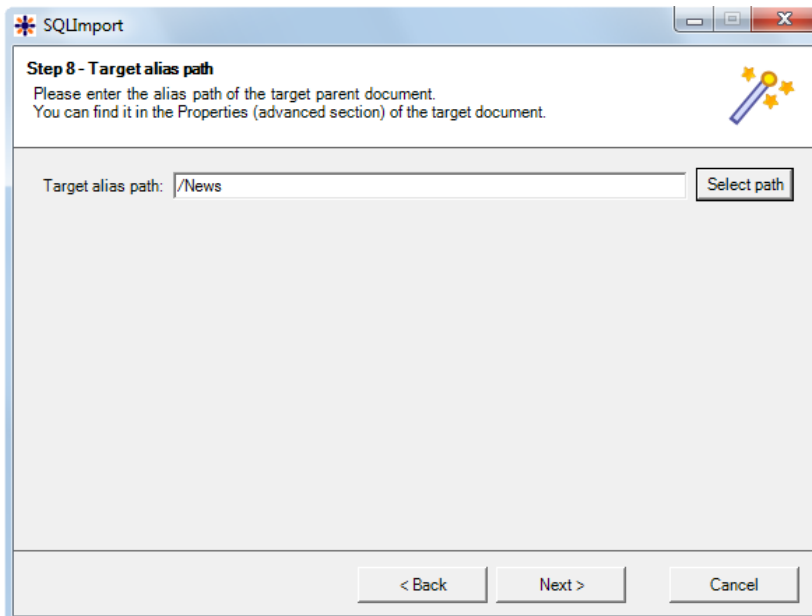
< Back Next > Cancel

Click **Next**. Select the field that will be used for the name of the document:



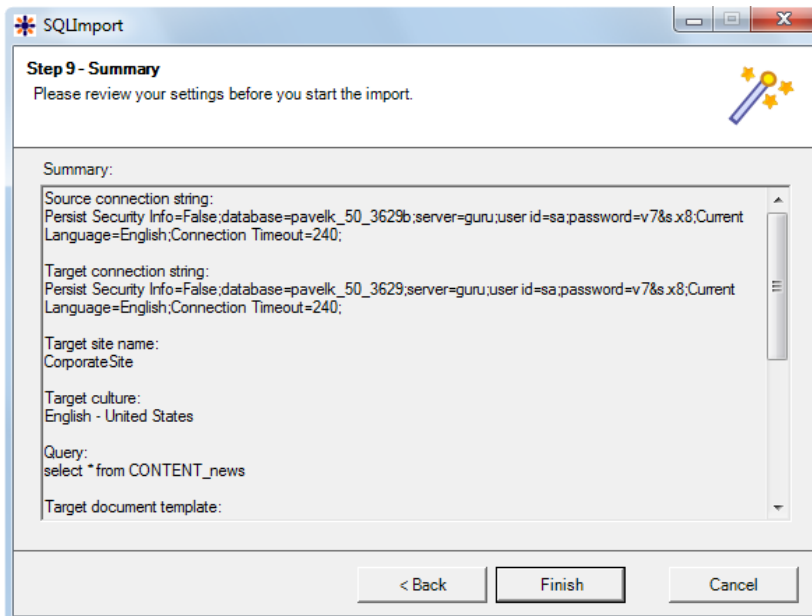
The screenshot shows a dialog box titled "SQLImport" with a standard Windows window title bar. The main content area is titled "Step 7 - Select NodeName Source Field" and contains the instruction "Select the field that will be used as a source for the node (document) name." To the right of this text is a small icon of a blue pencil with three yellow stars. Below the instruction is a dropdown menu labeled "Select NodeName source field:" with "NewsTitle" selected. At the bottom of the dialog are three buttons: "< Back", "Next >", and "Cancel".

Click **Next**. Select the target alias path where the documents should be imported:



The screenshot shows a dialog box titled "SQLImport" with a standard Windows window title bar. The main content area is titled "Step 8 - Target alias path" and contains the following text: "Please enter the alias path of the target parent document. You can find it in the Properties (advanced section) of the target document." To the right of this text is a small icon of a blue pencil with three yellow stars. Below the text is a text input field containing the value "/News" and a "Select path" button to its right. At the bottom of the dialog box are three buttons: "< Back", "Next >", and "Cancel".

Click **Next**. Review the import settings:



Now the data is imported into Kentico CMS database.

7.17 System tables and custom fields

7.17.1 Overview

Kentico CMS allows you to modify some of the system tables and enhance them with custom attributes. You can edit them in **Site Manager -> Development -> System tables**.

When you add a new column to the user profile, it's available on the **Custom fields** tab of the **User properties** dialog.



Always allow empty values

When creating a new empty field in a system table, it's highly recommended that you always allow empty values in the newly created field, so that the system procedures and existing dialogs keep working.

7.17.2 Custom document data

In some cases, you may need to add custom data to all documents. In this case, you can use the `NodeCustomData` or `DocumentCustomData` (culture specific) fields in the `CMS_Tree` and `CMS_Document` database tables, respectively.

These fields are accessible through the following properties of the document (`TreeNode`):

- `TreeNode.NodeCustomData`

- `TreeNode.DocumentCustomData`

You can use these values in two ways:

1. You can use them as a single ntext block of text:

[C#]

```
TreeNode.NodeCustomData.Value = "my value";
```

2. You can use them as a collection of custom values that are stored as an XML document:

[C#]

```
TreeNode.NodeCustomData["myproperty1"] = "my value 1";  
TreeNode.NodeCustomData["myproperty2"] = "my value 2";
```

7.18 Web parts

7.18.1 Overview

Web parts represent a block of content or combination of content and functionality. They are the basic building block of page templates.

Web part is a user control (ASCX) that inherits from the **CMSAbstractWebPart** class. You can easily create your own web parts as described in chapter [Developing web parts](#).

Web parts can be managed in **Site Manager -> Development -> Web parts**. Each web part has the following properties on the **General** tab:

- **Display name** - name of the web part displayed to the users in the administration interface
- **Code name** - name of the web part used in website code
- **Category** - here you can choose the category of the web part catalog where the web part will be placed
- **Type** - type of the web part; there are the following types of web parts:
 - **Standard** - typical web parts displaying some content
 - **Data source** - do not display any content, only provide data to be displayed by a connected web part
 - **Filter** - can be connected to a data source and enables users to limit the data provided by it
- **File name** - contains a relative path to the user control that implements the web part; the path starts from the CMSWebParts folder; it's recommended that you organize the web parts on the disk in the same way as in the categories; example: `Search/cmscompletesearchdialog.ascx`
- **Description** - text describing the web part, it will be displayed in the web part catalog
- **Thumbnail** - image used in the web part catalog

On the **Properties** tab, you can define the web part properties and how they appear in the **Web part properties** configuration dialog. Each web part has the following **default properties** that are not displayed on this tab. These properties are created automatically when the web part is defined. However, if you define some of these properties via this tab, you can modify its default behaviour and attributes of the property (e.g. for it not to be displayed, etc.).

Default

- **Web part control ID** - ID of the web part on the page
- **Web part title** - title of the web part displayed in CMS Desk's Design tab
- **Disable view state** - indicates if ViewState is disabled for the web part
- **Disable macros** - indicates if macro resolving is disabled for the web part

Visibility

- **Visible** - indicates if the web part should be displayed
- **Hide on subpages** - indicates if the web part should be hidden on sub-pages
- **Show for document types** - the list of document type code names separated with a semicolon (;) for which the web part should be displayed (if they are selected as the current document)
- **Display to roles** - the list of roles the web part should be displayed to

HTML Envelope

- **Web part container** - container (box) displayed around the web part; this value contains the code name of the container defined in Development -> Web part containers
- **Web part container title** - container title displayed if you specify the container
- **Content before** - HTML content displayed before the web part; you can use it to display some header or add some encapsulating code, such as <div> or <table> element for required layout
- **Content after** - HTML content displayed after the web part; you can use it to close the tags contained in the ContentBefore value, such as </div> or </table> element for required layout

AJAX

- **Use update panel** - indicates if AJAX UpdatePanel container is used for the web part

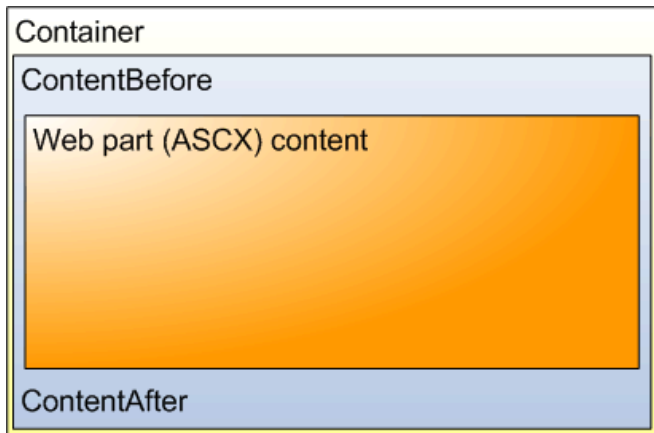
Time zones

- **Time zone** - time zone used for the web part content
- **Custom time zone** - optional custom time zone that can be used specifically only for this web part

Partial caching

- **Partial cache minutes** - number of minutes for that the content of the web part remains cached
- **Partial cache dependencies** - list of cache keys on which the cached keys depend; when the cache item changes, the cache of the web part is also deleted; each line contains one item

The structure of the web part, content before/after and container is following:



The containers, unlike the ContentBefore and ContentAfter sections, are re-usable and they can contain dynamically inserted values of web part properties.



Storing files related to web part

If your web part consists of several files (such as ASCX controls, images, js scripts, etc.), you should place these files in the subfolder under the folder where your main web part ASCX file is placed. If the code name of the web part is **MyWebPart**, the subfolder name must be **MyWebPart_Files**. It will ensure that the additional files are exported/imported correctly when you move your website or when you distribute the web part to other developers.

Web part documentation

You can add your documentation to the web part on the **Documentation** tab. If you wish to document particular properties, you need to fill in the **Field description** on the **Properties** tab.

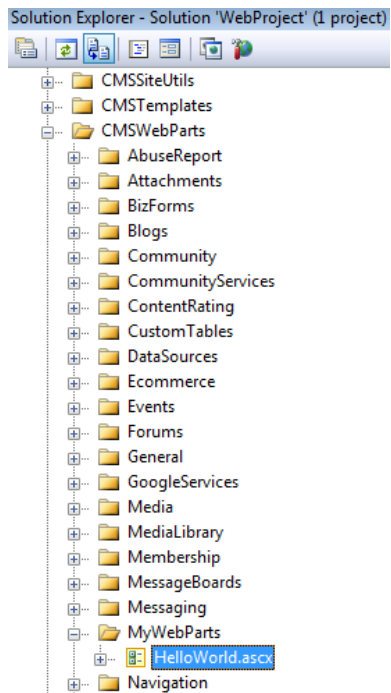
You can generate a complete web part documentation and print it by going to `<website URL>/CMSPages/documentation.aspx?generate=full` in your browser. If you want to print it, it's recommended that you use FireFox for correct formatting and page breaking.

7.18.2 Developing web parts

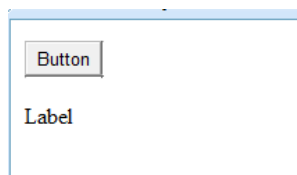
This chapter will guide you through the process of creating a very simple "Hello world" web part that displays a label and a button. When the button is clicked, it updates the current time displayed in the label.

1. Open the web project in Visual Studio (or Visual Web Developer) using the **WebProject.sln** file or using **File -> Open -> website** in Visual Studio.
2. Right-click the **CMSWebParts** folder in the **Solution Explorer** window and choose **New Folder**. Rename the folder to **MyWebParts**.

3. Right-click the **MyWebParts** folder and choose **Add New Item**. Choose to create a new **Web User Control** and call it **HelloWorld.ascx**.



4. Display the **HelloWorld** control on the Design tab. Drag and drop a new Button control and a new Label control on the form:



5. Double-click the Button control and add the following code to the Button1_Click method:

[C#]

```
Label1.Text = DateTime.Now.ToString();
```

[VB.NET]

```
Label1.Text = DateTime.Now.ToString()
```

6. Add the following line to the beginning of the code:

[C#]

```
using CMS.PortalControls;
```

[VB.NET]

```
Imports CMS.PortalControls
```

7. Change the following line:

[C#]

```
public partial class CMSWebParts_MyWebParts_HelloWorld : System.Web.UI.UserControl  
to  
public partial class CMSWebParts_MyWebParts_HelloWorld : CMSAbstractWebPart
```

[VB.NET]

```
Partial Class CMSWebParts_MyWebParts_HelloWorld  
    Inherits System.Web.UI.UserControl  
to  
Partial Class CMSWebParts_MyWebParts_HelloWorld  
    Inherits CMSAbstractWebPart
```

It ensures that the user control behaves as a web part.

8. Add the following code to the Page_Load method:

[C#]

```
Button1.Text = (string)this.GetValue("ButtonText");
```

[VB.NET]

(Visual Basic.NET doesn't create the Page_Load method automatically, so you need to add the whole method:)

```
Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs)  
Handles Me.Load  
    Button1.Text = CType(My.GetValue("ButtonText"), String)  
End Sub
```

It sets the button text to the value configured in Kentico CMS Desk.

9. Save all changes.

10. Open **Site Manager -> Development -> Web parts**, click the root and click **New category**. Enter *My web parts* into the **Category name** field and click **OK**.

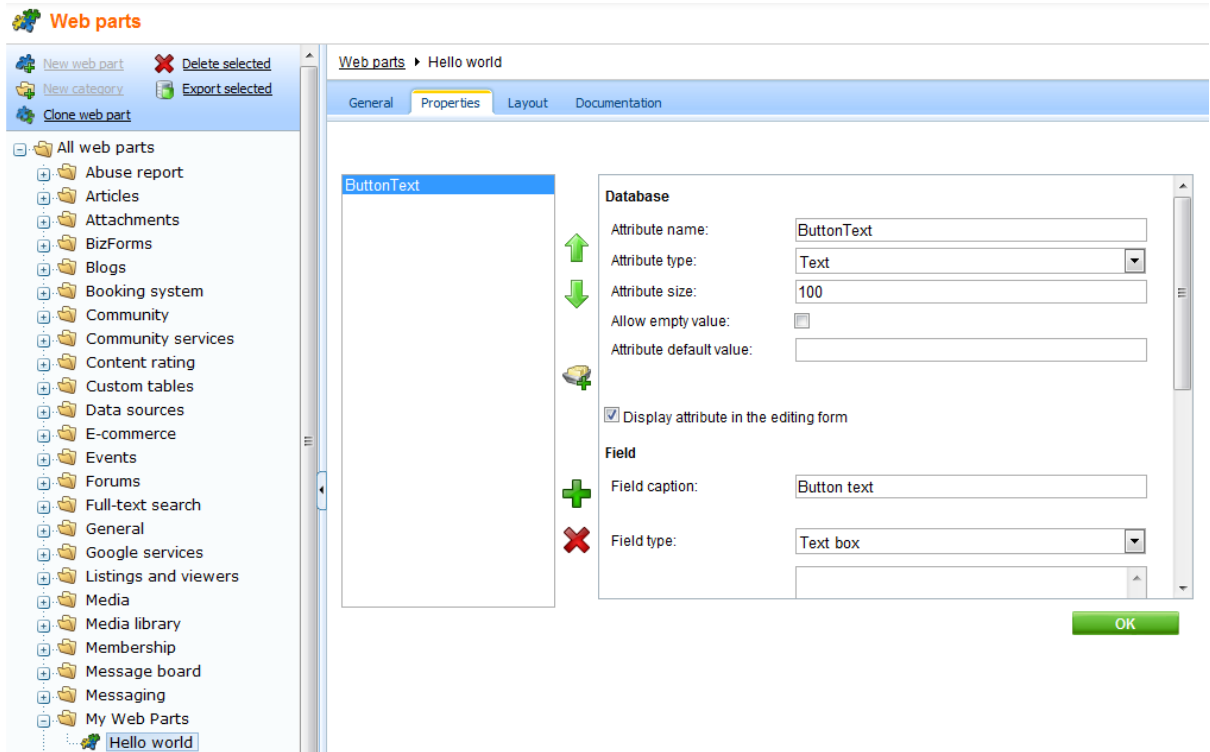
11. Click the new category and click **New web part**. Choose to **create a new web part** and enter the following values:

- Web part display name: Hello world
- Web part code name: HelloWorld
- Web part file name: MyWebParts/HelloWorld.ascx

Click **OK**.

12. Switch to the **Properties** tab and add the following property:

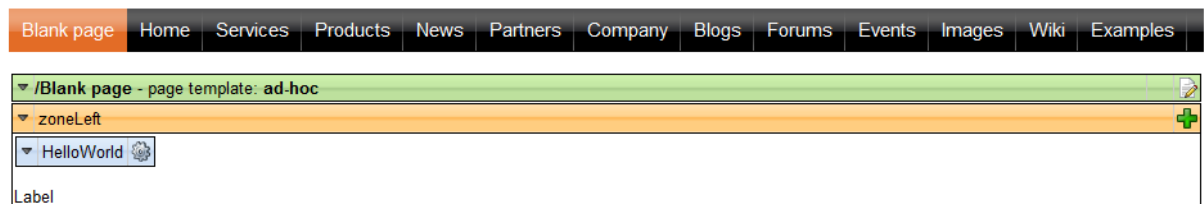
- Attribute name: ButtonText
- Attribute type: Text
- Attribute size: 100
- Field caption: Button text
- Field type: Text Box



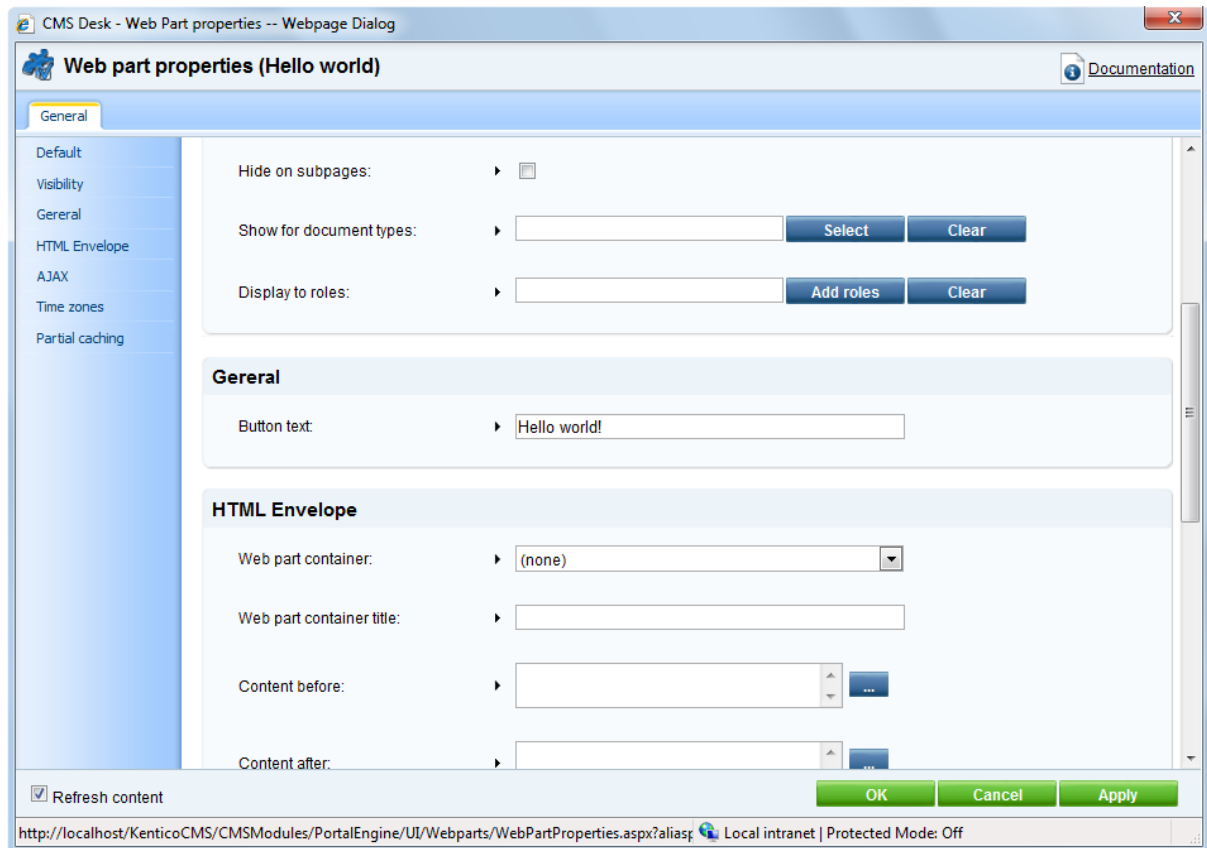
13. Switch to **CMS Desk**.

14. Create a new **blank page** using the **Simple** layout (or any other layout) under the root and switch to the **Design** tab.

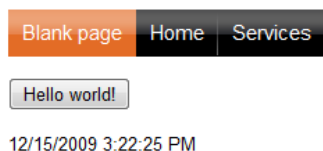
15. Click **Add web part** in the upper right corner of the web part zone and choose to add the **Hello world** web part:



16. The Web part properties window of the **HelloWorld** webpart appears, set the value of the **Button text** field to *Hello world!*



17. Now switch to the **Live site** mode using the button in the main toolbar. You will see the button with text Hello world! When you click it, the label displays current date and time:



You have learned how to create a simple web part.

**Tip: Displaying content on the web part**

You can also use Kentico CMS Controls on the web part (on the ASCX control) to display content from Kentico CMS in a customized form.

**Error message "The control collection cannot be modified during DataBind, Init, Load, PreRender or Unload phases."**

If you get this error message you may need to modify the code of your web part, so that it doesn't display any content on the Design tab - for example:

[C#]

```
using CMS.PortalEngine;

public override void OnContentLoaded()
{
    base.OnContentLoaded();
    if ((this.PagePlaceholder.ViewMode == ViewModeEnum.Design)
        || (this.HideOnCurrentPage) || (!this.IsVisible))
    {
        this.Repeater1.DataSourceID = "";
        this.CMSRepeater1.StopProcessing = true;
    }
}
```

**Initializing Kentico CMS controls in your custom web parts**

If you are using Kentico CMS controls in your web parts, it is recommended to initialize the controls' properties using the combination of `OnContentLoaded` and `SetupControl` methods. This is the way it is handled in all Kentico CMS web parts. You can see the code of any of the web parts located in `<project folder>/CMSWebParts` and take it as an example.

If you are using classical .NET controls or third party controls, this can be handled in the `PageLoad` method.

If a problem occurs (e.g. on postback), try loading the control dynamically. This can be achieved by making a control from the web part and loading it dynamically (e.g. using the **General -> User control** web part).

7.18.3 Modifying web part behavior

If you need to modify the behavior of standard web parts there are three options:

1. You only need to set the web part properties dynamically in your code

You need to create a user control, add the web part into it and write additional code. See chapter [Setting web part properties dynamically in your code](#).

2. You need to modify the design (layout) of the web part

You need to use the custom web part layouts described in chapter [Customizing web part layout](#).

3. You need to modify the code of the web part

You need to create a copy of the standard web part as described in chapter [Modifying the code or design of standard web parts](#).

7.18.4 Customizing web part layout

Kentico CMS comes with many built-in web parts. The concept of web part layouts allows you to customize the look of the web part by defining a custom HTML layout. So the web part layout is basically a custom skin for the web part.

Example: Customizing Newsletter subscription dialog

In this example, we will customize the newsletter subscription dialog layout. The standard layout looks like this:

[Examples](#) > [Webparts](#) > [Newsletters](#) > Newsletter subscription

First name:

Last name:

E-mail:

Corporate Newsletter

Go to **CMS Desk -> Content** and navigate to the **Examples -> Web parts -> Newsletters -> Newsletter subscription** page (if you're using the sample Corporate Site).

Switch to the **Design** tab and configure the **Newsletter subscription** web part. Click the **Layout** tab and choose (New) from the drop-down list. Enter the following values:

- **Display name:** Narrow layout
- **Code name:** NarrowLayout

Enter the following HTML code:

```
<%@ Control Language="C#" AutoEventWireup="true" CodeFile="~/CMSWebParts/
Newsletters/NewsletterSubscriptionWebPart.ascx.cs"
    Inherits="CMSWebParts_Newsletters_NewsletterSubscriptionWebPart" %>

<%@ Register Assembly="CMS.ExtendedControls" Namespace="CMS.ExtendedControls"
    TagPrefix="ccl" %>

<asp:Panel ID="pnlSubscription" runat="server" DefaultButton="btnSubmit" CssClass
="Subscription">
    <asp:Label runat="server" ID="lblInfo" CssClass="InfoMessage" EnableViewState
="false"
        Visible="false" />
    <asp:Label runat="server" ID="lblError" CssClass="ErrorMessage"
    EnableViewState="false"
        Visible="false" />
    <table>
        <tr>
            <td>
                <ccl:LocalizedLabel ID="lblFirstName" runat="server"
    AssociatedControlID="txtFirstName" /><br />
                <asp:TextBox ID="txtFirstName" runat="server" CssClass
="SubscriptionTextbox"></asp:TextBox>
            </td>
        </tr>
        <tr>
            <td>
                <ccl:LocalizedLabel ID="lblLastName" runat="server"
    AssociatedControlID="txtLastName" /><br />
                <asp:TextBox ID="txtLastName" runat="server" CssClass
="SubscriptionTextbox"></asp:TextBox>
            </td>
        </tr>
        <tr>
            <td>
                <ccl:LocalizedLabel ID="lblEmail" runat="server"
    AssociatedControlID="txtEmail" /><br />
                <asp:TextBox ID="txtEmail" runat="server" CssClass
="SubscriptionTextbox"></asp:TextBox>
            </td>
        </tr>
        <tr>
            <td>
                <asp:CheckBoxList runat="server" CssClass="NewsletterList" ID
="chk1Newsletters"></asp:CheckBoxList>
            </td>
        </tr>
        <tr>
            <td align="right">
                <ccl:LocalizedButton ID="btnSubmit" runat="server" OnClick
="btnSubmit_Click" CssClass="SubscriptionButton" />
            </td>
        </tr>
    </table>
</asp:Panel>
```

Click **OK**. When you look at the page now, you will see a dialog like this:

[Examples](#) > [Webparts](#) > [Newsletters](#) > Newsletter subscription

First name:

Last name:

E-mail:

Corporate Newsletter

Subscribe



Do not remove any controls from the layout

It's important to **keep all the controls in the layout**. If you need to hide some of them, you can add `Visible="False"` attribute to the control, but the control must stay in the layout so that the web part keeps working.

This issue **may also cause problems when upgrading to a new Kentico CMS version** - if some of the built-in web parts uses a new control and you use your web part layout created in the previous version, the web part may stop working. Please be sure to test your website after an upgrade carefully if you're using web part layouts.

7.18.5 Setting web part properties dynamically in your code

In some cases, you may need to set the value of the web part in your code, depending on some particular business rules. In such case, you need to create a new ASCX user control and place the original web part to this user control. In the user control code, you can implement your custom logic and set the properties appropriately.

The following example shows how you can dynamically set the **WHERE condition (WhereCondition)** property of the **Repeater** web part based on the fact that the current user is or is not authenticated. It uses the standard News document type with custom boolean field **Show to public users (ShowToPublicUsers)**.

1. Open the web project in **Visual Studio**.
2. Create a new folder under the project root called by the code name of your website, in our case **CorporateSite**. It will ensure that your user controls will be exported with the site when deploying the site to the live server.
3. Create a new user control under the folder **CorporateSite** and call it **NewsRepeater.ascx**.
4. Drag and drop the **CMSWebParts/Viewers/cmsrepeater.ascx** on your user control. You could alternatively use the CMSRepeater server control as well, but this is not the purpose of this example.

Set its properties like this:

- **ID:** RepeaterWebPart1
- **ClassNames:** cms.news (document types)
- **Path:** /news/%
- **TransformationName:** cms.news.preview
- **SelectedItemTransformationName:** cms.news.default

5. Add the following code to the code-behind of your user control:

[C#]

```
protected void Page_Init(object sender, EventArgs e)
{
    if (CMS.CMSHelper.CMSContext.CurrentUser.IsPublic())
    {
        // public user - show only public news
        this.RepeaterWebPart1.WhereCondition = "ShowToPublicUsers = 1";
        this.RepeaterWebPart1.ReloadData();
    }
}
```

This will set the **WhereCondition** property value dynamically depending on whether the user is signed in. **Save** all changes.

6. Go to **Site Manager -> Development -> Document types -> News** and add a new field called **ShowToPublicUsers** of type boolean.
7. Go to **CMS Desk -> Content**, choose **Home**, switch to the **Design** tab and add a new web part **General/ User control** to the **zoneBottom** zone. Set the **User control virtual path** property value to **~/CorporateSite/NewsRepeater.ascx**.
8. Edit some news in the **/News** section of the website and set the **Show to public users** value to **Yes**.
9. **Sign out** and see the home page. You should see only news items that you marked as **Show to public users**.

You have learned how to dynamically set the web part properties based on your custom logic.

7.18.6 Modifying the code of standard web parts

This chapter explains how you can create a copy of a standard web part and modify its code.

The following example shows how you can send custom e-mail when a BizForm form is submitted and display a custom confirmation message. It uses the `CMSWebParts\BizForms\BizForm.ascx` web part as the base and adds a custom handler on the `OnAfterSave` event.

1. We will create a copy of the BizForm definition in Kentico CMS. Go to **Site Manager -> Development -> Web parts -> BizForms -> BizForm**. Click **Clone web part** and enter the following values:

- **Web part display name:** BizForm with custom e-mail

- **Web part code name:** BizFormWithEmail
- **Web part category:** BizForms
- **Web part file name:** BizForms/bizformwithemail.ascx
- **Clone web part files:** yes (checked)

Click **Clone**. The system creates a copy of the existing web part using the new name and it also copies the code (ASCX and CS file).

2. Now we will make the modifications to the web part. Open the web project using the WebProject.sln file in Visual Studio. Switch to the **Design** tab and drag and drop a **Label** control on the page. Set its ID to **lblConfirmationMessage**.
3. Click the BizForm control and choose Events in the Properties window. Double-click the OnAfterSave event and add the following method inside the generated method:

[C#]

```
protected void BizFormNew_OnAfterSave()
{
    CMS.EmailEngine.EmailMessage msg = new CMS.EmailEngine.EmailMessage();
    msg.From = "mymail@domain.com"; // use valid e-mail
    msg.Recipients = "mymail@domain.com"; // use valid e-mail
    msg.Subject = "Custom BizForm e-mail";
    msg.Body = "The value of the FirstName field: "
        + CMS.GlobalHelper.ValidationHelper.GetString(
            this.BizFormNew.BasicForm.DataRow["FirstName"], "N/A");
    CMS.EmailEngine.EmailSender.SendEmail(msg);
    lblConfirmationMessage.Text = "The e-mail has been sent.";
}
```

Please notice how you can retrieve the form values through the `BizFormNew.BasicForm.DataRow` property.

Use valid e-mail addresses and **save** all changes.

4. Go to **CMS Desk -> Content**, choose the **Home** page, switch to the **Design** tab and add the **BizForm with custom e-mail** web part to the **zoneBottom** zone. Set the **Form name** property to the **Contact us** form (if you're using the sample Corporate Site).
5. Sign out and go to the live site. Enter some values into the form and submit it. You will see the additional confirmation message "The e-mail has been sent." and receive the e-mail.

You have seen how you can create a modification of a standard web part.

7.18.7 Web part inheritance

Web part inheritance allows you to create a web part that has the same properties and uses the same code as the original web part, but it has different default values. It means you can create specialized web part from a general one.

For example: You can create a News list web part inherited from the Repeater web part that will display a list of news by default. The default values can be later modified for any other value, but the inherited

(specialized) web part allows you to do things faster.

How to create an inherited web part

1. Go to **Site Manager -> Development -> Web parts**, click **Listings and viewers** and click **New web part**.
2. Click **Inherit from an existing web part** and enter the following values:
 - **Web part display name:** News list
 - **Web part code name:** NewsList
 - **Inherit from:** Listings and viewers/Repeater
 Click **OK**.
3. Click the **Properties** tab of the newly created web part. Here you can see the properties of the parent web part and you can override their default values by clearing the **Inherited** box and entering a new default value. Enter the following default values:
 - **Path:** /%
 - **Document types:** cms.news
 - **ORDER BY expression:** NewsReleaseDate
 - **Transformation:** cms.news.preview
 - **Selected item transformation:** cms.news.default

Click **OK**.

Web parts ▶ New news list ?

General **Properties** Layout Documentation

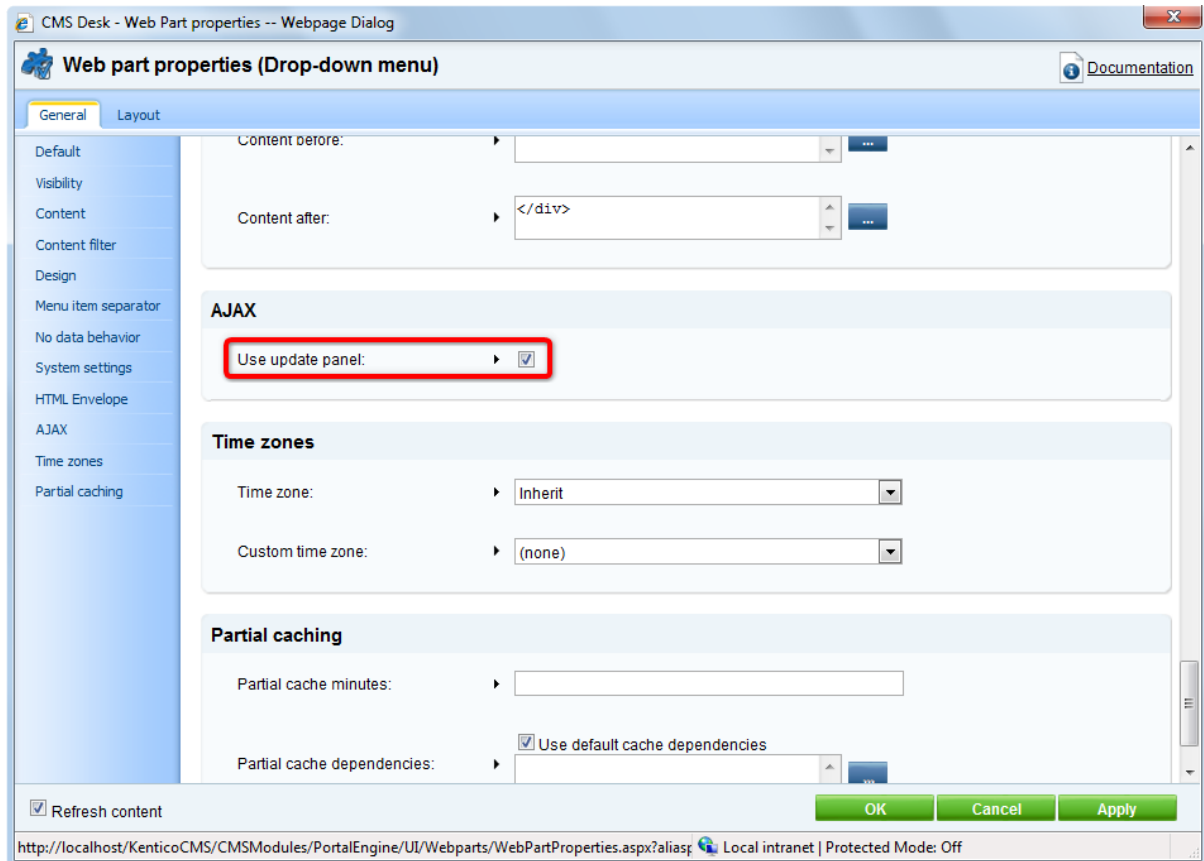
| Content | | | |
|-------------------------------|--|---------|---|
| Path: | <input type="text" value="/%"/> | Text | <input type="checkbox"/> Inherited |
| Data source name: | <input type="text"/> | Text | <input checked="" type="checkbox"/> Inherited |
| Content filter | | | |
| Document types: | <input type="text" value="cms.news"/> | Text | <input type="checkbox"/> Inherited |
| Combine with default culture: | <input type="text"/> | Text | <input checked="" type="checkbox"/> Inherited |
| Culture code: | <input type="text"/> | Text | <input checked="" type="checkbox"/> Inherited |
| Maximum nesting level: | <input type="text" value="-1"/> | Integer | <input checked="" type="checkbox"/> Inherited |
| ORDER BY expression: | <input type="text" value="NewsReleaseDate"/> | Text | <input type="checkbox"/> Inherited |
| Select only published: | <input checked="" type="checkbox"/> | Boolean | <input checked="" type="checkbox"/> Inherited |
| Select top N documents: | <input type="text"/> | Integer | <input checked="" type="checkbox"/> Inherited |
| Site name: | <input type="text"/> | Text | <input checked="" type="checkbox"/> Inherited |
| WHERE condition: | <input type="text"/> | Text | <input checked="" type="checkbox"/> Inherited |
| Columns: | <input type="text"/> | Text | <input checked="" type="checkbox"/> Inherited |

OK

4. Go to **CMS Desk**, choose the **Home** page in the content tree and switch to the **Design** tab. Add the News list web part to the page. It will display all site news without any additional configuration now.

7.18.8 AJAX support

Your web parts can use the UpdatePanel, which wraps the web part into the UpdatePanel. This can be easily done by enabling the **Use update panel** web part property of your web part.



No further modifications are necessary, but the following rules should be followed:

1. ID of a control must be defined when loading the control dynamically:

Incorrect:

```
Control ctrl = this.LoadControl("~/MyControl.ascx");
if (ctrl != null)
{
    Controls.Add(ctrl);
}
```

Correct:

```
Control ctrl = this.LoadControl("~/MyControl.ascx");
if (ctrl != null)
{
    ctrl.ID = "myControl";
    Controls.Add(ctrl);
}
```

2. When requesting PostBackEventReference, use Kentico's custom function instead of the default one:

Incorrect:

```
this.Page.ClientScript.GetPostBackEventReference(this, "");
```

Correct:

```
CMS.ExtendedControls.ControlsHelper.GetPostBackEventReference(this, "");
```

7.18.9 Web part containers

7.18.9.1 Containers overview

Containers are used as "boxes" for web parts. They consist of text that is displayed before the web part and after the web part which means they are used as an envelope for web part content. They have two advantages over using the ContentBefore and ContentAfter properties:

1. They are re-usable on many web parts.
2. They can contain a title and dynamically inserted values of the web part properties.

The containers can be managed in **Site Manager -> Development -> Web part containers**.

| | |
|------------------------|---|
| Container display name | The name of the container displayed to the users. |
| Container code name | The name of the container used in the code. |
| Text before web part | Text displayed before web part - the beginning of the envelope. |
| Text after web part | Text displayed after web part - the closing of the envelope. |

The **Text before/after web part** value can contain dynamically inserted values of the web part properties. You can insert them using the following expression:

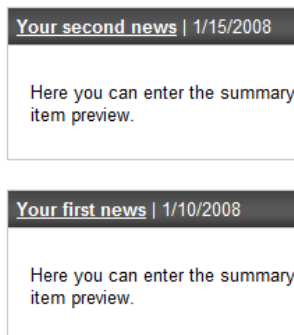
```
{%propertyname%}
```

You will most often use the following expression to insert the container title:

```
{%ContainerTitle%}
```

These macro expressions are resolved even when macro resolving for the particular web part (Disable macros property) is disabled.

Here's an example of web part **without container**:



Here's an example of the same web part **with container**:



7.18.9.2 Creating web part containers

Here's an example of defining a new web part container:

1. Go to **Site Manager -> Development -> Web part containers**.
2. Click **New container**.
3. Enter the following values:
 - **Container display name**: Blue
 - **Container code name**: Blue
 - **Text before web part**:

```
<table width="100%" style="border: 1px solid #4a62e4;" cellpadding="5"
cellspacing="0">
<tr valign="top">
<td style="background-color:#4a62e4;font-weight:bold;color:white">
{%ContainerTitle%}
</td>
</tr>
<tr valign="top">
<td>
```

- **Text after web part**:

```
</td>
</tr>
</table>
```

4. Click **OK** to save.
5. Go to **CMS Desk** and display some page on the Design tab. Configure some web part and set its properties like these:
 - Use container: Blue

- Container title: My web part with container

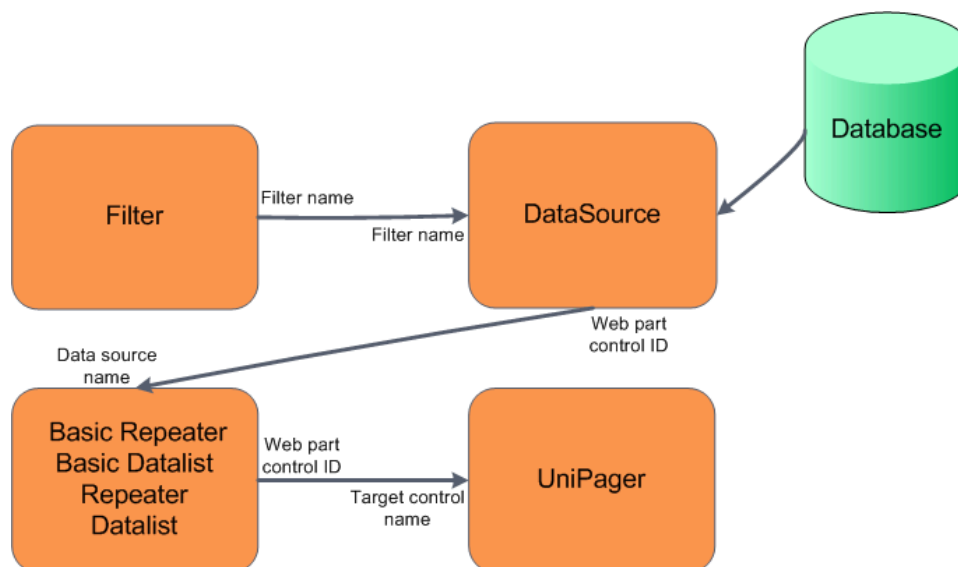
- View the page in **Live site** mode. The web part will be surrounded with border and it will have the blue title.

7.18.10 Data source web parts

7.18.10.1 Using DataSource web parts

DataSource web parts are designed for retrieving data from the database and sending it to other web parts that display it. This allows you to have separate web parts for retrieving data from the database, displaying data, filtering the displayed data and paging. These web parts can be placed anywhere on the page without any change in functionality and their design can be set separately, which results in higher design flexibility in comparison with using the original Repeater, Datalist, etc.

The following diagram shows how a DataSource web part can be connected with other web parts to form a functional group of interconnected web parts. Captions of connecting lines show which properties of the web parts have to be set identically for the group to work properly.



Please note: Repeater and Datalist web parts can only be used for Documents provided by the DataSource, not for e.g. Custom tables, etc. You will need to use Basic Repeater or Basic Datalist for this purpose.

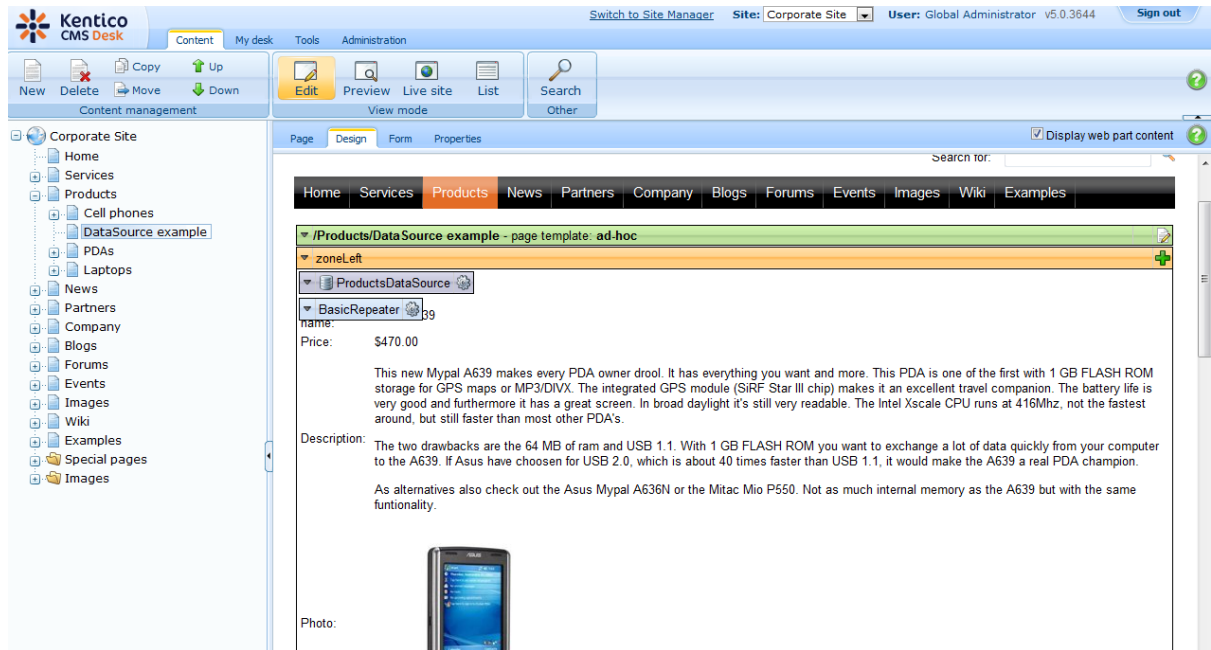
In the following example, we will create a group of interconnected web parts just as in the diagram above in order to see how the DataSource concept works in practice.

- Sign in to CMS Desk as the administrator (login *administrator* with blank password).
- Create a new page under the **Products** section. Name it **DataSource example** and choose to **Create a blank page** using the **Simple** layout. Click **Save**.
- Add the **Data Sources -> Products data source** web part to the only web part zone on the page. Leave default values for all its properties and click **OK**.

4. Add the **Listings & Viewers -> Basic Repeater** web part to the same web part zone. Set the following properties:

- **Data source name:** ProductsDataSource
- **Transformation name:** CMS.Product.Default

Click **OK**. You should see the repeater displaying products as in the following screenshot.



The screenshot displays the Kentico CMS 5.5 Developer's Guide interface. The top navigation bar includes the Kentico CMS Desk logo, a search bar, and user information (User: Global Administrator, v5.0.3644). The main interface is divided into several sections:

- Content management:** A toolbar with options like New, Delete, Copy, Move, Up, Down, Edit, Preview, Live site, List, and Search.
- Page Design:** A tabbed interface with Design, Form, and Properties views.
- Navigation:** A horizontal menu with links for Home, Services, Products (highlighted), News, Partners, Company, Blogs, Forums, Events, Images, Wiki, and Examples.
- Web Part Zone:** A tree view showing the structure of the page. The selected zone is **zoneLeft**, which contains a **ProductsDataSource** web part and a **BasicRepeater** web part.
- Product Display:** The BasicRepeater web part displays the following information:
 - Price:** \$470.00
 - Description:** This new Mypal A639 makes every PDA owner drool. It has everything you want and more. This PDA is one of the first with 1 GB FLASH ROM storage for GPS maps or MP3/DIVX. The integrated GPS module (SIRF Star III chip) makes it an excellent travel companion. The battery life is very good and furthermore it has a great screen. In broad daylight it's still very readable. The Intel Xscale CPU runs at 416Mhz, not the fastest around, but still faster than most other PDA's.
 - Photo:** A small image of the Mypal A639 PDA.

5. Now we will add the filter for the users to be able to filter displayed records. Add the **E-commerce -> Product filter** web part to the same web part zone. The web part will be added to the bottom of the page, so that you will not be able to see it. You might want to scroll down and move the web part above the repeater. Open the web part's menu and choose to move the web part **Up**.



Set the following property of the filter web part:

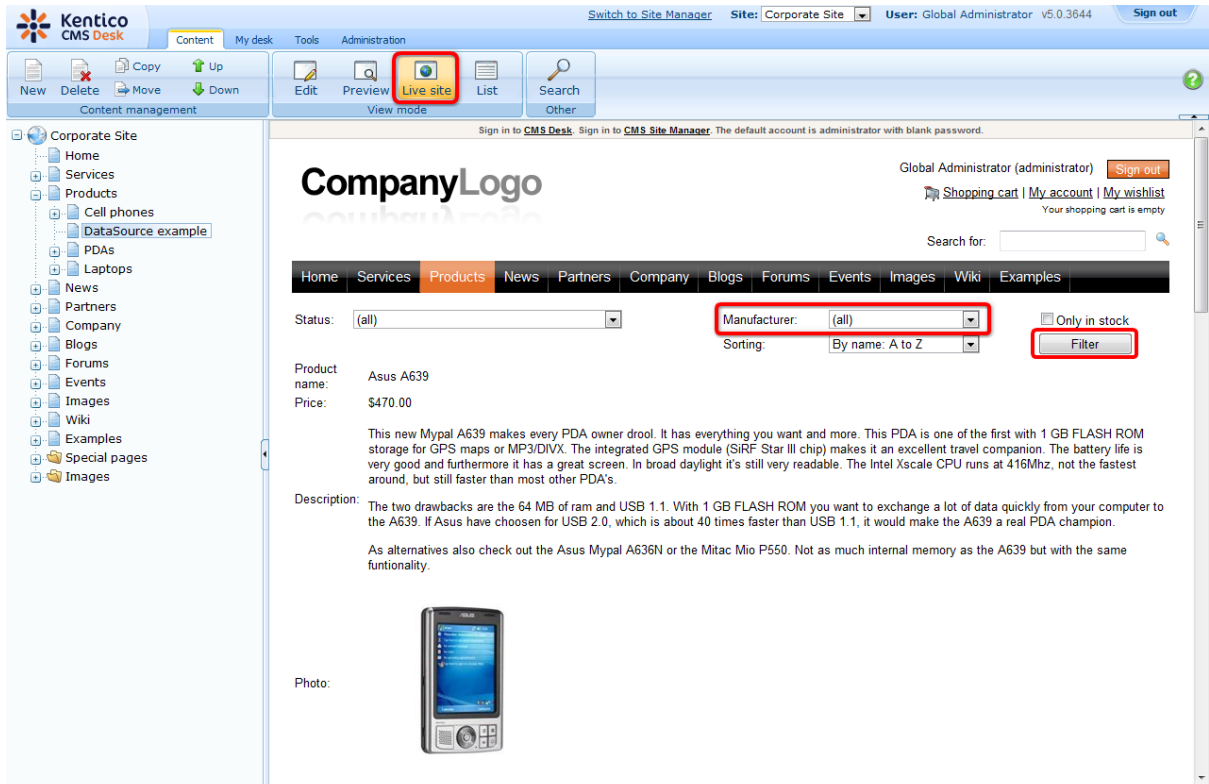
- **Filter name:** ProductFilter

Also open the ProductsDataSource's web part properties and enter the same filter name into its **Filter name** field:

- **Filter name:** ProductFilter

You have just connected the data source with the filter. Data sent from the DataSource to the repeater can now be filtered using the ProductFilter.

6. You have just connected the data source with the filter. Data sent from the DataSource to the repeater can now be filtered using the ProductFilter. To verify the functionality, switch to **Live site** mode. You can for example choose to display only products manufactured by Asus using the **Manufacturer** drop-down list. After selecting, click **Filter** for the changes to take effect. After doing so, you should see only Asus products in the repeater, as you can see in the screenshot below.



The screenshot displays the Kentico CMS 5.5 Developer's Guide interface. The top navigation bar includes the Kentico CMS Desk logo, site information (Corporate Site), user information (Global Administrator), and a sign-out button. The main toolbar contains buttons for Content management (New, Delete, Copy, Move, Up, Down), View mode (Edit, Preview, **Live site**, List), and Search. The left sidebar shows a tree view of the site structure, with 'DataSource example' selected under 'Products'. The main content area displays the 'CompanyLogo' and a navigation menu with 'Products' highlighted. Below the navigation menu, there are filters for Status (all), Manufacturer (all), and Sorting (By name: A to Z). A 'Filter' button is also present. The product listing shows the 'Asus A639' with a price of \$470.00. The description includes details about the PDA's features and drawbacks. A photo of the Asus A639 PDA is shown below the description.

7. As the amount of data displayed by the repeater might grow very large in some cases, the next logical step is to add a pager. Add the **Listings & Viewers -> Universal pager** web part to the web part zone and move it **Up** above the repeater the same way that you moved the filter in step 5.

Set the following properties:

- **Target control name:** BasicRepeater
- **Page size:** 5
- **Group size:** 5

and the following transformations:

- **Pages:** CMS.PagerTransformations.General-Pages
- **Current page:** CMS.PagerTransformations.General-CurrentPage
- **Previous page:** CMS.PagerTransformations.General-PreviousPage
- **Next page:** CMS.PagerTransformations.General-NextPage
- **Layout:** CMS.PagerTransformations.General-PagerLayout

Click **OK** to save the changes.

8. Now if you switch to Live site mode, size of the page should be reduced to 5 products and you should be able to switch between pages using the pager.

CompanyLogo

Global Administrator (administrator) Sign out
[Shopping cart](#) | [My account](#) | [My wishlist](#)
Your shopping cart is empty

Search for:

Home Services Products News Partners Company Blogs Forums Events Images Wiki Examples

| | | |
|--|--|--|
| Status: <input style="width: 100%;" type="text" value="(all)"/> | Manufacturer: <input style="width: 100%;" type="text" value="(all)"/> | <input type="checkbox"/> Only in stock |
| <div style="border: 1px solid red; padding: 2px; display: inline-block;"> \leq 1 2 3 4 5 \geq Results 6 - 10 of 126 </div> | Sorting: <input style="width: 100%;" type="text" value="By name: A to Z"/> | <input type="button" value="Filter"/> |

Product name: Asus A639


Price: \$470.00

Description: This new Mypal A639 makes every PDA owner drool. It has everything you want and more. This PDA is one of the first with 1 GB FLASH ROM storage for GPS maps or MP3/DIVX. The integrated GPS module (SiRF Star III chip) makes it an excellent travel companion. The battery life is very good and furthermore it has a great screen. In broad daylight it's still very readable. The Intel Xscale CPU runs at 416Mhz, not the fastest around, but still faster than most other PDA's.

Description: The two drawbacks are the 64 MB of ram and USB 1.1. With 1 GB FLASH ROM you want to exchange a lot of data quickly from your computer to the A639. If Asus have choosen for USB 2.0, which is about 40 times faster than USB 1.1, it would make the A639 a real PDA champion.

As alternatives also check out the Asus Mypal A636N or the Mitac Mio P550. Not as much internal memory as the A639 but with the same funtionality.

Photo:



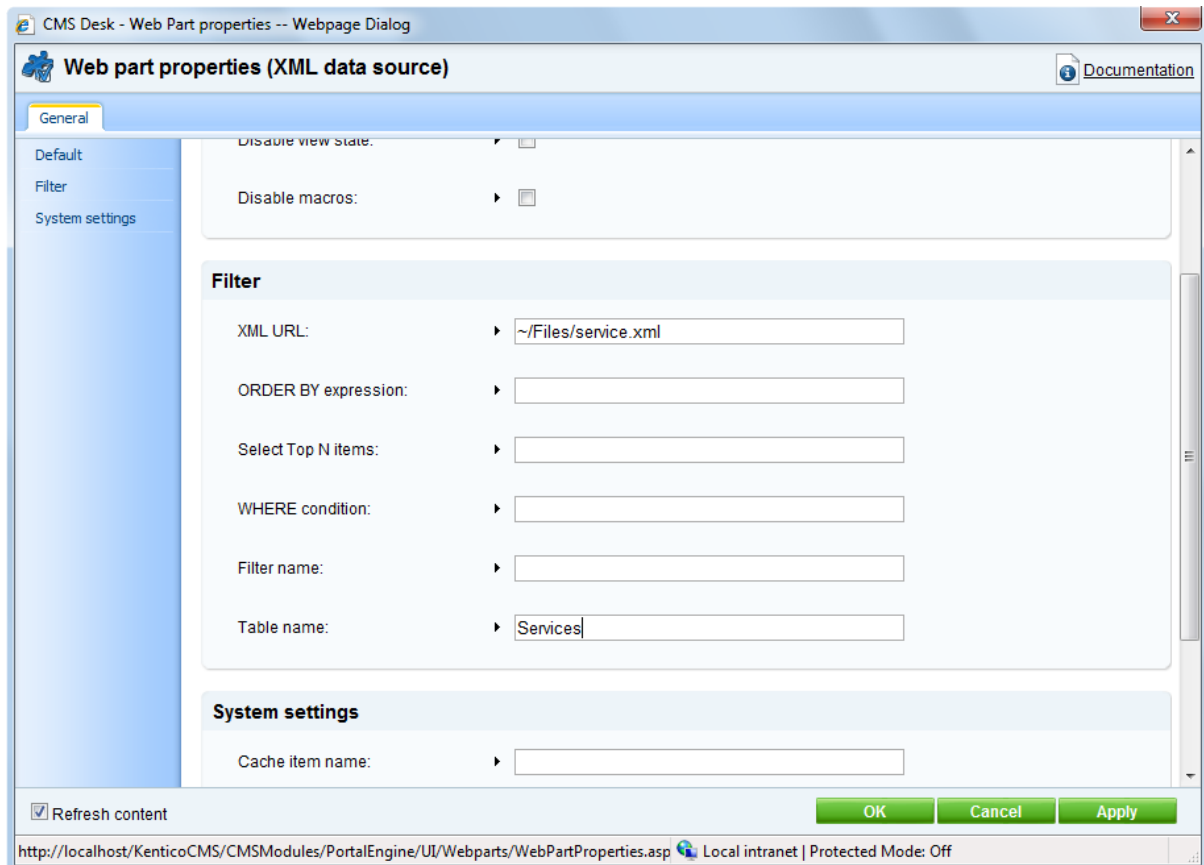
7.18.10.2 Problems with XMLDataSource

The XML data source web part can be used to provide data from an XML file specified by its **XML URL** property. It uses the [Dataset.ReadXml\(\)](#) method to read the XML files. In some cases, this method can separate data from the source XML file into more than one dataset table. In this case, you need to specify the dataset table name in the **Table name** property.

Unfortunately, it can not be explicitly said into what table the required data is loaded. Therefore, we recommend to find it out using the **Debug** function in **Visual Studio**.

If the Table name property is not specified appropriately in this case, no data is provided to the connected Repeater. It is therefore advisable to disable the Repeater's its **Hide if no record found** property in order to prevent the repeater from being hidden on the page, which may be confusing in some cases.

In some special cases, it may also happen that the required data may be distributed into more than one dataset table. In such case, the **Table name** property can not be used to solve the issue and the only workaround is to modify the source XML (if possible).



7.18.10.3 Developing DataSource web parts

The code example below shows a sample custom DataSource web part for providing users from the CMS. The web part consists of two controls, so you need to take the following two steps when developing your custom DataSource web part:

1. Create a user control that inherits from **CMSBaseDataSource**. This will be the control that gets the data.

- The **OnInit** and **DataFilter_OnFilterChanged** methods are necessary for handling the connected filter. If you are not planning to use a filter with the data source web part, you do not need to implement these methods.
- The **GetDataSourceFromDB** method ensures loading of the actual data.

DataSourceControl.ascx

```
<%@ Control Language="C#" AutoEventWireup="true" CodeFile="DataSourceControl.ascx.cs" Inherits="CMSTestingSite_APIExamples_Controls_DataSource" %>
```

DataSourceControl.ascx.cs

[C#]

```
using System;
using System.Collections.Generic;
using System.Web;
using System.Web.UI;
using System.Web.UI.WebControls;

using CMS.Controls;
using CMS.SiteProvider;

/// <summary>
/// Users data source. Loads all users with dependence on specified where
condition
/// </summary>
public partial class CMSTestingSite_APIExamples_Controls_DataSource :
CMSBaseDataSource
{
    #region "Variables"

    private string mWhereCondition = String.Empty;
    private string mOrderBy = String.Empty;

    #endregion

    #region "Properties"

    /// <summary>
    /// Gets or sets the where condition
    /// </summary>
    public string WhereCondition
```

```
{
    get
    {
        return mWhereCondition;
    }
    set
    {
        mWhereCondition = value;
    }
}

/// <summary>
/// Gets the data source
/// </summary>
public override object DataSource
{
    get
    {
        return base.GetDataSource();
    }
}

/// <summary>
/// Gets or sets the order by clause
/// </summary>
public string OrderBy
{
    get
    {
        return mOrderBy;
    }
    set
    {
        mOrderBy = value;
    }
}

#endregion

#region "Methods"

/// <summary>
/// Handle filter change event
/// </summary>
protected override void OnInit(EventArgs e)
{
    if (SourceFilterControl != null)
    {
        SourceFilterControl.OnFilterChanged += new ActionEventHandler
            (DataFilter_OnFilterChanged);
    }

    base.OnInit(e);
}
}
```

```
/// <summary>
/// OnFilterChange handler
/// </summary>
void DataFilter_OnFilterChanged()
{
    // Clear old data
    InvalidateLoadedData();
    // Raise change event
    this.RaiseOnFilterChanged();
}

/// <summary>
/// Gets the datasource data
/// </summary>
public override object GetDataSourceFromDB()
{
    // Check whether datasource contains data
    if (base.DataSource != null)
    {
        return base.DataSource;
    }
    // Initialize data and return datasource
    else
    {
        // Initialize properties with dependence on filter settings
        if (SourceFilterControl != null)
        {
            SourceFilterControl.InitDataProperties(this);
        }

        // Load data, in this example nothing is loaded
        base.DataSource = UserInfoProvider.GetFullUsers(this.WhereCondition,
this.OrderBy);
        return base.DataSource;
    }
}

#endregion
}
```

2. Create another user control and drop the first control on it. This control will become the actual web part. Register the control as a web part in Kentico CMS as described [here](#).

- The control must inherit from **CMSAbstractWebPart**.
- The line of the **SetupControl** method beginning with *this.srcUsers.FilterName* ensures that the inner datasource's name is set the same as the *Web part control ID* property of this web part. Don't get perplexed by the property being called *FilterName*. This is by design, because datasources use the same objects as filters.

DataSourceWebPart.ascx

```
<%@ Control Language="C#" AutoEventWireup="true" CodeFile="DataSourceWebPart.ascx.
```

```
cs" Inherits="CMSTestingSite_APIExamples_Controls_DataSourceWebPart" %>
<%@ Register src="DataSourceControl.ascx" tagname="DataSourceControl" tagprefix
="cms" %>
<cms:DataSourceControl ID="srcUsers" runat="server" />
```

DataSourceWebPart.ascx.cs

[C#]

```
using System;
using System.Collections.Generic;
using System.Web;
using System.Web.UI;
using System.Web.UI.WebControls;

using CMS.PortalControls;
using CMS.GlobalHelper;

public partial class CMSTestingSite_APIExamples_Controls_DataSourceWebPart :
CMSAbstractWebPart
{
    /// <summary>
    /// Gets or sets WHERE condition.
    /// </summary>
    public string WhereCondition
    {
        get
        {
            return ValidationHelper.GetString(this.GetValue("WhereCondition"), ""
);
        }
        set
        {
            this.SetValue("WhereCondition", value);
            srcUsers.WhereCondition = value;
        }
    }

    /// <summary>
    /// Gets or sets ORDER BY condition.
    /// </summary>
    public string OrderBy
    {
        get
        {
            return ValidationHelper.GetString(this.GetValue("OrderBy"), "");
        }
        set
        {
            this.SetValue("OrderBy", value);
            srcUsers.OrderBy = value;
        }
    }
}
```

```
/// <summary>
/// Gets or sets the source filter name
/// </summary>
public string FilterName
{
    get
    {
        return ValidationHelper.GetString(this.GetValue("FilterName"), "");
    }
    set
    {
        this.SetValue("FilterName", value);
        srcUsers.SourceFilterName = value;
    }
}

/// <summary>
/// Content loaded event handler
/// </summary>
public override void OnContentLoaded()
{
    base.OnContentLoaded();
    SetupControl();
}

/// <summary>
/// Initializes the control properties
/// </summary>
protected void SetupControl()
{
    if (this.StopProcessing)
    {
        // Do nothing
    }
    else
    {
        this.srcUsers.WhereCondition = this.WhereCondition;
        this.srcUsers.OrderBy = this.OrderBy;

        // Sets the current webpart name as datasource name
        this.srcUsers.FilterName = ValidationHelper.GetString(this.GetValue(
"WebPartControlID"), this.ClientID);
        // Sets the name of the extending filter
        this.srcUsers.SourceFilterName = this.FilterName;
    }
}
}
```

7.19 Widgets

7.19.1 Overview

Widgets introduce a support for the personalization of pages. The enhancement allows users and editors to edit the structure of page templates. This personalization is saved within the system and can be invoked from the live site by authorized users or through the CMS Desk in case of website editors. From the designer's point of view the widgets are basic building blocks of page templates in the same way as web parts.

There is a predefined set of widgets in the default CMS Kentico installation. As all widgets are based on existing web parts, you can alternatively create your own widgets. Widgets are created and managed in the **Site Manager** -> **Development** -> **Widgets**. The details are given in the [Developing widgets](#) section.

As mentioned above, widgets provide the same functionality as ordinary web parts. However, users with appropriate rights can modify widgets' properties, their placement on the web page, add and remove widgets from their pages and so on. Users are divided into four different groups:

- [Site developer/Administrator](#) - defines the placement of widget zones and their default content, selects web part properties available for personalization in widgets and manages all available widgets.
- [Page editor](#) - defines the content of the widget zones created in the page templates by the site developer/administrator.
- [Group administrator](#) - defines the design of group pages (personalized properties).
- [Website user](#) - defines the design of their home page or another page which can be personalized on the live site.

The details about this topic are given in the [Using widgets](#) section.

Security issues, definition of rights for different types of users and roles related to widgets are discussed in the [Security](#) section.

7.19.2 Developing widgets

Every widget is based on an existing web part. As a site developer, you can simply create your own widgets. This chapter will lead you through the step by step process of creating a widget.

1. As mentioned above, it is not possible to create a widget without a reference to a web part. To start, switch to the **Site Manager -> Development -> Widgets**, for the administration interface where widgets can be created. You should see a screen similar to the following one.

The screenshot displays the Kentico CMS Site Manager administration interface. The top navigation bar includes the Kentico logo, the text "CMS Site Manager", and several menu items: "Sites", "Administration", "Settings", "Development" (which is currently selected), "Licenses", and "Support". On the far right of the navigation bar, there is a link "Switch to CMS Desk" and a "User:" label.

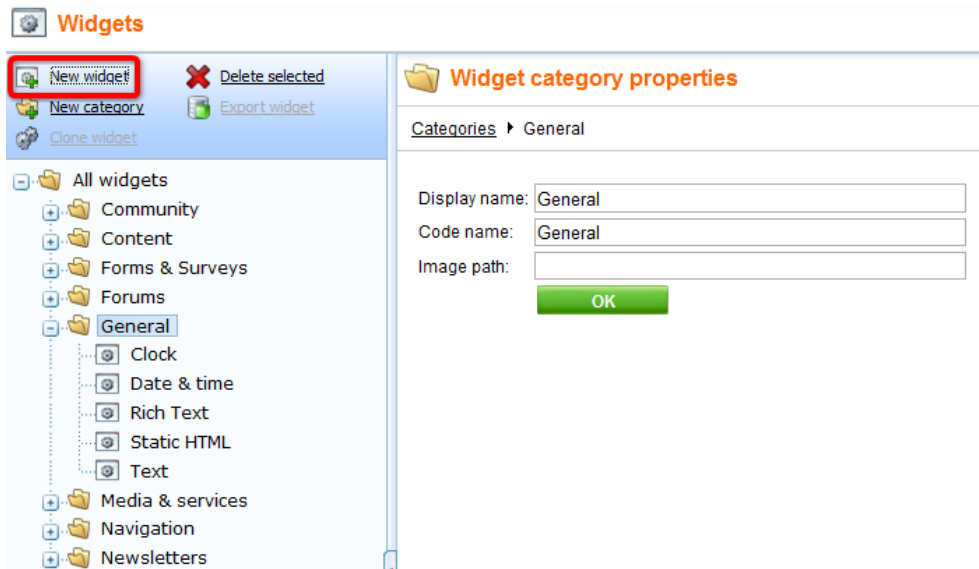
The main content area is divided into three sections:

- Left sidebar:** A tree view under the "Development" category. The "Widgets" item is selected and highlighted.
- Center pane:** Titled "Widgets", it contains a toolbar with "New widget", "Delete selected", "New category", "Export widget", and "Clone widget" buttons. Below the toolbar is a tree view showing a hierarchy of widget categories: "All widgets" (expanded), "Community", "Content", "Forms & Surveys", "Forums", "General", "Media & services", "Navigation", and "Newsletters".
- Right pane:** Titled "Widget category properties", it shows the "Categories" dropdown set to "All widgets". Below this are two input fields: "Display name:" with the value "All widgets" and "Image path:" which is empty. A green "OK" button is positioned below the input fields.

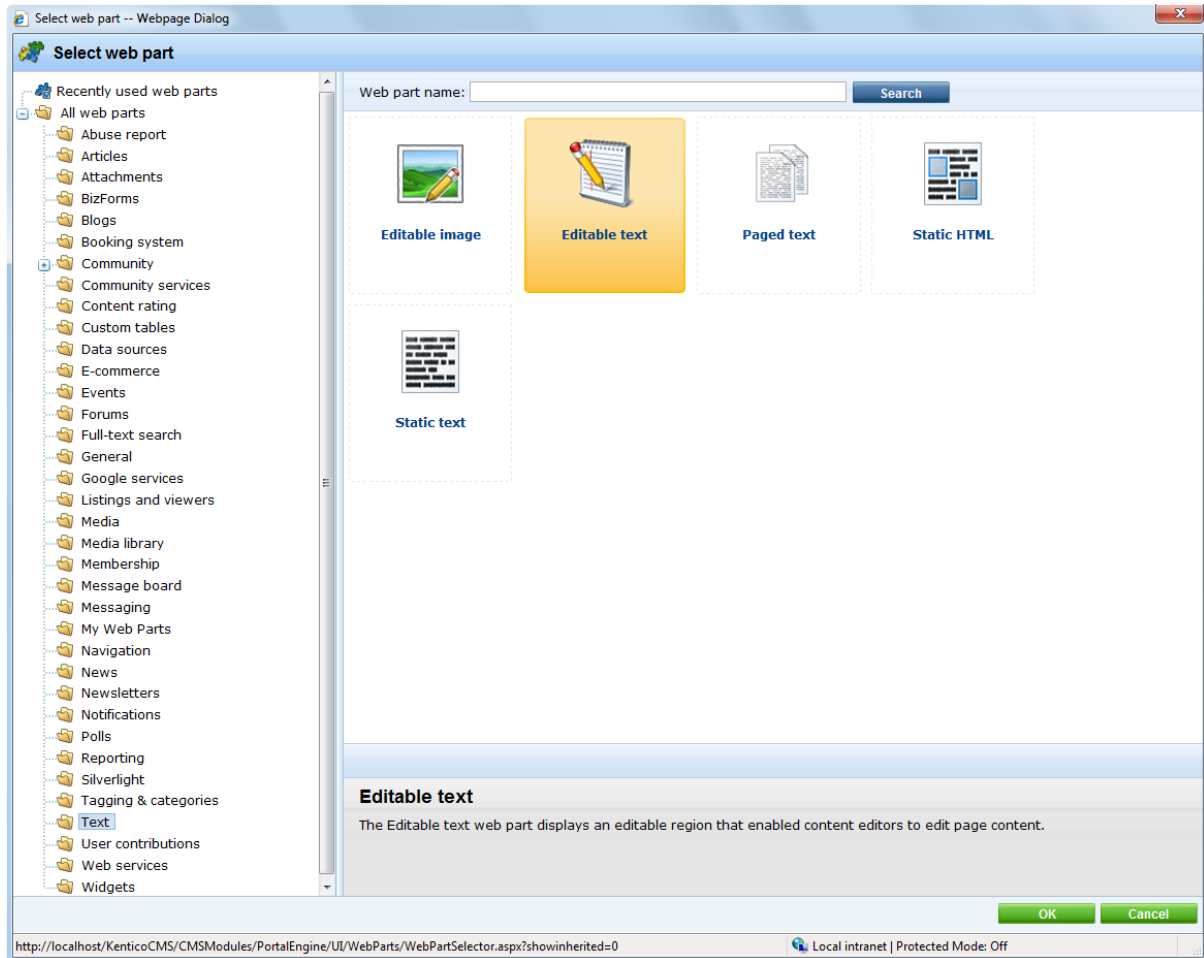
2. Widgets are grouped into categories. It is important to note that categories are used for the sake of organization only. The category under which a given widget is stored has no influence on who can use or modify the widget.

Clicking on the node causes the category to open and all widgets stored within that category are listed. You can also change the Display and Code name of a category. The **Image path** property sets the path to the image which can be used as the category icon in the **Add widget** dialog (the recommended size is 16x16px).

Select any category where the new widget will be stored and click the **New widget** (📁) icon. Alternatively, you can store the new widget into any folder and change its location later when the properties of the widget are defined.



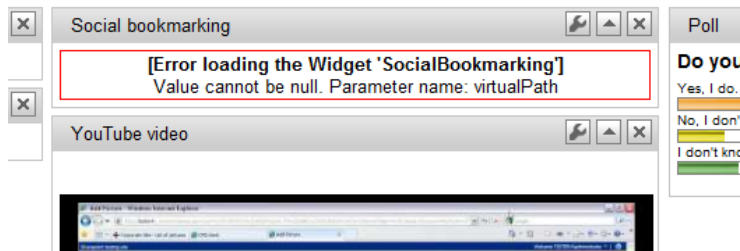
3. A dialog opens, where you can select a web part to be used as a template for the new widget. In the example below the **Editable text** web part from the **Text** folder is selected. To confirm the selection click the **OK** button.



4. A new widget has just been created. You can manage widgets using the icons above the tree. A new widget can be created based on an existing one using the **Clone widget** (🔄) icon. If you are about to create a new category use the **New category** (📁) icon.

To delete a selected widget or the whole category (except the *All widgets* category), click the **Delete selected** (✖) icon. Please, bear in mind that when a widget is deleted, it is not automatically removed from page templates. Therefore, when the page containing a deleted widget is to be displayed, an error message will be displayed instead of the missing widget.

The example below shows the effect of deleting the Social bookmarking widget without removing it from the page template.

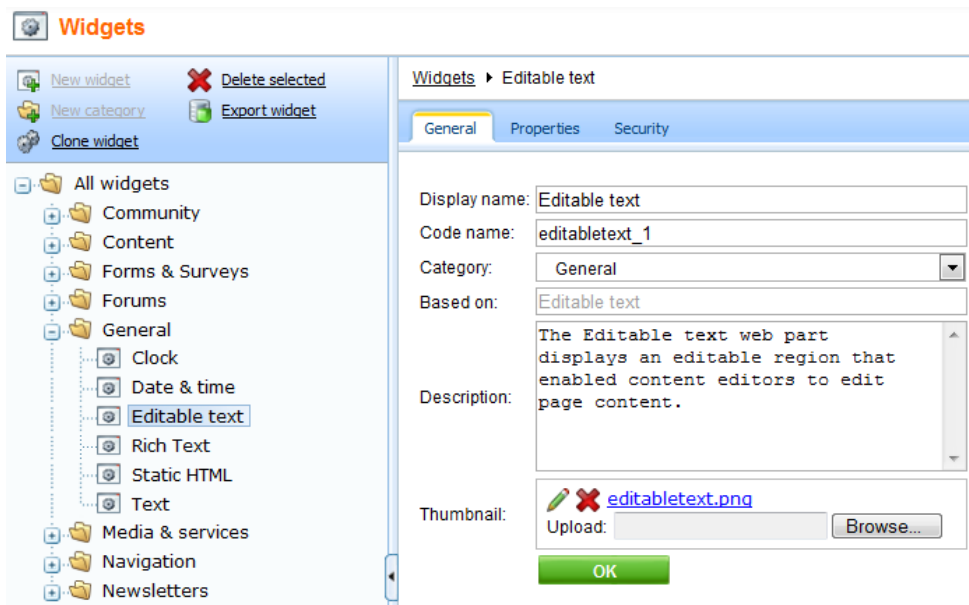


A selected widget can also be exported by clicking on the **Export widget** (📄) icon. For details regarding export see [Exporting single objects](#).

5. For each selected widget there are three tabs available. On the **General** tab there are all the basic settings:

- **Display name** - descriptive name of the widget used in Kentico CMS user interface
- **Code name** - name of the widget used in website code
- **Category** - defines to which category the widget belongs; you can change it here by selecting a new category from the drop-down list
- **Description** - text description of the widget
- **Thumbnail** - graphical representation of the widget in the list

Do any changes required and click the **OK** button.



6. The **Properties** tab includes all the properties available for the parent web part. You can notice that all of them are disabled by default. Using the **Display attribute in the editing form** check box you can choose which property will be available for the widget's user. Please bear in mind that any change must be confirmed by clicking the **OK** button.

The screenshot shows the 'Widgets' management interface. On the left, a tree view shows the 'General' category expanded to 'Editable text'. The main area is titled 'Widgets > Editable text' and has three tabs: 'General', 'Properties', and 'Security'. The 'Properties' tab is active, showing a list of properties on the left and their configuration on the right. The 'WordWrap' property is selected and highlighted in blue. In the 'Database' section, the 'Display attribute in the editing form' checkbox is checked and highlighted with a red square. Other fields include 'Attribute name' (WordWrap), 'Attribute type' (Boolean (Yes/No)), 'Attribute size', 'Allow empty value' (unchecked), and 'Attribute default value' (checked). The 'Field' section shows 'Field caption' (Word wrap (text area only)) and 'Field type' (Check box). A text area at the bottom contains the description: 'Indicates if long lines should be wrapped in the textarea control.' An 'OK' button is located at the bottom right.

7. On the **Security** tab there are settings specifying where the widget can be used and who will be able to modify it. The details are given in the [Widgets security](#) section.

The screenshot shows the 'Security' tab for an 'Editable text' widget. On the left is a tree view of widget categories, with 'Editable text' selected. The main area contains two tables for configuring permissions. The first table allows selection of zones (group, editor, user) and user types (Authenticated users, Authorized roles). The second table lists specific roles for the 'Corporate Site' with checkboxes to allow or deny access.

| | Allowed for |
|---|----------------------------------|
| This widget can be used in group zones | <input type="checkbox"/> |
| This widget can be used in editor zones | <input type="checkbox"/> |
| This widget can be used in user zones | <input type="checkbox"/> |
| Authenticated users | <input type="radio"/> |
| Authorized roles | <input checked="" type="radio"/> |

Please select the authorized roles (available only when you select the "Authorized roles" option above):

Site:

| | Allowed for |
|------------------------------|--------------------------|
| Authenticated users | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> |
| CMS Community Administrators | <input type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> |
| CMS Desk Administrators | <input type="checkbox"/> |
| CMS Editors | <input type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> |
| Everyone | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> |

8. When all settings are done the widget is ready for use in a page template.

7.19.3 Using widgets

There are different sets of actions available for the users depending on their roles as given below:

- [Site developer/Administrator](#) - Determines which zones are widget zones and which ones are standard (static) web part zones. They define the default content (layout) of a widget zone. Those settings are available in **CMS Desk -> Content -> Design**. They also select web part properties which can be personalized (changed by the user). This can be done in **Site Manager -> Development -> Widgets**. The site developer or administrator also define the widgets in the administration interface.
- [Page editor](#) - Defines the content of the widget zones created in the page templates by the site developer/administrator. It is accessible through **CMS Desk -> Content -> Edit**.
- [Group administrator](#) - Defines the design of group pages (personalized properties). Group administrator adds or removes the widgets from the editor point of view and sets the widget properties. This customization can be done on community sites in **CMS Desk -> Content -> Edit**.
- [website user](#) - Authenticated users of the website define the design of their home page or another page which can be personalized on the live site. They add or remove the widgets and set the widget properties.

Site developer/Administrator

The site developer makes a decision regarding the layout of page templates. This also includes the decision whether a zone will be defined as a web part zone (static) or widget zone (customizable).

To change a web part zone into a widget zone, go to the **CMS Desk -> Content -> Design**, and click on the **Properties** item in the left menu of the selected zone.

Design Form Properties Disp

Sign in to [CMS Desk](#) Sign in to [CMS Site Manager](#) The default account is administrator with blank password.

CompanyLogo

Global Administrator (administrator) [Sign out](#)
[Shopping cart](#) | [My account](#) | [My wishlist](#)
Your shopping cart is empty

Search for:

Home Services Products News Partners Company Blogs Forums Events Images Wiki **Examples**

▼ /Examples/My home page - page template: ad-hoc

▼ zoneTop

- ▼ WidgetActions
- ▼ editabletext of personalized user home page. Page personalization is ensured through widgets. User can add/remove widget, change the widget position and configure its properties. The personalization is allowed only for authenticated users.
- ▼ LogonLink

▼ MyHomePageTop


- ▼ MyMessages_1 list ignore list

[New message](#) [Delete all messages](#)

0 unread message(s) of 0 total

▼ zoneLeft

- ▼ NationalGeographic



▼ zoneCenter

- ▼ Add widget
- ▼ Properties

h Weaker Than First

a 2.2 percent pace in the quarter, less than the 2.6 percent reported earlier, but analysts still foresee stronger growth in the fourth quarter.

- Democrats Face Challenge in Merging Health Bills
- New Jersey College Is Beseet by Accusations
- Ahmadinejad Calls Nuclear Claims 'a Joke'
- Efforts Lag at Making Highway Work Zones Safer


[More news >](#)

▼ zoneRight

- ▼ LatestBlogPostsUsers

Which cell phone are you using?

- ▼ clock



Using the **Web part properties** dialog you can define a widget zone type.

- **None** - a standard web part zone will be created
- **User personalization** - the zone will be of widget type and website users will be able to personalize that zone; these zones are marked with the **User zone** (👤) icon
- **Customization by page editor** - this option allows page editors to customize the zone; page editor zones show the **Editor zone** (📄) icon
- **Customization by group administrator** - the same as above for group administrators; these zones have the **Group administrator zone** (👥) icon in their title bar

Please, bear in mind that changing the widget zone type removes all current web parts or default widgets placed in that zone.

Having defined the zone as a widget type zone, you can now add widgets. Simply click on the **Add widget** (+) button on the right side of the zone. You can select any widget available for the given type (User, Editor, Group administrator) of the widget zone.



A **Widget properties** dialog opens, where you can change any parameters available for customization. To save the changes just click on the **OK** button.

Widget properties -- Webpage Dialog

Widget properties (Poll)

Poll settings

Poll name: Product Survey

Show graph:

Count type: Absolute

Show results after vote:

Check if user voted:

HTML Envelope

Widget container: Black box

Widget container title: Polls

Refresh page

OK Cancel Apply

http://localhost/KenticoCMS_2212/CMSModules/Widge Local intranet | Protected Mode: Off

Page editor

As a page editor, you can add, modify or delete any widget placed in the editor type of widget zone. To add a widget just click on the **Add widget** (+) icon in the top left corner of the editor widget zone.



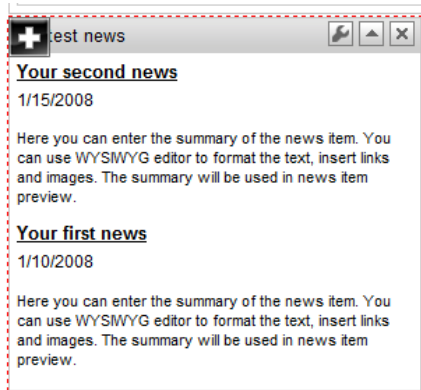
For any widget placed in a zone with page editor rights you can modify the widget by clicking on the **Configure widget** (📄) icon. You can also delete widgets using the **Delete widget** (✖) icon. Widgets can be moved between different widget zones by clicking on the **Drag widget** (📁) icon and dragging the widget to the desired place.

Group administrator

Group administrators have basically the same rights as page editors. They can add, delete and configure all widgets placed in the group admin type widget zones.

Website user

Authenticated website users can manipulate user widgets on the live site and thus personalize their home pages. In order to add a widget to the user widget zone, click on the **Add widget** (+) icon in the top left corner of the zone.



Any widget can be configured by clicking on the **Configure widget** (⚙️) icon. You can also delete widgets using the **Delete widget** (✖️) icon. To move the widgets between zones, click on the **Drag widget** (📁) icon and drag the widget to the new zone. Every widget can be minimized using the **Minimize** (▢) icon, or restored using the **Maximize** (📄) icon.

If there is a **Widget actions web part** on the page, users can add widgets or reset widgets to default setting by clicking on the appropriate links. When adding a widget using the **Add widget** link, the widget is placed in the first available zone. The user can drag the widget into another zone if the default placement is not suitable.



7.19.4 Security

When a new widget is created from an existing web part, all the attributes are hidden in the editing form. It is up to the widget creator to select attributes which would be available for customization using check boxes in the **Properties** tab.

The security options are defined in the **Security** tab. By default, all widgets are forbidden for any zone and are allowed for authorized roles only. However, no authorized role is selected by default. It is up to the developer to allow the widget for a specific type of zone and role.

Widgets ▶ Rich Text

General Properties **Security**

| | Allowed for |
|---|----------------------------------|
| This widget can be used in group zones | <input type="checkbox"/> |
| This widget can be used in editor zones | <input type="checkbox"/> |
| This widget can be used in user zones | <input type="checkbox"/> |
| Authenticated users | <input type="radio"/> |
| Authorized roles | <input checked="" type="radio"/> |

Please select the authorized roles (available only when you select the "Authorized roles" option above):

Site: Corporate Site

| | Allowed for |
|------------------------------|--------------------------|
| Authenticated users | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> |
| CMS Community Administrators | <input type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> |
| CMS Desk Administrators | <input type="checkbox"/> |
| CMS Editors | <input type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> |
| Everyone | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> |

Please keep in mind that changing the security settings will affect new widgets only. If a user was allowed to add a widget and an administrator has forbidden this right, the user can still see the widget on their page. However, once deleted, the widget cannot be added back to the page without allowing it in the **Security** tab of that particular widget.

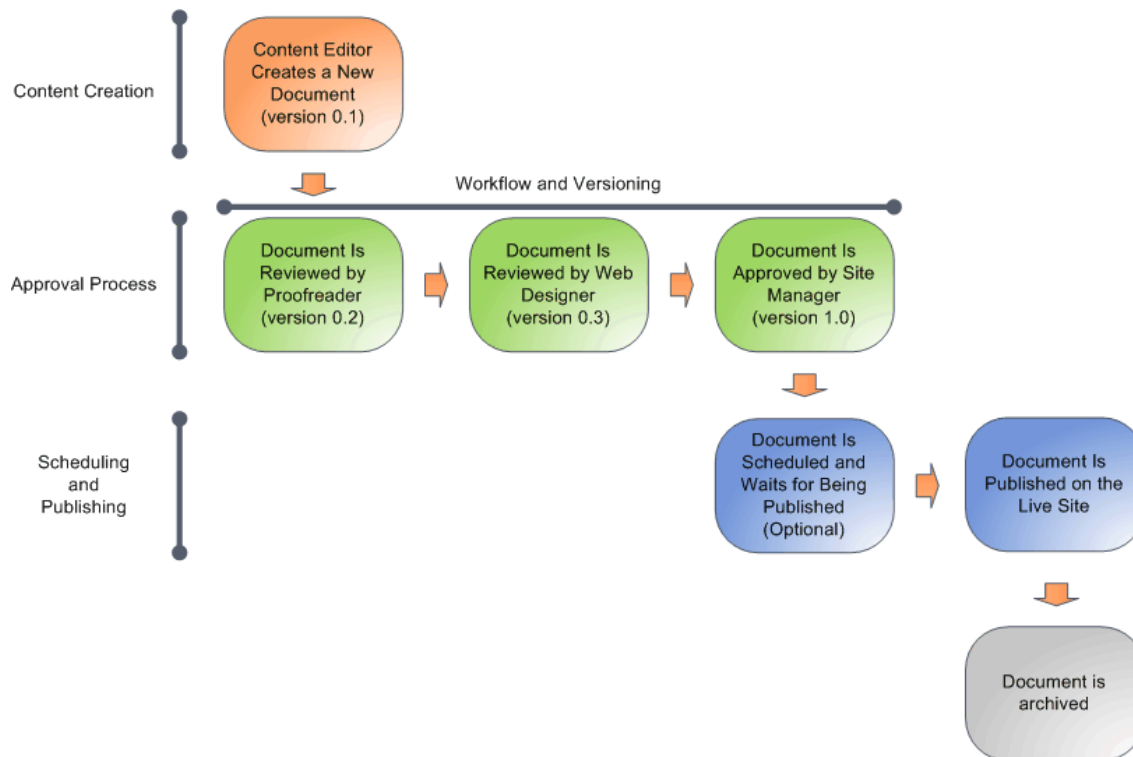
7.20 Workflow and versioning

7.20.1 Overview

Kentico CMS allows you to use workflow for all documents, including uploaded files. It includes the following features:

- The **workflow** support allows you to organize the process of content creation, updates and publishing on your website.
- The **versioning** support is tightly bound with workflow and it allows you to store (audit), view and roll-back previous versions of the content.
- The **content locking (check-in/check-out)** support allows you to avoid concurrent modifications of the same document by multiple users.
- The **preview** support allows you to see the content in the context of the site before it's published. This feature is only available for documents that use workflow - you can preview the documents before they are approved to the *Published* step.
- The **archiving** support allows you to archive a document. Such a document is no longer displayed on the website, but it's kept in the content tree and can be re-published at any time later.

The following figure shows an example of document life cycle with a workflow:



The workflow process consists of any number of custom, sub-subsequent steps. For each step, the members of the authorized roles are allowed to modify and approve/reject the document. The document can be approved by any of the authorized users.

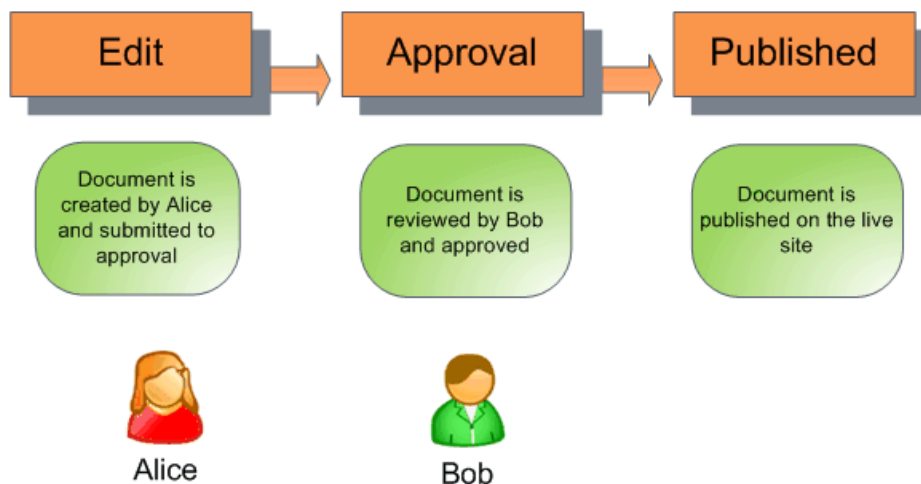
As you can see, the workflow process can be used to ensure quality of the content copy and design. In the following chapters, you will learn how to define and apply workflow processes.

7.20.2 Defining a workflow

Workflow settings can be managed in **Site Manager -> Development -> Workflows**.

The workflow you create in this chapter will be used for all examples in the next chapters. It will look like this:

- Any editor can create a news item in the /News section of the website.
- Then, the news item must be approved by one of the members of the role PR Managers. The users authorized to approve the document in the given step are also authorized to modify the document in the given step.
- Approved news item is published on the website.



Creating testing users and roles

Before we configure the workflow, we will create testing users. Go to **Site Manager -> Administration -> Users** and click **New user**. Create a new user with following details:

- User name: **Alice**
- Full name: Alice Murphy
- E-mail: <your e-mail>
- Enabled: yes
- Is editor: yes

Go to the **Sites** tab and assign the user to the appropriate website.

Go to the **Roles** tab and assign the user to the **CMS Editors** role of the given website.

Create another user with following details:

- User name: **Bob**
- Full name: Bob Johnson
- E-mail: <your e-mail - you may want to use a different e-mail>
- Enabled: yes
- Is editor: yes

Go to the **Sites** tab and assign the user to the appropriate website.

Go to the **Roles** tab and assign the user to the **CMS Editors** role of the given website.

Go to **Site Manager -> Administration -> Roles**, choose the appropriate site from the top drop-down-list and click **New role**. Enter the following details:

- Role display name: PR Managers
- Role code name: PRManagers

Switch to the **Users** tab and add user Bob Johnson to this role.

As you can see, Alice is the news editor (because of the CMS Editors role) and Bob is the PR Manager who will approve the news (PR Managers role) and can also edit the news (CMS Editors role).



Please note

The PR Managers role has no permissions set for the purpose of this example. This means that if a user was a member of only this particular role, they would not be able to perform a full range of tasks such as creating, editing or deleting documents, etc. In your real website, you would probably want to go to Site Manager -> Administration -> Permissions and give the user role appropriate permissions, especially those for Module CMS Content.

See also chapter [Permissions for modules and documents](#) for detailed information on how to do this.

Defining a new workflow

Go to **Site Manager -> Development -> Workflows**, click **New workflow** and enter the following values:

- Display name: News approval
- Code name: newsapproval

Click **OK** to create the workflow.

Defining workflow steps

Choose the **Steps** tab and create a new workflow step:

- Display name: Approval
- Code name: Approval

Click **OK** and choose the **Roles** tab in the Workflow properties dialog. Choose the appropriate website in the drop-down list and select the **PR Managers** role and click OK. Now the PR Managers are authorized to edit, approve and reject documents in the newly created step.

When you see the list of workflow steps now, it looks like this:

Workflow properties

Workflow ▶ News approval

General Steps Scope Documents

[New workflow step](#)

| Actions | Workflow step name |
|---------|--------------------|
| | Edit |
| | Approval |
| | Published |
| | Archived |

As you can see there are always **three default steps**:

- **Edit** - the first step when the document is created or modified after it was published.
- **Published** - the document is published on the live site. When you edit such a document, it's automatically moved to step **Edit**.
- **Archived** - the document is not published on the live site, but it remains in the content repository.

As you can see, the custom steps are placed between the **Edit** and **Published** steps. You can change the order of the steps using the up/down arrows (if there's more than one custom step).

Defining workflow scope

The workflow scope defines which documents the workflow should be applied to. Switch to the **Scopes** tab, choose the appropriate website from the drop-down list and click **New workflow scope**. Enter the following details:

- **Starting alias path:** */news* (this is the section of the website for which the workflow will be applied)
- **Document type:** *News*
- **Culture:** *(all)*

Click **OK**.

Workflow properties

Workflow ▶ News approval

General Steps Scope Documents

[New workflow scope](#)

Site:

| Actions | Starting path | Document type | Culture |
|---------|---------------|---------------|---------|
| | /News | News | (all) |

We have configured the workflow process for the news documents. In the next chapter, you will learn how the workflow works in our sample scenario.

Workflow's documents overview

On the **Documents** tab, you can see a list of documents that are using the workflow. By clicking a document in the list, you will be redirected to the document in **CMS Desk -> Edit**.

The following actions can be performed with actions in the list. These actions are also useful if you want to **finish the documents' workflow**:

- **Publish and finish workflow** - the new version of the document will be approved and published
- **Remove workflow and keep currently published data** - the original version of the document remains published and all the changes will be discarded

Based on the selection in the first drop-down list, these actions can be performed for:

- **All documents** - the action will be performed with all documents
- **Selected documents** - the action will be performed with documents selected by the check-boxes ()

Workflow properties

Workflow ▶ News approval

General Steps Scope **Documents**

Site: (all)

Document name: LIKE

Document type: LIKE

| <input type="checkbox"/> | Document name | Document type | Step name | Version | Language | Site |
|--------------------------|---------------|---------------|-----------|---------|-------------------------|----------------|
| <input type="checkbox"/> | My new news | News | Edit | 0.1 | English - United States | Corporate Site |

Selected documents: Publish and finish workflow

Items per page: 25

7.20.3 Using workflow

This example explains how the workflow process works from the perspective of content editors. It requires the system to be configured as described in the previous chapter.

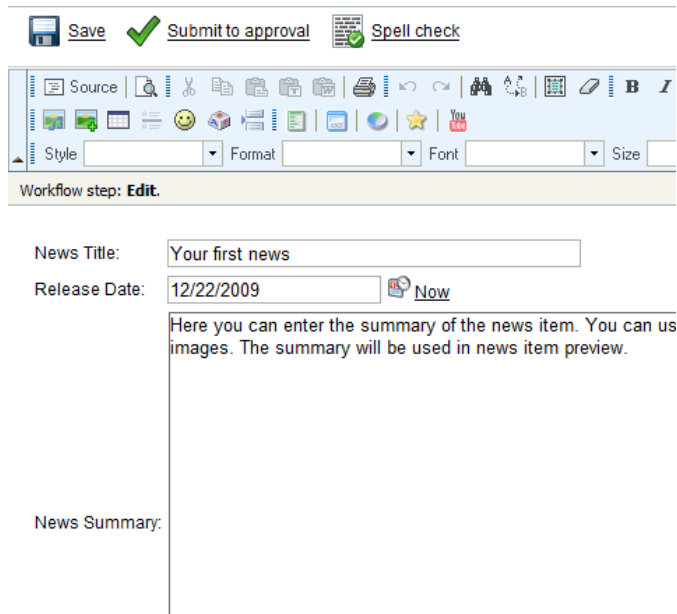
Creating a new document

Sign in to **CMS Desk** as **Alice** and create a news item in the /News section:

- News title: My first news item
- Release date: <use the date picker to choose the current date>
- News summary: Some summary
- News text: Some text
- Publish from-to: leave the fields blank

Click **Save**. After the document is saved, you can see that there's a new button **Submit to approval**

displayed in the document menu:



The screenshot shows a document editing interface. At the top, there is a toolbar with three buttons: 'Save' (with a floppy disk icon), 'Submit to approval' (with a green checkmark icon), and 'Spell check' (with a document icon). Below the toolbar is a rich text editor toolbar with various icons for text formatting, alignment, and insertion. Below the rich text editor toolbar are three dropdown menus labeled 'Style', 'Format', and 'Font', followed by a 'Size' input field. Below these elements is a status bar that reads 'Workflow step: Edit.'.

Below the toolbar, there is a form for entering news details. The 'News Title:' field contains the text 'Your first news'. The 'Release Date:' field contains the date '12/22/2009' and a 'Now' button. Below the 'Release Date:' field is a text area for the 'News Summary:' with the placeholder text: 'Here you can enter the summary of the news item. You can use images. The summary will be used in news item preview.'

Before we submit the document to approval, we will preview it. Click **Preview** in the main toolbar and see what the document will look like on the live site.

Now go back to the editing form and click the **Submit to approval** button. The document is now waiting for the approval by some member of the PR Managers role and Alice can no longer edit it. Also, a notification e-mail is sent to all members of the PR Managers role.

Approving the document

Sign in to **CMS Desk** as **Bob** and select the **/News/My first news item** document. You can now preview, edit and approve or reject the document. Once you approve the document, it's published on the live site. A notification e-mail is sent to Alice so that she knows the document has been published.

Please note: When you're approving or rejecting the document, you can go to **Properties -> Workflow**, add additional comments and click **Approve**.



Tip: Reports "Documents waiting for my approval" and "Recent documents"

Every user can find the list of documents waiting for their approval in dialog **My Desk -> Documents waiting for my approval**.

Similarly, the user who submitted the document can see the document status in dialog **My Desk -> Recent documents**.

Archiving the document

If you want to archive the document so that it's no longer displayed on the live site, but it remains in the Kentico CMS database, you can go to **Properties -> Workflow** dialog of the published document and click the **Archive** button.

Workflow history and workflow comments

Beside the action buttons for approving/rejecting the document on the editing pages, you can also use the advanced interface in **Properties -> Workflow dialog**:

This document is currently using workflow **Default workflow**.

Approve:

Comment:

Send e-mail:

Approve

Workflow steps

| | Order | Step name |
|---|-------|-----------|
| ➔ | 1 | Edit |
| | 2 | Approval |
| | 3 | Published |
| | 4 | Archived |

Workflow history:

| Time | Step name | User | Comment | Action |
|-----------------------|-----------|--------------------------------------|---------|----------|
| 12/22/2009 2:56:36 PM | Published | Global Administrator (administrator) | | Approved |
| 12/22/2009 2:56:36 PM | Approval | Global Administrator (administrator) | | Approved |
| 12/22/2009 2:56:32 PM | Edit | Global Administrator (administrator) | | Approved |

Here you can also track the workflow history of the document and see the current workflow step in the workflow.



Workflow and permissions

Once you enable workflow, the user needs to be authorized to both edit the document and must be authorized to manage the document in the give workflow step.

The users with permission "Manage workflow" can approve/reject any document in any workflow step, even if they are not authorized for the given workflow step. This permission can be set in the **Site Manager -> Administration -> Permissions** section, in the permission matrix called **Module: CMS Content**.

7.20.4 E-mail notification in workflow process

The workflow process automatically notifies the members of the authorized roles that there's a document waiting for their approval. It also sends a notification to the document author (the user who last edited the document in the Edit step and sent it to the next workflow step) when the document status changes.

Please note: notification e-mails are not sent among users who have the same e-mail address, i.e. when user1 and user2 have the same address and user1 sends a document for user2's approval, no notification e-mail is sent

You can turn off e-mail notifications in the workflow process in **Site Manager -> Settings -> Content Management**. Here you can set the following values:

- **Send workflow e-mails** - indicates if workflow e-mails should be sent.
- **Send workflow e-mails from** - the e-mail address from which the e-mails will be sent.



Tip: Workflow notification e-mail templates

You can customize the workflow notification e-mails in **Site Manager -> Development -> E-mail templates**. The workflow uses the following e-mail templates:

- Document approved
- Document archived
- Document published
- Document ready for approval
- Document rejected

You can use the following macro expressions in the workflow notification templates:

- **{%applicationurl%}** - the URL of the Kentico CMS web project on the server (including protocol and domain name)
- **{%nodeid%}** - NodeID of the current document
- **{%documentname%}** - document name
- **{%approvedby%}** - name of the user who approved/rejected/archived the document or submitted the document to approval
- **{%approvedwhen%}** - date and time of approval/rejection/archivation
- **{%originalstep%}** - original step before approval/rejection/archivation
- **{%currentstep%}** - new step after approval/rejection/archivation
- **{%comment%}** - comment added by the user who changed the status of the document

7.20.5 Versioning and rollback

Versioning allows you to store all versions of a document which uses workflow. You can view the versions of a document in **CMS Desk -> Content -> Properties -> Versions**.



| Document history: | | | | | | | | | Destroy history |
|-------------------|---|------|---------|--------------|-----------------------|---------|-----------------------|-----------------------|-----------------|
| Actions | Modified when / by | Ver. | Comment | Publish from | Publish to | Publish | Published from | Published to | |
| | 12/22/2009 3:08:24 PM
Global Administrator (administrator) | 3.1 | | | | | | | |
| | 12/22/2009 3:08:02 PM
Global Administrator (administrator) | 3.0 | | | | | 12/22/2009 3:08:07 PM | | |
| | 12/22/2009 3:07:03 PM
Alice Murphy (alice) | 2.0 | | | 12/22/2009 3:08:07 PM | | 12/22/2009 3:07:26 PM | 12/22/2009 3:08:07 PM | |
| | 12/22/2009 3:07:03 PM
Alice Murphy (alice) | 1.0 | | | 12/22/2009 3:07:26 PM | | 12/22/2009 3:07:03 PM | 12/22/2009 3:07:26 PM | |

You can perform the following actions with the listed versions:

- **View** - displays an overview of the document's content with the possibility of [side-by-side comparison](#) of versions
- **Rollback** - rolls back any changes made since the particular version of the document
- **Delete** - deletes the old version

You can use the **Destroy history** button to clear the history and restart version numbering. The user must be granted with **Destroy** permission for this document.

The history also shows when the particular version has been published and when it was replaced with a new version.

The length of the version history can be configured in **Site Manager -> Settings -> Content management -> Version history length**.

Automatic version numbering

Kentico CMS supports automatic version numbering:

- If you use workflow without [content locking](#), automatic version numbering is used by default.
- If you use content locking, this option is optional and can be configured in **Site Manager -> Settings -> Content management -> Use automatic version numbering**.

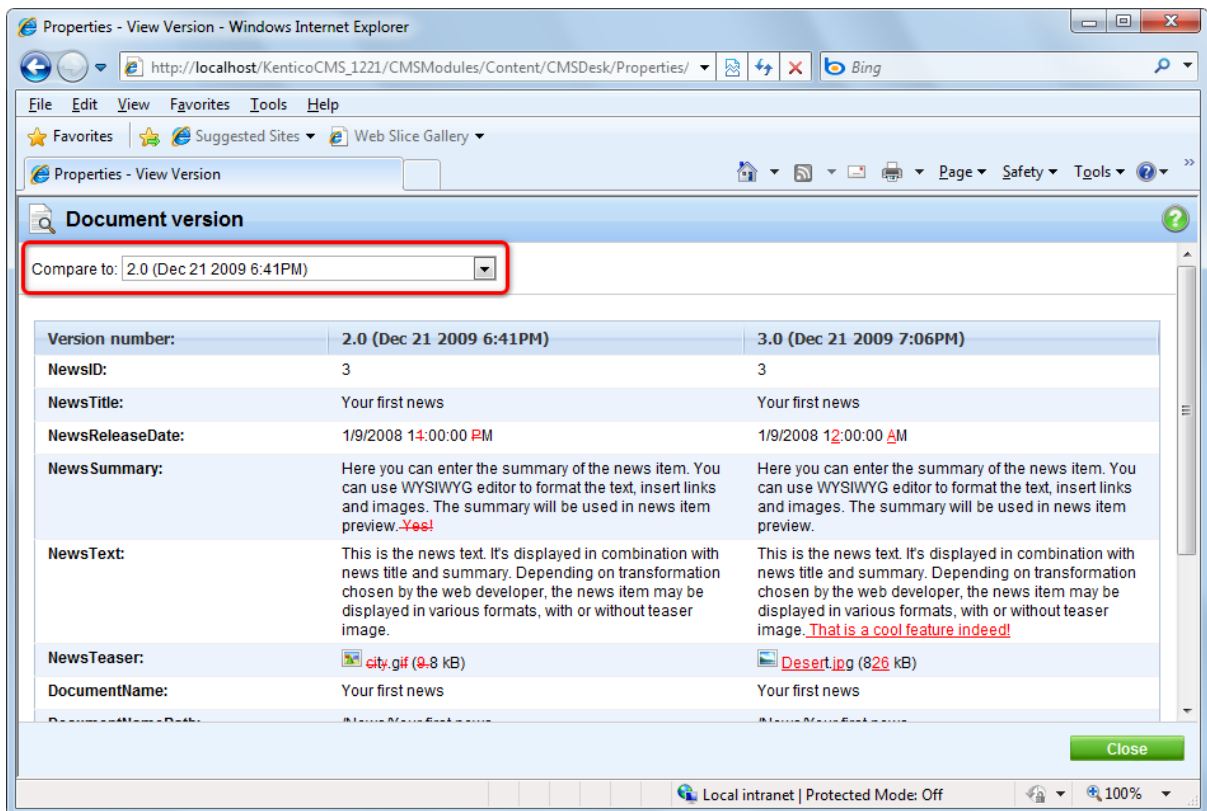
The automatic version numbering works like in the following example:

- 0.1 - first version of the document when it's created
- 0.2 - second modification of the document
- 1.0 - first published version of the document
- 1.1 - first modification of the published document
- 2.0 - second published version of the document



Side-by-side comparison of versions

If you view click the **View** (🔍) icon next to a version, the pop-up window allows you to view a side-by-side comparison with other document versions.

You only need to select the appropriate version in the **Compare to** drop-down list. Content of the two versions will be displayed side-by-side with the changes highlighted in **red font**.



The screenshot shows a Windows Internet Explorer browser window displaying the 'Properties - View Version' dialog box. The dialog box has a title bar 'Properties - View Version - Windows Internet Explorer' and a URL bar showing 'http://localhost/KenticoCMS_1221/CMSModules/Content/CMSDesk/Properties/'. The main content area is titled 'Document version' and features a 'Compare to:' dropdown menu with '2.0 (Dec 21 2009 6:41PM)' selected. Below this is a table comparing two versions: 2.0 (Dec 21 2009 6:41PM) and 3.0 (Dec 21 2009 7:06PM). The table lists various fields such as NewsID, NewsTitle, NewsReleaseDate, NewsSummary, NewsText, NewsTeaser, and DocumentName, with the content for each field shown side-by-side. Changes in the 3.0 version are highlighted in red text. A 'Close' button is located at the bottom right of the dialog box.

| Version number: | 2.0 (Dec 21 2009 6:41PM) | 3.0 (Dec 21 2009 7:06PM) |
|-------------------|---|--|
| NewsID: | 3 | 3 |
| NewsTitle: | Your first news | Your first news |
| NewsReleaseDate: | 1/9/2008 14:00:00 PM | 1/9/2008 12:00:00 AM |
| NewsSummary: | Here you can enter the summary of the news item. You can use WYSIWYG editor to format the text, insert links and images. The summary will be used in news item preview. .Yes! | Here you can enter the summary of the news item. You can use WYSIWYG editor to format the text, insert links and images. The summary will be used in news item preview. |
| NewsText: | This is the news text. It's displayed in combination with news title and summary. Depending on transformation chosen by the web developer, the news item may be displayed in various formats, with or without teaser image. | This is the news text. It's displayed in combination with news title and summary. Depending on transformation chosen by the web developer, the news item may be displayed in various formats, with or without teaser image. .That is a cool feature indeed! |
| NewsTeaser: |  |  |
| DocumentName: | Your first news | Your first news |
| DocumentNamePath: | News/Your first news | News/Your first news |

7.20.6 Content locking

Content locking allows content editors to lock the document for editing so that the other editors cannot modify the document at the same time.

Content locking configuration

You can enable content locking for all versioned documents in **Site Manager -> Settings -> Content management -> Use check-in/check out**.

Example

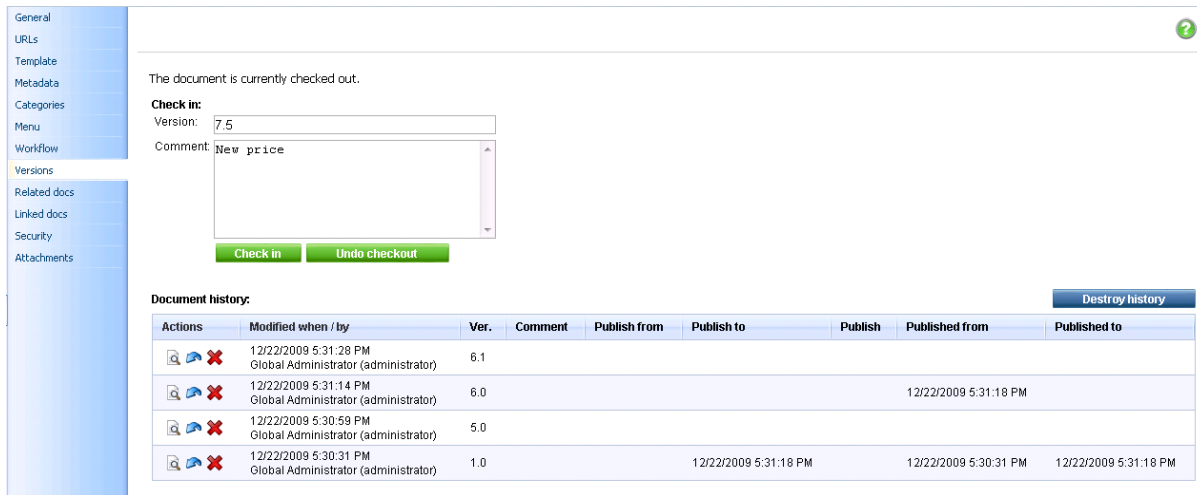
Here's an example of operations in the document life cycle:

1. User Alice creates a news item. The news item is automatically checked out (locked) for her. The other users cannot edit it.
2. User Alice finishes the changes and checks-in the document.
3. Now the other users can modify the document as well. As the document is checked in, Alice can also submit it to approval.

When you try to edit a checked-in document, you will get a disabled editing form with **Check out** button:

The screenshot displays the Kentico CMS Desk interface. The top navigation bar includes 'Content', 'My desk', 'Tools', and 'Administration'. The 'Content management' toolbar contains 'New', 'Delete', 'Move', 'Copy', 'Up', and 'Down'. The 'View mode' toolbar includes 'Edit', 'Preview', 'Live site', and 'List'. The language selection bar shows 'English', 'French', and 'German'. The left sidebar shows a site structure with 'Corporate Site' containing 'Home', 'Services', 'Products', 'News', 'Partners', 'Company', 'Blogs', 'Forums', and 'Images'. The 'News' folder is expanded, showing 'My first news item', 'Your first news', and 'Your second news'. The main editing area is in 'Form' mode and shows a 'Save' button and a 'Check out' button. A message states: 'You need to check out the document for editing. Workflow step: Published.' The form fields are: 'News Title: My first news item' and 'Release Date: 12/18/2009' with a 'Now' button. Below the form is a 'Some summary' field.

You can also use check-in/check-out buttons in **Properties -> Versions dialog**. This dialog allows you to specify custom version numbers and comments for each version when you check-in the document:



The document is currently checked out.

Check in:
 Version:
 Comment:

Document history:

| Actions | Modified when / by | Ver. | Comment | Publish from | Publish to | Publish | Published from | Published to |
|---------|---|------|---------|--------------|-----------------------|---------|-----------------------|-----------------------|
| | 12/22/2009 5:31:28 PM
Global Administrator (administrator) | 8.1 | | | | | | |
| | 12/22/2009 5:31:14 PM
Global Administrator (administrator) | 8.0 | | | | | 12/22/2009 5:31:18 PM | |
| | 12/22/2009 5:30:59 PM
Global Administrator (administrator) | 5.0 | | | | | | |
| | 12/22/2009 5:30:31 PM
Global Administrator (administrator) | 1.0 | | | 12/22/2009 5:31:18 PM | | 12/22/2009 5:30:31 PM | 12/22/2009 5:31:18 PM |



Checking-in any document

Users who are granted with permission "Check-in any document" can check-in any document even if they haven't checked-out the document. This permission can be set in the **Site Manager -> Administration -> Permissions** section, in the permission matrix called **Modules -> CMS Content**.

However, this check-in can only be performed from the **Properties -> Versions** tab of the selected document, by clicking either the **Check-in** or **Undo check-out** buttons.

7.20.7 Managing workflow using .NET code (API)

For details on versioning and workflow implementation and their scripting using .NET API, please see chapters [Workflow internals](#) and [Versioning internals](#).

Part



Modules

8 Modules

8.1 Overview

This section provides reference on in-box modules in Kentico CMS. Information on particular modules can be found in the sub-categories.

You can also learn how to develop a simple module and integrate it in Kentico CMS's user interface in [this example](#).

Please note: not all modules might be available in your installation because some modules are available only with certain licenses

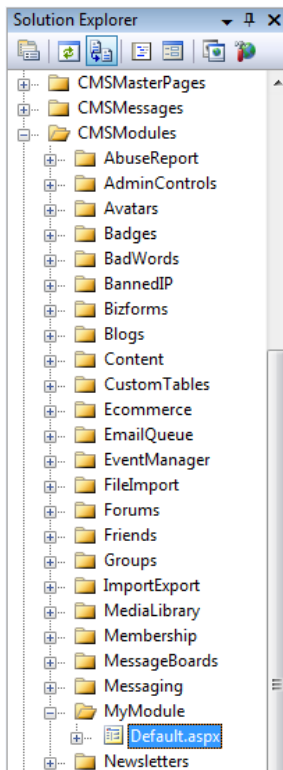
8.2 Developing custom modules

This chapter describes how you can create a custom module integrated into Kentico CMS administration interface.

You will learn how to create a simple module with a single button that displays the current date and time. The procedure can be used for adding any kind of custom module that you develop. You will also learn how to control access to the module's functions using [permissions](#) and integration of this module into the UI using [UI personalization](#).

1. Open Kentico CMS web project in Visual Studio. You can do that either using the *WebProject.sln* file in your website root or using the **File -> Open -> website** menu in Visual Studio.
2. Create a new folder *MyModule* under the *CMSModules* folder.

3. Create a new page *default.aspx* under the *CMSModules/MyModule* folder:



4. Switch to code behind of the page and change the following line:

[C#]

```
public partial class CMSModules_MyModule_Default : System.Web.UI.Page
```

to:

[C#]

```
public partial class CMSModules_MyModule_Default : CMSToolsPage
```

It ensures that the module can be used only by users with access to Kentico CMS Desk.

5. Add the following code at the beginning of the page:

[C#]

```
using CMS.CMSHelper;  
using CMS.UIControls;
```

6. Add the following code to the *Page_Load* method:

[C#]

```
if (!CMSContext.CurrentUser.IsAuthorizedPerResource("cms.mymodule", "read"))  
{  
    RedirectToAccessDenied("cms.mymodule", "Read");  
}
```

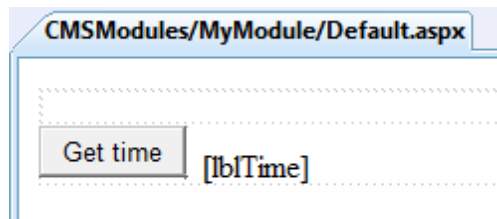
It checks if the current user has the **Read** permission for module *myprojects.mymodule*.

7. Switch to the **Design** mode and add a **Button** control on the page. Set its properties:

- **ID:** btnGetTime
- **Text:** Get time

8. Add a **Label** control on the page, next to the button. Set its properties:

- **ID:** lblTime
- **Text:** (clear the value)




9. Double-click the button and add the following code inside the **btnGetTime_Click** method:

[C#]

```
if (CMSContext.CurrentUser.IsAuthorizedPerResource("cms.mymodule", "gettime"))  
{  
    lblTime.Text = DateTime.Now.ToString();  
}  
else  
{  
    lblTime.Text = "You're not authorized to get the current date and time.";  
}
```

It checks if the current user has *gettime* permission for a module named *cms.mymodule* and if so, it displays the current date and time.

10. Run the project and sign in to **Site Manager**.

11. Go to **Development -> Modules** and click **New module** (). Enter the following values:

- **Module display name:** My module
- **Module code name:** cms.mymodule; for the UI element to be site-related, it is important to enter the value in the *cms.<elementname>* format, where *<elementname>* is the Code name of the UI element created in step 16; see [this topic](#) for more details

Click **OK**. The module was registered in the system.

Please note: in the system, modules are represented by *ResourceInfo* and *ResourceInfoProvider*

12. Go to the **Permission names** tab and click **New permission** (). Enter the following values:

- **Permission display name:** Read
- **Permission code name:** read
- **Display in matrix:** enable

Click **OK**.

13. Add another permission:

- **Permission display name:** Get time
- **Permission code name:** gettime
- **Display in matrix:** enabled

Click **OK**.

14. Go to the **Sites** tab and enable the new module for appropriate sites.

15. Now that the module is registered, we need to display it in the user interface. We will do it by registering a new UI element as described [here](#). For the purposes of this example, we will place it into the **Tools** menu. The module can also be placed into other sections of the UI as listed [here](#).

16. Go back to **Development -> Modules** and edit (✎) the **Tools** module. Switch to its **User interface** tab, select the root of the tree (Tools) and click **New element** (➕). Enter the following details:

- **Display name:** My module
- **Code name:** MyModule
- **Element is custom:** enabled
- **Caption:** My module
- **Target URL:** ~/CMSModules/MyModule/Default.aspx

Click **OK**.

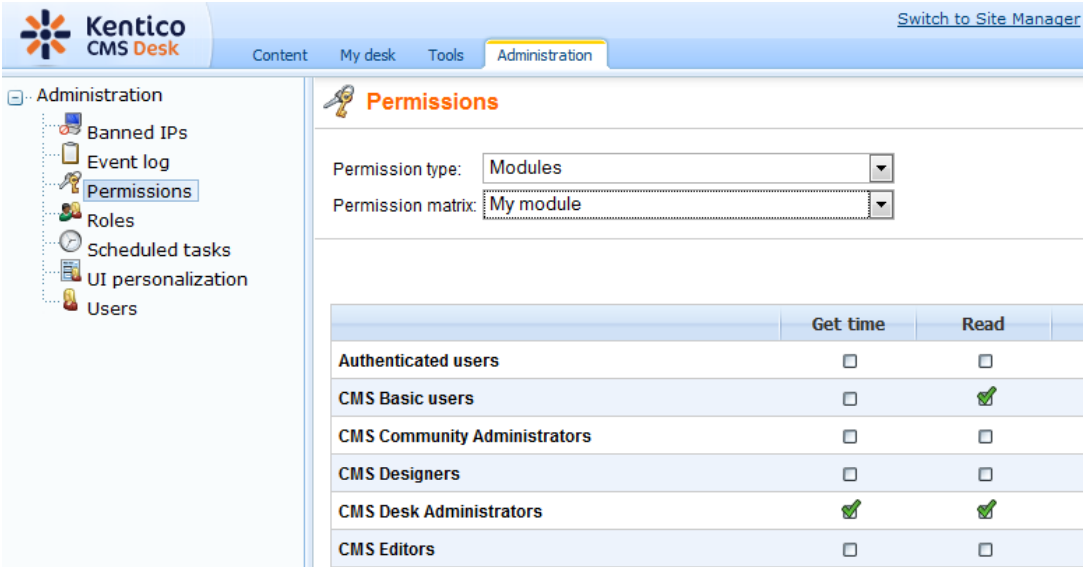
The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development' (selected), 'Licenses', and 'Support'. The left sidebar shows a tree view of the 'Development' section, with 'Modules' selected. The main area displays the 'Module properties' dialog for the 'Tools' module. The 'User interface' tab is active, and a new element 'My module' has been created under the 'Tools' module. The 'Display name' is 'My module', 'Code name' is 'MyModule', 'Parent element' is 'Tools', and 'Element is custom' is checked. The 'Caption' is 'My module' and the 'Target URL' is '~/CMSModules/MyModule/Default.aspx'. An 'OK' button is visible at the bottom of the dialog.

17. We will use [UI personalization](#) to enable access to this module only to members of certain roles. For this to work, UI personalization needs to be [enabled](#). With the new UI element still selected, switch to the **Roles** tab and enable the element for members of the **CMS Basic users** and **CMS Desk Administrators** roles.

The screenshot shows the Kentico CMS Site Manager interface. The 'Development' tab is selected in the top navigation. The left sidebar shows a tree view of development elements, with 'Tools' expanded. The main area displays the 'Module properties' dialog for 'My module'. The 'User interface' tab is active, and the 'Roles' sub-tab is selected. The 'Site' dropdown is set to 'Corporate Site'. The 'Roles' table shows the following configuration:

| | My module |
|------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> |
| CMS Basic users | <input checked="" type="checkbox"/> |
| CMS Community Administrators | <input type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> |
| CMS Editors | <input type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> |
| Everyone | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> |

18. Go to **CMS Desk -> Administration -> Permissions** and choose **Permission type**: Modules with **Permission matrix**: My module. Grant **CMS Basic users** with the *Read* permission and **CMS Desk Administrators** with both the *Get time* and the *Read* permissions:

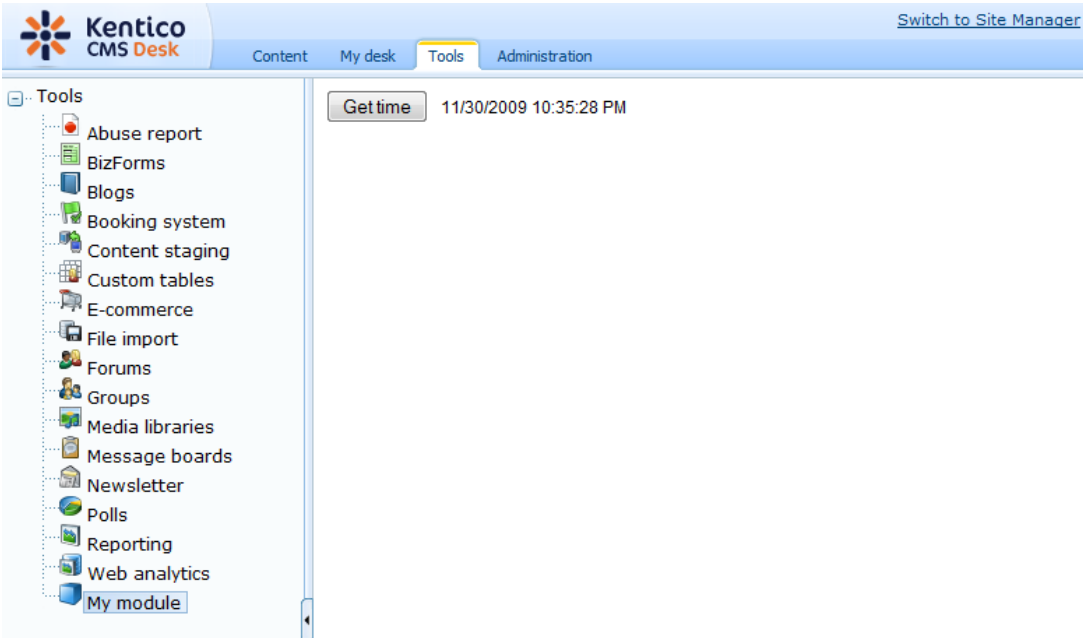


The screenshot shows the Kentico CMS Administration interface. The left sidebar contains the following items: Administration, Banned IPs, Event log, Permissions (selected), Roles, Scheduled tasks, UI personalization, and Users. The main content area is titled 'Permissions' and shows the following configuration:

- Permission type: Modules
- Permission matrix: My module

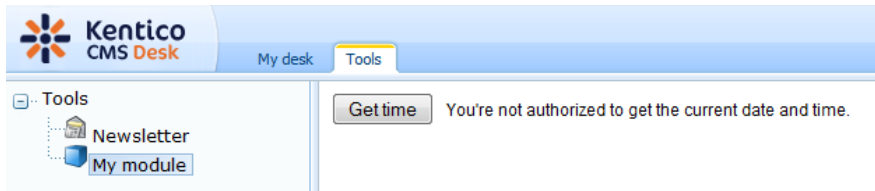
| | Get time | Read |
|------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Community Administrators | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input type="checkbox"/> | <input type="checkbox"/> |

19. Now go to **CMS Desk -> Tools** logged in as *administrator* (with blank password). You can see the **My module** item at the bottom of the left menu. Click it and you will see your form created in steps 3-9. When you click the button, current date and time gets displayed.



The screenshot shows the Kentico CMS Tools interface. The left sidebar contains the following items: Abuse report, BizForms, Blogs, Booking system, Content staging, Custom tables, E-commerce, File import, Forums, Groups, Media libraries, Message boards, Newsletter, Polls, Reporting, Web analytics, and My module (selected). The main content area shows a 'Get time' button and the current date and time: 11/30/2009 10:35:28 PM.

20. Now try logging in as *andy* (with blank password) and go back to **CMS Desk -> Tools**. Andy is a member of the **CMS Basic users** role. In step 18, you configured that members of this role have only the *Read* permission necessary for the module to be displayed (ensured in step 6), but not the *Get time* permission necessary for the button functionality. Try clicking it, you will see the access denied message that you defined in step 9.



Exporting custom modules

The following folders will be included in the export package when the custom module is selected for export. It is therefore recommended that your modules data is stored within these folders:

- ~/App_Code/CMSModules/<module_name>
- ~/App_Data/CMSModules/<module_name>
- ~/CMSModules/<module_name>

The <module_name> value needs to be the same as the code name of the module in the administration interface, so for example for a module named CMS.Test, the folders would be:

- ~/App_Code/CMSModules/CMS_Test
- ~/App_Data/CMSModules/CMS_Test
- ~/CMSModules/CMS_Test

8.3 Abuse report

8.3.1 Overview

The Abuse report module enables site visitors to report indecent posts, comments or some other forms of website abuse. The module comes with two web parts, Abuse report and In-line abuse report, enabling site visitors to send the reports.

8.3.2 Abuse reports management

Abuse reports can be viewed and managed in **CMS Desk -> Tools -> Abuse report**.

Report abuse

Title:

Status: (all)

Site: Corporate Site

| Actions | Title | When | Status |
|---------|--|-----------------------|--------|
| | Forum post abuse report: Thanks! Where can I download Kentico CMS? You can download Kentico C... | 12/20/2009 5:21:11 PM | New |
| | Forum post abuse report: We are happy to announce web site launch. http://www.kentico.com/out... | 12/20/2009 5:21:24 PM | New |

Items per page: 25

The top part of the page is a filter. By default, you get all reports displayed in the list below it. Using the filter, you can display only those reports that match the specified criteria. Available filtration parameters are **Title**, **Status** and **Site** from which the report was sent. To filter the reports, enter the appropriate parameters and click the **Show** button. A list of reports matching the criteria will be displayed.

The following actions are available for each of the reports:

- **Edit** () - if clicked, the user will be redirected to report properties page, where you can edit the report's properties
- **Delete** () - deletes the report
- **Mark as solved** () - switches the report to the Solved status; used to mark reports for that the necessary actions have been taken
- **Reject** () - switches the report to the Rejected status; used to mark reports that were not considered being cases of website abuse

If you click a title of a report, you will be redirected to the page that the report was sent from. If you mouse-over it, report description entered by the sender of the report will be displayed in form of a tooltip.

8.3.3 Using the Abuse report and In-line abuse report web parts

The **Abuse report** web part serves site visitors to report website abuse such as using indecent expressions, offensive posts, etc. The web part can be placed into any web part zone on any page of your website. In the web part selection dialog, you can find it under the **Abuse report** folder.

You have to set the following specific properties in order for the web part to work properly:

| | |
|-----------------------|--|
| Confirmation text | Text message that will be displayed to the site visitor after sending the abuse report. |
| Title of abuse report | Title of the report that will be displayed to the site administrator in the list of abuse reports. |

When the user types in the report text and clicks the **Report abuse** button, a report will be logged in **CMS Desk -> Tools -> Abuse report**.

| Forum | Threads | Posts | Last post |
|---|---------|-------|---|
| Site forums | | | |
| Web site forums | | | |
| Announcements
Product announcements come here.
Lock | 2 | 6 | Frank Stevens
(11/16/2008 1:08:41 PM) |
| Technical support
Sample forum for technical support questions.
Lock | 3 | 4 | David Fishman
(11/16/2008 1:37:45 PM) |

Someone whose user name is The Rude Boy has insulted me with vulgar expressions in the Technical support forum!!!



If you want to use only a small clickable link instead of the whole **Abuse report** web part, you can use the **In-line abuse report** web part. When a site visitor clicks the link, the page will become grayed-out and an abuse report dialog will pop-up in the middle of it. Properties of the two web parts are identical. This web part can also be used in transformations, as shown in the [Using the In-line abuse report web part in transformations](#) chapter.

Forums

You can set up any number of forum groups and each forum group may have multiple forums on particular topic. The forums are organized into threads. You can also use the Forums module for article comments if you use so called "ad-hoc" forums that are bound to some particular document (article, product, etc.).

Search forums:
[Advanced search](#)

| Forum | Threads | Posts | Last post |
|---|---------|-------|---|
| Site forums | | | |
| Web site forums | | | |
| <u>Announcements</u>
Product announcements come here.
<input type="button" value="Lock"/> | 2 | 6 | Frank Stevens
(11/16/2008 1:08:41 PM) |
| <u>Technical support</u>
Sample forum for technical support questions.
<input type="button" value="Lock"/> | 3 | 4 | David Fishman
(11/16/2008 1:37:45 PM) |

[Site map](#) | [Disclaimer](#)




8.3.4 Using the In-line abuse report web part in transformations

The Inline abuse report web part appears as a link with the 'Report abuse' text. After clicking the link, a dialog appears, letting the site visitor send abuse report to the site administrators. This web part is mainly used in transformations, letting you include the Report abuse link repeatedly where ever you need.

The object viewer that is being used by this web part can handle only blog comments, message board messages and forum posts. If you use the web part in transformations of some other objects, the "Show object details" link will not be displayed in its abuse reports' properties.

In the following example, you will learn how to add the Inline abuse report web part to the default transformation of a message board message on our sample Corporate Site.

1. Go to **CMS Desk**, switch to the **Edit** mode and its **Design** tab.
2. In the content tree, select **Examples -> Webparts -> Message boards -> Message board**.
3. Choose to **Configure** () the **MessageBoard** web part.
4. In the web part properties window, choose to **Edit** the **Message transformation** property.

5. Replace the transformation code with the following code. It is the original code of the transformation with the highlighted parts added. The first highlighted part is registration of the webpart tag, the second one is a <div> containing the web part itself:

```
<%@ Register Src="~/CMSModules/MessageBoards/Controls/MessageActions.ascx" TagName="MessageActions" TagPrefix="cms" %>

<%@ Register Src="~/CMSModules/AbuseReport/Controls/InlineAbuseReport.ascx"
TagName="InlineAbuseReport" TagPrefix="cms" %>

<div class="CommentDetail">
  <asp:Panel ID="pnlRating" runat="server" />
  <table width="100%">
    <tr>
      <td class="CommentUserName" style="width: 100%">
        <%# IfEmpty(Eval("MessageURL"), Eval("MessageUserName"), "<a
href=\"\" + Eval("MessageURL") + \"\" target=\"_blank\">\" + Eval("MessageUserName")
+ "</a>")%>
      </td>
    </tr>
    <tr>
      <td class="CommentText">
        <%# CMS.GlobalHelper.TextHelper.EnsureLineEndings(Convert.ToString
(Eval("MessageText")), "<br />")%>
      </td>
    </tr>
    <tr>
      <td class="CommentDate">
        <%# GetDateTime(Eval("MessageInserted")) %>
      </td>
    </tr>
    <tr>
      <td align="right" class="CommentAction">
        <div class="buttonpadding">
          <cms:MessageActions ID="messageActions" runat="server" />
        </div>
      </td>
    </tr>
  </table>
</div>

<div class="BlogPDateWhole">
<cms:InlineAbuseReport ID="InlineAbuseReport" runat="server" ReportObjectType
="board.message" ReportObjectID='<%# Eval("MessageID") %>' ReportTitle="Message
board abuse report" />
</div>

<hr style="border: 1px solid #CCCCCC;" />
```

6. Click **Save**. Now if you switch to the Live site and view the message board, you should be able to see the *Report abuse* link below each of the messages:

Jing Wa-Tung

Do you think it is good that your web is the number one on search engine?

Why we use seo with our web? I think all of us want our web is the number one on the search engines. But is it good?

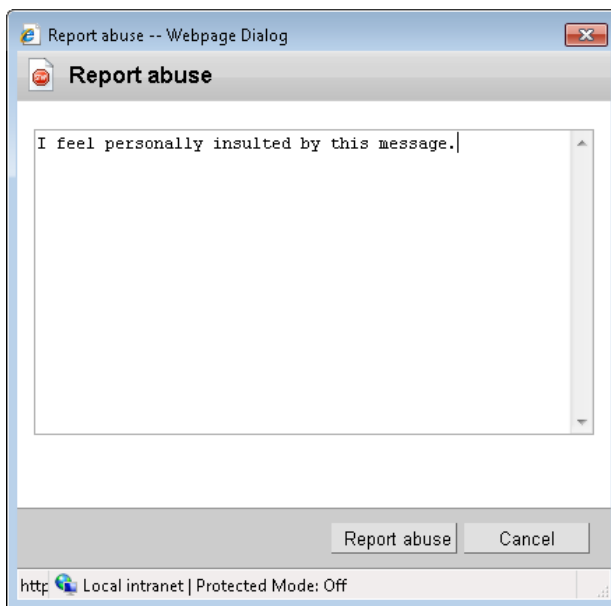
Yes, it could have high traffic, and you can earn more money. But did you think about any disadvantages?

9/8/2008 11:34:59 AM

[Edit](#) [Delete](#) [Reject](#)

[Report abuse](#)

7. If you click it, a new dialog window will pop up, as you can see in the screenshot below. Type in some report text and click the **Report abuse** button. The report will be logged in **CMS Desk -> Tools -> Abuse report**.




8.3.5 Security

Permissions for the Abuse report module can be set in **Site Manager -> Administration -> Permissions**. Select the **Modules -> Abuse report** permission matrix and grant roles with appropriate permissions.

The following permissions can be assigned to the roles:

- **Manage** - members of the role are allowed to edit, delete, mark as solved and reject abuse reports
- **Read** - members of the role are allowed to view the abuse reports list

 **Permissions**

Site: ▼

Permission type: ▼

Permission matrix: ▼

| | Manage | Read |
|------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> | <input type="checkbox"/> |

8.4 Alternative forms

8.4.1 Overview

The Alternative forms module enables layout and functionality customization of existing **BizForms**, **document types**, **system tables** and **custom tables**. These alternatives can then be easily used instead of the originals when needed.

8.4.2 Creating an alternative form

This example shows how to create an alternative form of the existing **Contact us** BizForm on the sample Corporate Site.

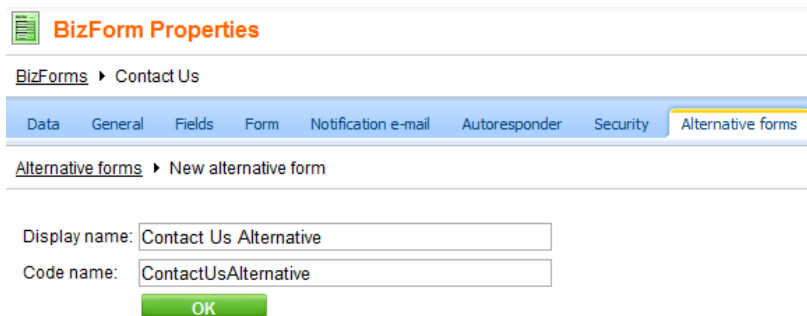
Alternative forms of document types, system tables and custom tables can be created in exactly the same way as described in this example. You only need to access the alternative forms tab from the following locations:

- Site manager -> Development -> Custom tables
- Site manager -> Development -> Document types
- Site manager -> Development -> System tables

There, just choose to **Edit** (✎) the particular item, switch to its **Alternative forms** tab and follow the instructions below, starting from the second step.

1. Go to **CMS Desk -> Tools -> BizForms**. Choose to **Edit** (✎) the **Contact us** BizForm. The **BizForm Properties** screen will appear.
2. On **BizForm Properties**, switch to the **Alternative forms** tab and choose to **Create new form**.
3. On the form that will be displayed, enter the following details and click **OK**.

- **Display name:** Contact Us Alternative
- **Code name:** ContactUsAlternative



The screenshot shows the 'BizForm Properties' dialog box with the 'Alternative forms' tab selected. The 'Alternative forms' sub-tab is 'New alternative form'. The 'Display name' field contains 'Contact Us Alternative' and the 'Code name' field contains 'ContactUsAlternative'. An 'OK' button is visible at the bottom.

BizForm Properties

BizForms ▶ Contact Us

Data General Fields Form Notification e-mail Autoresponder Security **Alternative forms**

Alternative forms ▶ New alternative form

Display name:

Code name:

4. Switch to the **Fields** tab. As you can see, all fields present in the original form are present here as well and you can now make modifications to them. Let's disable the **LastName** field as an example. Select the field from the list on the left and on its properties, uncheck the **Display attribute in the editing form** check-box. Confirm by clicking **OK**. Like this, you can modify any field in the form according to your needs.

General Fields Layout

ContactUsID
FormInserted
FormUpdated
FirstName
LastName
Email
PhoneNumber
Message

Database

Attribute name: LastName

Attribute type: Text

Attribute size: 200

Allow empty value:

Attribute default value:

Display attribute in the editing form

Field

Show on public form:

Field caption: Last name

Field type: Text box

OK

5. Not only the fields, but also the layout of the form can be modified. Switch to the **Layout** tab and check the **Use custom layout** check-box. The layout editor will appear. Notice that the **LastName** field that we disabled in the previous step is not offered in the **Available fields** listbox. Click the **Generate table layout** button. Table layout will be generated in the editing field below. Highlight the **\$\$label:FirstName\$\$** text in the first row and change its color to red.

General Fields **Layout**

Save

Use custom form layout

Generate table layout

| | |
|--------------------------------|---|
| \$\$label:FirstName\$\$ | \$\$input:FirstName\$\$
\$\$validation:FirstName\$\$ |
| \$\$label:Email\$\$ | \$\$input:Email\$\$
\$\$validation:Email\$\$ |
| \$\$label:PhoneNumber\$\$ | \$\$input:PhoneNumber\$\$
\$\$validation:PhoneNumber\$\$ |
| \$\$label:Message\$\$ | \$\$input:Message\$\$
\$\$validation:Message\$\$ |

Available fields:

- FirstName
- Email
- PhoneNumber
- Message

Insert label
Insert input
Insert validation label
Insert submit button

Also select the rows of the first table column, right click it and from the context menu, choose **Cell -> Cell properties**. In the displayed dialog, choose **Vertical alignment: Top** and click **OK**. This will make the labels to be aligned to their fields. Click **Save**.

Cell Properties

Width: pixels

Height: pixels

Word Wrap: Yes

Horizontal Alignment: <Not set>

Vertical Alignment: **Top**

Cell Type: Data

Rows Span:

Columns Span:

Background Color: Select...

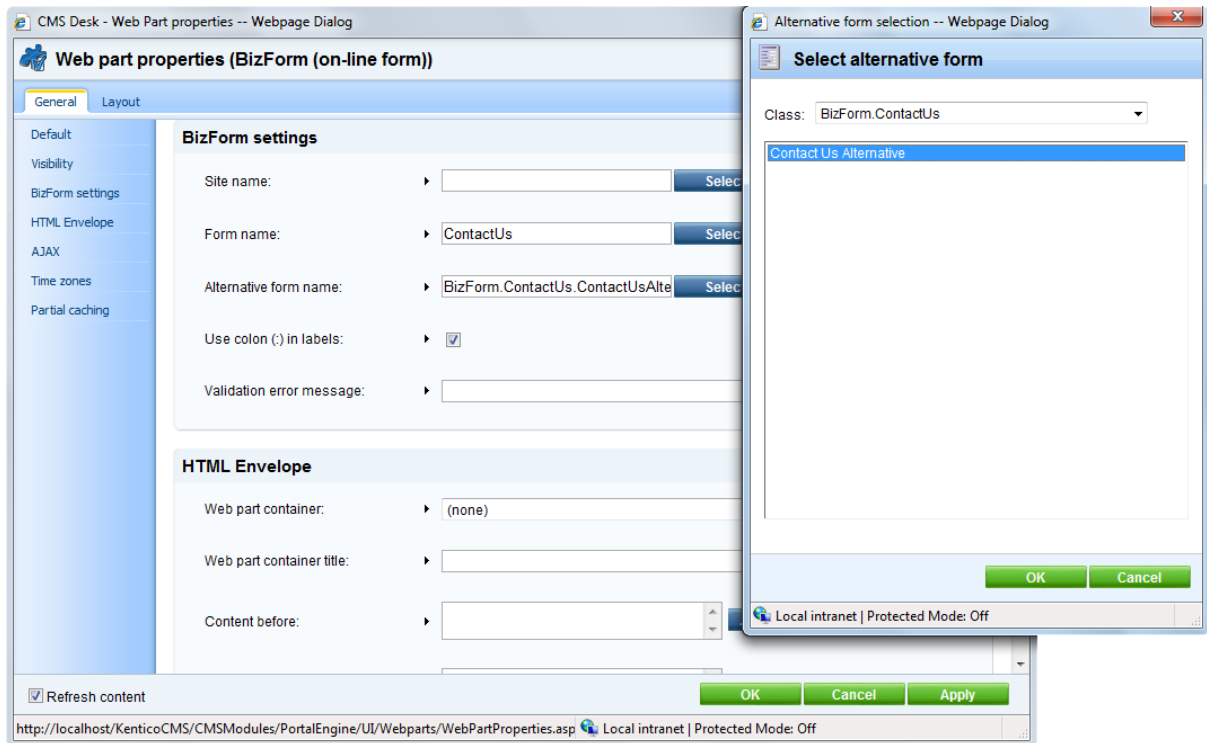
Border Color: Select...

OK Cancel

Insert label

6. Let's take a look at what we've created. Switch to **CMS Desk -> Content**. From the content tree, select **Examples -> BizForms -> BizForm**. As you can see, there is the original version of the **Contact Us** form present on the page. We will edit the web part's properties so that the alternative form is used instead.

7. In **Edit** mode, switch to the page's **Design** tab and choose to configure the web part properties. We will be concerned about the **Alternative form name** field. Click the **Select** button next to it and from the list, select our **Contact Us Alternative**. Click **OK**.



8. Now when you switch to the **Live site** mode, you should see the modified version as in the following screenshot:

Examples > Webparts > BizForms > BizForm

First name:

E-mail:

Phone number: () -

Your message:

You have learned how to create an alternative form to an existing BizForm and use it on your website.

8.4.3 Joining two classes into one form

It is also possible to join two classes into one alternative form. This option is currently available only for the **User** and **User - Settings** system tables.

1. When creating an alternative form of the **User** system table, you have the option to check the **Combine with user settings** check-box. This causes that fields contained in the **User - Settings** table will be included in the alternative form.

System table properties

System tables ▶ User

Fields Queries **Alternative forms**

Alternative forms ▶ New alternative form

Display name:

Code name:

Combine with user settings:

OK

2. Now if you switch to the **Fields** tab, you will see that besides the original fields contained in the **Users** table, fields from the **User - Settings** table are also present, as you can see in the following screenshot:

General **Fields** Layout

UserLastLagonInfo
UserIsHidden
UserVisibility
UserIsDomain
UserHasAllowedCultures
UserSettingsID
UserNickName
UserPicture
UserSignature
UserURLReferrer
UserCampaign
UserMessagingNotificationE
UserCustomData
UserRegistrationInfo
UserPreferences
UserActivationDate
UserActivatedByUserID
UserTimeZoneID
UserAvatarID
UserBadgeID
UserShowSplashScreen
UserActivityPoints
UserForumPosts

Database

Attribute name:

Attribute type:

Attribute size:

Allow empty value:

Attribute default value:

Display attribute in the editing form

Field

Default visibility:

Visibility control:

Allow user to change field visibility:

Field caption:

OK

8.4.4 Automatically used alternative forms

If you create alternative form and give it one of the following code names, the form will be automatically used when performing the corresponding action. The following table shows the names and actions when the forms are used.

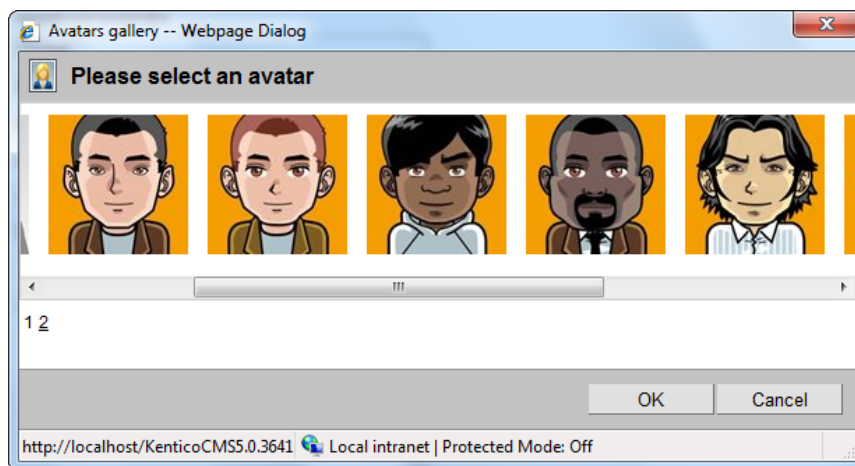
| Alternative form Code name | Used when | Supported by |
|----------------------------|--|--|
| insert | creating a new document | document types, BizForms, system tables, custom tables |
| update | editing an existing document | document types, BizForms, system tables, custom tables |
| newculture | creating a new culture version of a document | document types |

8.5 Avatars

8.5.1 Overview

The Avatars module enables users to have an image associated with their account. This image is called an 'avatar' and is displayed on the user's public profile, in forum posts, etc. An avatar serves as a graphical representation of a user, and is used to personalize that user's contributions on websites. More information about users in general can be found in the [Development -> Membership, permissions and security](#) chapter of this guide.

Users can either choose an avatar from a gallery of pre-defined avatars if this option is enabled or create a custom avatar by uploading their own image from a file on their local disk. All common image formats are supported, including animations.



Unlike pre-defined avatars, custom avatars can't be selected by other users and they are deleted from the system if the user they were uploaded by changes her avatar.

Groups can also have avatars, these are displayed on the group's profile and can benefit the group by providing a way for it to be identified better and faster, etc. To read more about groups, please refer to the [Modules -> Groups](#) chapter of this guide.

There are several ways for users or group administrators to add or change avatars. See the [Changing user avatars](#) or [Changing group avatars](#) chapters for more details.

Site administrators can manage all avatars or change their settings. This is described in the [Managing avatars](#) and [Settings](#) chapters.

The [Avatars internals and API](#) chapters provide information about the database tables and classes used by the module, examples of how avatars can be managed using the API and how avatars can be displayed in transformations.

8.5.2 Changing user avatars

When a new user registers on a site, the default avatar will be assigned to them. After that, they can change their avatar using the **My account** web part. It can be done on its **Personal settings** tab, as you can see in the screenshot below.

My profile

Personal settings | Change password | Notifications

Username: Turbo

Full name: Noel Turpin

Email: noel.turpin@localhost.local


Display my e-mail to: Nobody (all) Site members Friends

Nickname: Turbo

Signature: --T-U-R-B-O--

Messaging notification e-mail:

Time zone: (none)

Avatar: 

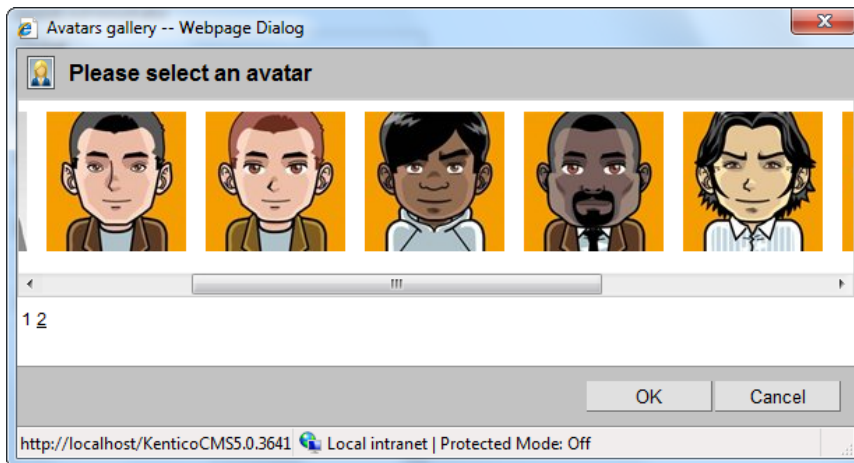
Upload:

[Select pre-defined avatar](#)

Gender: Male Female

Date of birth: 1/3/1975

Users can **Delete** (✖) the avatar or **Upload** a custom one from a file. If pre-defined avatars are enabled in site settings, users can also click the **Select pre-defined avatar** link, which displays a gallery of pre-defined avatars.



You can find a live example of this on our **Community starter site**. Just log-in as some of the pre-defined users (e.g. *Turbo* with blank password) and click the **Edit my profile** link in the **Shortcuts** menu on the right.

Changing user avatar in CMS Desk

Users with access to **CMS Desk** can change their avatars in **My Desk -> My profile**. It can be done the same way as described above. You can **Delete** (✖) the avatar or **Upload** your own avatar from a file.


If default avatars are enabled in site settings, you can also click the **Select pre-defined avatar** link, which displays a gallery of pre-defined avatars from which you can easily pick one by clicking it and clicking **OK**.

Kentico CMS Desk [Switch to Site Manager](#)

Content **My desk** Tools Administration

My profile

Details Change password Notifications Subscriptions

User name: administrator
 Full name: Global Administrator
 First name: Global
 Last name: Administrator
 Nick name: Admin
 E-mail: administrator@localhost.local
 Preferred content culture: (default)
 Preferred user interface culture: English
 Messaging notification e-mail:
 Time zone: (none)
 Signature:
 Gender: Male Female
 Date of birth: [Now](#)
 Avatar: 
[Select pre-defined avatar](#)
 Show splash screen:

8.5.3 Changing group avatars


When a new group is created, the default avatar will be assigned to it. After that, group administrators can change the group's avatar using the **Group profile** web part.

Users can **Delete** (✘) the avatar or **Upload** a custom one from a file. If pre-defined avatars are enabled in site settings, users can also click the **Select pre-defined avatar** link, which displays a gallery of pre-defined avatars.

You can find a live example of this on the **Community starter site**. Sign-in as some group administrator (e.g. *Josh* with blank password, he is the *Australian travellers* group admin) and click Groups in the main menu. You should see the **Australian travellers** group in the **My groups** section. Click it, and what you can see in the screenshot below will be displayed to you.

General Security Members Roles Forums Media libraries Message boards Polls

Description:
This is a group of Australian travellers. If you are one of them, please register to the group. It is a great chance for you to get in touch with other Aussie travellers. They can share their experience and maybe even become your travel mates.
On the other hand, if you are planning a trip to Australia, users from this group can serve you as a source of valuable information and may even invite you to meet

Avatar:

Upload:
[Select pre-defined avatar](#)

Approve members:
 Any site member can join
 Only approved members can join
 Only approved members can join except for invited members

Content access:
 Anybody can view the content
 Site members can view the content
 Only group members can view the content

Notify group admins when a user joins/leaves:
Notify group admins on pending members:
Created by: administrator
Approved by: administrator

8.5.4 Managing avatars

The administration interface for avatar management is located in **Site Manager -> Administration -> Avatars**.

You can filter displayed avatars using the filter above the list. Possible filtering parameters are **Avatar name**, **Avatar type** (user or group avatar, avatars of type 'All' can be used for both) and **Avatar kind** (shared avatars are the pre-defined ones, while custom avatars are those that users uploaded from a file). Click **Search** to display only avatars matching the selected criteria.

You can **Edit** (✎) or **Delete** (✖) listed avatars.

Kentico CMS Site Manager Switch to CMS Desk User: Global Administrator v5.0.3637 Sign out

Sites Administration Settings Development Licenses Support

Administration

- Avatars
- Bad words
- Badges
- Banned IPs
- E-mail queue
- Event log
- Permissions
- Recycle bin
- Roles
- Scheduled tasks
- Smart search
- System
- UI personalization
- Users
- Web farm

Avatars

Add new avatar

Avatar name: LIKE

Avatar type: (all)

Avatar kind: Shared

Search

| Actions | Avatar name | Avatar type | Image preview |
|---------|-------------|-------------|---------------|
| | Group | Group | |
| | Group 2 | Group | |
| | Group 3 | Group | |
| | Group 4 | Group | |
| | Group 5 | Group | |
| | Man | User | |
| | Man 1 | User | |
| | Man 2 | User | |
| | Man 3 | User | |

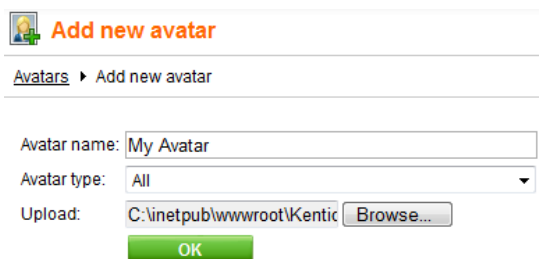
Creating pre-defined avatars

1. New **pre-defined avatars** can be created using the **Add new avatar** link at the top part of the page. Click it.

2. You will be asked to enter the following details:

- **Avatar name** - name of the avatar
- **Avatar type** - choose if the avatar can be used for users, groups or both
- **Upload** - enter the path to the avatar image on your local machine or click the **Browse** button to browse and locate the file

When entered, click **OK** to proceed.




The screenshot shows a web interface for adding a new avatar. At the top, there is a header with a person icon and the text "Add new avatar". Below this is a breadcrumb trail: "Avatars > Add new avatar". The form contains three main fields: "Avatar name:" with a text input containing "My Avatar"; "Avatar type:" with a dropdown menu currently set to "All"; and "Upload:" with a text input containing "C:\inetpub\wwwroot\Kentic" and a "Browse..." button. At the bottom of the form is a green "OK" button.

3. The avatar is now created and if you go back to the list of avatars, you should see the avatar present in the list. However, you can set the following extra properties of the avatar now or any time later when editing the avatar:

- **Make it default for user** - if checked, this avatar will be the default avatar for users
- **Make it default for male** - if checked, this avatar will be the default avatar for male users
- **Make it default for female** - if checked, this avatar will be the default avatar for female users
- **Make it default for group** - if checked, this avatar will be the default avatar for groups

Default avatars will be assigned to newly created users or groups automatically when the user or group is created.


 **Avatar properties**

Avatars ▸ My Avatar

The changes were saved.

Avatar name:

Avatar type:

Image: 

Upload:

Make it default for user:

Make it default for male:

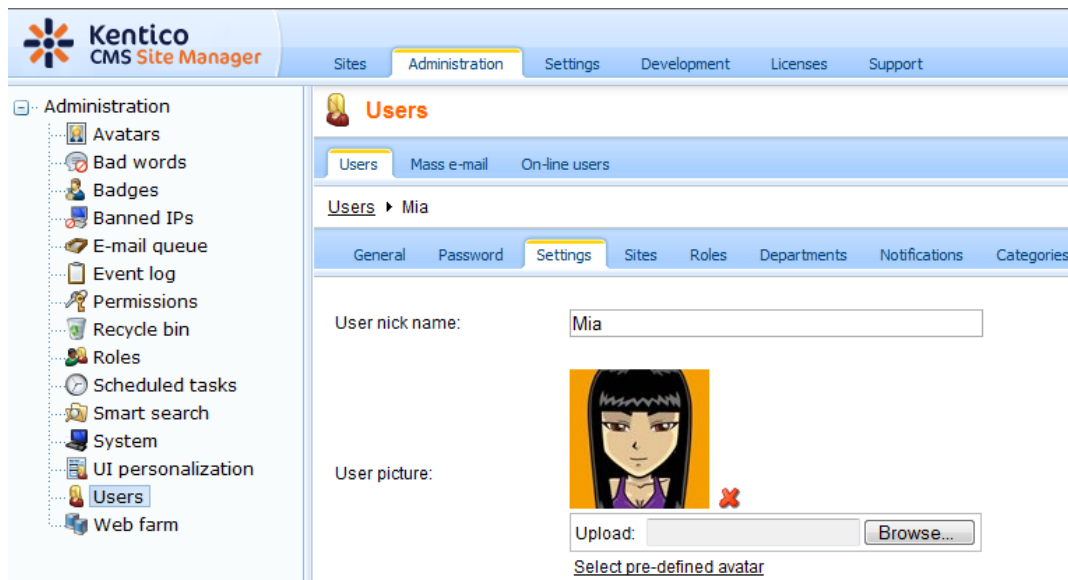
Make it default for female:

Make it default for group:

Administrating users' avatars

Site administrators can change the avatar of any user. If you go to **Site Manager -> Administration -> Users**, choose to **Edit** (✎) some of the users in the list and switch to their **Settings** tab, you should see the user's avatar in the **User picture** field, as you can see in the screenshot below. You can **Delete** (✖) the avatar or **Upload** your own avatar from a file.

If default avatars are enabled in site settings, you can also click the **Select pre-defined avatar** link, which displays a gallery of pre-defined avatars from which you can easily pick one by clicking it and clicking **OK**.



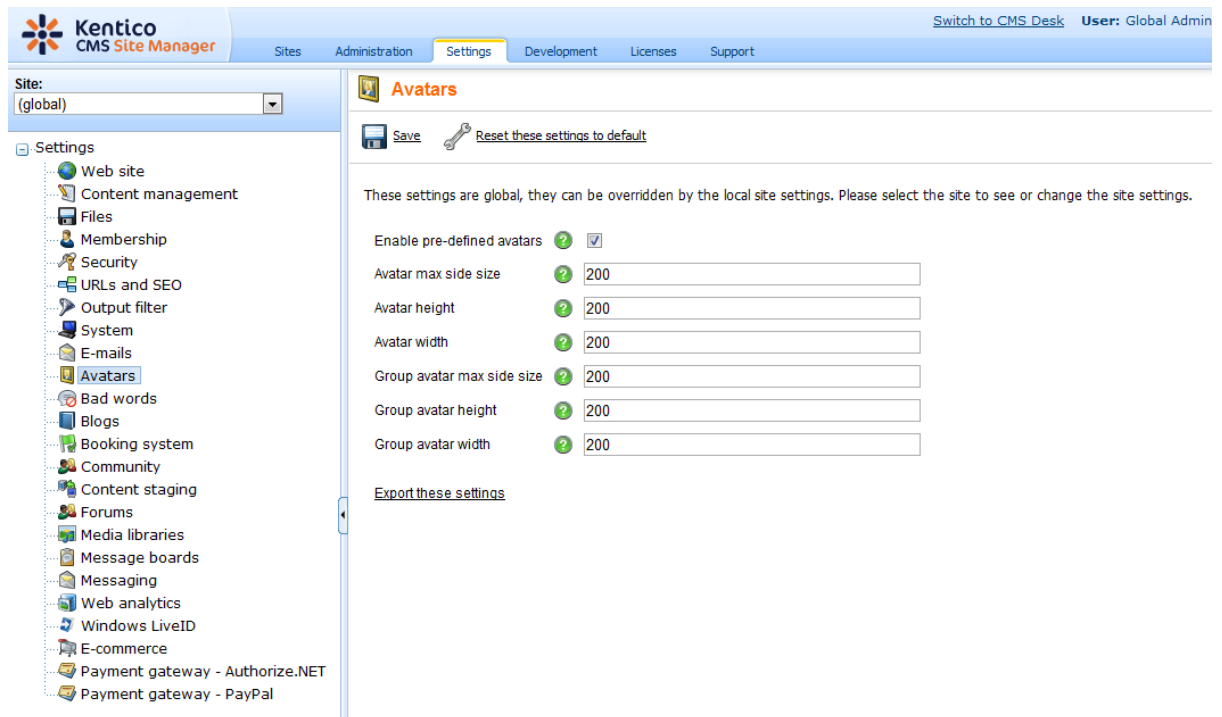
Changing group avatars in CMS Desk

Site administrators can change the avatar of any group. If you go to **CMS Desk -> Tools -> Groups** and choose to **Edit** (✎) some of the groups, you should see the group's avatar in the **Avatar** section, as depicted in the screenshot below. A Group avatar can be **Deleted** (✖), a new one can be **Uploaded** from a file or selected from a gallery of pre-defined avatars (if this is enabled in site settings).

8.5.5 Settings

Settings of the Avatars module can be done in **Site Manager -> Settings -> Avatars**. The following settings are available:

- **Enable pre-defined avatars** - if checked, default avatars can be selected when selecting user's or group's avatar; if unchecked, only custom uploaded avatars can be used
- **Avatar max side size** - maximal size of **user avatars**; if one or both sides of the image are longer, the image will be resized so that the longer side's size matches the entered value; if 0 is entered, 'Avatar height' and 'Avatar width' values will be used instead
- **Avatar height** - if 'Avatar max side size' is set to 0, images will be resized to this height
- **Avatar width** - if 'Avatar max side size' is set to 0, images will be resized to this width
- **Group avatar max side size** - maximal size of **group avatars**; if one or both sides of the image are longer, the image will be resized so that the longer side's size matches the entered value; if 0 is entered, 'Group avatar height' and 'Group avatar width' values will be used instead
- **Group avatar height** - if 'Group avatar max side size' is set to 0, images will be resized to this height
- **Group avatar width** - if 'Group avatar max side size' is set to 0, images will be resized to this width



8.5.6 Avatars internals and API

8.5.6.1 Database tables and API classes

The Avatars module uses the following database table:

- **CMS_Avatar** - this is the database table used for storing avatars

The Avatars API is provided by the following **CMS.SiteProvider** namespace classes:

- **AvatarInfo**, **AvatarInfoProvider** - these classes provide functionality for managing avatars

The following chapters show examples of how these classes can be used:

- [Getting avatar data](#)
- [Modifying and creating avatars](#)

The following chapter contains examples of how avatars can be displayed in transformations:

- [Displaying avatars in transformations](#)

8.5.6.2 Getting avatar data

The following sample code shows how you can get an avatar as an *AvatarInfo* object:

[C#]

```
using CMS.SiteProvider;

...

// Get avatar object by AvatarID
AvatarInfo ai = AvatarInfoProvider.GetAvatarInfo(1);

// Get avatar object by AvatarName
AvatarInfo ai2 = AvatarInfoProvider.GetAvatarInfo("AvatarName");
```

The following sample code shows how you can get a DataSet containing all avatars in the system with an *AvatarID* greater than 5, ordered by their name:

[C#]

```
using System.Data;
using CMS.SiteProvider;

...

// Get DataSet of avatar objects
DataSet ds = AvatarInfoProvider.GetAvatars("AvatarID > 5" , "AvatarName");
```

8.5.6.3 Modifying and creating avatars

The following sample code shows how you can modify the name of an existing avatar:

[C#]

```
using CMS.SiteProvider;

...

// Get avatar object by AvatarID
AvatarInfo ai = AvatarInfoProvider.GetAvatarInfoWithoutBinary(avatarID);

// Change avatar name
ai.AvatarName = ai.AvatarName + "_Updated";

// Save avatar object
AvatarInfoProvider.SetAvatarInfo(ai);
```

The following sample code shows how you can create a new pre-defined avatar of type 'All' and add it to the system:

[C#]

```
using CMS.SiteProvider;

...

// Create new avatar object
AvatarInfo ai = new AvatarInfo("\\Directory\\custom.jpg");

// Set properties
ai.AvatarType = AvatarInfoProvider.GetAvatarTypeString(AvatarTypeEnum.
All);
ai.AvatarIsCustom = false;
```

```
// Save object to database
AvatarInfoProvider.SetAvatarInfo(ai);
```

8.5.6.4 Displaying avatars in transformations

Avatars can also be displayed in transformations. Here are some code examples that can be placed in your transformations.

The following code returns the image tag of the avatar contained in the *AvatarGuid* field of the currently transformed user, with a maximum *sidesize* of 50 px. and *Alt tag* equal to the user's Nickname or Username:

```
<%# GetUserAvatarImage(50, HTMLEncode(GetNotEmpty("UserNickname;UserName"))) %>
```

The following code returns the image tag of the avatar with ID *UserAvatarID*, of user with ID *UserID*, with a maximum *sidesize* of 50 px. and *Alt tag* equal to the user's Username:

```
<%# GetUserAvatarImage(Eval("UserAvatarID"), Eval("UserID"), 50, Eval("UserName")) %>
```

The following code returns the image tag of the avatar with ID *UserAvatarID*, of user with ID *UserID*, with a maximum *width* of 40 px., maximum *height* of 45 px. and *Alt tag* equal to the user's *Username*:

```
<%# GetUserAvatarImage(Eval("UserAvatarID"), Eval("UserID"), 0, 40, 45, Eval("UserName")) %>
```

8.6 Bad words

8.6.1 Overview

The Bad words module can be used as a filter for indecent input from website users. The module can filter forum posts, blog comments, messages sent via the Messaging module and messages posted onto a message board. You can define an unlimited number of bad words. If a user inputs a text containing some of these words, a predefined action will be performed for the words.

8.6.2 Enabling the module

For the module to be functional, you also have to go to **Site Manager -> Settings -> Bad words** and check the **Check Bad Words** check-box.

You can also set the **default action** that will be taken in case that a bad word is detected and the word has no action defined. This is done using the **Bad word action** drop-down list. Using the **Bad word replacement** property, you can define the **default replacement text** that will be used in case that a bad word is detected, has the Replace action set and has no replacement text defined.

The screenshot displays the Kentico CMS Site Manager interface. At the top, the logo and name 'Kentico CMS Site Manager' are visible on the left, and navigation links for 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support' are in the center. On the right, there are links for 'Switch to CMS Desk' and 'User: Global Admin'. Below the navigation bar, a 'Site:' dropdown menu is set to '(global)'. A left-hand sidebar lists various settings categories, with 'Bad words' highlighted. The main content area is titled 'Bad words' and includes a 'Save' button and a 'Reset these settings to default' link. A message states: 'These settings are global, they can be overridden by the local site settings. Please select the site to see or change the site settings.' The settings are as follows:

- Check bad words:
- Bad word replacement:
- Bad word action:

Below the settings is a link for 'Export these settings'.

8.6.3 Defining a bad word

The Bad words module's user interface is located in **Site Manager -> Administration -> Bad words**.

The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The left sidebar shows a tree view of administration options, with 'Bad words' selected. The main content area is titled 'Bad words' and features a 'New bad word' link. Below this, there is a filter section with an 'Expression' input field and an 'Action' dropdown menu set to 'Replace'. A 'Show' button is located below the filter. The main part of the page is a table listing bad words with columns for 'Actions', 'Expression', 'Action', 'Replacement', and 'All cultures'.

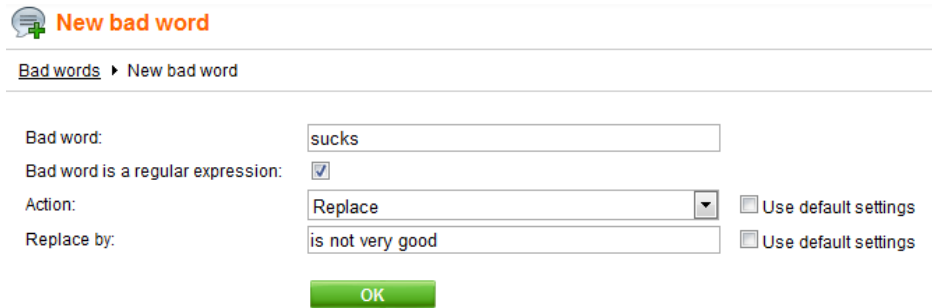
| Actions | Expression | Action | Replacement | All cultures |
|---------|------------|-------------------|-----------------|--------------|
| | arse | Replace (default) | ***** (default) | Yes |
| | asshole | Replace (default) | ***** (default) | Yes |
| | assramer | Replace (default) | ***** (default) | Yes |
| | bastard | Replace (default) | ***** (default) | Yes |
| | bitch | Replace (default) | ***** (default) | Yes |
| | bollock | Replace (default) | ***** (default) | Yes |
| | cabron | Replace (default) | ***** (default) | Yes |
| | cawk | Replace (default) | ***** (default) | Yes |
| | chink | Replace (default) | ***** (default) | Yes |
| | clit | Replace (default) | ***** (default) | Yes |
| | clits | Replace (default) | ***** (default) | Yes |
| | cock | Replace (default) | ***** (default) | Yes |
| | cum | Replace (default) | ***** (default) | Yes |
| | cunt | Replace (default) | ***** (default) | Yes |
| | dago | Replace (default) | ***** (default) | Yes |

The top part of the page is a filter. Using it, you can display only those bad words that match the specified criteria. You can filter by the **Expression** and by the **Action** that has been set for it. After specifying the filtering criteria and clicking the **Show** button, only those items that match the specified criteria will be displayed in the list.

To add a new bad word, click the **New bad word** link at the top of the page. You will be redirected to the **Bad word properties** page. The following details can be entered:

- **Bad word** - bad word that should not appear in the text
- **Bad word is a regular expression** - if checked, you can also enter regular expressions into the previous field
- **Action** - action that will be taken in case that the bad word is detected; see chapter **Possible actions** for more details
Use default settings - if checked, global value will be used as set in **Site Manager -> Settings -> Bad words -> Bad word action**
- **Replace by** - in case the Replace action is selected, the substitute for the bad word is defined here
Use default settings - if checked, global value will be used as set in **Site Manager -> Settings -> Bad words -> Bad word replacement**

Enter the details as in the following screenshot and click **OK**.



New bad word

[Bad words](#) ▸ New bad word

Bad word:

Bad word is a regular expression:

Action: Use default settings

Replace by: Use default settings

Let's try the functionality now. Go to the live Corporate Site, enter the Blog section and open some of the blog posts. Enter a comment as in the following screenshot and click **Add**.



Leave comment [Subscribe](#)

Name:

E-mail:

Your URL:

Comments:

Subscribe me to this blog post

Enter security code: 

As you can see, the last word has been replaced with its polite substitute that has been defined earlier.

[The rude boy](#)
Hey man, try to write something meaningful next time. This article is not very good!!!
12/18/2009 9:57:22 AM

You can also check the **Event log** in **Site Manager -> Administration**. An event is always logged automatically when a user tries to post some text containing a bad word. The **Event code** is **BADWORD** in such case.

| Actions | Type | Event time | Source | Event code | User name | IP address | Document name | Site |
|---------|------|-----------------------|-----------------|--------------------|---------------|------------|---------------|----------------|
| | I | 12/18/2009 9:57:51 AM | Authentication | AUTHENTICATIONSUCC | administrator | ::1 | | Corporate Site |
| | I | 12/18/2009 9:57:22 AM | Bad words check | BADWORD | | ::1 | | Corporate Site |

Cultural versions of bad words

You can set for which cultures will a certain bad word be used. If you choose to **Edit** a bad word in the list in **Administration -> Bad words** and switch to its **Cultures** tab, you will be offered the following two options:

- **The word is not allowed in all cultures** - the bad word will be filtered in all site cultures
- **The word is not allowed only in following cultures** - the bad word will be filtered only in cultures selected by the check-boxes below

Click **Save** for the settings to take effect.

 **Bad word properties**

Bad words ▸ bitch

General Cultures

The word is not allowed in all cultures

The word is not allowed only in following cultures

| <input type="checkbox"/> | Culture name |
|--------------------------|--------------------------|
| <input type="checkbox"/> | Afrikaans - South Africa |
| <input type="checkbox"/> | Arabic - Algeria |

Remove selected Add cultures

8.6.4 Possible actions

In case that a bad word is detected, one of the following actions can be taken:

- **Remove** - the bad word is removed from the entered text with no substitution for it
- **Replace** - the bad word is removed and replaced with a predefined word
- **Report abuse** - a report will be created in **CMSDesk -> Tools -> Abuse report**
- **Request moderation** - the post will have to be approved; this also happens in case that the forum, message board or blog comments are not moderated by default
- **Deny** - a warning message will be displayed when the user tries to post the inadequate text, telling which words are to be removed

The following table shows which actions are available for each of the supported modules:

| | Blog comments | Forums | Messaging | Message boards |
|--------------------|---------------|--------|-----------|----------------|
| Remove | • | • | • | • |
| Replace | • | • | • | • |
| Report abuse | • | • | | • |
| Request moderation | • | • | | • |
| Deny | • | • | • | • |

In case that there is **more than one bad word detected** in an entered text and the words have **different actions** set, the actions will be taken according to their hierarchy. Remove, Replace and Report abuse actions have the same "strength", which means that the actions can be taken simultaneously. Request moderation is stronger than Report abuse and Deny is the strongest of all.

The following list shows which actions will be taken in some specific cases in order for you to easily understand their hierarchy:


- **Remove and Replace** - the first one will be removed and the second one will be replaced with the defined substitute
- **Remove, Replace and Report abuse** - the first one will be removed, the second one replaced and an abuse report will be logged
- **Remove, Replace and Request moderation** - the first one will be removed, the second one will be replaced and the post will have to be approved
- **Report abuse and Request moderation** - the post will have to be approved and no abuse report will be logged
- **Deny and any other** - the text is left as it is, but produces an error message

8.6.5 Security

To enable the Bad words module, go to **Site Manager -> Administration -> Permissions**, select the **Modules -> Bad words** permission matrix and grant user roles with appropriate permissions.

The following table explains the particular permissions:

- **Use bad words** - allows members of the role to use bad words, i.e. bad words checking will not be performed to submissions made by members of the role

 **Permissions**

Site:

Permission type:

Permission matrix:

| | Use bad words |
|------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> |
| CMS Community Administrators | <input checked="" type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> |
| CMS Editors | <input type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> |
| Everyone | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> |

8.7 Banned IPs

8.7.1 Overview

The Banned IPs module is useful when you want to prevent users with certain IP addresses from accessing or using your website in a certain way. This typically happens when a user posts offensive material on a website (e.g. on a forum), harasses site members or behaves in some other unwanted way. IP banning can also be used to restrict access to your websites from certain areas of the world. These bans can be set either for individual websites or globally for all websites in the system.

To learn how to enable the Banned IPs module, please see the [Enabling IP banning](#) chapter.

Adding banned IPs can easily be performed by site administrators. The [Banning an IP address](#) chapter describes how. To find out how to determine which IP a user you want to ban is using, please see the [Finding an IP address](#) chapter.

The [Banned IPs internals and API](#) chapters provide information about the database tables and classes used by the module and examples of how banned IPs can be managed using the API.

IP banning is usually used as a last resort and there are other modules which can help you deal with offensive content and keep your website clean. Please refer to the [Modules -> Abuse report](#) and [Modules -> Bad words](#) chapters of this guide to read more.

8.7.2 Enabling IP banning

For the bans to take effect, go to **Site Manager -> Settings -> Security**, select the appropriate site, check the **Banned IP enabled** check-box and click **Save**. The bans should take effect now.

The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The 'Settings' section is active, and the 'Security' sub-section is selected. The left sidebar shows a tree view of settings categories, with 'Security' highlighted. The main content area displays the 'Security' settings for the 'global' site. The 'Enable banned IPs' checkbox is checked and highlighted with a red box. Other settings include 'Send password e-mails from' (admin@localhost.local), 'Password format' (SHA1), 'Use SSL for administration interface' (unchecked), 'Check page permissions' (Secured areas), 'Website logon page URL' (~/cmspages/logon.aspx), 'Access denied page URL' (empty), 'Redirect banned IPs to URL' (~/CMSMessages/BannedIP.aspx), 'Enable flood protection' (unchecked), 'Flood interval' (20), and 'Enable UI personalization' (unchecked). Buttons for 'Save' and 'Reset these settings to default' are visible at the top of the settings area.

Users attempting to perform an action from an IP address that is banned should get a page with the following message displayed in their browsers.

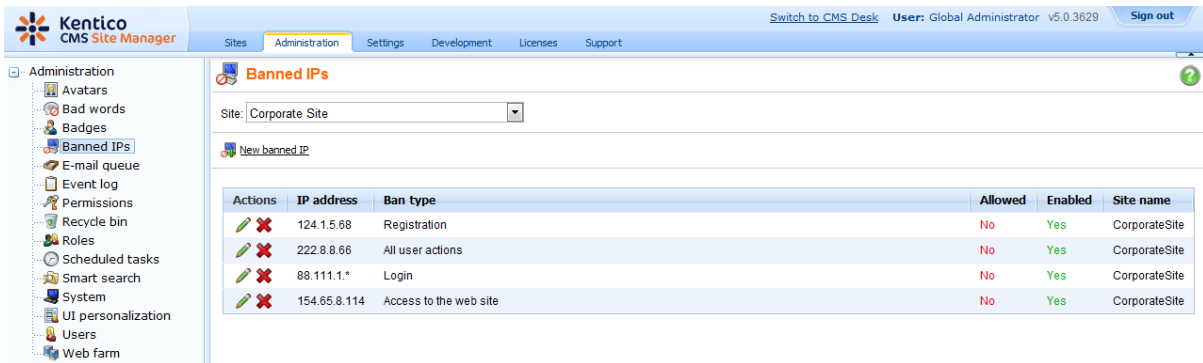
Your IP address is banned

This is the default banned IPs redirect page, which can be found at `~/CMSMessages/BannedIP.aspx`. You can create your own page and set its URL in **Site Manager** -> **Settings** -> **Security** -> **Redirect banned IPs to URL**.









8.7.3 Banning an IP address

Banned IPs can be managed in **Site Manager** -> **Administration** -> **Banned IPs**. Alternatively, you can access the same page from **CMS Desk** -> **Administration**, but you can manage banned IPs only for the currently edited site.

From the **Site** drop-down list, choose the site you want to add the IP for and click the **New banned IP** link.




The screenshot shows the Kentico CMS Site Manager Administration interface. The left sidebar contains a navigation menu with items like Avatars, Bad words, Badges, Banned IPs, E-mail queue, Event log, Permissions, Recycle bin, Roles, Scheduled tasks, Smart search, System, UI personalization, Users, and Web farm. The main content area is titled "Banned IPs" and shows a dropdown menu for "Site: Corporate Site". Below this is a "New banned IP" link and a table of banned IP addresses.

| Actions | IP address | Ban type | Allowed | Enabled | Site name |
|---|--------------|------------------------|---------|---------|---------------|
|   | 124.1.5.68 | Registration | No | Yes | CorporateSite |
|   | 222.8.8.66 | All user actions | No | Yes | CorporateSite |
|   | 88.111.1.* | Login | No | Yes | CorporateSite |
|   | 154.65.8.114 | Access to the web site | No | Yes | CorporateSite |

Enter the required details:

| | |
|---|--|
| IP Address | IP address to be banned.
Asterisk (*) can be used as a substitute for any number in the IP address, substituting for all values from 0 to 255.
Example: 192.168.1.*
Dot (.) can be used as a substitute for any single number in the IP address, substituting all values from 0 to 9. Example: 192.168.1.15. substitutes all numbers from 150 to 159 |
| Ban type | Type of the ban. The following types are available: <ul style="list-style-type: none">• <u>Access to the website</u> - users cannot access the site from the entered address at all• <u>Login</u> - users cannot log in from the entered address• <u>Registration</u> - users cannot register from the entered address• <u>All user actions</u> - users can enter the site from this IP, but specific actions will not be allowed |
| Enabled | If unchecked, the ban takes no effect. |
| Ban Reason | Text description of why the IP was banned. |
| Ban IP address | If selected, this IP address will be banned. |
| Allow IP address for this site if the IP address is banned globally | If selected, this IP address will be allowed for the selected site even if it is banned globally. |
| Allow site to override the ban | If checked, this ban can be overridden by bans set for particular sites; can be set only for global bans. |

 **New banned IP**

Banned IPs ▶ New banned IP (global)

IP address:

Ban type:

Enabled:

Ban reason:

Ban IP address
 Allow IP address globally

Allow site to override the ban:

When you have all details entered, click **OK**.

Now if you go back to the list of banned IPs, you should see the newly created record present in the list.

Editing an existing ban

If you want to edit the record in the future, just go to the list and click the **Edit** (✎) icon next to the record. The same page will be displayed as when creating a new record, but with details entered. To make the desired changes, just change the appropriate values and click **OK**.

8.7.4 Finding an IP address

There are several ways to locate user IP addresses.

If you wish to find the IP address of a user responsible for a certain event, go to **Site Manager -> Administration -> Event log** and find the event you are interested in. The IP address of the user who caused the event has its own column in the displayed table and can also be viewed if you choose to click **Display event** (🔍). This can also be done at **CMS Desk -> Administration -> Event Log**, but here you can only view events from the currently edited site.

| Action | Type | Event time | Source | Event code | User name | IP address | Document name | Site |
|--------|------|-----------------------|-------------------|--------------------|---------------|----------------------------|---------------|------------------|
| 🔍 | I | 6/14/2010 11:06:41 AM | Forum post | CREATEOBJ | Abi | 192.168.3.12 | | Widget community |
| 🔍 | I | 6/14/2010 11:06:11 AM | Authentication | AUTHENTICATIONSUCC | Abi | 192.168.3.12 | | Widget community |
| 🔍 | I | 6/14/2010 11:03:22 AM | Authentication | AUTHENTICATIONSUCC | administrator | fe80::5184:9163:92:94c0%12 | | Widget community |
| 🔍 | I | 6/14/2010 11:03:15 AM | Forum post | CREATEOBJ | Abi | fe80::5184:9163:92:94c0%12 | | Widget community |
| 🔍 | I | 6/14/2010 11:02:31 AM | Authentication | AUTHENTICATIONSUCC | Abi | fe80::5184:9163:92:94c0%12 | | Widget community |
| 🔍 | I | 6/14/2010 10:18:26 AM | Authentication | AUTHENTICATIONSUCC | administrator | fe80::5184:9163:92:94c0%12 | | Widget community |
| 🔍 | I | 6/14/2010 10:16:34 AM | Authentication | AUTHENTICATIONSUCC | administrator | fe80::5184:9163:92:94c0%12 | | Widget community |
| 🔍 | I | 6/14/2010 10:15:16 AM | Authentication | AUTHENTICATIONSUCC | David | 192.168.3.12 | | Widget community |
| 🔍 | I | 6/14/2010 10:11:18 AM | Authentication | AUTHENTICATIONSUCC | David | fe80::5184:9163:92:94c0%12 | | Widget community |
| 🔍 | I | 6/14/2010 10:10:05 AM | Authentication | AUTHENTICATIONSUCC | administrator | fe80::5184:9163:92:94c0%12 | | Widget community |
| 🔍 | I | 6/14/2010 10:10:00 AM | Authentication | AUTHENTICATIONSUCC | David | fe80::5184:9163:92:94c0%12 | | Widget community |
| 🔍 | I | 6/14/2010 10:09:52 AM | Authentication | AUTHENTICATIONSUCC | administrator | fe80::5184:9163:92:94c0%12 | | Widget community |
| 🔍 | I | 6/14/2010 10:06:53 AM | Site | UPDATEOBJ | administrator | 127.0.0.1 | | Widget community |
| 🔍 | I | 6/14/2010 10:06:53 AM | Site | UPDATEOBJ | administrator | 127.0.0.1 | | Widget community |
| 🔍 | I | 6/14/2010 10:06:52 AM | Site | UPDATEOBJ | administrator | 127.0.0.1 | | Widget community |
| 🔍 | I | 6/14/2010 9:53:46 AM | Application_Start | STARTAPP | | 127.0.0.1 | | Widget community |
| 🔍 | W | 6/14/2010 9:52:07 AM | Application_End | ENDAPP | | | | Widget community |
| 🔍 | I | 6/14/2010 9:23:40 AM | Abuse report | CREATEOBJ | administrator | 127.0.0.1 | | Widget community |

For example, if you want to find a user who often uses Bad words, enter **BADWORD** into the **Event code** field of the Event log filter and make sure **LIKE** is selected from the drop-down list. This will display a list of all Bad word violations and all relevant information including user names and their IP addresses.

To find the IP address used by a specific user when they last logged on, go to **Site Manager -> Administration -> Users**. Alternatively, you can access this information from **CMS Desk -> Administration -> Users**, but you can only see the users of the currently edited site.

Choose to **Edit** (✎) the user whose IP address you wish to find. It can be seen under **General -> Last logon information**. This can be useful if you get multiple abuse reports about some user and want to quickly find their IP address.


The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a navigation menu with items like Avatars, Bad words, Banned IPs, etc. The main content area is titled 'Users' and shows the profile for a user named 'David Silver'. The 'Last logon information' field is highlighted with a red box, displaying the IP address '192.168.3.12'. Other fields include User name, Full name, First name, Middle name, Last name, E-mail, and various checkboxes for user roles and permissions.

8.7.5 Security

To limit access to the Banned IPs module, go to **Site Manager -> Administration -> Permissions** and grant roles with appropriate permissions according to your needs.

The following permissions can be assigned to the roles:

- **Modify** - members of the role are allowed to add, edit and delete banned IPs
- **Read** - members of the role are allowed to view the banned IPs list

 **Permissions**

Site: ▾
Permission type: ▾
Permission matrix: ▾

| | Modify | Read |
|------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |

8.7.6 Banned IPs internals and API

8.7.6.1 Database tables and API classes

The Banned IPs module uses the following database table:

- **CMS_BannedIP** - this is the database table used for storing banned IPs

The Banned IPs API is provided by the following **CMS.SiteProvider** namespace classes:

- **BannedIPInfo**, **BannedIPInfoProvider** - these classes provide functionality for managing banned IPs

The following chapters show examples of how these classes can be used:

- [Getting banned IP data](#)
- [Modifying and creating banned IPs](#)
- [Checking if actions are banned](#)

8.7.6.2 Getting banned IP data

The following sample code shows how you can get a banned IP as a *BannedIPInfo* object:

[C#]

```
using CMS.SiteProvider;  
  
...
```

```
// Get BannedIP object by IPAddressID  
BannedIPInfo bi = BannedIPInfoProvider.GetBannedIPInfo(1);
```

The following sample code shows how you can get a DataSet containing all banned IPs in the system with an *IPAddressID* greater than 5, ordered by their *IPAddress*:

[C#]

```
using System.Data;
using CMS.SiteProvider;

...

// Get DataSet of BannedIP objects
DataSet ds = BannedIPInfoProvider.GetBannedIPs("IPAddressID > 5",
"IPAddress");
```

8.7.6.3 Modifying and creating banned IPs

The following sample code shows how you can modify the Ban reason of an existing banned ip:

[C#]

```
using CMS.SiteProvider;

...

// Get BannedIP object by IPAddressID
BannedIPInfo bi = BannedIPInfoProvider.GetBannedIPInfo(1);

// Change Ban reason property
bi.IPAddressBanReason = bi.IPAddressBanReason + "_Updated";

// Save object
BannedIPInfoProvider.SetBannedIPInfo(bi);
```

The following sample code shows how you can create a new banned IP of type 'All user actions' and add it to the system:

[C#]

```
using CMS.SiteProvider;

...

// Create new BannedIP object
BannedIPInfo bi = new BannedIPInfo();

// Set properties
bi.IPAddress = "127.0.0.1";
bi.IPAddressBanReason = "Ban reason";
```

```
        bi.IPAddressAllowed = true;
        bi.IPAddressAllowOverride = true;
        bi.IPAddressBanType = BannedIPInfoProvider.BanControlEnumString(
BanControlEnum.AllNonComplete);
        bi.IPAddressBanEnabled = true;

        // Save object
        BannedIPInfoProvider.SetBannedIPInfo(bi);
```

8.7.6.4 Checking if actions are banned

The following sample code shows how you can check if the current user action is banned for the current site. It uses a Label control with the ID `lblError` to display the error message:

[C#]

```
using CMS.SiteProvider;
using CMS.CMSHelper;
using CMS.GlobalHelper;

...

        // Check if current action is allowed
        if (!BannedIPInfoProvider.IsAllowed(CMSContext.CurrentSiteName,
BanControlEnum.AllNonComplete))
        {
            // If not error message is shown
            lblError.CssClass = "ErrorLabel";
            lblError.Text = "Requested action was canceled. Banned IP address.";
        }
```

8.8 BizForms

8.8.1 Overview

The BizForms module enables non-technical users (content editors) to create and publish simple on-line forms, such as "contact us form", "order form" or "event registration form". The form can be published on the website by inserting a special macro expression into the text or using the BizForm web part.

Here's an example of such form:

s News Partners **Company** Blogs Forums Events

Company

Contact Us

If you want to contact us, please use the form below:

First name:

Last name:

E-mail:

Phone number: () -

Your message:

The captured data is stored in a separate database table and optionally sent by e-mail to specified address. They can be viewed through the web user interface and exported to Microsoft Excel.

You can find the administration interface of the module in **CMS Desk -> Tools -> BizForms**.

8.8.2 Creating a new form

In the following chapters, we will create a new form, publish it and read the entered data.

Go to **CMS Desk -> Tools -> BizForms** and click **New BizForm**. Enter the following details:

- **Form display name:** Event registration
- **Form code name:** EventRegistration
- **Table name:** Form_EventRegistration

Click **OK**. On the General tab, in the **After the form is submitted** section, choose the **Display text** option and enter the following value:

- **Display text:** Thank you for your registration. We will confirm it shortly by e-mail.

Enter the caption of the submit button:

- **Submit button text:** Register

Click **OK**.

The screenshot shows the Kentico CMS 5.5 Developer's Guide interface. The top navigation bar includes "Content", "My desk", "Tools", and "Administration". The "Tools" tab is active, and the "BizForm Properties" page is displayed. The left sidebar shows a tree view of tools, with "BizForms" selected. The main content area shows the "Event registration" form properties. The "General" tab is active, and the form is configured with the following settings:

- Form display name: Event registration
- Form code name: EventRegistration
- Table name: Form_EventRegistration
- After the form is submitted:
 - Display text: Thank you for your registration. We will confirm it s
 - Redirect to URL:
 - Clear form
 - Continue editing
- Submit button text: Register
- Submit button image:

An "OK" button is visible at the bottom of the form configuration area.

Now we will define the form fields. Go to the **Fields** tab. Add the following fields using the **Simplified** mode:

- Column name: FirstName
 - Show on public form: yes
 - Field caption: First name
 - Field type: TextBox
 - Maximum length: 100
 - Allow empty value: no
- Column name: LastName
 - Show on public form: yes
 - Field caption: Last name
 - Field type: TextBox
 - Maximum length: 100
 - Allow empty value: no
- Column name: Phone
 - Show on public form: yes
 - Field caption: Phone
 - Field type: U.S. phone number
 - Maximum length: 14
 - Allow empty value: **yes**
- Column name: Email
 - Show on public form: yes
 - Field caption: E-mail
 - Field type: E-mail
 - Maximum length: 100

- Allow empty value: no
- Column name: Presentations
- Show on public form: yes
- Field caption: Presentations you want to visit
- Field type: Multiple choice
- Options:
ASP.NET;ASP.NET
ATLAS;ATLAS
WPF;Windows Presentation Foundation
- Allow empty value: **yes**
- Column name: RegistrationProcessed
- Show on public form: **no**
- Field caption: Registration processed
- Field type: Check box
- Allow empty value: **yes**

The last item will be used only by site owners to mark the processed registration forms.

Please note: if you switch to the Advanced mode, you can set up additional options, such as validation rules or design.

The screenshot shows the 'Fields' configuration window in Kentico. The 'Fields' tab is selected in the top navigation bar. On the left, a list of fields is shown, with 'EventRegistrationID' selected. To the right of the list are navigation icons: a green up arrow, a green down arrow, a globe icon with a plus sign, a green plus sign, and a red X icon. The main configuration area on the right contains the following fields:

- Column name:
- Show on public form:
- Field caption:
- Field type:
- Allow empty value:
- Default value:

At the bottom of the configuration area, there is a link labeled 'Switch to advanced mode' and a green 'OK' button.



Form text localization

If you need to display the form on a multi-lingual website, you can localize the field captions and other text strings using expressions like this:

```
{$myform.fullName$}
```

or

```
{$=Hello|de-de=Hallo|it-it=Ciao$}
```

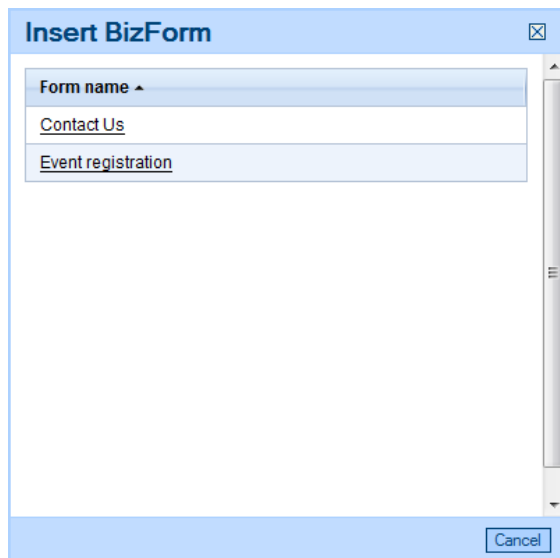
You can find more details in chapter [Localization Expressions](#).

8.8.3 Displaying form on the website

In order to display the BizForm on the website, you need to use one of the following options:

- place the BizForm **into WYWIWYG editor** content using the Insert BizForm button
- place the BizForm **into any editable text** using the macro in format `%%control: BizFormControl? BizFormName%%` where BizFormName is the code name of the form
- place the **BizForm web part** and set its Form name property

We will use the first option now. Go to **CMS Desk -> Content** and edit some page with editable regions. Click **Insert BizForm** button in the editor toolbar. The Insert BizForm dialog opens. Click **Contact Us** to insert the form into the text:



The following code will be pasted to the region:

```
%%control: BizFormControl?ContactUs%%
```


Click **Save** and click **Live site**. You will see the form on the page:

First name:

Last name:

E-mail:

Phone number: () -

Your message:

Enter some values and click the submit button to save it.

8.8.4 Notification and autoresponder e-mails

The BizForms module allows you to send two types of e-mails when a new record is added:

- Notification e-mail to the site administrator
- Autoresponder - a notification e-mail to the person who submitted the new record into the form

When a record is added via the administration interface,

Notification e-mails

You can configure the notification e-mails on the **Notification e-mail** tab in the form properties.

Check the box **Send form data to e-mail** and enter the following values:

- **From e-mail:** {%Email%} (*this ensures that the e-mail is sent from the person who entered the data and you can easily reply the e-mail*)
- **To e-mail:** webmaster@example.com (*use your e-mail here*)
- **Subject:** Event registration by {%FirstName%} {%LastName%}
- **Attach uploaded documents:** Yes
- **Use custom layout:** Yes

Click **Generate table layout** and then click **Save**.

When you submit the form now, you will receive a notification with entered data.

Autoresponder

You can configure the automatic reply on the **Autoresponder** tab in the form properties. First, you need to choose the field that contains the e-mail address where the automatic response should be sent (typically the E-mail field where the visitor enters their e-mail).

Then, you need to enter the sender e-mail and subject and define the body of the e-mail by inserting text and special macros into the text. For example:

Thank you for your registration. Your registration number is \$\$value:EventRegistrationID\$\$ and we will use e-mail address \$\$value:Email\$\$ for further communication.

The macro `$$value:<fieldname>$$` inserts value of the given field into the text.

You can also add attachments that are sent with the message, such as event agenda, white papers, etc.



Inserting dynamic values into e-mail messages

You can make the values of the following fields dynamic:

- From e-mail
- To e-mail
- Subject
- Display text
- Redirect to URL

You only need to use a special expressions in format `{%column_name%}` into the field value, where the *column_name* is the value of the **Column name** property of the particular BizForm filed. When the form is submitted, the expression is automatically resolved and replaced by current form data.

Example:

If you enter the **Display text** value like this:

Dear {%FirstName%}, thank you for your message. We will contact you shortly.

It will be displayed like the following when "Jane" was entered in the **First name** field by the user:

Dear Jane, thank you for your message. We will contact you shortly.

This is also useful if you need to customize the sender address of notification e-mails to site administrators. When the site administrator replies to such e-mail, the reply will be sent to the person who submitted the form instead of sending it to some system e-mail address. All you need to do is to set the **From e-mail** value to e.g. `{%Email%}`.

Macros

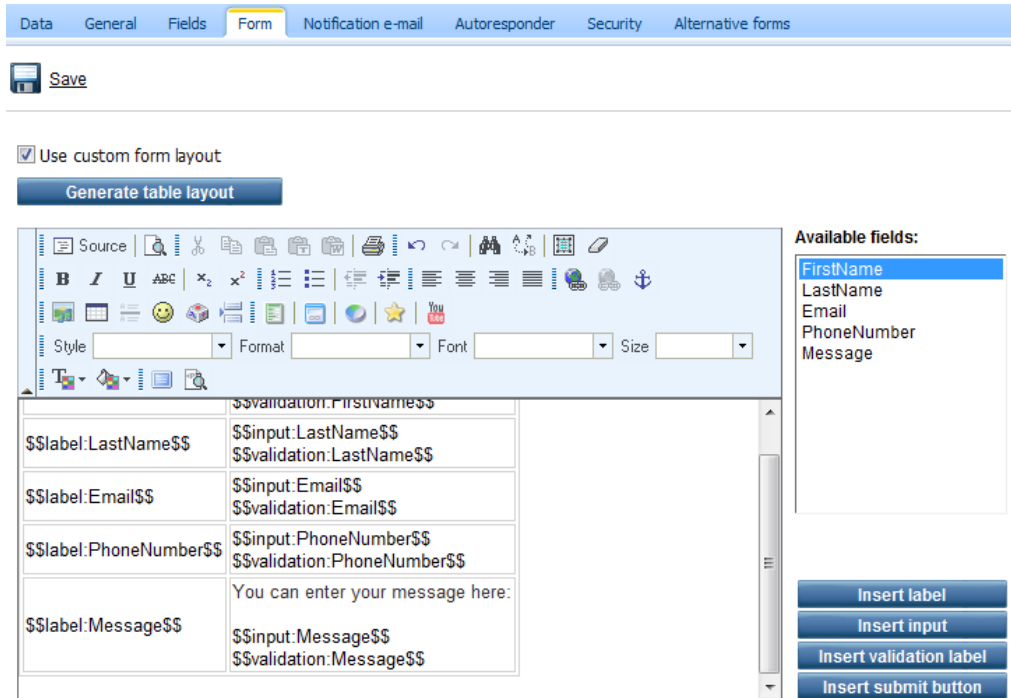
You can also use Context and Custom macros in the **From e-mail**, **To e-mail** and **Subject** fields. Please see [Appendix A - Macro expressions](#) for more details on macros in Kentico CMS.

8.8.5 Defining custom form layout

If you're not satisfied with the standard table layout of the form, the BizForms module allows you to define custom form layout. Go to **CMS Desk -> Tools -> BizForms** and click the **Edit** icon next to the **Contact us** form. Switch to the **Form** tab and check the **Use custom form layout** box.

Click **Generate table layout** to quickly generate the fields into the form. Alternatively, you can use the **Insert label/input/validation label** buttons on the right.

You can for example add the text "You can enter your message here:" at the top of the **Message** field:



Attachments

Add file:

Click **OK** to save the form.

Now the form looks like this:

First name:

Last name:

E-mail:

Phone number: () -

You can enter your message here:





Your message:

Adding Images to the form layout



You can upload an image using the dialog below the editor and then paste the image to the form.

8.8.6 Managing BizForm data

BizForm records (entered data) can be managed on the **Data** tab. The table on this page shows the particular submitted records. You can perform the following actions:

-  **New record** - create a new record
-  **Select displayed fields** - enables you to restrict displayed columns in the table
-  **Export data to Excel** - creates an Excel table (.xls file) representing all records in the BizForm
-  **Export data to Excel 2007** - creates an Excel 2007 table (.xlsx file) representing all records in the BizForm





Each of the records listed in the table has the following options:





- **Edit record** () - allows you to alter the record
- **Delete record** () - allows you to delete the record

BizForm Properties

BizForms > Contact Us

Data | General | Fields | Form | Notification e-mail | Autoresponder | Security | Alternative forms

| Actions | ContactUsID | Form inserted | Form updated | First name | Last name | E-mail | Phone number | Your message |
|---|-------------|------------------------|------------------------|------------|-----------|-----------------------------------|----------------|---------------|
|   | 1 | 12/21/2009 10:24:21 AM | 12/21/2009 10:54:20 AM | Pavel | Knotek | screenshot.master@localhost.local | (111) 222-3333 | Say cheese! |
|   | 2 | 12/21/2009 10:29:41 AM | 12/21/2009 10:54:27 AM | John | Smith | jsmith@localhost.local | (222) 555-8788 | Hi everybody! |

When editing or creating a new record via this administration interface, the BizForm is displayed the same way as on the live site, letting you enter or change the values. You can decide if [notification and autoresponder e-mails](#) will be sent when you save the record:

- **Send notification e-mail** - if enabled, notification e-mail will be sent when the record is saved (according to configuration on the Notification e-mail tab)
- **Send autoresponder e-mail** - if enabled, autoresponder e-mail will be sent when the record is saved (according to configuration on the Autoresponder tab)

Data | General | Fields | Form | Notification e-mail | Autoresponder

Data > New record

Send notification e-mail Send autoresponder e-mail

First name:

Last name:

E-mail:



Phone number:

Your message:

8.8.7 Security

The access to the BizForms module can be managed in **CMS Desk -> Administration -> Permissions**, after you select **Modules -> BizForms** permission matrix. The BizForms module has the following permissions:

- **Create form** - members of the role are allowed to create new BizForms
- **Delete data** - members of the role are allowed to delete existing BizForm records
- **Delete form including data** - members of the role are allowed to delete BizForms including their related records
- **Edit data** - members of the role are allowed to create and edit BizForm records
- **Edit form** - members of the role are allowed to edit BizForm configuration, fields and layout (not the records)
- **Read data** - members of the role are allowed to view BizForm records
- **Read form** - members of the role are allowed to view BizForm configuration, fields and layout (not the records)

 **Permissions** 

Site:

Permission type:

Permission matrix:

| | Create form | Delete data | Delete form including data | Edit data | Edit form | Read data | Read form |
|------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Security for particular forms

You can specify which roles are authorized to read and modify a form and its data on a form level. Open the properties of the given form and switch to the Security tab. Here you can specify which roles are allowed to use this form:

- **All bizform users** - any visitor can enter data into the form
- **Only authenticated users** - only members of roles added to the box will be allowed to add BizForm data

Please note: the role must be granted with permissions for the BizForms module. Then, you can further customize the access to particular BizForms. The fact that the role is granted with access to the given form is not sufficient.

The screenshot shows the 'Security' tab selected in a configuration window. The tab bar includes 'Data', 'General', 'Fields', 'Form', 'Notification e-mail', 'Autoresponder', 'Security', and 'Alternative forms'. Below the tabs, the section 'Allow management of this form to:' contains two radio button options: 'All bizform users' (unselected) and 'Only authorized roles' (selected). A text input field contains the text '_authenticated_'. To the right of the input field are two buttons: 'Add roles' and 'Remove'. At the bottom left of the configuration area is a green 'OK' button.

8.8.8 BizForms API and internals

Database structure

Each BizForm has its own database table. You can find its name in the BizForm Properties dialog. This table contains all fields that you specified. You can modify the data using direct access to the database table (there are no dependencies).

Custom Field Controls

You can create your own field controls as described in chapter [Form controls](#). If you want to make them available in the BizForms field editor, you need to check the box **Show control in BizForms** in the **Form control properties** dialog (Site Manager -> Development -> Form controls) and choose the default data type.

Event Handling

You can run custom actions when a BizForm form is submitted and a record is created, updated or deleted. There are two ways how you can handle the data changes:

1. Handling the BizForm control events

In this case, you place the BizForm control on a user control or web part and specify the **FormName** property to the code name of the required BizForm. Then, you can handle the BizForm events, such as **OnAfterSave**, **OnBeforeValidate**, etc.

In these handlers, you can access form values using the **BizForm.BasicForm.DataRow** property and stop further processing (saving) of the form using the **BizForm.StopProcessing** property. Particular fields, labels and validation error messages can be accessed using properties **BizForm.BasicForm.FieldControls**, **BizForm.BasicForm.FieldLabels** and **BizForm.BasicForm.FieldErrorLabels**.

2. Handling global data events

You can write a custom data handler as described in chapter [Data handler \(CustomDataHandler class\)](#). Such a handler will allow you to run custom code whenever a database record is inserted, updated or deleted. You can use the **dataItem.ClassName** property to check if the record being updated is your BizForm code name (you can find the Form code name in the BizForm Properties dialog).

Managing data using API

The following examples show you how to create, update and delete form data using .NET code:

Creating a new record

[C#]

```
using CMS.FormEngine;
using CMS.SettingsProvider;
using CMS.DataEngine;
using CMS.GlobalHelper;

...

string bizFormName = "TestingSiteContactUs";
string siteName = "CMSTestingSite";

// Read BizForm definition
BizFormInfo bfi = BizFormInfoProvider.GetBizFormInfo(bizFormName,
siteName);

if (bfi != null)
{
    // Read data type definition
    DataClassInfo dci = DataClassInfoProvider.GetDataClass(bfi.
FormClassID);

    if (dci != null)
    {
        GeneralConnection genConn = ConnectionHelper.GetConnection();
        // create a new record in memory (new DataClass object)
        DataClass formRecord = new DataClass(dci.ClassName, genConn);

        // Insert some data
        formRecord.SetValue("FirstName", "Alice");
        formRecord.SetValue("LastName", "Cooper");
        formRecord.SetValue("Email", "alice@email.com");
        formRecord.SetValue("Message", "Hallo world");
        formRecord.SetValue("FormInserted", DateTime.Now);
        formRecord.SetValue("FormUpdated", DateTime.Now);

        // Insert the new record in the database
        formRecord.Insert();

        // Update number of entries in BizFormInfo
        bfi.FormItems++;
        BizFormInfoProvider.SetBizFormInfo(bfi);
    }
}
```

Updating a record

[C#]

```
using CMS.FormEngine;
using CMS.SettingsProvider;
using CMS.DataEngine;
using CMS.GlobalHelper;

...

string bizFormName = "TestingSiteContactUs";
string siteName = "CMSTestingSite";

// Read BizForm definition
BizFormInfo bfi = BizFormInfoProvider.GetBizFormInfo(bizFormName,
siteName);

if (bfi != null)
{
    // Read data type definition
    DataClassInfo dci = DataClassInfoProvider.GetDataClass(bfi.
FormClassID);

    if (dci != null)
    {
        // Get all bizform data
        GeneralConnection genConn = ConnectionHelper.GetConnection();
        DataSet ds = genConn.ExecuteNonQuery(dci.ClassName + ".selectall",
null, null, null);

        if (!DataHelper.DataSourceIsEmpty(ds))
        {
            // Get ID of the first record
            int formRecordID = ValidationHelper.GetInteger(ds.Tables[0].
Rows[0][0], 0);

            // Get the record with ID of the first row record
            DataClass formRecord = new DataClass(dci.ClassName,
formRecordID, genConn);

            if (!formRecord.IsEmpty())
            {
                // Set new field values
                formRecord.SetValue("FirstName", "Bob");
                formRecord.SetValue("LastName", "Marley");
                formRecord.SetValue("Email", "bob@email.com");
                formRecord.SetValue("Message", "Good job:");
                formRecord.SetValue("FormUpdated", DateTime.Now);

                // Save updates in the database
                formRecord.Update();

                lblInfo.Text = "The first record was updated
successfully.";
            }
        }
    }
}
```

```
        }
    }
    else
    {
        lblInfo.Text = "No data found.";
    }
}
}
```

Deleting a record

[C#]

```
using CMS.FormEngine;
using CMS.SettingsProvider;
using CMS.DataEngine;
using CMS.GlobalHelper;

...

string bizFormName = "TestingSiteContactUs";
string siteName = "CMSTestingSite";

// Get BizForm definition
BizFormInfo bfi = BizFormInfoProvider.GetBizFormInfo(bizFormName,
siteName);

if (bfi != null)
{
    // Get data type definition
    DataClassInfo dci = DataClassInfoProvider.GetDataClass(bfi.
FormClassID);
    if (dci != null)
    {
        // Get all bizform data
        GeneralConnection genConn = ConnectionHelper.GetConnection();
        DataSet ds = genConn.ExecuteNonQuery(dci.ClassName + ".selectall",
null, null, null);

        if (!DataHelper.DataSourceIsEmpty(ds))
        {
            // Get ID of the first record
            int formRecordID = ValidationHelper.GetInteger(ds.Tables[0].
Rows[0][0], 0);

            // Get the record with specified ID
            DataClass formRecord = new DataClass(dci.ClassName,
formRecordID, genConn);

            if (!formRecord.IsEmpty())
            {
                // Delete the first record.
            }
        }
    }
}
```

```
        formRecord.Delete();

        // Update number of entries in BizFormInfo
        bfi.FormItems--;
        BizFormInfoProvider.SetBizFormInfo(bfi);

        lblInfo.Text = "The record was deleted successfully.";
    }
    else
    {
        lblInfo.Text = "No data found.";
    }
}
```

8.8.9 Adding custom actions to a BizForm form

If you need to add a custom action that will be executed when the form is validated, inserted or updated, you need to create your own clone of the BizForm web part that will contain custom code. You can find an example in chapter [Modifying the code or design of standard web parts](#).

8.9 Blogs

8.9.1 Overview

The Blogs module allows you to publish a personal or company blog. You can publish multiple blogs on the same site and there can be multiple editors for each blog.

The blog module fully leverages the standard content management engine, so every blog post you create is a standard document that can be displayed on the website, searched, etc. You can also configure permissions and workflow for every blog as you're used to do with other content.

The following figure shows the sample blog in the Corporate Site sample website:

The screenshot displays a corporate website's blog interface. At the top is a navigation menu with links: Home, Services, Products, News, Partners, Company, Blogs (highlighted), Forums, Events, Images, Wiki, and Examples. Below the menu is a breadcrumb trail: Blogs > My blog. The main content area features three blog posts, each with a title, body text, and a footer indicating the post date, author, and comment count.

Blog Post 1:
Title: Nokia 6120
Text: I am very happy to be one of the Nokia 6120 owners. It wasn't hard to make a decision which cell phone will be my next - it is the smallest and lightest smartphone in the world. Cell phones today have gone far from just being a communication device. They are now used for downloading music, video shooting, browsing the net, receiving mails, and many more. The Nokia 6120 has been designed to support all that. And for those of you who are interested in installing new applications to your cell phones I have a good news, Nokia 6120 is a smartphone, so you can do that really easily.
Footer: Posted: 8/15/2007 12:55:04 PM by Global Administrator | with 1 comments

Blog Post 2:
Title: Symbian S60 3rd released
Text: Symbian series 60 3rd Edition operating system has been released. It is much more flexible system than its previous versions. The core of the system was completely rebuild so it takes a lot of changes to Symbian users. Unfortunately, applications for your previous versions of the Symbian operating system are not compatible with the new one.
Footer: Posted: 8/10/2007 12:58:04 PM by Global Administrator | with 1 comments

Blog Post 3:
Title: Which cell phone are you using?
Text: Today I decided to make a discussion about your cell phones. I would like to know which cell phones my blog readers are using. It will help me to choose post themes for you in the future. So go for it.
Footer: Posted: 7/22/2007 12:50:04 PM by Global Administrator | with 0 comments

Sidebar:

- Title:** This is my new blog with the latest news in the cell phones. I hope you will find valuable information here.
- Tags:** cell phones, Nokia, poll, software, Symbian
- My favourite websites:** www.Nokia.com
- Recent posts:** Nokia 6120, Symbian S60 3rd released, Which cell phone are you using?
- Syndication:** RSS
- Post archive:** August 2007 (2), July 2007 (1)

As you can see, the blog displays the list of blog posts and some additional information on the right, such as blog description, RSS feed link, recent posts, favorite websites and archive. When you click some particular blog post, you can see the text plus the Comments section that allows you to read and add comments to the blog post:

[Home](#) | [Services](#) | [Products](#) | [News](#) | [Partners](#) | [Company](#) | [Blogs](#) | [Forums](#) | [Events](#) | [Images](#) | [Wiki](#) | [Examples](#)

[Blogs](#) > [My blog](#) > [August 2007](#) > Nokia 6120

Nokia 6120

I am very happy to be one of the Nokia 6120 owners. It wasn't hard to make a decision which cell phone will be my next - it is the smallest and lightest smartphone in the world. Cell phones today have gone far from just being a communication device. They are now used for downloading music, video shooting, browsing the net, receiving mails, and many more. The Nokia 6120 has been designed to support all that. And for those of you who are interested in installing new applications to your cell phones I have a good news, Nokia 6120 is a smartphone, so you can do that really easily.

Posted: 8/15/2007 12:55:04 PM by **Global Administrator** | with [1 comments](#)
 Filed under: [Symbian](#), [Nokia](#)

Trackback URL: http://localhost/KenticoCMS_0421/trackback/0f6a3521-ea58-4fdb-8680-e02e56b31c74/Nokia-6120.aspx

Comments

[Global Administrator](#)
 This is test comment.
 12/13/2007 10:28:17 AM

[Report abuse](#)

Leave comment [Subscribe](#)

Name:

E-mail:

Your URL:

Comments:

Subscribe me to this blog post

Enter security code: **653314**

Title

This is my new blog with the latest news in the cell phones. I hope you will find valuable information here.

Tags

[cell phones](#) [Nokia](#) [poll](#) [software](#)
Symbian


My favourite websites

[www.Nokia.com](#)

Recent posts

[Nokia 6120](#)
[Symbian S60 3rd released](#)
[Which cell phone are you using?](#)

Syndication

 [RSS](#)

Post archive

[August 2007 \(2\)](#)
[July 2007 \(1\)](#)

8.9.2 Adding a blog to your site

In this example, you will learn how to create a new blog in the sample Corporate Site, under the News section.

Sign in to **CMS Desk**. In the **Content** section, click **/News** and click **New**. Choose to create a new **Blog**. Enter the following details:

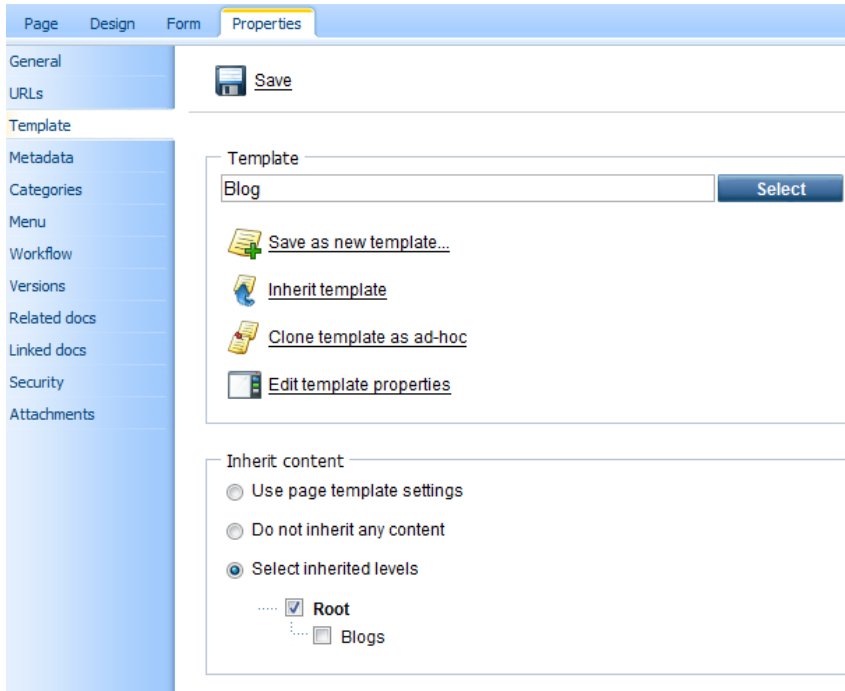
- **Blog name:** My new blog
- **Blog description:** This is my new blog on web design.
- **Side column text:** I like these websites...
- **Moderate comments:** yes
- **Open comments for:** Always
- **Send comments to e-mail:** *enter your e-mail address*
- **Allow anonymous comments:** yes
- **Use CAPTCHA for comments:** yes (this will require a verification of the number displayed in the picture to avoid spam posts)

The following fields are also available, but you don't need to enter them for the purpose of this example:

- **Blog teaser:** blog teaser image displayed in blog lists
- **Require e-mail address:** indicates if e-mail address is required when adding a blog comment
- **Unsubscription URL:** URL of a page with the Blog post unsubscription web part, which handles blog post unsubscription requests from links contained in blog post notifications
- **Enable subscriptions:** indicates if subscriptions to notifications about new blog comments are enabled
- **Blog moderators:** users who can moderate blog post comments
- **Moderate comments:** indicates if blog comments are moderated
- **Enable trackbacks:** indicates if the trackbacking feature is enabled
- **Publish from:** date and time from when the blog will be published on the site
- **Publish to:** date and time until when the blog will be published on the site

Click **Save**. You have just created your blog. However, there are two additional steps you need to do:

1. Go to the **Properties -> Template** dialog and click **Template properties**. Set the **Inherit content** value to **Select inherited levels** and choose only the **Root**. It ensures that the page displays the master page and then your blog content.



Click **OK**.

2. Choose the **root** in the content tree and switch to the **Design** tab. Configure the **menuMain** web part and set the **Document types** value to this:

```
cms.menuitem;cms.blog
```

Click **OK**. It ensures that the main menu contains a link to your blog.

Sign out and choose the **My new blog** item in the main menu (under the News section). You will see an empty blog like this:

The screenshot shows a web application interface. At the top is a dark navigation bar with the following items: Home, Services, Products, News (highlighted in orange), Partners, Company, Blogs, Forums, Events, Images, Wiki, and Examples. Below the navigation bar is a breadcrumb trail: [News](#) > My new blog. The main content area is divided into several sections on the right side:

- Title:** This is my new blog.
- Tags:** [cell phones](#) [Nokia](#) [poll](#) [software](#) **Symbian**
- My favourite websites:** This is my brand new blog.
- Recent posts:** No recent posts
- Syndication:** [RSS](#)
- Post archive:** No data in archive

At the bottom right of the page, there is a footer with links for [Site map](#) and [Disclaimer](#).

Adding a blog on the live site

You can enable users to create blogs directly on the live site by adding the **New blog** web part to your site. Like this, users can only add the name and description of their new blog. All other blog properties, listed earlier in this article, will be taken from the web part's properties.

Blog name:

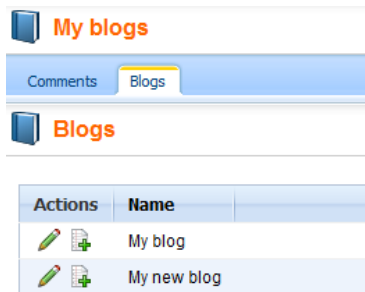
Blog description:

8.9.3 Adding posts to your blog

You can add new posts to your blog in two ways:

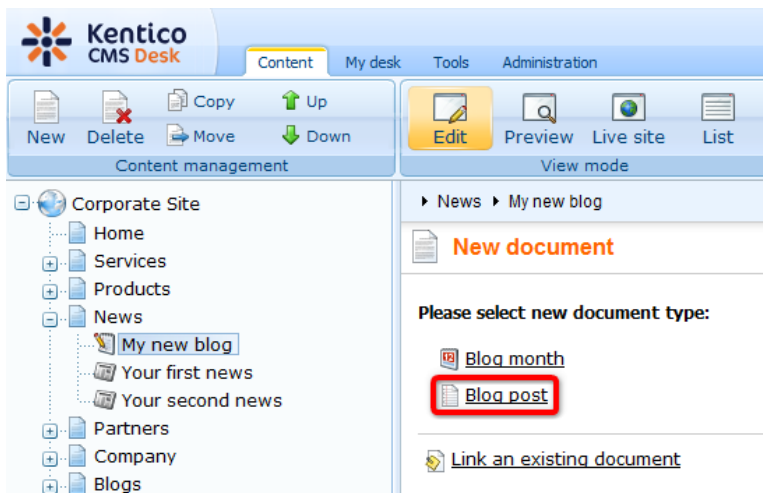
1. From the CMS Desk -> My Desk -> My blogs dialog

This dialog displays the list of blogs you are owner of (you can set the owner in the **Properties -> General** dialog of the blog document). Here you can click the **New post** icon and you will be displayed with form for inserting the post:



2. In the Content section

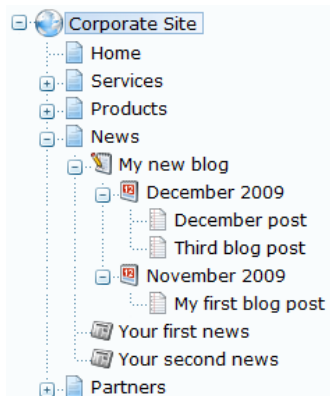
Choose the **Content** tab in **CMS Desk**, locate the blog main document and then click **New**. Choose to create a new **Blog post**:



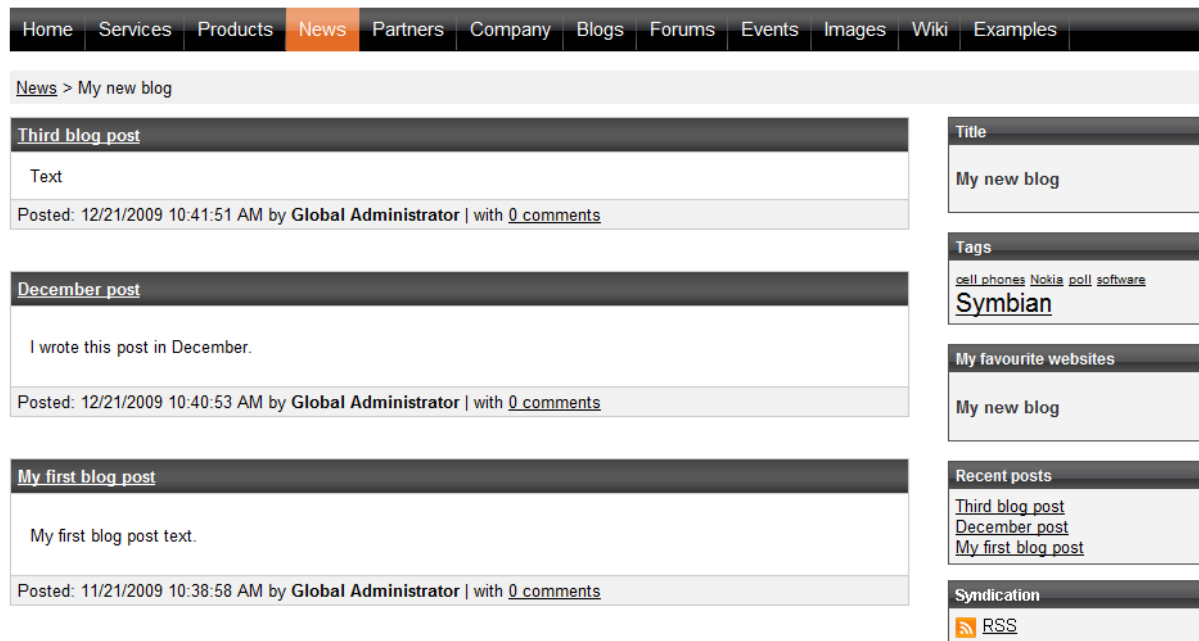
Enter the post content and click **Save**.

Document structure

In both cases, the blog post will be automatically saved under the appropriate month. If the month is not created yet, it's created automatically, so you do not need to care about creating a month. The months allows you to easily organize the blog posts. The structure of Blog, Blog month and Blog post documents looks like this:



When you sign out and go to your blog, you will see a page like this:



8.9.4 Moderating comments

The comments can be moderated in tree ways:

1. In the My Desk -> My blogs section

In this section, currently logged-in users can manage comments at all their own blogs. Neither the **Read** nor **Manage comments** permissions for the Blogs module are necessary for the user to perform blog comments management in this section.

Comments can be approved by clicking the **Approve** (✓) icon. More comments can be approved at once when you select them by the check-boxes, choose the **Approve** action in the **Selected items** drop-down list and click **OK**.

The screenshot shows the Kentico CMS Desk interface. The top navigation bar includes 'Content', 'My desk', 'Tools', and 'Administration'. The 'My desk' sidebar is visible on the left. The main content area is titled 'My blogs' and shows the 'Comments' tab. The 'Comments' section displays a list of comments for the blog 'Abi's european trip'. The comments are from Kelly and Henry. The interface includes a sidebar with 'My desk' options, a top navigation bar, and a table of comments with columns for Actions, User name, Comment text, Approved, Is SPAM, and Inserted.

| Actions | User name | Comment text | Approved | Is SPAM | Inserted |
|---------|--------------------------------|---------------------------------|----------|---------|------------------------|
| | <input type="checkbox"/> Kelly | Your trip must have been great! | No | No | 12/21/2009 11:02:20 AM |
| | <input type="checkbox"/> Henry | Too long for me.. | No | No | 12/21/2009 11:02:06 AM |

2. In the CMS Desk -> Tools -> Blogs section

In this section, management of blog comments on the site is possible based on the permissions:

Global administrators and users with the **Manage comments** permission for the Blogs module can manage comments of all blogs on the current site. Blog **moderators** and blog **owners** can manage comments of their own blogs and blogs for that they are moderators. These permissions are reflected by the **Blog** drop-down list, which displays only those blogs where comments can be managed by the current user.

Comments can be approved by clicking the **Approve** (✓) icon. More comments can be approved at once when you select them by the check-boxes, choose the **Approve** action in the **Selected items** drop-down list and click **OK**.

The screenshot shows the Kentico CMS Desk interface. On the left is a navigation menu with 'Tools' expanded, listing various administrative functions. The main area is titled 'Blogs' and contains a 'Comments' section. Above the table are filter dropdowns for 'Blog', 'User name', 'Text', 'Is approved', and 'Is SPAM', along with a 'Show' button. Below the filters is a table of comments with columns for 'Actions', 'User name', 'Comment text', 'Approved', 'Is SPAM', and 'Inserted'. At the bottom, there is a 'Selected items' dropdown and an 'OK' button.

| Actions | User name | Comment text | Approved | Is SPAM | Inserted |
|---------|-----------|---------------------------------|----------|---------|------------------------|
| | Kelly | Your trip must have been great! | No | No | 12/21/2009 11:02:20 AM |
| | Henry | Too long for me.. | No | No | 12/21/2009 11:02:06 AM |

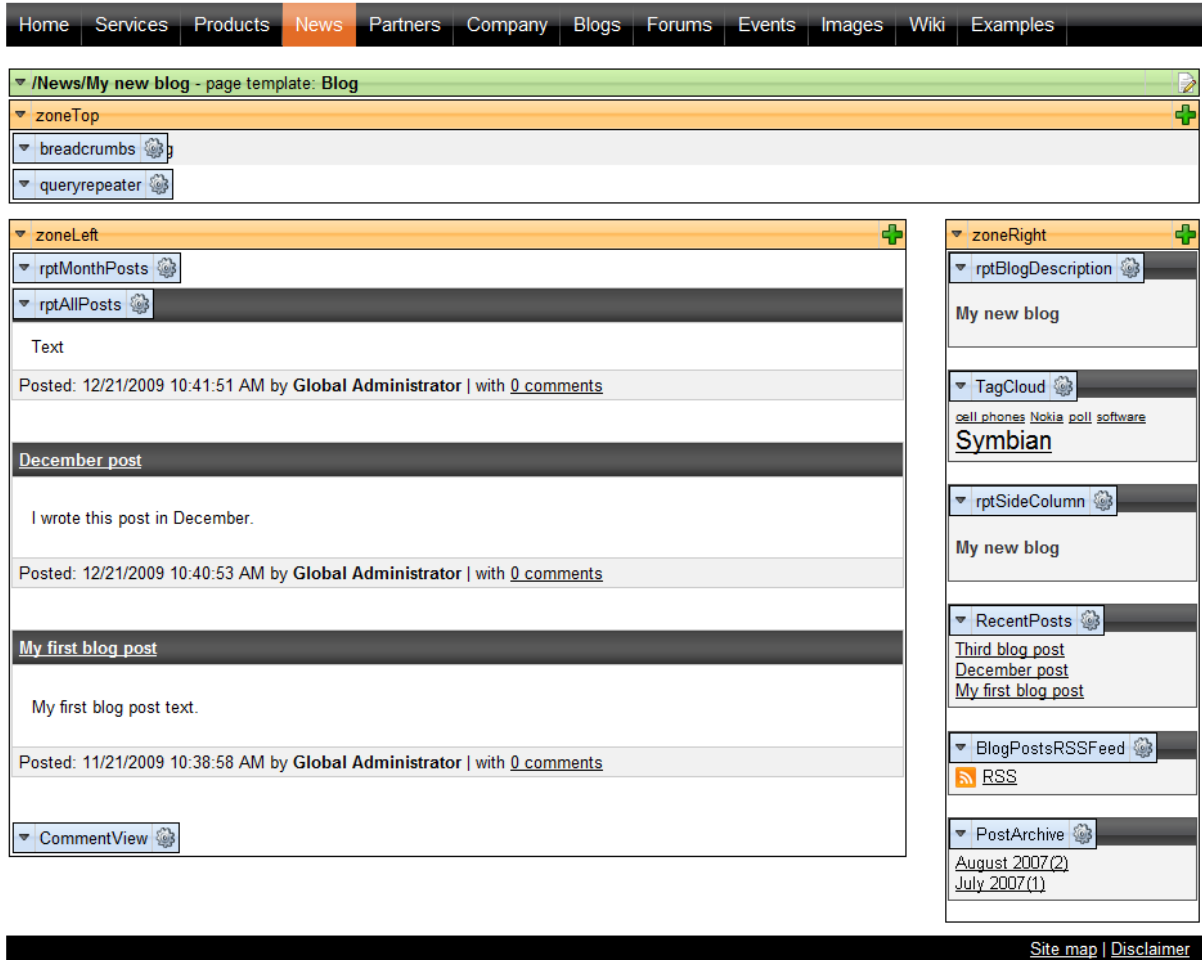
3. On-site management

When you're signed in and are entitled to manage the comments for the given blog, you are displayed with **Edit**, **Delete**, **Approve** and **Reject** buttons. These buttons are displayed to **blog owner**, **moderators** of the current blog, **global administrators** and users with the **Manage comments** permissions for the Blogs module.

The screenshot shows the on-site management view for comments. It displays two comment entries. The first entry is by 'Henry' with the text 'Too long for me..' and a timestamp of '12/21/2009 11:02:06 AM'. The second entry is by 'Kelly' with the text 'Your trip must have been great!' and a timestamp of '12/21/2009 11:02:20 AM'. For each entry, there are action buttons: 'Edit', 'Delete', 'Approve', and 'Report abuse'. In the first entry, 'Approve' is highlighted with a red box. In the second entry, 'Reject' is highlighted with a red box.

8.9.5 Blog layout and design

You can configure the blog layout and design by changing the page template of the **blog** document. Locate your blog in the **CMS Desk -> Content** section and choose the Design tab. You will see a page like this:



The blog is displayed using the **Blog page template**. The web parts ensure displaying of the blog content, comments and boxes in the right-hand column.

There are two repeaters to display the posts:

- **rptMonthPosts** - this repeater is used to display posts in the given month
- **rptAllPosts** - this repeater is used to display the latest N posts when the blog is displayed without selecting a particular month

If you need to modify the layout of the blog posts, you need to modify the transformations. By default, the following transformations are used:

- **cms.blog.PostPreview** - the view in the list of posts
- **cms.blogpost.Default** - the detailed view

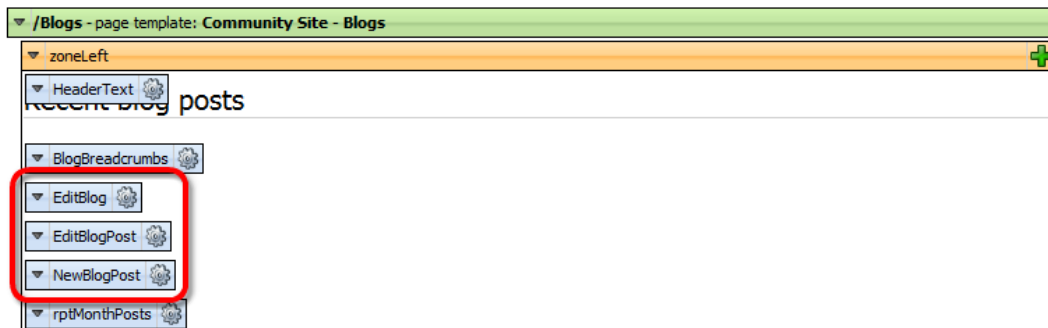
8.9.6 On-site management via User contributions

You can enable users to perform the following tasks using the [User contributions](#) module web parts:

- **Edit blog properties**
- **Edit or delete blog posts**
- **Add new blog posts**

A live example of this can be found on the sample **Community Starter site**, on the **Blogs** title page. If you go to **CMS Desk's Design** tab and view the page, you will see the following web parts, which enable the above mentioned functionalities:

- **EditBlog** - Edit contribution web part set up for enabling blog properties editing
- **EditBlogPost** - Edit contribution web part set up for enabling blog post editing
- **NewBlogPost** - Contribution list web part set up for enabling adding of blog posts



These web parts are inherited by the underlying pages, which means they will be displayed when a blog, resp. blog post is displayed. The following sections explain how to enable users to perform these tasks on the live site.

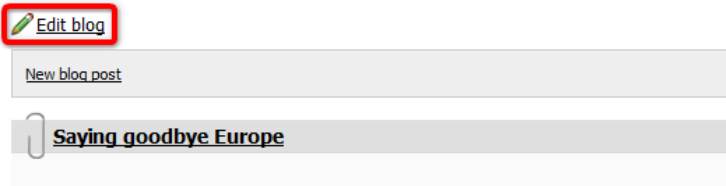
Edit blog properties

1. Create an **alternative form** for the **Blog** document type, which will contain the fields that you want to let users modify. If you are not familiar with the Alternative forms concept, please refer to the [Alternative forms](#) chapter first.
2. Add the **Edit contribution** web part to the blogs section title page and set its following properties:

- **Show for document types** - CMS.Blog
- **Alternative form name** - code name of the alternative form created in step 1
- **Edit button label** - Edit blog
- **Allow editing by users** - Document owner; this is the setting that makes the most sense as blog properties should be edited only by the blog's owner

If you go to the live site and display some blog placed under the blogs section title page, you should see the **Edit blog** link as highlighted in the screenshot below. After clicking the link, the alternative form will be displayed, letting blog owners edit the properties of the blog.

Abi's european trip



Add new blog posts

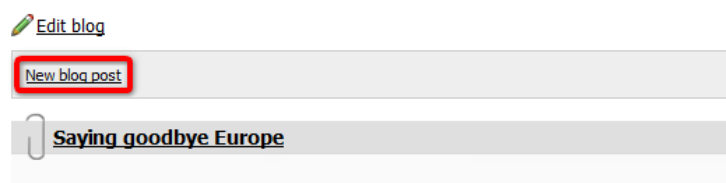
1. Create an **alternative form** for the **Blog post** document type, which will contain the fields that you want to let users to specify when creating the blog post. If you are not familiar with the Alternative forms concept, please refer to the [Alternative forms](#) chapter first.

2. Add the **Contributions list** web part to the blogs section title page. You only need to set the following properties, as the web part will not be used for displaying blog posts, but only for their inserting.

- **Show for document types** - CMS.Blog
- **Allowed new document types** - CMS.BlogPost
- **Alternative form name** - code name of the alternative form created in step 1
- **New item button label** - New blog post
- **Allow insert** - enable
- **Allow editing by users** - Document owner; this is the setting that makes the most sense as blog posts should be edited only by the blog's owner

If you go to the live site and display some blog placed under the blogs section title page, you should see the **New blog post** link as highlighted in the screenshot below. After clicking the link, the alternative form will be displayed, letting blog owners add new blog posts directly from the live site.

Abi's european trip



Edit or delete blog posts

1. Create an **alternative form** for the **Blog post** document type, which will contain the fields that you want to let users modify. If you are not familiar with the Alternative forms concept, please refer to the [Alternative forms](#) chapter first.

2. Add the **Edit contribution** web part to the blogs section title page and set its following properties:

- **Show for document types** - CMS.BlogPost
- **Alternative form name** - code name of the alternative form created in step 1
- **Edit button label** - Edit
- **Allow delete** - enable
- **Allow editing by users** - Document owner; this is the setting that makes the most sense as blog posts should be edited only by the blog's owner

If you go to the live site and display some blog post placed under the blogs section title page, you should see the **Edit** and **Delete** links as highlighted in the screenshot below. After clicking the **Edit** link, the alternative form will be displayed, letting blog owners edit the blog post. Using the **Delete** link, they can delete the blog post.

Abi's european trip > July 2008

 [Edit](#)  [Delete](#)



Saying goodbye Europe

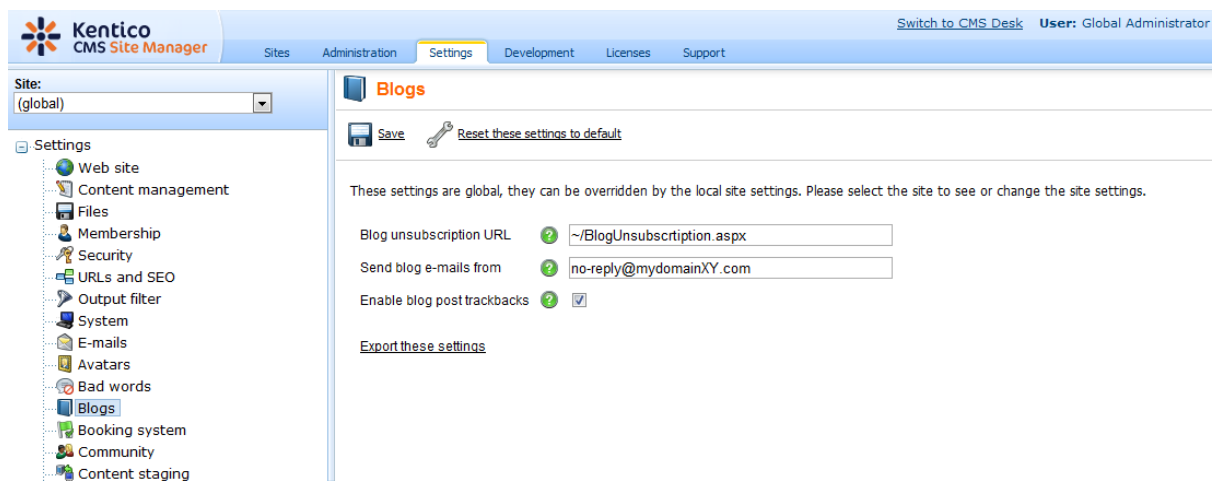


Paris, our final destination. Bec
all gone. I have a friend here, s
to look at pictures we've take

8.9.7 Settings

Settings of the Blogs module can be done in **Site Manager -> Settings -> Blogs**. The following settings are available:

- **Blog unsubscription URL** - URL of a page on that the **Blog post unsubscription** web part is placed; this is a special web part used for handling unsubscriptions from receiving notifications about new blog posts
- **Send blog e-mails from** - e-mail address that will be used as the Sender ('From') address of notification e-mails
- **Enable blog post trackbacks** - If checked, specified blog posts are pinged after the new blog post is saved; turn off this setting if you are creating your site on the production server to avoid creating trackbacks to your production server



The screenshot displays the Kentico CMS Site Manager interface. The top navigation bar includes the Kentico logo, "CMS Site Manager", and tabs for "Sites", "Administration", "Settings", "Development", "Licenses", and "Support". The "Settings" tab is active. On the left, a "Site:" dropdown menu shows "(global)". Below it is a tree view of settings categories, with "Blogs" selected. The main content area is titled "Blogs" and contains a "Save" button and a "Reset these settings to default" link. A message states: "These settings are global, they can be overridden by the local site settings. Please select the site to see or change the site settings." The settings are as follows:


| | | |
|-----------------------------|---|--|
| Blog unsubscription URL | ? | <input type="text" value="~/BlogUnsubscription.aspx"/> |
| Send blog e-mails from | ? | <input type="text" value="no-reply@mydomainXY.com"/> |
| Enable blog post trackbacks | ? | <input checked="" type="checkbox"/> |

Below the settings is a link: [Export these settings](#)

8.9.8 Security

The Blogs module leverages the standard security used for all documents, as blogs are actually documents in the content tree. The Blogs module also has the following permissions in **Site Manager - > Administration -> Permissions**:

- **Manage comments** - allows members of the role to manage blog post comments
- **Read** - allows members of the role to view blog posts and blog post comments via the administration interface

 **Permissions**

Site: ▼

Permission type: ▼

Permission matrix: ▼

| | Manage comments | Read |
|------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> | <input type="checkbox"/> |

To manage blog posts, you need to be one of the following:

- global administrator
- owner of the blog
- blog moderator
- granted with the **Manage comments** permission for the **Blogs** module in the **Administration -> Permissions** dialog

The blogs in the **My Desk -> My blogs** dialog are displayed only to the blog document owner.

8.9.9 Managing blogs using Kentico CMS API

Since the blog posts are standard Kentico CMS documents, you can create, modify, read and delete them using standard API for documents. You can find more details and examples in chapter [Content management internals](#) and the subsequent chapters.

The following examples show how you can work with comments using the API:

Adding a new comment

[C#]

```
using CMS.CMSHelper;
using CMS.GlobalHelper;
using CMS.TreeEngine;
using CMS.SiteProvider;
using CMS.Blogs;

...

// Use a valid alias path of a testing post
string postAlias = "/TestingBlog/October-2007/TestingPost";

// Prepare the TreeProvider (it must be initialized with user
information when editing
// document structure)
UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
TreeProvider tree = new TreeProvider(ui);

CMS.TreeEngine.TreeNode postNode = tree.SelectSingleNode(CMSContext.
CurrentSiteName,
    postAlias, TreeProvider.ALL_CULTURES, true, null, false);
if (postNode != null)
{
    // Add new comment to the post
    BlogCommentInfo commentObj = new BlogCommentInfo();
    commentObj.CommentDate = DateTime.Now;
    commentObj.CommentPostDocumentID = postNode.DocumentID;
    commentObj.CommentText = "Some comment text";
    commentObj.CommentUserID = ui.UserID;
    commentObj.CommentUserName = (ui.UserNickName != "") ? ui.
UserNickName : ui.FullName;

    // Save comment
    BlogCommentInfoProvider.SetBlogCommentInfo(commentObj);
}
```

Editing an existing comment

[C#]

```
using CMS.CMSHelper;
using CMS.GlobalHelper;
using CMS.TreeEngine;
using CMS.SiteProvider;
using CMS.Blogs;

...

// Use a valid alias path of a testing post
string postAlias = "/TestingBlog/October-2007/TestingPost";

// Prepare the TreeProvider (it must be initialized with user
information when editing
// document structure)
UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
TreeProvider tree = new TreeProvider(ui);
DataSet ds = null;

// Get the parent post document
CMS.TreeEngine.TreeNode postNode = tree.SelectSingleNode(CMSContext.
CurrentSiteName, postAlias, TreeProvider.ALL_CULTURES, true, null, false);
if (postNode != null)
{
    // Get all post comments
    ds = BlogCommentInfoProvider.GetPostComments(postNode.DocumentID,
false);

    if (!DataHelper.DataSourceIsEmpty(ds))
    {
        // Set all post comments as approved
        foreach (DataRow dr in ds.Tables[0].Rows)
        {
            // Edit comment and save it
            BlogCommentInfo commentObj = new BlogCommentInfo(dr);
            commentObj.CommentApprovedByUserID = ui.UserID;
            BlogCommentInfoProvider.SetBlogCommentInfo(commentObj);
        }
    }
}
```

Deleting a comment

[C#]

```
using CMS.CMSHelper;
using CMS.GlobalHelper;
using CMS.TreeEngine;
using CMS.SiteProvider;
using CMS.Blogs;

...

// Use a valid alias path of a testing post
string postAlias = "/TestingBlog/October-2007/TestingPost";

// Prepare the TreeProvider (it must be initialized with user information
when editing
// document structure)
UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
TreeProvider tree = new TreeProvider(ui);
DataSet ds = null;

// Get the parent post document
CMS.TreeEngine.TreeNode postNode = tree.SelectSingleNode(CMSContext.
CurrentSiteName,
    postAlias, TreeProvider.ALL_CULTURES, true, null, false);
if (postNode != null)
{
    // Get all post comments
    ds = BlogCommentInfoProvider.GetPostComments(postNode.DocumentID,
false);
    if (!DataHelper.DataSourceIsEmpty(ds))
    {
        // Delete all post comments
        foreach (DataRow dr in ds.Tables[0].Rows)
        {
            // Delete comment
            BlogCommentInfo commentObj = new BlogCommentInfo(dr);
            BlogCommentInfoProvider.DeleteBlogCommentInfo(commentObj.
CommentID);
        }
    }
}
```

8.9.10 Trackbacks

8.9.10.1 Trackbacks overview

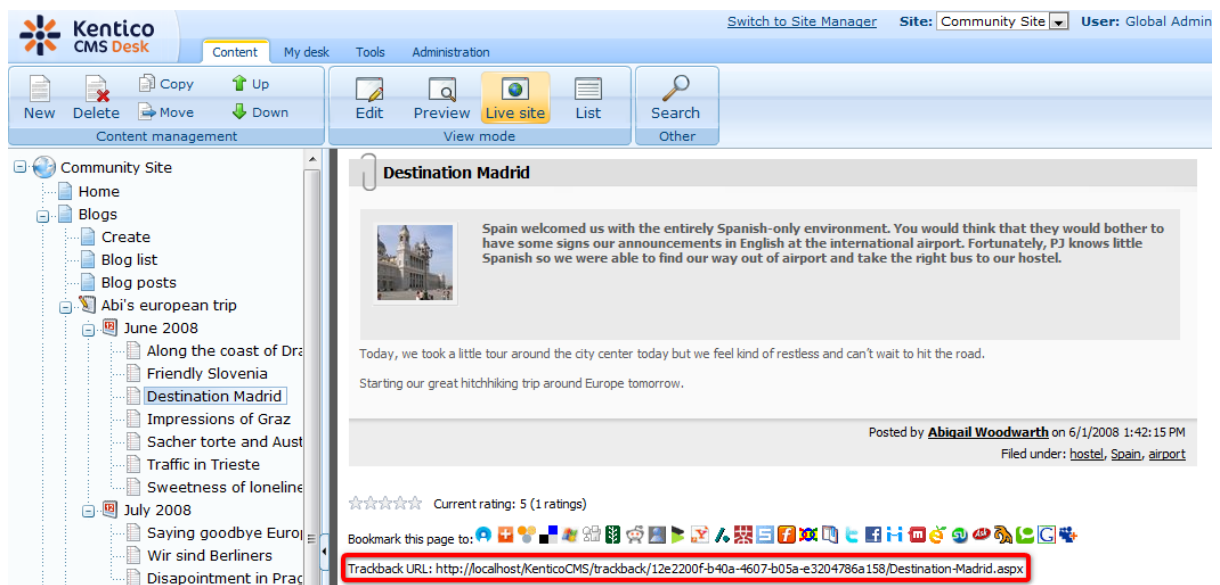
The Trackbacks feature allows sending of blog post links to other blogs when a new blog post is created. The link is typically, but not always, added as a blog comment on in the target blog, as implemented in Kentico CMS. This can be performed not only within the same site, but also to completely different sites created not only with Kentico CMS.

Trackbacks are typically used to let readers of a topic-related blog posts know about your new blog post. You can find detailed information on trackbacks on the following Wikipedia page: <http://en.wikipedia.org/wiki/Trackback>

Read [here](#) to learn how to enable trackbacks on your site.

How it works

1. There is a Trackback URL published below the blog post. These URLs can be found on various blogs at sites developed not only with Kentico CMS.




2. When users are creating a new blog post, they can add such URLs into the **Send trackbacks to** field. More than one trackback URLs can be entered, each on a new line.

The screenshot shows the 'Send trackbacks to' field in the Kentico CMS 5.5 editor. The field is highlighted with a red rectangular border and contains the following URL: `http://localhost/KenticoCMS/trackback/12e2200f-b40a-4607-b05a-e3204786a158/Destination-Madrid.aspx`. Below the field, there is a small instruction: *Enter single URL on each line*. The rest of the editor interface is visible, including the breadcrumb 'Blogs > Abi's european trip', a toolbar with 'Save', 'Save and create another', and 'Spell check' buttons, a large 'Post text' text area, a 'Post teaser' field with an 'Upload file' button, an 'Allow comments' checkbox which is checked, a 'Tags' field with a 'Select' button and the instruction *Enter tags separated with comma. Example: dogs, cats*, and 'Publish from' and 'Publish to' fields, each with a 'Now' button.

3. When the blog post is submitted, trackback ping is sent to the trackback URLs. If everything is configured correctly at the other blogs, a blog comment is added with the blog post link, title and summary, as you can see in the screenshot below.

Destination Madrid




Spain welcomed us with the entirely Spanish-only environment. You would think that they would bother to have some signs our announcements in English at the international airport. Fortunately, PJ knows little Spanish so we were able to find our way out of airport and take the right bus to our hostel.

Today, we took a little tour around the city center today but we feel kind of restless and can't wait to hit the road.
Starting our great hitchhiking trip around Europe tomorrow.

Posted by **Abigail Woodwarth** on 6/1/2008 1:42:15 PM
Filed under: [hostel](#), [Spain](#), [airport](#)

☆☆☆☆☆ Current rating: 5 (1 ratings)

Bookmark this page to: 

Trackback URL: <http://localhost/KenticoCMS/trackback/12e2200f-b40a-4607-b05a-e3204786a158/Destination-Madrid.aspx>

Comments

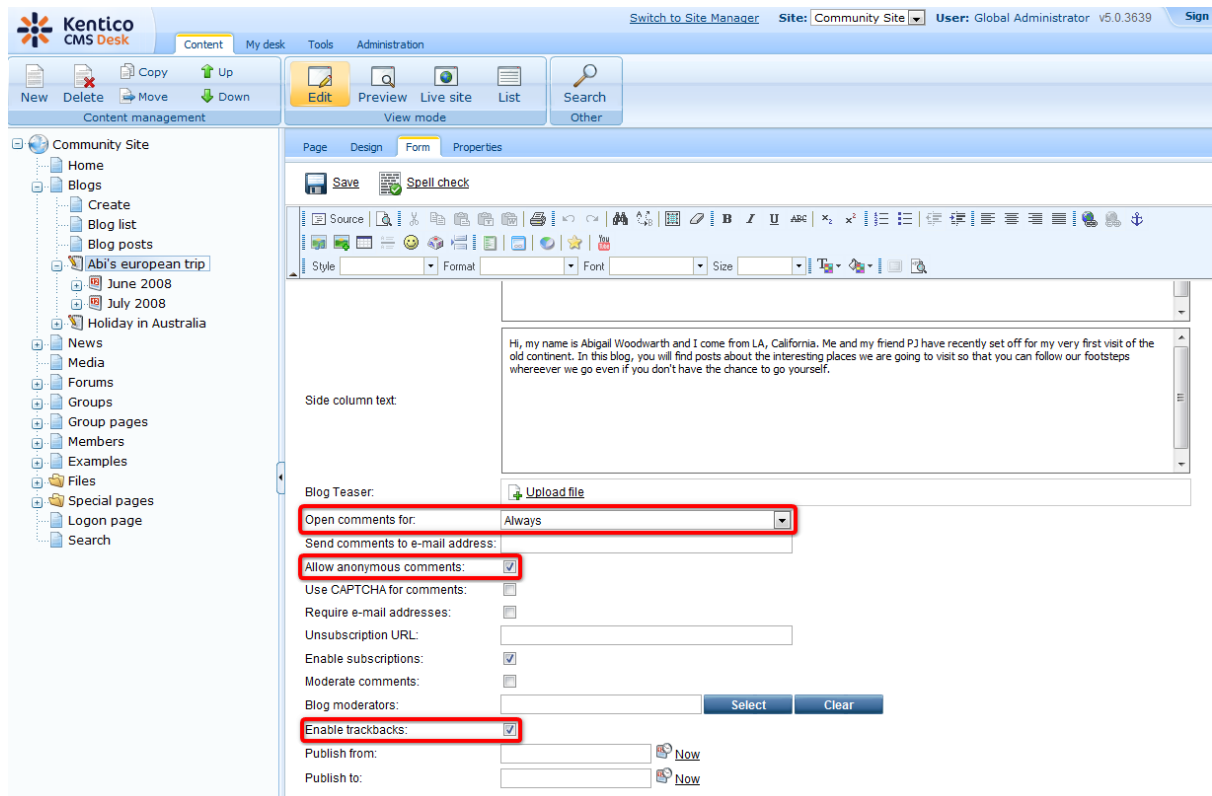
Abi's european trip - New post
Pingback from Abi's european trip - New post.
New blog post summary
12/21/2009 11:40:47 AM

[Edit](#) [Delete](#) [Approve](#) [Report abuse](#)

8.9.10.2 Enabling trackbacks

For the trackbacks to be functional in a particular blog, you need to enable the following options on the blog's **Form** tab:

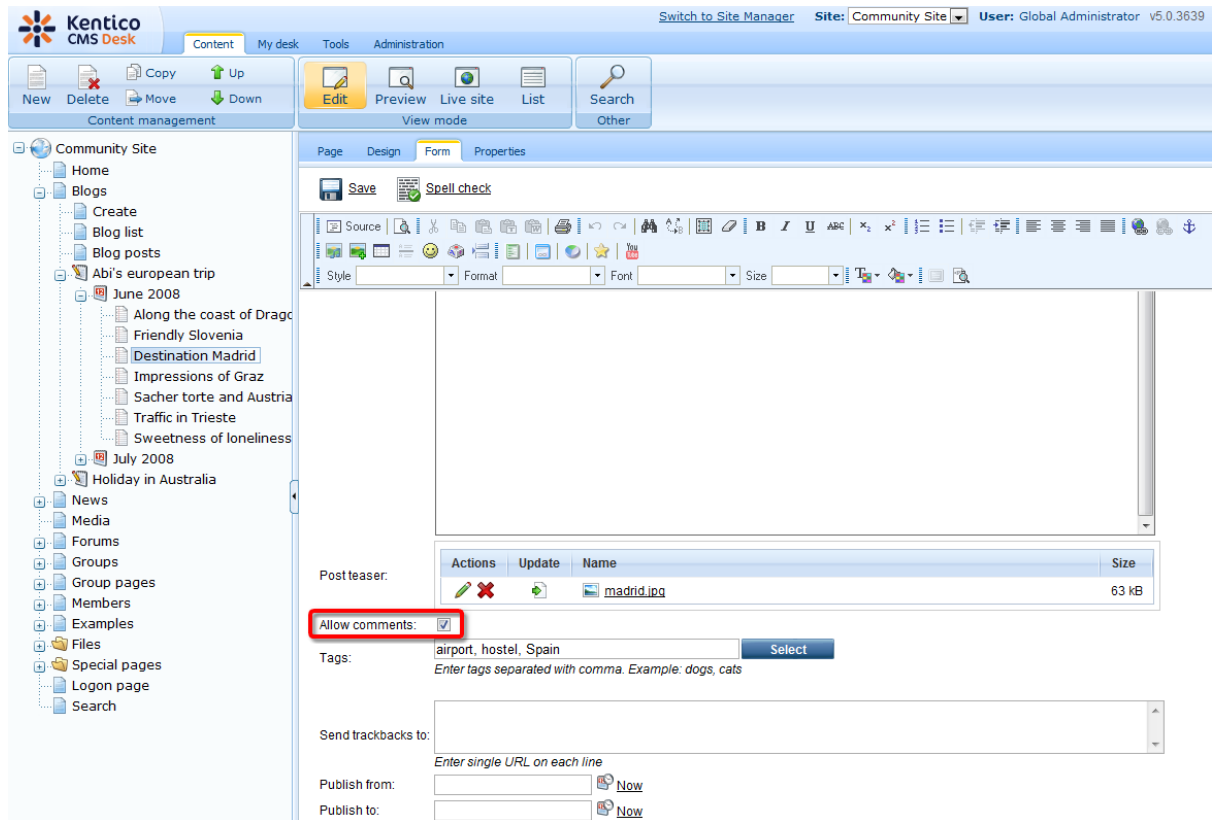
- **Enable trackbacks** - this option enables displaying of the trackback URL with each blog post and inserting of trackbacks as blog comments
- **Allow anonymous comments** - trackback comments are in fact anonymous comments, so this option needs to be enabled for the comments to be inserted
- **Open comments for** - this option defines how long after the insertion of the blog post will inserting of blog comments be possible; trackbacks can also be inserted only within this period



The screenshot displays the Kentico CMS 5.5 Developer's Guide interface. The top navigation bar includes the Kentico CMS Desk logo, a "Switch to Site Manager" link, the current site name "Community Site", the user "Global Administrator", and the version "v5.0.3639". The main interface is divided into several sections:

- Content management:** Includes buttons for "New", "Delete", "Move", "Copy", "Up", "Down", "Edit", "Preview", "Live site", "List", and "Search".
- Page Design Form Properties:** The "Form" tab is active, showing a "Save" button and a "Spell check" icon.
- Blog Teaser:** A text area containing the text: "Hi, my name is Abigail Woodwarth and I come from LA, California. Me and my friend PJ have recently set off for my very first visit of the old continent. In this blog, you will find posts about the interesting places we are going to visit so that you can follow our footsteps wherever we go even if you don't have the chance to go yourself."
- Form Configuration:** A list of settings for the blog post, with several options highlighted by red boxes:
 - Open comments for:** A dropdown menu set to "Always".
 - Send comments to e-mail address:** An empty text input field.
 - Allow anonymous comments:** A checked checkbox.
 - Use CAPTCHA for comments:** An unchecked checkbox.
 - Require e-mail addresses:** An unchecked checkbox.
 - Unsubscription URL:** An empty text input field.
 - Enable subscriptions:** A checked checkbox.
 - Moderate comments:** An unchecked checkbox.
 - Blog moderators:** An empty text input field with "Select" and "Clear" buttons.
 - Enable trackbacks:** A checked checkbox.
 - Publish from:** An empty text input field with a "Now" button.
 - Publish to:** An empty text input field with a "Now" button.

The **Allow comments** option must also be enabled on the pinned blog post's **Form** tab so that the comment can be inserted.



8.9.11 Blog comments notifications

8.9.11.1 Who can be notified

When a new blog comment is added, notification e-mails can be sent to:

- **Blog owners**
- **Blog moderators**
- **Subscribers**

The text below explains to whom are the notification e-mails sent under specific conditions:

New comment

1. has been added by the blog owner, blog moderator, user with the Manage permission or global administrator

- the comment is marked as APPROVED
- the e-mail is sent to: the blog owner (if their e-mail address is set in blog properties) and the subscribers

2. has been added by anybody else

a) the blog is moderated

- the comment is marked as NOT APPROVED
- the e-mail is sent to: the blog owner (if their e-mail address is set in blog properties) and the moderators

b) the blog is not moderated

- the comment is marked as APPROVED
- the e-mail is sent to: the blog owner (if their e-mail address is set in blog properties) and the subscribers

Comment editing

1. the comment has been switched from NOT APPROVED to APPROVED

- the e-mail is sent to: the subscribers

2. other comment changes

- no e-mails are sent

8.9.11.2 User subscriptions

Users can subscribe to receiving notifications about new blog comments at some blog post. It can be done two ways:

1. Users can subscribe when leaving a comment, by checking the **Subscribe me to this blog post** check box. In this case, notifications will be sent to the e-mail address specified in the **E-mail** field above.

Leave comment [Subscribe](#)

Name: Pavel Knotek

E-mail: pavelk@localhost.local

Your URL:

Comments: Sweet dreams, Kelly... :-)

Subscribe me to this blog post

Enter security code: 997355

2. Users can also subscribe without leaving a comment, by clicking the **Subscribe** link at the top of the Leave comment form.

Leave comment [Subscribe](#)

Name: Pavel Knotek

E-mail: pavelk@localhost.local

This displays a subscription form. By entering the e-mail address to the **Your e-mail** field and clicking the **Subscribe** button, users can subscribe too.

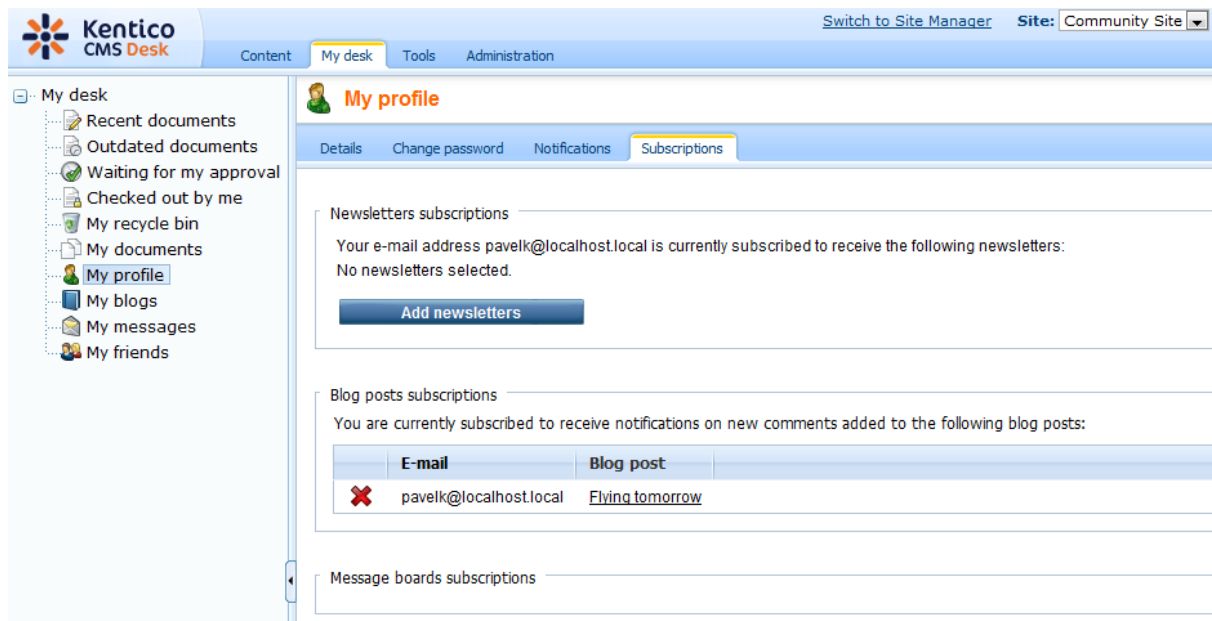
Subscribe [Leave comment](#)

Your e-mail: pavelk@localhost.local

Subscriptions management

Users can view their subscriptions and eventually **unsubscribe** using the **Delete** (✘) icon at the following two places:

1. Users with access to **CMS Desk** can view their subscriptions on the **My Desk -> My profile -> Subscriptions** tab.



The screenshot shows the Kentico CMS Desk interface. The top navigation bar includes the Kentico CMS Desk logo, a 'Switch to Site Manager' link, and a 'Site: Community Site' dropdown. The main navigation tabs are 'Content', 'My desk', 'Tools', and 'Administration'. The left sidebar shows a 'My desk' menu with items like 'Recent documents', 'Outdated documents', 'Waiting for my approval', 'Checked out by me', 'My recycle bin', 'My documents', 'My profile', 'My blogs', 'My messages', and 'My friends'. The 'My profile' page is active, with sub-tabs for 'Details', 'Change password', 'Notifications', and 'Subscriptions'. The 'Subscriptions' tab is selected, showing three sections: 'Newsletters subscriptions', 'Blog posts subscriptions', and 'Message boards subscriptions'. The 'Newsletters subscriptions' section indicates that the user's email address 'pavelk@localhost.local' is subscribed to receive newsletters, but no newsletters are selected, with an 'Add newsletters' button. The 'Blog posts subscriptions' section shows the user is subscribed to receive notifications on new comments for the following blog posts:

| E-mail | Blog post |
|--------------------------|---------------------------------|
| ✘ pavelk@localhost.local | Flying tomorrow |

2. On live site, users can view their subscriptions in the **My account** web part. The **Display subscriptions** property of the web part must be enabled for this to be possible.

Personal settings | Change password | Notifications | Messages | Friends | Subscriptions


Newsletters subscriptions

Your e-mail address pavelk@localhost.local is currently subscribed to receive the following newsletters:
No newsletters selected.

[Add newsletters](#)

Blog posts subscriptions

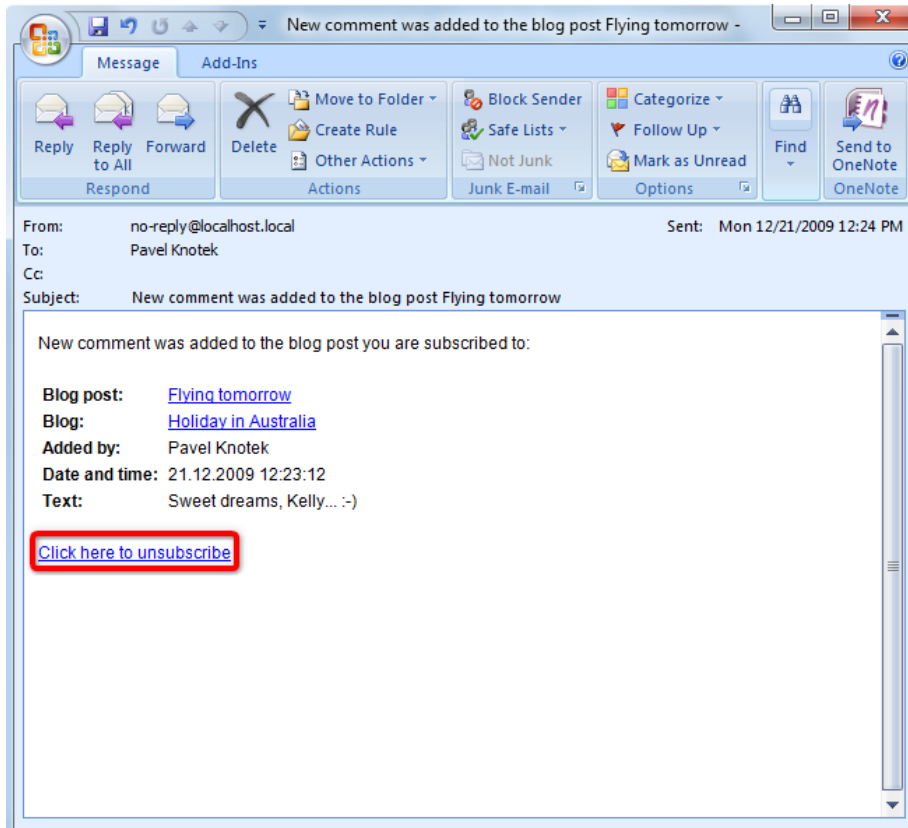
You are currently subscribed to receive notifications on new comments added to the following blog posts:

| | E-mail | Blog post |
|---|------------------------|---------------------------------|
|  | pavelk@localhost.local | Flying tomorrow |

Message boards subscriptions

Unsubscription possibilities

Subscribers can unsubscribe by clicking the unsubscription link, which is present in each notification e-mail.



For this to work, you have to do the following two things:

1. Place the **Blog post unsubscription** web part to some page. It is recommended to create a special page for this purpose, as you can see at *Community site -> Special-pages -> Blog unsubscribe*. You can set only one specific property of the web part - **Confirmation text** - this is the text that will be displayed after successful unsubscription.
2. Set the URL of the page created in step 1 as the **Unsubscription URL** property of the blog. This can be done two ways:
 - In **Site Manager -> Settings -> Blogs**, by settings the **Blog unsubscription URL** property. This is the default value that will be used by default, if no other URL is set.
 - If some different URL is set in the option mentioned above, you can set the value of the **Unsubscription URL** property on the blog's **Form** tab. This value overrides the one set in Site Manager -> Settings -> Blogs.

8.9.11.3 E-mail templates

There are three different e-mail templates that can be used when sending notifications about new blog comments, depending on the recipient of the notification:

- **Blog owners** - e-mails are based on the **Blogs - Notification to blog owner** e-mail template
- **Blog moderators** - e-mails are based on the **Blogs - Notification to blog moderators** e-mail template
- **Subscribers** - e-mails are based on the **Blogs - Notification to blog post subscribers** e-mail template

The following macros can be used in the e-mail templates:

Data macros

- **Blog.XXX** - where XXX represents a column of the CONTENT_Blog table or the CMS_View_Tree_Joined view
- **BlogPost.XXX** - where XXX represents a column of the CONTENT_Blog table or the CMS_View_Tree_Joined view
- **Comment.XXX** - where XXX is a column of the CONTENT_BlogComment table
- **CommentUser.XXX** - where XXX is a column of the CMS_User table
- **CommentUserSettings.XXX** - where XXX is a column of the CMS_UserSettings table

Example: {%CommentUser.Email%}

| | | | | |
|-----------------------|-------------------------|----------|--|------------|
| Macro type: | Item: | | | |
| Data | (all columns) | bloglink | | Insert |
| | (all columns) | | | |
| | (enter expression) | | | |
| New blog post comment | blog | | | approval: |
| | blogpost | | | |
| Blog post: | [url={%comment | | | {%} [/url] |
| Blog: | [url={%BlogPost | | | |
| Added by: | {%CommentUser | | | |
| | commentusersettings | | | |
| Date and time: | {%Comment.CommentDate%} | | | |

Source macros

a) Links

- **BlogPostLink** - blog post link
- **BlogLink** - blog link
- **UnsubscriptionLink** - unsubscription link

b) Others - there macros are present due to backward compatibility purposes

- **UserFullName** - the same result as {%Comment.CommentUserName%}
- **CommentUrl** - the same result as {%Comment.CommentUrl%}
- **Comments** - the same result as {%Comment.CommentText%}
- **CommentDate** - the same result as {%Comment.CommentDate%}
- **BlogPostTitle** - the same result as {%BlogPost.BlogPostTitle%}

Example: {%BlogPostLink%}

Macro type: Item:

New blog post comment was added and now is waiting for you:

Blog post: [url={%BlogPostLink%}] {%BlogPost.DocumentName%}
Blog: [url={%BlogLink%}] {%Blog.DocumentName%} [/url]
Added by: {%Comment.CommentUserName%}
Date and time: {%Comment.CommentDate%}

- bloglink
- blogpostlink
- blogposttitle
- commentdate
- comments
- commenturl
- unsubscribe link
- userfullname

8.9.12 MetaWeblog API

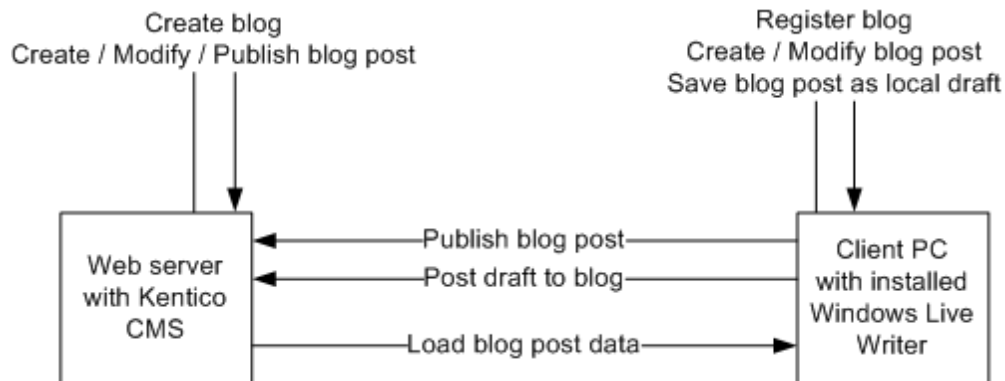
8.9.12.1 Overview

MetaWeblog API is a programming interface that enables external programs to get and set the text and attributes of blog posts. The API uses the XML-RPC protocol for communication between client applications and the blog server.

MetaWeblog API integration enables bloggers to write their blog posts using an application like Windows Live Writer (WLW) or Microsoft Word 2007 (or higher) on their local computer, even when they are offline. Then it enables transfer of these blog posts to the Kentico CMS web application, either by publishing them directly on the live site or just saving them as a draft to be published later.

How it works

The diagram below shows which actions can be performed in both Kentico CMS web application and Windows Live Writer, and the blog post transfer possibilities between the two applications.



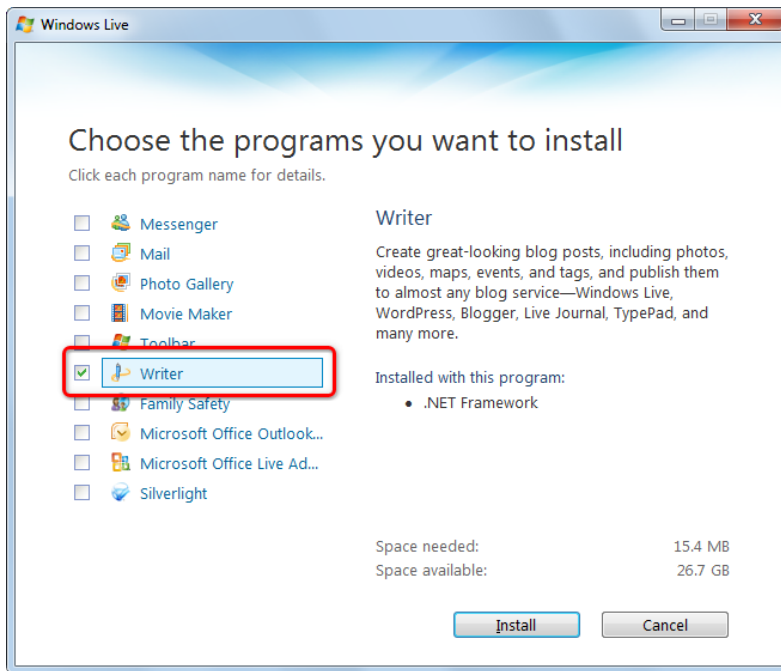
The following actions need to be taken in order to use Windows Live Writer to write Kentico CMS blog posts:

1. User [creates a blog](#) in Kentico CMS (either via CMS Desk or on the live site).
2. User [installs Windows Live Writer](#) and [registers their new blog](#) in it.
3. Now the user is ready to create new and modify existing blog posts directly from WLW and transfer the changes into Kentico CMS.

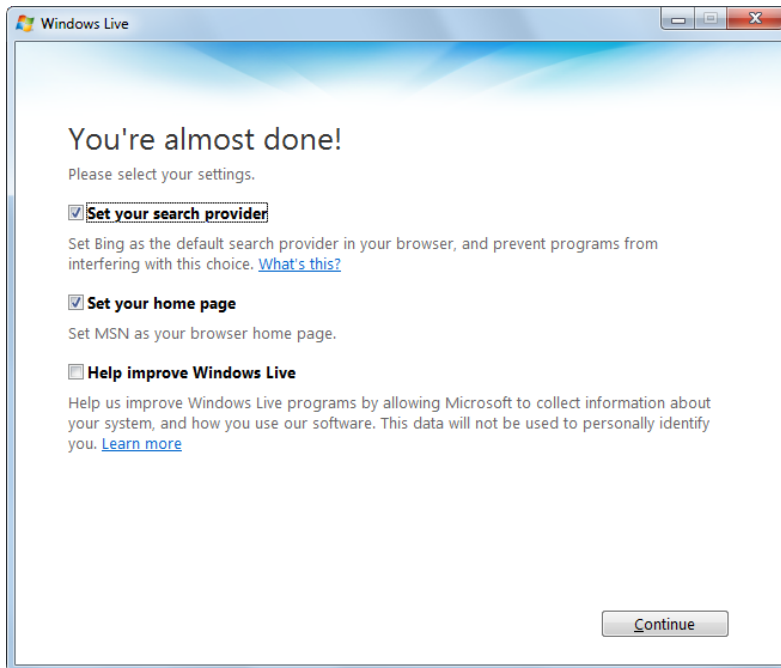
8.9.12.2 Windows Live Writer installation

The following steps need to be taken in order to install Windows Live Writer on your machine:

1. Download Windows Live installer from <http://download.live.com/writer>.
2. Execute the installer. Choose the **Writer** option from the list of available programs. Other options are not directly related to the Windows Live Writer. Choose as you wish and click **Install**.



3. When the installation finishes, it offers you some additional settings, which are not directly related to Windows Live Writer. Choose as you wish and click **Continue**.



4. You will get to the final screen, where you are offered to sign up for a [Live ID](#). This again is not directly related to Windows Live Writer, so do as you wish and finally click **Close** to finish the installer.

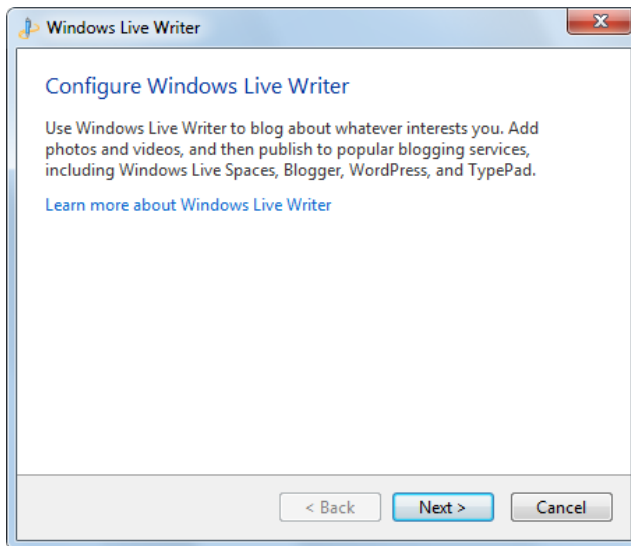


8.9.12.3 Registering blog account

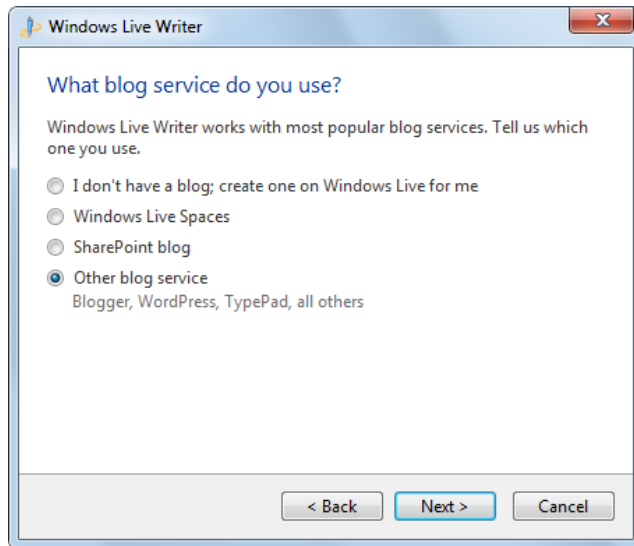
When you run Windows Live Writer for the first time, a wizard will appear, letting you configure connection to your online web service. After the initial setup, the wizard is still accessible under the **Tools -> Accounts -> Add** or **Blogs -> Add blog account** menu options.

The following text describes how to connect Windows Live Writer to a blog in a Kentico CMS instance.

1. The first step of the wizard is just informational. Besides some very basic info, it offers you the *Learn more about Windows Live Writer* link, which redirects you to some in-depth info about the program. Follow it if you wish and click **Next** to proceed further.



2. This step requires you to select the type of blog service. Select **Other blog service** and click **Next**.

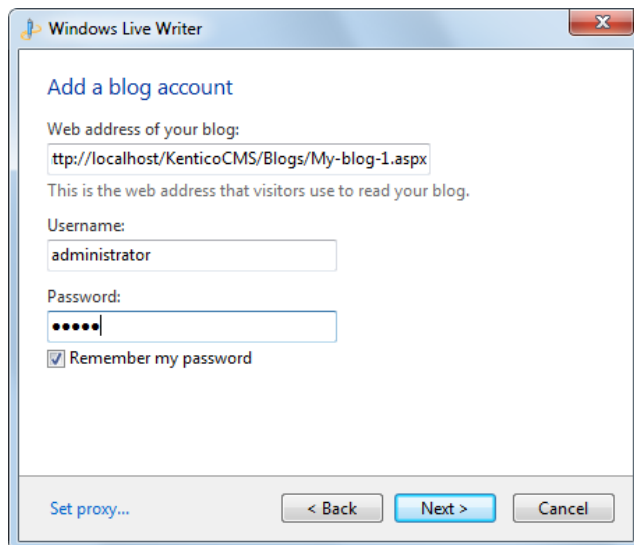


The screenshot shows a dialog box titled "Windows Live Writer" with the question "What blog service do you use?". Below the question, it says "Windows Live Writer works with most popular blog services. Tell us which one you use." There are four radio button options: "I don't have a blog; create one on Windows Live for me", "Windows Live Spaces", "SharePoint blog", and "Other blog service". The "Other blog service" option is selected, and below it, it lists "Blogger, WordPress, TypePad, all others". At the bottom of the dialog, there are three buttons: "< Back", "Next >", and "Cancel".

3. Now you need to enter the URL of the blog and the logon credentials of the blog owner. Enter the following details:

- **Web address of your blog:** full Live URL of the blog's title page, e.g. *http://localhost/KenticoCMS_0322/Blogs/My-blog-1.aspx*
- **Username:** user name of the blog owner, e.g. *administrator*
- **Password:** blog owner's password (blank passwords are not supported), e.g. *12345*
- **Remember my password:** enable this option if you don't want to enter the password each time you use the application

Click **Next** to proceed.

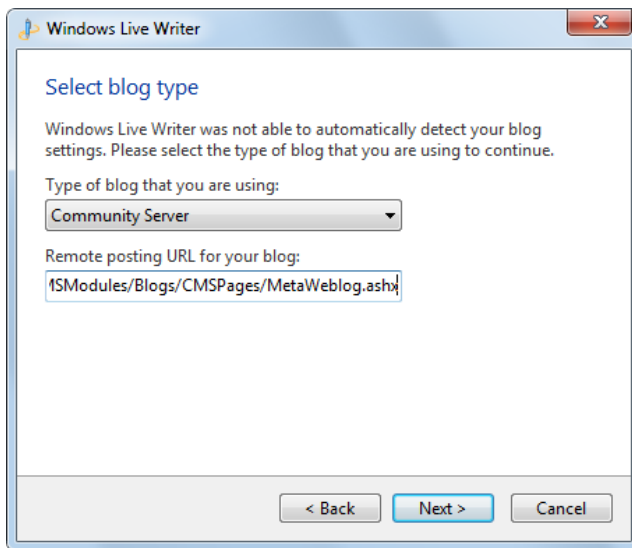


The screenshot shows a dialog box titled "Windows Live Writer" with the question "Add a blog account". Below the question, it says "Web address of your blog:" followed by a text box containing "http://localhost/KenticoCMS/Blogs/My-blog-1.aspx". Below that, it says "This is the web address that visitors use to read your blog." There are three text boxes: "Username:" containing "administrator", "Password:" containing "*****", and a checked checkbox labeled "Remember my password". At the bottom of the dialog, there are four buttons: "Set proxy...", "< Back", "Next >", and "Cancel".

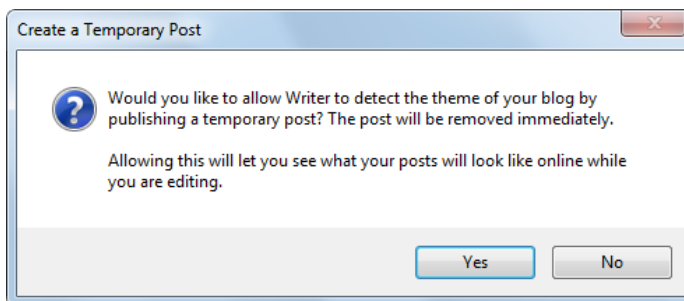
4. In the fourth step, you need to select the type of the blog and the posting URL of the blog. Enter the following details:

- **Type of blog that you are using:** *Community Server* or *MetaWeblog API* (the first one provides some extra functionality in WLW)
- **Remote posting URL for your blog:** URL of the MetaWeblog API handler, which is always in format *http://<application path>/CMSModules/Blogs/CMSPages/MetaWeblog.ashx* (e.g. *http://localhost/KenticoCMS/CMSModules/Blogs/CMSPages/MetaWeblog.ashx*)

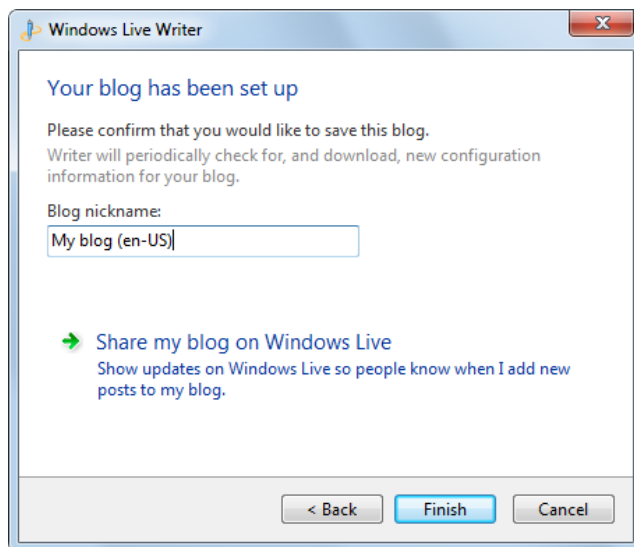
Click **Next**.



5. Now a dialog pops up, asking you if you want to detect the theme used for the blog so that you can see how the blog post will look like live when you are editing it. Click **Yes** to perform this action. If you click **No**, you can still do it later manually by choosing the **View -> Refresh theme** option from Windows Live Writer menu.



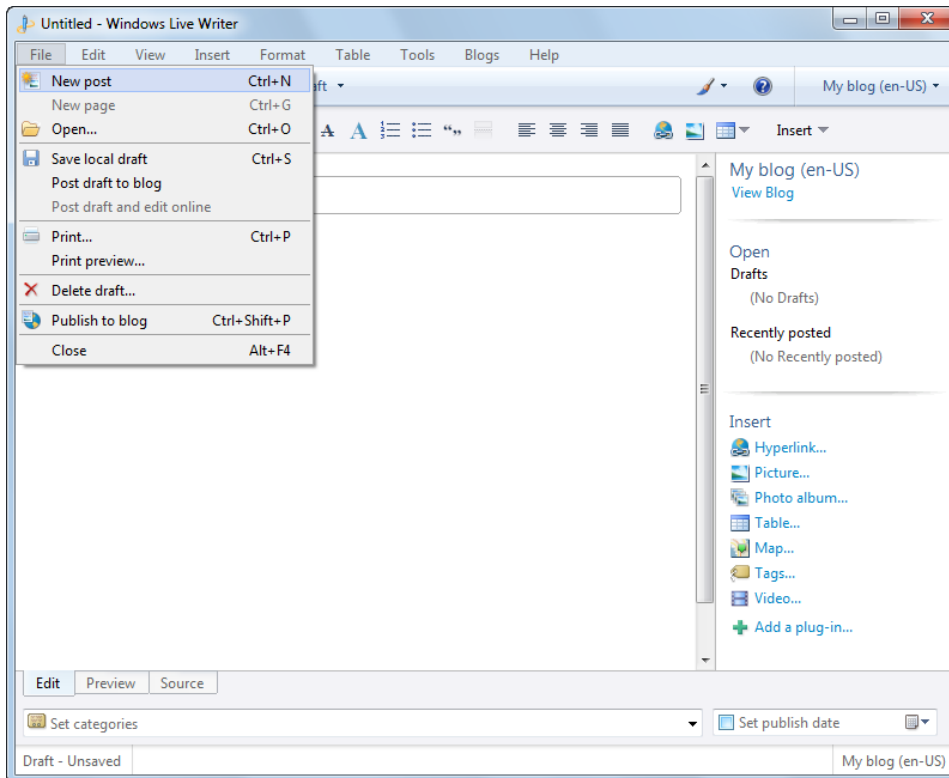
6. In the final step, you just need to enter the **Blog nickname**, which is just a name under which the blog will appear in WLW user interface. Enter whatever you wish and click **Finish**. Your blog is now registered and you can start blogging from within Windows Live Writer.



8.9.12.4 Publishing first blog post

In the following example, you will learn how to create a new blog post with Windows Live Writer and publish it to the Kentico CMS blog registered in the [previous example](#).

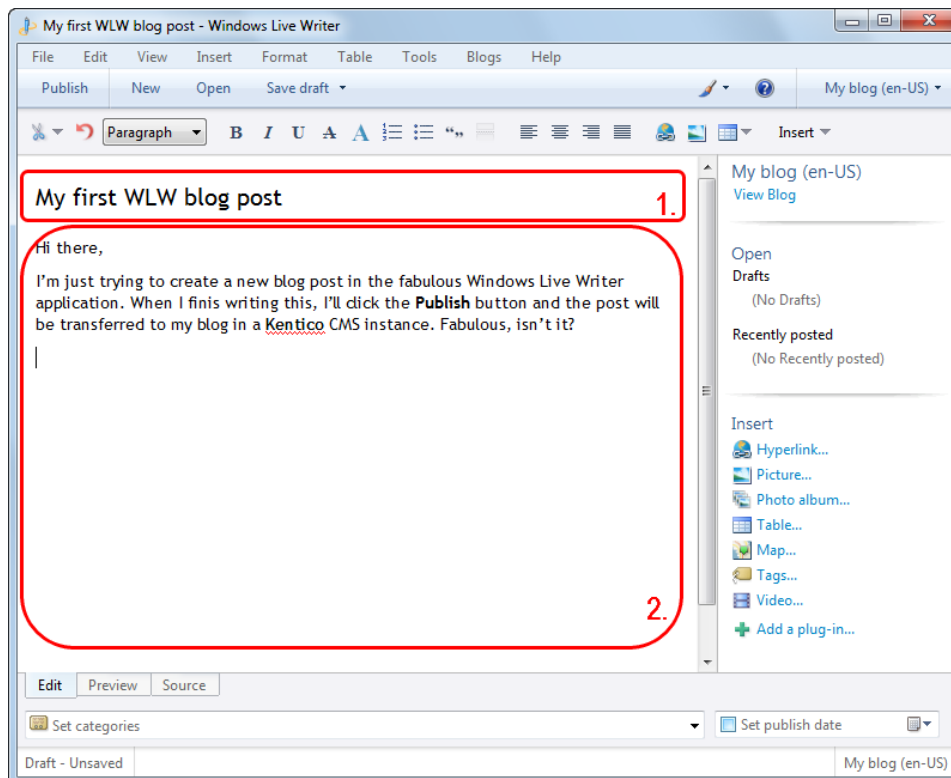
1. Open Windows Live Writer and select **New post** from the **File** menu (or click **Ctrl+N**).



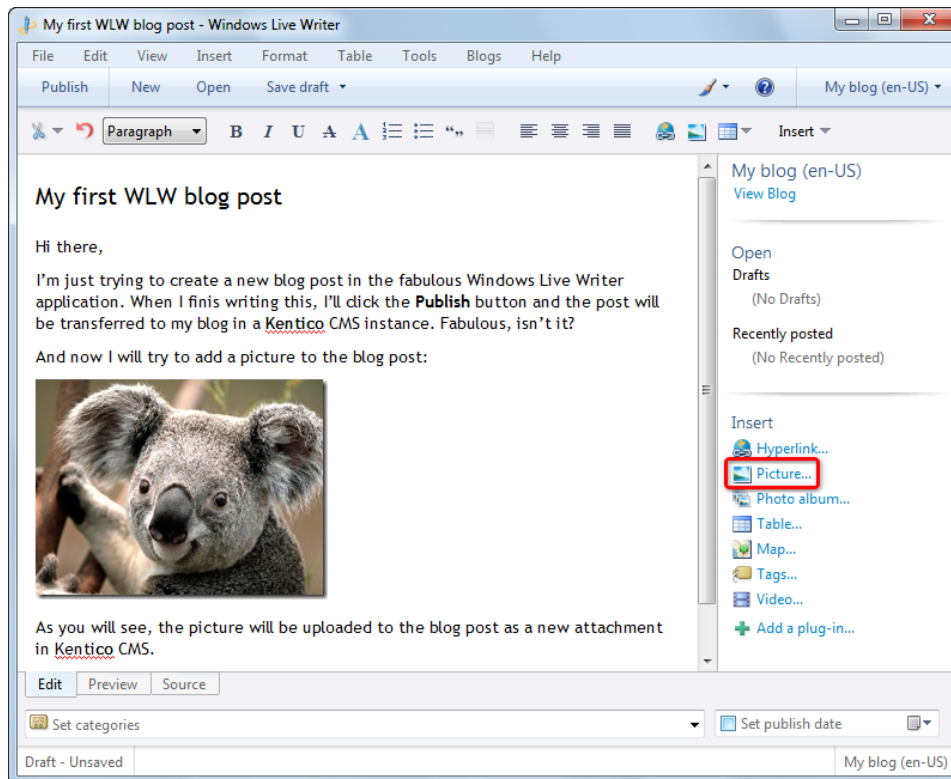
2. The gray rectangle at the top (1.) is where you enter the title of the blog post. What you enter here will be used as a value of the **Post title** field in your Kentico CMS blog post.

The text area below (2.) is where you enter the text of the blog post itself. This will be used for the **Post text** field, and in case you enabled the automatic summary (learn [here](#) how to do it), its beginning will be used for the **Post summary** field too.

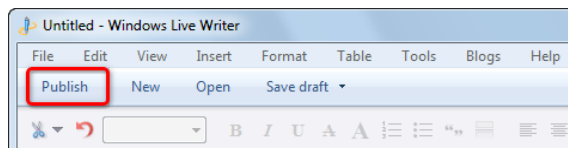
Enter some title and blog post text.



3. Now let's try adding an image. It is quite easy with Windows Live Writer, just click the **Picture...** option in the **Insert** menu on the right and select some image from your local disk. You should achieve that your blog post looks somewhat similar to the screenshot below.



4. Now that your blog post is ready, we can publish it to the live site. Click the **Publish** button in the top toolbar.



5. When the publishing finishes, your blog will be displayed in your browser and you will see the new post published.

Home Services Products News Partners Company **Blogs** Forums Events Images Wiki Examples


Blogs > My blog

My first WLW blog post

Hi there,

I'm just trying to create a new blog post in the fabulous Windows Live Writer application. When I finish writing this, I'll click the **Publish** button and the post will be transferred to my blog in a Kentico CMS instance. Fabulous, isn't it?

And now I will try to add a picture to the blog post:



As you will see, the picture will be uploaded to the blog post as a new document attachment in Kentico CMS.

Posted: 3/23/2010 11:12:31 AM by Global Administrator | with 0 comments

Title

This is my new blog with the latest news in the cell phones. I hope you will find valuable information here.

Tags

[cell phones](#) [Nokia](#) [poll](#) [software](#)
Symbian

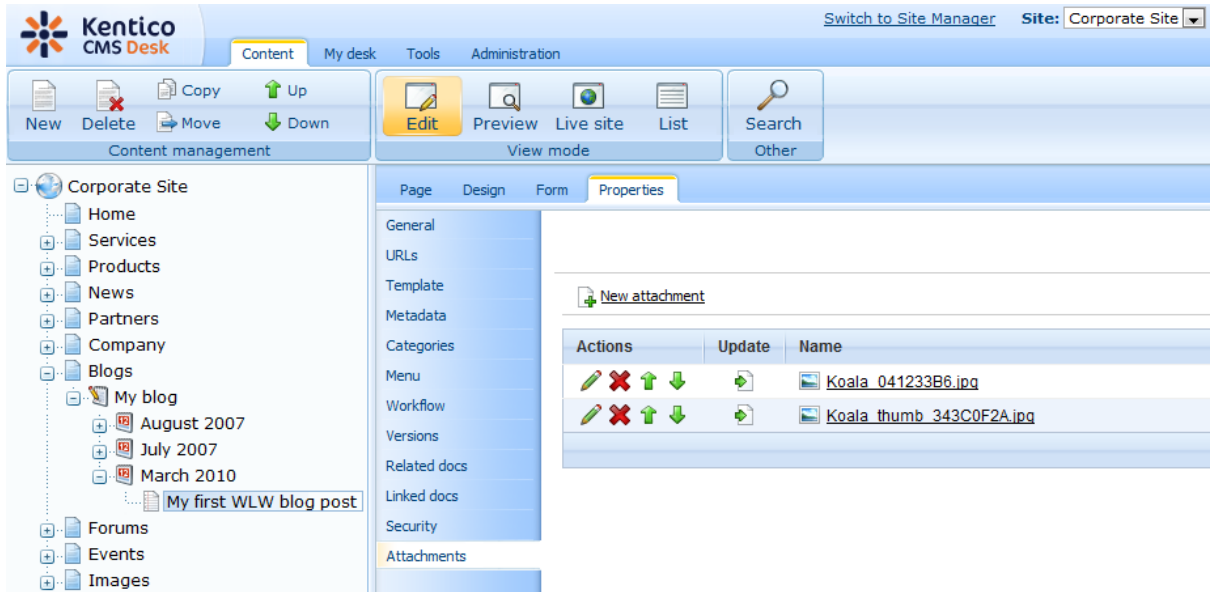
My favourite websites

www.Nokia.com

Recent posts

[My first WLW blog post](#)
[Nokia 6120](#)
[Symbian S60 3rd released](#)
[Which cell phone are you using?](#)

6. If you view the blog post in CMS Desk and switch to its **Properties -> Attachments** tab, you will see that the image has been uploaded as an attachment of the post. There are two versions of the image - the first one is the original full-size image, while the second one is its thumbnail used in the post text (e. g. in the screenshot above).

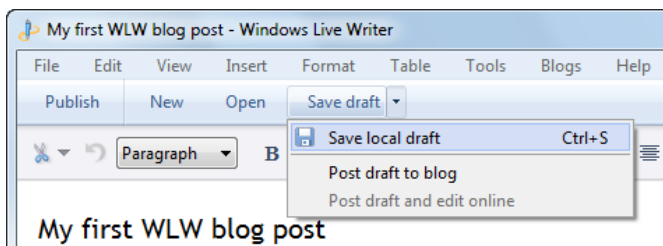


8.9.12.5 Managing blog posts

This chapter describes some additional options that you have when creating or editing a blog post.

Save local draft

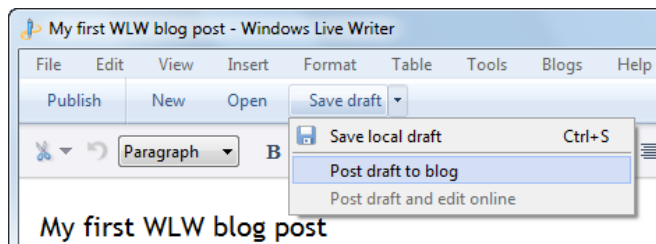
Current local version of the blog post is saved as blog post local draft; each blog post can have only one local draft. This action doesn't propagate any changes into the CMS.



Post draft to blog

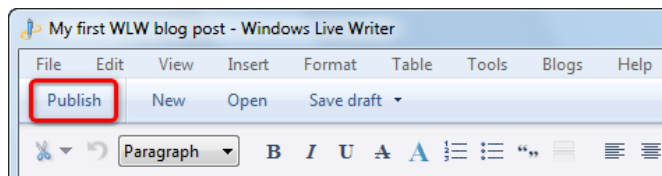
Current local version of the blog post is posted to blog, but its local draft is not removed. Depending on [workflow](#) settings, the following two situations can occur in the CMS:

- a) **Blog post document is under workflow** - new minor version of the blog post is created (posted version is not published)
- b) **Blog post document is not under workflow** - blog post is published immediately; this means that this action is identical to the *Publish* action, i.e. the *Post draft to blog* action makes sense only in case that workflow is enabled for blog post documents



Publish

Current local version of the blog post is posted to blog and published immediately. Local draft of the published blog post is automatically removed.



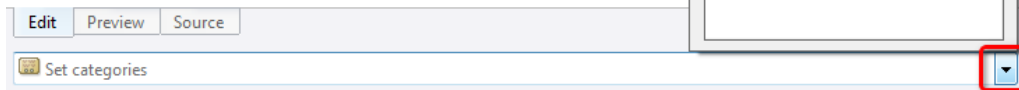
Tagging

The tag selector in WLW enables you to tag the blog post with tags from the parent blog's Kentico CMS [tag group](#). The tag group of the blog post itself is not reflected here at all.

And now I will try to add a picture to the blog post:

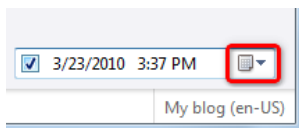


As you will see, the picture will be uploaded to the blog post as a new document in the CMS.



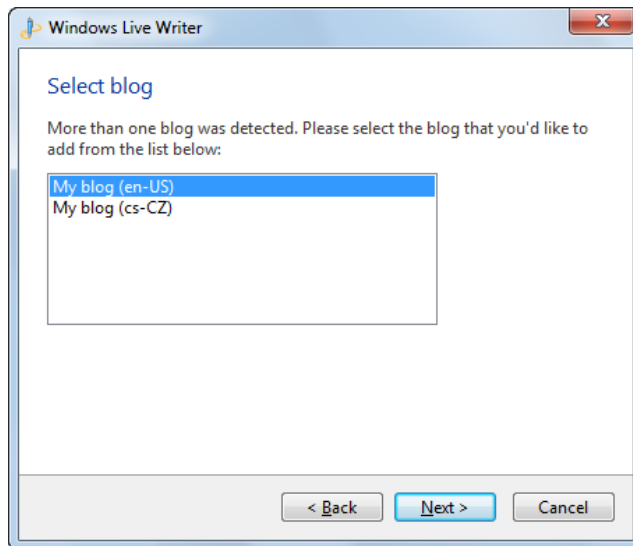
Publish date

You can specify a date here, which will be propagated into the **Publish from** field on the **Form** tab in CMS Desk. The value determines the date and time when the blog post gets published on the live site. It will be converted to the user's [time zone](#) before it is set as the **Publish from** property of the blog post in Kentico CMS. If no time is set here, the blog post is published immediately.



8.9.12.6 Multilingual support

In case that your blog exists in more than one cultural version, you will get the following dialog displayed after blog type selection (step 4) when [registering your blog account](#).



In the dialog, you need to choose which cultural version will the account be registered for. This means that you need to register **one dedicated account for each cultural version** of your blog.

8.9.12.7 Settings

Settings related to MetaWeblog API can be performed in **Site Manager -> Settings -> MetaWeblog API**. The following settings can be configured:

- **Allow automatic summary:** if enabled, blog post summary will be created automatically from the beginning of the blog post text, and will be as long as the value of the Summary length property; this is applied only when a post is created - when editing an existing post, the summary is not updated
- **Summary length:** length of automatic blog post summary in characters
- **Delete unused attachments:** if enabled, all blog post attachments which are not used in post text or have not been uploaded via WLW (i.e. have been uploaded via Kentico CMS user interface) will be deleted when an existing blog post is modified and then published from WLW

The screenshot displays the Kentico CMS Site Manager interface. The top navigation bar includes the Kentico logo, the text "Kentico CMS Site Manager", and tabs for "Sites", "Administration", "Settings", "Development", "Licenses", and "Support". The "Settings" tab is active. On the left, a "Site:" dropdown menu is set to "Corporate Site". Below it is a tree view of settings categories, with "MetaWeblog API" selected. The main content area is titled "MetaWeblog API" and contains the following settings:

- Allow automatic summary:** A checkbox that is checked, with a help icon (question mark) to its left. To its right is an unchecked checkbox labeled "Inherit from global settings".
- Summary length:** A text input field containing the value "200", with a help icon (question mark) to its left. To its right is an unchecked checkbox labeled "Inherit from global settings".
- Delete unused attachments:** A checkbox that is checked, with a help icon (question mark) to its left. To its right is an unchecked checkbox labeled "Inherit from global settings".

At the bottom of the settings area, there are two buttons: "Save" and "Reset these settings to default". Below the buttons is a link labeled "Export these settings".

8.9.12.8 Security

Managing blog posts

The following text explains what conditions need to be met in order to perform the listed actions in Windows Live Writer. The conditions need to be valid for the user account used to access the blog (as entered in step 3 [here](#)).

To **view a blog post**, the user needs to be:

- owner of the blog post
- or granted with the **Read** document permission for the blog post (as explained [here](#))
- or global administrator

To **modify a blog post without workflow**, or to **modify a blog post under workflow without custom workflow steps**, the user needs to be:

- owner of the blog post
- or granted with the **Modify** document permission for the blog post (as explained [here](#))
- or global administrator

To **modify a blog post under workflow with custom workflow steps**, the user needs to be:

- member of the role which can approve the document in the custom workflow step (see [Defining a workflow](#) for more details)
- or global administrator

To **delete a blog post**, the user needs to be:

- owner of the blog post
- or granted with the **Delete** document permission for the blog post (as explained [here](#))
- or global administrator

Banned IPs

If the user's IP is on the [Banned IPs](#) list, the user will not be able to transfer any data between Kentico CMS and the client application (WLW, Microsoft Word 2007+, ...).

8.10 Booking system

8.10.1 Overview

The Booking system module allows you to manage events and their attendees. You can use it for both on-line and off-line meetings.

You can find the Booking system module in **CMS Desk -> Tools** section.

8.10.2 Publishing the events

The events managed by the Booking system are actually documents of type **Event (booking system)**. The Event document uses the following fields:

| | |
|----------------------------------|--|
| Event name | Name |
| Event summary | Summary |
| Event details | Details |
| Event location | Location |
| Event date and time | When the event starts |
| Capacity | Maximum number of attendees |
| Allow registration over capacity | Indicates if the number of registered attendees can be higher than the capacity. |
| Open from | Date and time when the registration starts |
| Open to | Date and time when the registration ends |

If you wish to publish events, you can use the page template **Events/Event calendar with event details** to display the event calendar and allow users to register or you can build your own page template.

The event calendar is displayed using the **Events -> Event calendar** web part. The registration is ensured by the **Booking system/Event registration** web part. It is displayed when the event details are selected and allows visitors to sign up for the event.

| December 2009 | | | | | | |
|----------------|----------------------------------|----------------|----------------|----------------|----------------|----------------|
| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
| 29
No event | 30
No event | 1
No event | 2
No event | 3
No event | 4
No event | 5
No event |
| 6
No event | 7
No event | 8
No event | 9
No event | 10
No event | 11
No event | 12
No event |
| 13
No event | 14
No event | 15
No event | 16
No event | 17
No event | 18
No event | 19
No event |
| 20
No event | 21
December conference | 22
No event | 23
No event | 24
No event | 25
No event | 26
No event |
| 27
No event | 28
No event | 29
No event | 30
No event | 31
No event | 1
No event | 2
No event |
| 3
No event | 4
No event | 5
No event | 6
No event | 7
No event | 8
No event | 9
No event |

December conference

Here come the details and additional information of December conference.

Event capacity: 10
Event location: Boston, Massachusetts
Event date: 12/21/2009 9:00:00 AM

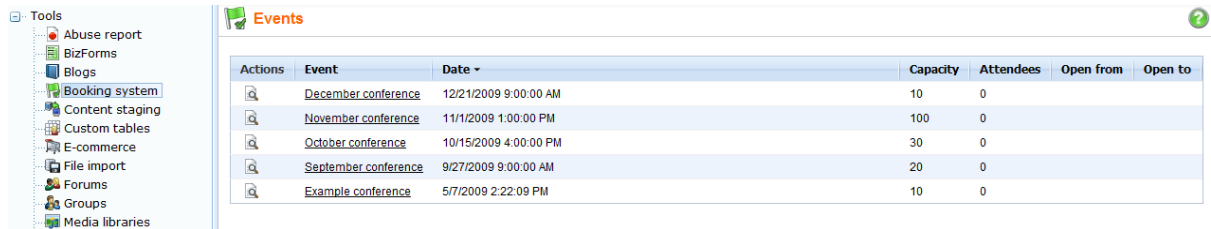
Registration

First name:
Last name:
E-mail:
Phone:

[Add event to Outlook](#)

8.10.3 Managing attendees

The attendees who register for the event can be managed in the **CMS Desk -> Tools -> Booking system** section. Here you can see the list of all events, their capacity and number of attendees.



| Actions | Event | Date | Capacity | Attendees | Open from | Open to |
|---------|--------------------------------------|-----------------------|----------|-----------|-----------|---------|
| | December conference | 12/21/2009 9:00:00 AM | 10 | 0 | | |
| | November conference | 11/1/2009 1:00:00 PM | 100 | 0 | | |
| | October conference | 10/15/2009 4:00:00 PM | 30 | 0 | | |
| | September conference | 9/27/2009 9:00:00 AM | 20 | 0 | | |
| | Example conference | 5/7/2009 2:22:09 PM | 10 | 0 | | |

When you view some event, you can see the registered attendees and edit their details or remove them. You can also resend the invitation e-mail.

Sending e-mail to all attendees

On the **Send e-mail** tab, you can send an e-mail to all attendees and inform them about event changes, etc.

8.10.4 Security

The security is split into two sections:

Management of events


Since the events are standard documents, the users who manage them need to have appropriate document permissions as described in [Permissions for modules and documents](#).

Management of attendees

The attendees can be managed in the **Tools -> Booking system** module. The users who want to perform the management need to be granted with permissions for this module in the **Administration -> Permissions** section.

You can assign the roles with the following permissions:

- **Modify** - allows users to modify (add, update, delete) the list of attendees and their details
- **Read** - allows users to read the list of attendees, resend messages and send mass e-mail

 **Permissions**

Site:

Permission type:

Permission matrix:

| | Modify | Read |
|------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> | <input type="checkbox"/> |

8.11 Categories

8.11.1 Overview

The categories module enables users to categorize their documents. Any document in the content tree can be assigned to an unlimited number of categories. The module contains the Category list web part. This web part can display a list of categories in the form of clickable links. After clicking some of the categories, a list of all documents in the selected category will be displayed.

Cascading Style Sheets (CSS)

Czech Republic

General Packet Radio Service (GPRS)

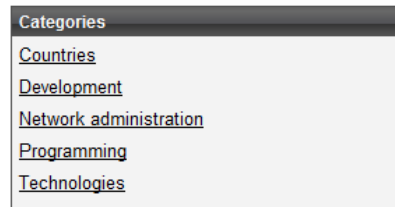
Global Positioning System

HyperText Markup Language (HTML)

Router

Search Engine Optimization (SEO)

Wide XGA



8.11.2 Creating a new category

There are two types of categories:

- **Global categories** - categories created by the system administrator; can be used by all users
- **Custom categories** - categories created by a user, i.e. their own ones; only the user who created such category can use it

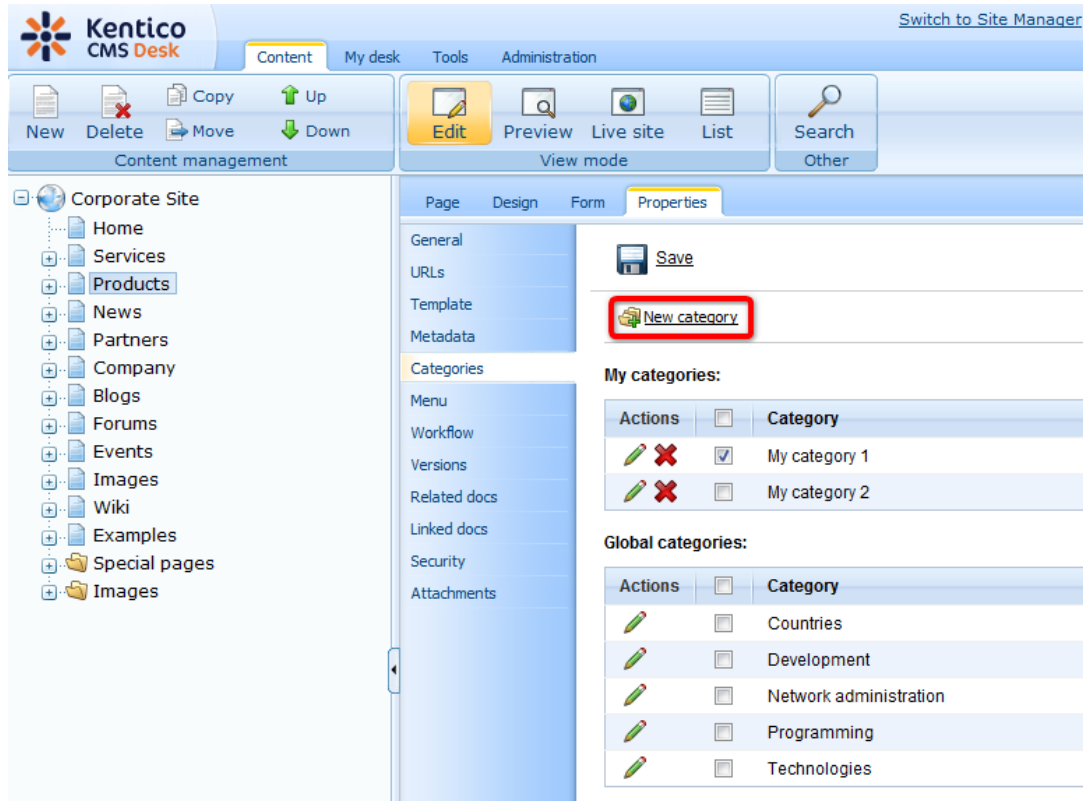
Custom categories

Each user can create their own categories and assign documents to them. This can be done in **CMS Desk**, after selecting a document from the content tree and switching to its **Properties -> Categories** tab.

The current user's **custom categories** are listed in the **My categories** section. These categories can be Edited (✎) or Deleted (✖) in this section. Global categories are listed below and can also be edited here with certain limitations compared to editing in Site Manager.

To create a new custom category, just follow these three easy steps:

1. Click the **New category** link.



2. Enter the required details:

| | |
|--------------|----------------------------------|
| Display name | Display name of the category. |
| Description | Text describing of the category. |

And click **OK**.

The screenshot shows the 'Properties' tab of a dialog box. On the left is a navigation menu with items: General, URLs, Template, Metadata, Categories (highlighted), Menu, Workflow, Versions, Related docs, Linked docs, Security, and Attachments. The main area is titled 'Categories > New category'. It contains a 'Display name' text box with 'My category 1' and a 'Description' text area with the text 'This is a category of documents related to information technology.'. A green 'OK' button is at the bottom.

3. You should be redirected back to the list where your new custom category should be visible.

My categories:

| Actions | <input type="checkbox"/> | Category |
|---------|--------------------------|---------------|
| | <input type="checkbox"/> | My category 1 |
| | <input type="checkbox"/> | My category 2 |

Global categories

Global categories are created by system administrator and all users can add documents to these categories. Administrators can manage global categories in **Site Manager -> Development -> Categories**. On this page, only the **global categories** can be created and managed.

| Actions | Name ^ | Enabled | Documents |
|---------|------------------------|---------|-----------|
| | Countries | Yes | 1 |
| | Development | Yes | 6 |
| | Network administration | Yes | 2 |
| | Programming | Yes | 5 |
| | Technologies | Yes | 4 |

To create a new global category, just follow these three easy steps:

1. Click the **New category** link.

New category

Categories > New category

Display name:

Code name:

Description:

Enabled:

2. Enter the required details:

| | |
|--------------|--|
| Display name | Display name of the category. |
| Code name | Code name of the category. |
| Description | Description text of the category. |
| Enabled | Indicates if the category is enabled in the system. Documents cannot be assigned to categories that are not enabled. |

3. Click **Save**. The category has just been created and should be visible in the categories list.

Administrating users' custom categories

Administrators can manage custom categories of other users in **Site Manager -> Administration -> Users**.

Choose to **Edit** some of the users and switch to its **Categories** tab, you can edit and eventually create the selected user's **custom categories** here.

Categories can be created in a similar way as mentioned in the previous examples, by clicking the **New category** link.

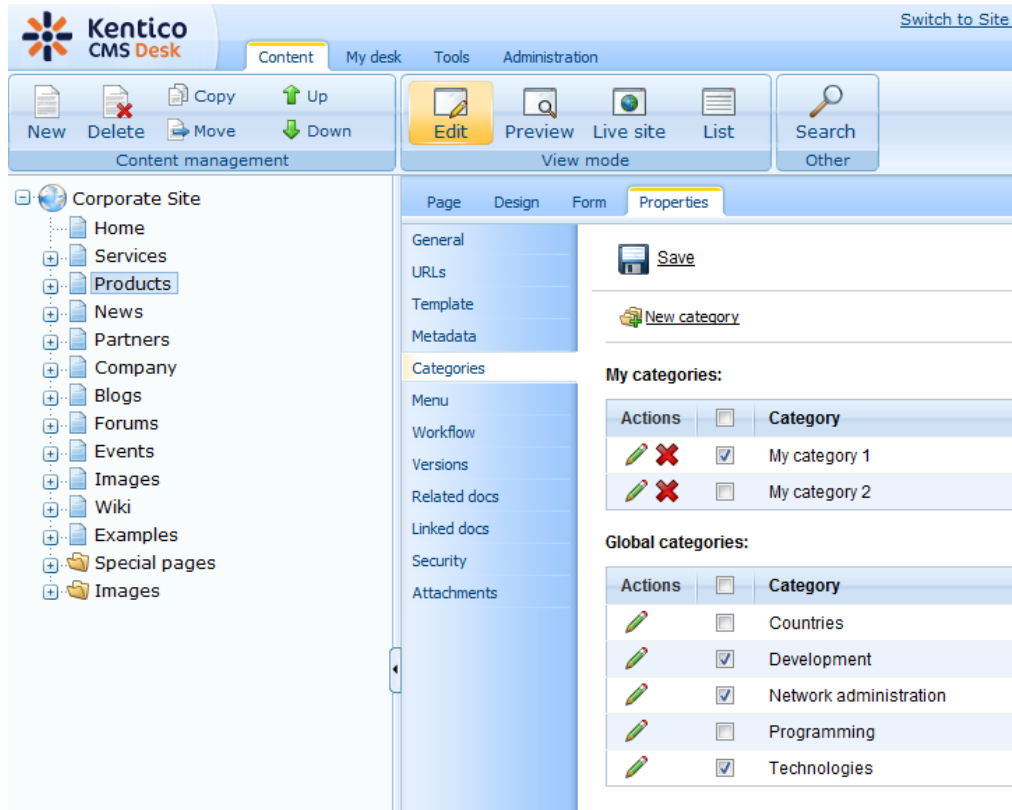
The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The left sidebar shows a tree view of 'Administration' options, with 'Users' selected. The main content area is titled 'Users' and shows a sub-tab for 'Mass e-mail' and 'On-line users'. Below this, the user 'administrator' is selected, and the 'Categories' tab is active. A 'New category' link is visible. A table lists the categories for the user:

| Actions | Category |
|---------|---------------|
| | My category 1 |
| | My category 2 |

8.11.3 Adding a document to a category

Adding documents to categories is very simple.

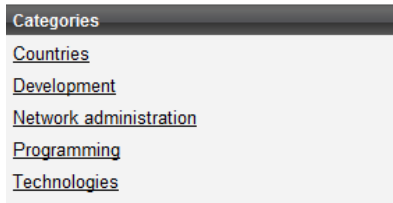
1. Log in to **CMS Desk** and in **Edit** mode, select the document from the content tree.
2. Switch to its **Properties -> Categories** tab.



3. In the categories lists, check the appropriate categories' **Select** check-boxes and click **Save**.

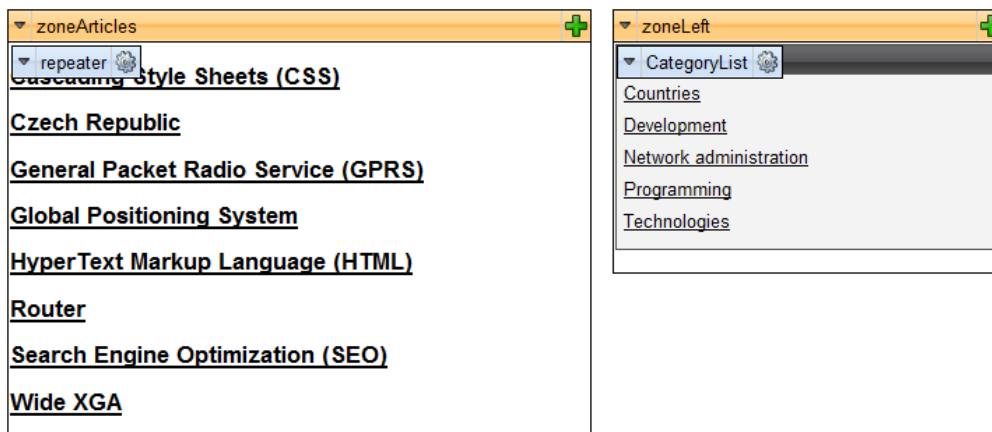
8.11.4 Using the Category list web part

The category list web part is used to display a list of enabled global and custom categories. For each of the categories, there is a number of documents in the category displayed in brackets after the category's name. If the site visitor clicks any of the categories, they will be redirected to a page containing a list of links leading to documents in the category.



The Category list always works 'in pair' with some repeater web part. When a category is clicked in the category list, a list of articles in the selected category is displayed in the repeater. The repeater can be located either on the same page as the category list, or on some other page to that the site visitor will be redirected. You can find an example of this behavior on the sample Corporate site, in section

Examples -> Web parts -> Tagging & Categories -> Category list.



For this to work, you have to do the following property settings to the web parts:

Category list:

- The placement of the repeater is defined by the Category list's **Category list page** property. In case that the repeater is placed on the same page as the category list, the value should be left blank. In case that it is placed on some other page, you should enter the **alias path** of that page.
- ID of the clicked tag is transferred to the repeater in form of a query string parameter. The name of the parameter can be set using the **Querystring parameter name** property. The repeater displays the appropriate list of documents based on the value that it gets via this parameter.

Repeater:

- Set the value of the **Path** parameter to the location in the content tree where the documents are stored.
- Set the value of the **Document types** parameter to the document type(s) that is (are) to be displayed.
- Select the transformations that you want to use for the **Transformation** and **Selected items transformation**.
- Finally, use the following code as a value for the repeater's **WHERE condition** parameter. The **categoryid** value should be replaced by the name set in the Category list's **Querystring parameter name** property.

```
'{?categoryid?}' = '' OR (DocumentID IN ( SELECT DocumentID FROM  
CMS_DocumentCategory WHERE CategoryID = '{?categoryid?}' ))
```

8.12 Content rating

8.12.1 Overview

The content rating module can be used to give users the possibility of rating any document on your website. The module's main part is the Content rating web part. You can place this web part on any page of your website and let site visitors rate the content of the particular page. You can then view the overall rating on the document's Properties tab in CMS Desk.

8.12.2 How to enable content rating on the web site

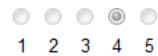
The content rating web part gives users the possibility of rating a document. It has three default appearance modes:

Stars



Current rating: 3 (1 ratings)

Radio-buttons



Current rating: 4 (1 ratings)

Drop-down



Current rating: 2.5 (2 ratings)

It is also possible to create other appearance modes by creating your **custom controls**. These must be placed in `~/CMSAdminControls/ContentRating/Controls/` and inherit from **ExtendedControls.AbstractRatingControl.cs**, just like the default ones.

You can place the web part on any page of your website to enable users rate the content of this particular page. In the following example, we will add the web part to a news item on the sample Corporate site.

1. Sign in to **CMS Desk** as *administrator* (blank password by default). Switch to the **Design** mode and select **News -> Your first news** from the content tree.
2. Click the **Add web part** (+) icon at the top right corner of the **zoneLeft** web part zone. Select the **Content rating -> Content rating** web part and click **OK**.

3. In the web part properties window, you can set the following specific properties:

- **Rating type** - appearance of the web part; Stars, Radio-buttons or Drop-down list as depicted above can be chosen
- **Max rating value** - size of the rating scale; e.g. if 7 is entered, rating will be possible on a scale from 1 to 7
- **Show results** - if checked, overall rating results will be displayed; if unchecked, users can rate, but don't see the results
- **Result message** - message showing overall rating results; the {0} macro shows overall rating (for one decimal rounding, you can use {0:0.#}); {1} displays the total number of votes
- **Message after rating** - text message displayed a user submits their rating; macros that can be used: {0} your rating, {1} overall rating, {2} overall number of votes
- **Check permissions** - if checked, permissions set by the Allow for public and Hide to unauthorized roles properties will be checked
- **Allow for public** - if checked, rating will be allowed to public unauthorized users; if unchecked, all users will be allowed to rate
- **Check if user rated** - if checked, users will be allowed to vote only once; to indicate that the user already voted, Kentico CMS stores a **DocRated** cookie in your web browser, the cookie contains **NodeIDs** of the rated documents divided by vertical bars (e.g. /4/61/229/230/228/369/)
- **Hide to unauthorized users** - if checked, the web part will be hidden to unauthorized users

For the purposes of this example, it is also advisable to set the value of the **Show for document types** property to **cms.news**. This ensures that the web part will be displayed only for the particular news items and not for the list of news on the News section title page.

Enter the values and click **OK**.

4. Sign out of the administration interface and view the **Your first news** news item. You should see the web part below the news text as in the screenshot below. Now try rating!

[Home](#) [Services](#) [Products](#) [News](#) [Partners](#) [Company](#) [Blogs](#) [Forums](#) [Events](#) [Images](#) [Wiki](#) [Examples](#)

[News](#) > Your second news

Your second news



1/15/2008

Here you can enter the summary of the news item. You can use WYSIWYG editor to format the text, insert links and images. The summary will be used in news item preview.

This is the news text. It's displayed in combination with news title and summary. Depending on transformation chosen by the web developer, the news item may be displayed in various formats, with or without teaser image.



[RSS](#)

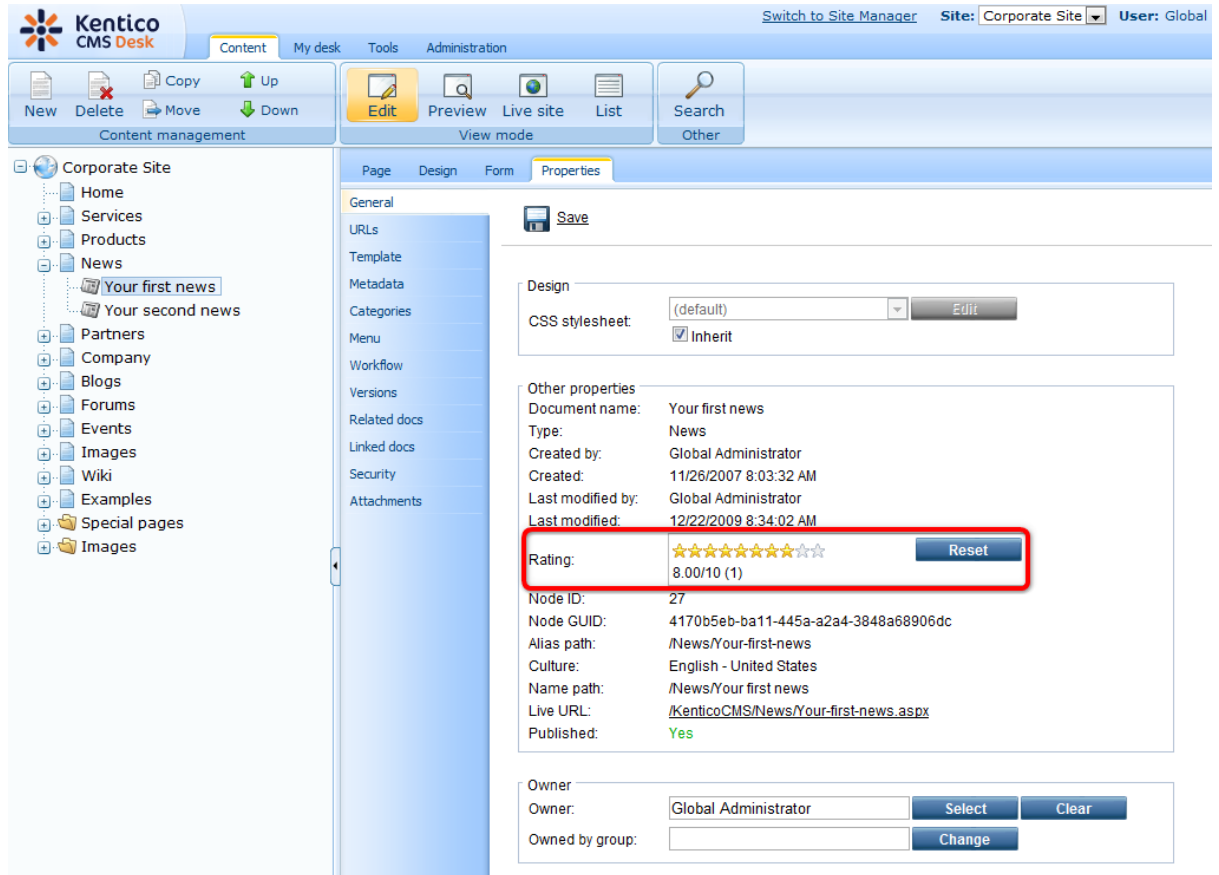


Current rating: 0 (0 ratings)

[Site map](#) | [Disclaimer](#)



5. If you switch back to **Kentico Desk** and view **Properties** of the news item, you should see the **Rating** property on the **General** tab. This property reflects the current rating of the selected document. All ratings are recalculated to 10 step scale and displayed as stars here, no matter what the settings of the web part are. You can reset the value using the **Reset** button.



8.12.3 Other involved web parts

The **Message board** and **Group message board list** web parts enable content rating too. For both of them, you have to set the following three properties:

- **Enable content rating** - if checked, content rating will be enabled by the web part
- **Rating type** - appearance of the web part; Stars, Radio-buttons or Drop-down list can be chosen
- **Max rating value** - size of the rating scale; e.g. if 7 is entered, rating will be possible on a scale from 1 to 7

When leaving a board message, the rating control (determined by the Rating type property) will be displayed above the Name field. Users can select their rating and after sending the message, the rating will be applied.

Leave message

Your rating: ★★★★★

Name:

Your URL:

Your e-mail:

Message:

Enter security code:

8.12.4 Displaying ratings in transformations

Content rating results can also be displayed in transformations. To do that, the following code needs to be placed in your transformation:

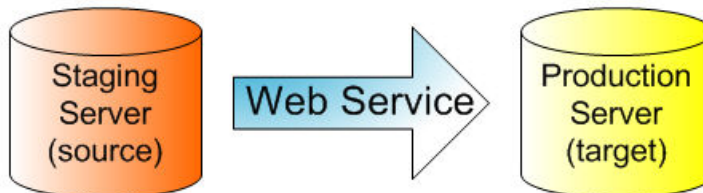
```
<%@ Register Src="~/CMSAdminControls/ContentRating/RatingControl.ascx" TagName
="RatingControl" TagPrefix="cms" %>

<cms:RatingControl ID="elemRating" runat="server" Enabled="false" RatingType
="Stars" ExternalValue='<%# Convert.ToString(CMS.GlobalHelper.ValidationHelper.
GetDouble(Eval("DocumentRatingValue"), 0))/(CMS.GlobalHelper.ValidationHelper.
GetDouble(Eval("DocumentRatings"), 0) == 0?1:CMS.GlobalHelper.ValidationHelper.
GetDouble(Eval("DocumentRatings"), 1))' %>' />
```

8.13 Content staging

8.13.1 Overview

The **Content staging** module allows you to separate the content in development, staging (editing) and production (live) environment. It allows you to easily transfer document and object changes to another server or make a complete synchronization of documents and objects from one server to another. You can synchronize documents and objects to multiple production servers with separate databases. The synchronized data is transferred over a secured web service.



The Staging module **supports** synchronization of the following data:

- **Document data**
- **Document attachments** – if document contains the file fields, the files are synchronized together with the document.
- **Document relationships** – if specified relationship and related document exist on the target server, the relationship is also synchronized
- **Workflow process** – only published document versions are synchronized to the target server and both servers need to have the same workflow schemas defined
- **Global objects**
- **Custom tables** and data stored in them
- **Media libraries** and the files and folders in them

The Staging module **does not support** synchronization of the following data:

- **BizForms data**, the forms themselves are synchronized
- **Forum posts**, the forums themselves are synchronized
- **Message boards messages**, the boards themselves are synchronized
- **Blog comments**, the blogs themselves are synchronized
- **Friends**
- **Messaging module messages**
- **ACLs (document permissions)**
- **Web templates**
- **Abuse reports**
- **Web analytics**
- **Event log**
- **Export history**

You need to ensure that both staging and production site use the same settings (document types, templates, web parts ...), code files and that both servers use the same version of the CMS.

8.13.2 Content staging configuration

Configuration of the Content staging module consists of two parts: the source and target server configuration.

Microsoft WSE Configuration

To enable Content staging, you first need to open the **bin** folder under your web project and rename the **Microsoft.Web.Services3.dll.rename** file to **Microsoft.Web.Services3.dll**. This needs to be done on both the source and the target server.

Source (Staging) Server Configuration

Source configuration is required for the staging (testing) server. You need to enable content staging using the following parameters in **Site Manager -> Settings -> Content staging** section.

- **Log content changes** - if enabled, synchronization tasks are automatically generated when content (documents) is modified
- **Log data changes** - if enabled, synchronization tasks are automatically generated when custom tables data are modified
- **Log object changes** - if enabled, synchronization tasks are automatically generated when an object is modified
- **Log staging changes** - if enabled, synchronization tasks are created for changes made by synchronization from another server to this server; see [Bi-directional staging](#) for more details
- **Log export tasks** - if enabled, synchronization tasks are logged when an object is deleted (incremental update support)

Then you need to specify the target server(s). Go to **CMSDesk -> Tools -> Content staging -> Servers**. This is where you can manage the list of target servers.

Every site can use different target servers for content staging. You can even synchronize the content between the source and target server between different sites in the same website instance (in the same database).

To add a new server, click **New server** () , enter the server properties and save them:

- **Server display name** - server display name displayed to the users in the administration interface
- **Server code name** - server name used in website code
- **Server URL** - staging service URL that points to the content staging web service of the target server; the web service page is located at `~/CMSPages/syncserver.aspx`, so the URL should look like this:
http://www.targetserver.com/CMSPages/syncserver.aspx
- **Enabled** - if checked, the target server is enabled, it means that the tasks are automatically generated for the server and the synchronization is enabled for this server; you can temporarily disable the server by unchecking the box in case of server maintenance or any other case
- **Server authentication** - server authentication settings; you should set the same parameters that are configured for your target server (described below); the default user name is **admin** and the default password is **pass**

**Please note**

Tasks are logged only for created and enabled servers. If there is no server created or if no server is running, no tasks are logged.

Target (Production) Server Configuration

On the target server, the staging service is disabled by default. For it to work, you need to perform staging configuration in **Site Manager -> Settings -> Content staging**.

- **Enable staging service** - if checked, the staging service is enabled for the given site;
- **Staging service authentication** - staging service authentication type; you can choose from the following options, while it's recommended that you choose *USERNAME* authentication to configure the staging first, test the synchronization and then you can optionally configure the site for *X509* certificates
 - *USERNAME* – username/password authentication (fast, recommended for the data without high security requirements)
 - *X509* – X509 certificate authentication (more secure, slower, requires certificates)
- **Staging service username and password** - username and password for the *USERNAME* authentication
- **Server key ID and Client key ID** - certificate keys for the *X509* authentication, the certificates need to be stored within Local computer – Personal certificate store

8.13.3 Synchronizing the content

All changes made to the documents and objects are tracked in the database, in the synchronization log. You can view the changes in **CMS Desk → Tools → Content Staging**.

The interface for viewing changes and performing synchronization is divided into the following tabs:




All tasks tab

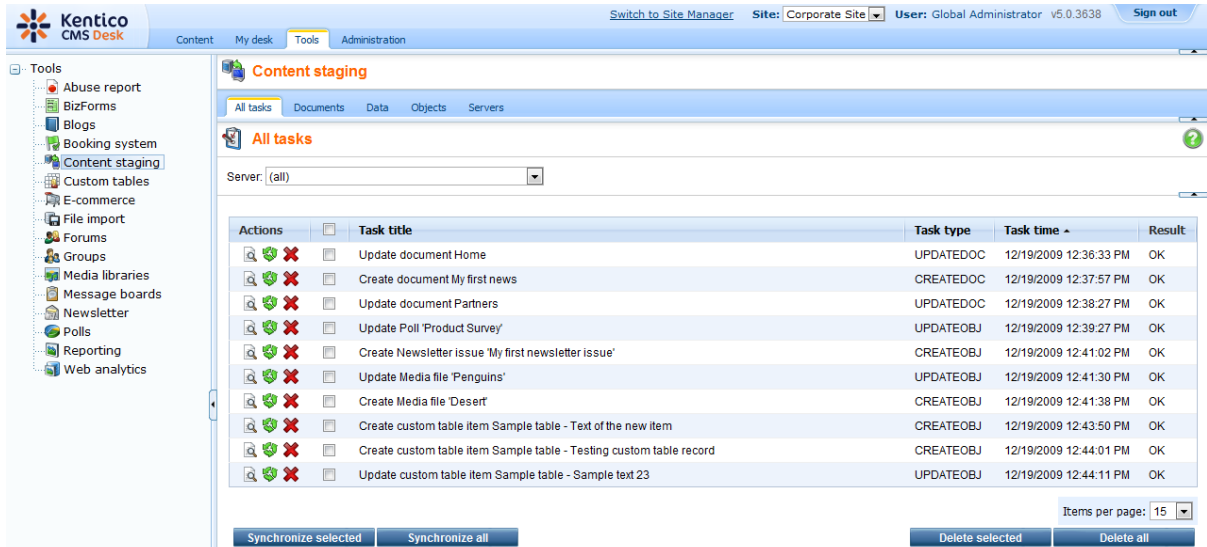
On the **All tasks** tab, you can see a list of all content staging tasks, i.e. all changes made to the system that can be synchronized on the target server.































Using the **Server** drop-down, you can choose the target server that you want to synchronize. By choosing **(all)**, you perform synchronization for all available target servers. Then you can perform one of the following actions using the buttons at the bottom:

- **Synchronize selected** - performs synchronization for all tasks selected by the check-boxes (☑) on the target server;
- **Synchronize all** - performs synchronization for all listed tasks on the target server; in case you made any changes to content on the target server in the meantime, these changes will be overwritten
- **Delete selected** - deletes all tasks selected by the check-boxes (☑) on the target server
- **Delete all** - deletes all listed tasks on the target server

You can also perform the following actions separately with particular staging tasks:

-  **View** - opens a new window with detailed information about the staging task
-  **Synchronize** - performs the synchronization task on the target server
-  **Delete** - deletes the synchronization task from the list






| Actions | Task title | Task type | Task time | Result |
|--|---|-----------|------------------------|--------|
| <input type="checkbox"/>    | Update document Home | UPDATEDOC | 12/19/2009 12:36:33 PM | OK |
| <input type="checkbox"/>    | Create document My first news | CREATEDOC | 12/19/2009 12:37:57 PM | OK |
| <input type="checkbox"/>    | Update document Partners | UPDATEDOC | 12/19/2009 12:38:27 PM | OK |
| <input type="checkbox"/>    | Update Poll 'Product Survey' | UPDATEOBJ | 12/19/2009 12:39:27 PM | OK |
| <input type="checkbox"/>    | Create Newsletter issue 'My first newsletter issue' | CREATEOBJ | 12/19/2009 12:41:02 PM | OK |
| <input type="checkbox"/>    | Update Media file 'Penguins' | UPDATEOBJ | 12/19/2009 12:41:30 PM | OK |
| <input type="checkbox"/>    | Create Media file 'Desert' | CREATEOBJ | 12/19/2009 12:41:38 PM | OK |
| <input type="checkbox"/>    | Create custom table item Sample table - Text of the new item | CREATEOBJ | 12/19/2009 12:43:50 PM | OK |
| <input type="checkbox"/>    | Create custom table item Sample table - Testing custom table record | CREATEOBJ | 12/19/2009 12:44:01 PM | OK |
| <input type="checkbox"/>    | Update custom table item Sample table - Sample text 23 | UPDATEOBJ | 12/19/2009 12:44:11 PM | OK |

Documents tab

In the screenshot below, you can see the **Documents** tab. By clicking the website root in the content tree on the left, you can view a list of all changes (synchronization tasks) made to all the documents of your website. By clicking a particular document, you can view only the changes made to it.

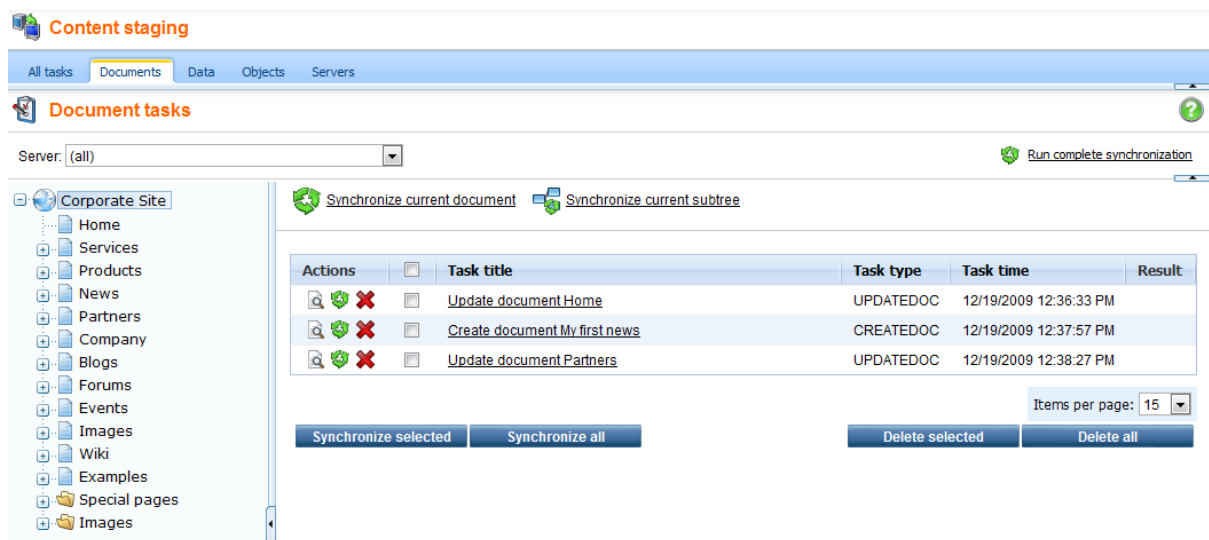
You can perform the same actions as on the **All tasks** tab, as described [above](#).

You can also perform the following manual actions. These actions are manual because they are not related to the listed tasks and they can be performed even if there are no synchronization tasks logged:

-  **Run complete synchronization** - performs complete synchronization of all documents in the content tree
-  **Synchronize current document** - synchronizes the currently selected document
-  **Synchronize current sub-tree** - synchronizes all documents in the selected sub-tree

The following types of tasks are logged for documents. You can see the type in the **Task type** column:

- **CREATEDOC** - document was created
- **UPDATEDOC** - document was modified
- **DELETEDOC** - document was deleted
- **DELETEALLCULTURES** - all cultural versions of the document were deleted
- **PUBLISHDOC** - document was published
- **ARCHIVEDOC** - document was archived
- **REJECTDOC** - document was rejected
- **MOVEDOC** - document was moved to another location in the content tree





Data tab

In the screenshot below, you can see the **Data** tab. This is where changes made to data in **custom tables** are logged.

You can perform the same actions as on the **All tasks** tab, as described [above](#).

You can also perform the following manual actions. These actions are manual because they are not related to the listed tasks and they can be performed even if there are no synchronization tasks logged:

-  **Run complete synchronization** - performs complete synchronization of all data in all custom tables
-  **Synchronize current sub-tree** - synchronizes all data in the selected custom table

The following types of tasks are logged for custom tables data. You can see the type in the **Task type** column:

- **CREATEOBJ** - new item was added to a table
- **UPDATEOBJ** - an item in a table was updated
- **DELETEOBJ** - an item in a table was deleted

Please note: Staging tasks for custom table items are logged based on their *ItemGUID* column. Items which do not have this column (typically in custom tables imported from older versions of Kentico CMS), changes made to them are not logged. However, you can edit the custom table in CMS Desk -> Tools -> Custom tables. You will see a warning message with a link letting you to generate the GUIDs for the table.

The screenshot shows the 'Data tasks' interface in Kentico CMS. The 'Data' tab is selected, and the 'Sample table' is chosen from the 'Custom tables' list. A table displays the following tasks:

| Actions | Task title | Task type | Task time | Rest |
|---------|---|-----------|------------------------|------|
| | Create custom table item Sample table - Text of the new item | CREATEOBJ | 12/19/2009 12:43:50 PM | |
| | Create custom table item Sample table - Testing custom table record | CREATEOBJ | 12/19/2009 12:44:01 PM | |
| | Update custom table item Sample table - Sample text 23 | UPDATEOBJ | 12/19/2009 12:44:11 PM | |

At the bottom of the table, there are buttons for 'Synchronize selected', 'Synchronize all', 'Delete selected', and 'Delete all'. A dropdown menu shows 'Items per page: 15'.

Objects tab

In the following screenshot, you can see the **Objects** tab. This is where changes made to objects are logged.

The main categories are **website** and **Global objects**. The first category contains object changes connected to the current website, whilst the second one contains object changes for global objects.

You can perform the same actions as on the **All tasks** tab, as described [above](#).

When you select a particular object category, you get also the following manual action offered. This action is manual because it is not related to the listed tasks and can be performed even if there are no synchronization tasks logged:

- **Synchronize current sub-tree** - synchronizes all objects in the selected category

The following types of tasks are logged for objects. You can see the type in the **Task type** column:

- **CREATEOBJ** - new object was created
- **UPDATEOBJ** - object was modified
- **DELETEOBJ** - object was deleted
- **ADDTOSITE** - object was assigned to a site; applicable only to site-related objects
- **REMOVEFROMSITE** - object was removed from a site; applicable only to site-related objects

The following types of tasks are logged for folders in media libraries:

- **CREATEFOLDER** - folder was created
- **RENAMEFOLDER** - folder was renamed
- **COPYFOLDER** - folder was copied
- **MOVEFOLDER** - folder was moved
- **DELETEFOLDER** - folder was deleted



Please note

Global metadata changes such as changes to document types, custom tables and system tables produce staging tasks for all staging servers of all sites. In such case, it is recommended to synchronize such changes to all servers of all sites at the same time to prevent overwriting of such metadata and loosing the data by synchronizing the older tasks later.

You can use the `<add key="CMSStagingTreatServerNamesAsInstances" value="true" />` key to make sure that once the global task is synchronized, it is deleted from all other servers with the same name to prevent such possibility. The default value is false since staging can use multiple target instances targeted with the same names.

The screenshot shows the 'Content staging' interface with the 'Objects' tab selected. A table lists several tasks with their actions, titles, types, times, and results.

| Actions | Task title | Task type | Task time | Result |
|--|---|-----------|------------------------|--------|
| <input type="checkbox"/> <input checked="" type="checkbox"/> | Update Poll 'Product Survey' | UPDATEOBJ | 12/19/2009 12:39:27 PM | |
| <input type="checkbox"/> <input checked="" type="checkbox"/> | Create Newsletter issue 'My first newsletter issue' | CREATEOBJ | 12/19/2009 12:41:02 PM | |
| <input type="checkbox"/> <input checked="" type="checkbox"/> | Update Media file 'Penguins' | UPDATEOBJ | 12/19/2009 12:41:30 PM | |
| <input type="checkbox"/> <input checked="" type="checkbox"/> | Create Media file 'Desert' | CREATEOBJ | 12/19/2009 12:41:38 PM | |

Buttons at the bottom include 'Synchronize selected', 'Synchronize all', 'Delete selected', and 'Delete all'. The 'Items per page' is set to 15.

8.13.4 Bi-directional staging

If you want to perform content staging bi-directionally, i.e. you want to update changes from Server 1 to Server 2 and then back from Server 2 to Server 1, you need to **disable** the **Log staging changes** option in **Site Manager -> Settings -> Content staging** on both servers.

If this option is enabled, changes made to the system via content staging synchronization (i.e. transferred from Server 1 to Server 2) are logged as new synchronization tasks on the target server (on Server 2). Now if you perform synchronization in the reversed direction, i.e. back from Server 2 to Server 1, these tasks are also performed and logged back on Server 1 as new staging tasks. This goes on and on in a never-ending loop, which results in the tasks remaining and not being deleted on both servers.

In order to prevent this behavior, you need to disable the **Log staging changes** option on both servers so that the staging changes are not logged as new synchronization tasks.

The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', 'Support', and 'Buy'. The 'Settings' tab is active, and the 'Content staging' section is selected in the left-hand menu. The main content area displays the 'Content staging' settings for the 'global' site. The settings are as follows:

| Setting | Value |
|--------------------------------|-------------------------------------|
| Log content changes | <input checked="" type="checkbox"/> |
| Log data changes | <input checked="" type="checkbox"/> |
| Log object changes | <input checked="" type="checkbox"/> |
| Log staging changes | <input type="checkbox"/> |
| Log export tasks | <input checked="" type="checkbox"/> |
| Enable staging service | <input type="checkbox"/> |
| Staging service authentication | User name and password |
| Staging service user name | admin |
| Staging service password | pass |
| Client key ID | gBfo0147IM6cKnTbbMSuMVvmFY4= |
| Server key ID | bBwPftvKp3b6TNDq+14qs58VJQ= |

The 'Log staging changes' option is highlighted with a red box in the original image. Below the settings, there is an 'Export these settings' link.

8.13.5 Staging of Media library files and folders

Kentico CMS supports staging of the **physical files and folders** stored in the file system in a [Media library](#). Staging tasks related to Media library files are logged in [CMS Desk -> Tools -> Content Staging -> Objects](#).

You can limit the maximal size of synchronized media library files by adding the following key to the *appSettings* section of your *web.config* file. The value is entered in **kiloBytes** and files larger than the value will not be synchronized.

```
<add key="CMSMediaFileMaxStagingSize" value="1024" />
```

Please note: Changes in media library files and folders are logged as content staging tasks only when performed via the UI. If you make some changes directly in the library folder in the file system (e.g. upload or update some files via FTP), the changes are not logged.

Also, if you make some change to a file via the UI and then update the file via FTP, the current file (the one updated via FTP) will be transferred to the target server, even if the staging task was created before the file upload. This happens because binary data of the files are loaded in synchronization time, not when the synchronization task is logged.

8.13.6 Using X.509 authentication

In order to use **X.509** authentication, you need to install your own, or our sample certificates. Kentico CMS is delivered with sample client and server private certificates. In order to install them, you need to

do the following on the source server (for the client certificate "Client private.pfx") and on the target server (for the server certificate "Server private.pfx"):

1. Choose **Start -> Run**, type **mmc** and press **Enter**.
2. In the console window, choose **File -> Add/Remove Snap-in**.
3. Click **Add** and choose **Certificates**.
4. Choose **Computer account** in the next step.
5. Choose **Local computer** in the next step. Finish adding the **Certificates** snap-in.
6. Unfold **Certificates (Local Computer)** under the console root, right-click **Personal** and choose **All Tasks -> Import...** The **Certificate Import Wizard** starts.
7. Import the appropriate certificate from the .pfx file in folder **C:\Program Files\Kentico CMS\<version>\SampleCertificates**.
8. Enter the following password for the sample certificates (it is the same for client and server certificate): **wse2qs**
9. Now you need to grant the ASPNET (for Windows XP) or (for NT Authority\Network Service in Windows 2003) account with **READ** permissions for the certificate file. You can do that using the **WseCertificate3.exe** tool that can be found in folder **C:\Program Files\Kentico CMS\<version>\Sample Certificates**
10. Run the **WseCertificate3.exe** tool.
11. Choose **Local Computer** in the **Certificate Location** field.
12. Choose **Personal** in the **Store Name** field.
13. Click **Open Certificate** and choose either the client or the server certificate.
14. Click **View Private Key File Properties...** and grant the user ASPNET (for Windows XP) or the user NT Authority\Network Service (for Windows Server 2003) with **READ** permission for this file.

If you're using your own certificates (highly recommended), you will need to update the following values in the **Site Manager -> Settings -> Content Staging** dialog:

- Client key ID
- Server key ID

Here's how to get the ID's:

You will use the `WseCertificate3.exe` tool located in folder `C:\Program files\KenticoCMS\<version>\SampleCertificates` to get the certificate keys.

1. Run the **WseCertificate3.exe** tool.

2. Choose **Local Computer** in the **Certificate Location** field.

3. Choose **Personal** in the **Store Name** field.

4. Click **Open certificate** and select either client or the server certificate.

In the **Key identifiers group** you can now see the **certificate key**, **Windows key identifier (Base64)** should be used within Kentico CMS settings.



Important: Sample certificates

Using the sample certificates is not secure and it's also very slow. It's highly recommended that you use your own certificate issued by a certification authority.



Tip

If you encounter problems with content staging when using SLL (X.509), try adding the following key to your `web.config` file:

```
<add key="CMSStagingAcceptAllCertificates" value="true" />
```

This key ensures that all certificates will be accepted. If set to false, only certificates issued by a certification authority will be accepted.

8.13.7 Synchronization using API

In special cases, you may need to use Kentico CMS API to perform your own synchronization process. There are several methods you can use to work with synchronization.

| | |
|--|---|
| WorkflowEngine.DocumentHelper.
LogSynchronization | Creates a synchronization task for the specified document. This method does not actually perform the synchronization, it only creates the task which can be later synchronized. By default, the method creates the task for all the enabled servers. You can use the overridden version with serverId parameter to specify the particular server. |
| CMSStaging.StagingHelper.
RunSynchronization | Runs the synchronization of specified task for the specified server or servers. |

Here is an example code how to synchronize the content of the document “/Home” to server “Staging.Target1”:

[C#]

```
using CMS.TreeEngine;
using CMS.CMSHelper;
using CMS.Staging;
using CMS.WorkflowEngine;

TreeProvider tree = new TreeProvider(CMSContext.CurrentUser);
// Get the base document record
TreeNode node = tree.SelectSingleNode(CMSContext.CurrentSiteName, "/Home", "en-us",
, false, null, false);
if (node != null)
{
    // Get full document record (required for synchronization logging)
    node = tree.SelectSingleNode(CMSContext.CurrentSiteName, node.NodeAliasPath,
node.DocumentCulture, false, node.NodeClassName, false);
    if (node != null)
    {
        // Get the server
        ServerInfo si = ServerInfoProvider.GetServerInfo("Staging.Target1",
CMSContext.CurrentSiteID);
        if (si != null)
        {
            // Log the synchronization task for the given server
            TaskInfo ti = DocumentHelper.LogSynchronization(node, TaskTypeEnum.
UpdateDocument, tree, si.ServerID);
            if (ti != null)
            {
                // Run the task synchronization
                StagingHelper.RunSynchronization(ti.TaskID, si.ServerID);
            }
        }
    }
}
```

You can also use low level operations from `TaskInfoProvider`, `SynchronizationInfoProvider` and `ServerInfoProvider` to achieve synchronization, but previous methods should be enough to perform any simple synchronization actions.

The following example shows how you can synchronize the administrator user account. Synchronization of any other objects is done the same way using the API, as all objects implement the **IInfoObject** interface.

[C#]

```
using CMS.SiteProvider;
using CMS.Staging;
using CMS.CMSHelper;

// Gets the object
UserInfo userObj = UserInfoProvider.GetUserInfo("administrator");
if (userObj != null)
{
    // Gets the server
    ServerInfo si = ServerInfoProvider.GetServerInfo("Staging.Target1", CMSContext.
CurrentSiteID);
    if (si != null)
    {
        // Creates the synchronization task
        TaskInfo ti = TaskInfoProvider.LogSynchronization(userObj, TaskTypeEnum.
UpdateObject, null, null, si.ServerID);
        if (ti != null)
        {
            // Runs the synchronization task
            StagingHelper.RunSynchronization(ti.TaskID, si.ServerID);
        }
    }
}
```

8.13.8 Configuration of automatic synchronization

Automatic synchronization is available only for synchronizing document changes. Object changes cannot be synchronized this way. Manual synchronization remains the only way to perform object synchronization tasks.

If you want the changes to be synchronized from the staging to the live site on a regular basis without waiting for the administrator's approval, you can configure the scheduled task called **Content synchronization** in **Site Manager -> Administration -> Scheduled tasks**. This task is disabled by default, so you need to enable it and configure the interval.



8.13.9 Security

You can control the access to the Content staging module in **Administration -> Permissions**. You need to select:

- **Site:** your site
- **Permission type:** Modules
- **Permission matrix:** Content staging

In the permission matrix, you can add the following permissions to the particular roles:

- **Manage all tasks** - displays the All tasks tab and allows synchronization and management of synchronization tasks on it
- **Manage data tasks** - displays the Data tab and allows synchronization and management of synchronization tasks on it
- **Manage document tasks** - displays the Objects tab and allows synchronization and management of synchronization tasks on it
- **Manage object tasks** - displays the Objects tab and allows synchronization and management of synchronization tasks on it
- **Manage servers** - allows members of the roles to manage target server configurations on the Servers tab

 **Permissions** 

Site:

Permission type:

Permission matrix:

| | Manage all tasks | Manage data tasks | Manage document tasks | Manage object tasks | Manage servers |
|------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

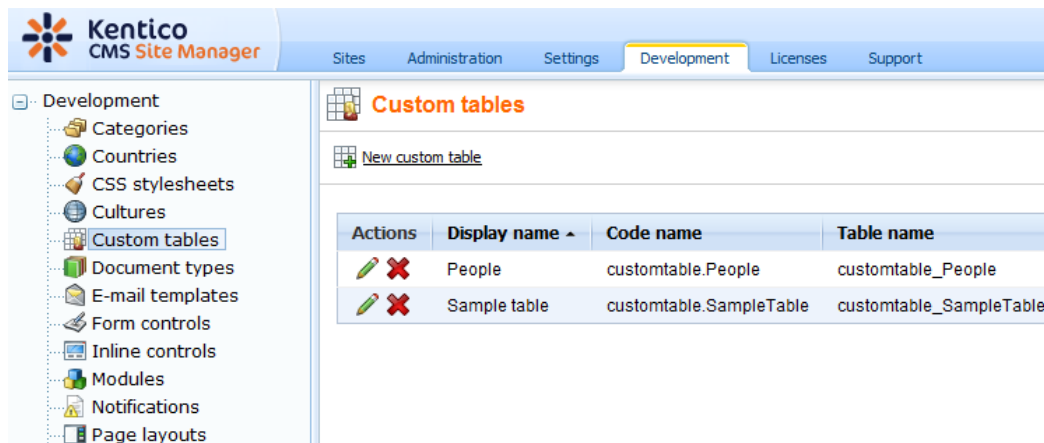
8.14 Custom tables

8.14.1 Overview





The Custom tables module allows users to store data in their own custom database tables without the need to use the tree structure, which is inefficient for larger amounts of data.



8.14.2 Managing custom tables

The administration interface for custom tables management is located in **Site Manager -> Development -> Custom tables**.



The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes tabs for Sites, Administration, Settings, Development (selected), Licenses, and Support. The left sidebar shows a tree view of the Development section, with 'Custom tables' selected. The main content area is titled 'Custom tables' and features a 'New custom table' link. Below this is a table with the following data:

| Actions | Display name ^ | Code name | Table name |
|---|----------------|-------------------------|-------------------------|
|   | People | customtable.People | customtable_People |
|   | Sample table | customtable.SampleTable | customtable_SampleTable |

The top part of the page is a filter. You can filter displayed custom tables by Display name, Code name and **Table name**. You can also **Edit** () or **Delete** () the listed records. Creating a new custom table is also done here and is described in the following example:

New Custom table wizard

In the following example, we will create a new custom table using the New custom table wizard. It will be a simple table for storing information about people. Their first names, last names and dates of birth will be stored in the table.

1. Go to **Site Manager -> Development -> Custom tables**.
2. Click the **New Custom table** link.

3. The New Custom table wizard starts. On the first step of the wizard, you are asked to fill in the custom table's display name and code name. The code name is always preceded by a namespace which allows you to have different tables of the same name used in different contexts. Enter the following details:

- **Custom table display name:** People
- **Custom table code name:** customtable.People

and click **Next** to continue.

Step 1 | **General**
Please enter custom table display name (for users) and code name (it will be used in your code when necessary).

Custom table display name:

Custom table code name:

[Next >](#)

4. In the second step, you are asked to fill in the database table name. A name in the format <namespace>_<code name> is pre-filled automatically. The primary key name cannot be changed by default. Using the check-boxes below, you can determine which of the default fields should be included in the table. The meanings of the fields are the following:

- **ItemCreatedBy** - user name of the user who created the item
- **ItemCreatedWhen** - date and time of when the item was created
- **ItemModifiedBy** - user name of the user who last modified the item
- **ItemModifiedWhen** - date and time of last modification
- **ItemOrder** - order of the item when table content list is displayed; the lower number, the earlier position in the list

Leave default values for all parameters and click **Next** to continue.

Step 2 | **Data type**
Please supply name of the new database table and included fields.

Database table name:

Primary key name:

Include ItemCreatedBy field:

Include ItemCreatedWhen field:

Include ItemModifiedBy field:

Include ItemModifiedWhen field:

Include ItemOrder field:

[Next >](#)

5. In the third step, the field editor that you should be already familiar with is displayed. Create three fields with the following parameters:

- **Attribute name:** FirstName
 - **Attribute type:** Text
 - **Attribute size:** 100
 - **Field caption:** First name
 - **Field type:** Text box
- **Attribute name:** LastName
 - **Attribute type:** Text
 - **Attribute size:** 100
 - **Field caption:** Last name
 - **Field type:** Text box
- **Attribute name:** DateOfBirth
 - **Attribute type:** Date and Time
 - **Field caption:** Date of birth
 - **Field type:** Calendar
 - **Edit time:** unchecked

When you are finished, click **Next** to continue to the following step.

Step 3 | **Fields**
Please define custom fields of the custom table and their appearance in the editing form.

The changes were saved.

| | |
|------------------|--|
| ItemID | |
| FirstName | |
| LastName | |
| DateOfBirth | |
| ItemCreatedBy | |
| ItemCreatedWhen | |
| ItemModifiedBy | |
| ItemModifiedWhen | |
| ItemOrder | |
| ItemGUID | |


Database

Attribute name:

Attribute type:

Attribute size:

Allow empty value:

Attribute default value:  Now

Time zone

Time zone type:

Custom time zone:

Display attribute in the editing form

Field

Field caption:

Field type:

6. On Step 4, you only have to select by which sites will the custom table be used. Click **Add sites** and choose **Corporate Site** in the pop-up dialog. Finally click **Next** to proceed to the following step.

The screenshot shows a configuration window for Step 4, titled "Sites". The instruction reads: "Please select sites where this document type can be used:". Below this is a table with two rows. The first row has a checkbox and the text "Site name". The second row has a checked checkbox and the text "Corporate Site". Below the table are two buttons: "Remove selected" and "Add sites". At the bottom right of the window is a green "Next >" button.

| <input type="checkbox"/> | Site name |
|-------------------------------------|----------------|
| <input checked="" type="checkbox"/> | Corporate Site |

Remove selected Add sites

Next >

7. Step 5 offers you to set up how items in the custom table will be indexed using the [Smart Search](#) engine. The four drop-downs at the top determine which fields of the table will be displayed in the search results. Change the values to the following:

- **Title field:** LastName
- **Content field:** FirstName
- **Image field:** none
- **Date field:** ItemModifiedWhen

Leave the rest of the settings at the default values and click Next. For more information about settings in this step, please refer to [this](#) chapter.

Step 5

Search options

Please set search fields for Smart search module.

Title field:

Content field:

Image field:

Date field:

[Set automatically](#)

| Field name | Content | Searchable | Tokenized | Custom search name |
|---------------|-------------------------------------|-------------------------------------|-------------------------------------|----------------------|
| ItemID | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| FirstName | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="text"/> |
| LastName | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="text"/> |
| DateOfBirth | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| ItemCreatedBy | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |

[Next >](#)

8. The fifth step gives you an overview of what has been done automatically. To finish the wizard, click **Finish**. You will be redirected back to the list of custom tables in **Site Manager -> Development -> Custom tables**.

Step 6**The wizard has finished**

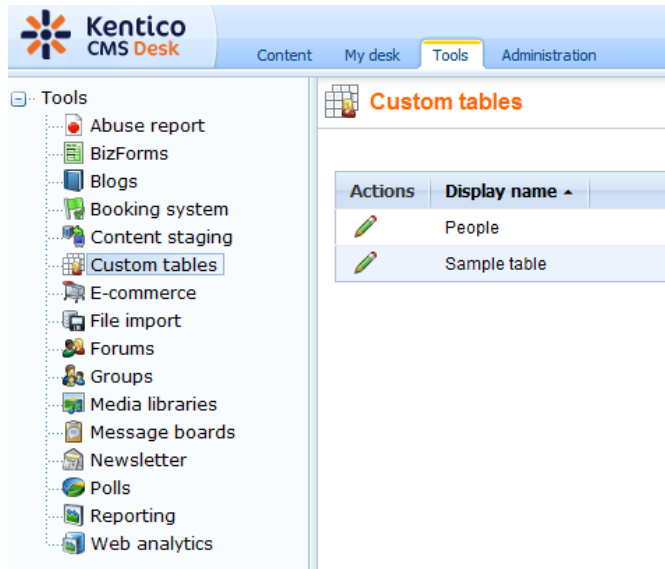
The setup has finished the following steps:

- The new custom table was created.
- The sites were selected where this custom table can be used.
- The default queries were created.
- The default ASCX transformation was created.
- The default permission names were created.

[Finish](#)

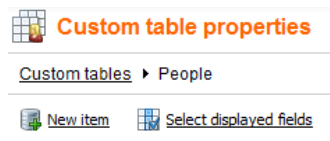
8.14.3 Adding items into custom tables

The administration interface for adding data into custom tables is located in **CMS Desk -> Tools -> Custom tables**.



In the following example, you will learn how to add data into the sample **People** custom table we have created in the previous chapter ([read here](#)):

1. Click the **Edit** () icon next to the **People** table. A blank page with a header as in the following screenshot will be displayed. The page is blank because there is no data in the custom table yet.



2. Click the **New item** link. Form that you can see in the following screenshot will be displayed. Enter some sample data and click **OK**.

3. The data you entered has just been saved into the custom table. You can edit it now or use the [Create another](#) link to create another record. Try creating at least two other records.





















4. When you're finished, switch back to the **Custom tables** list in **CMS Desk -> Tools** and choose to

Edit (✎) the **People** custom table. You should see the list of entries where the blank page was before entering the records.

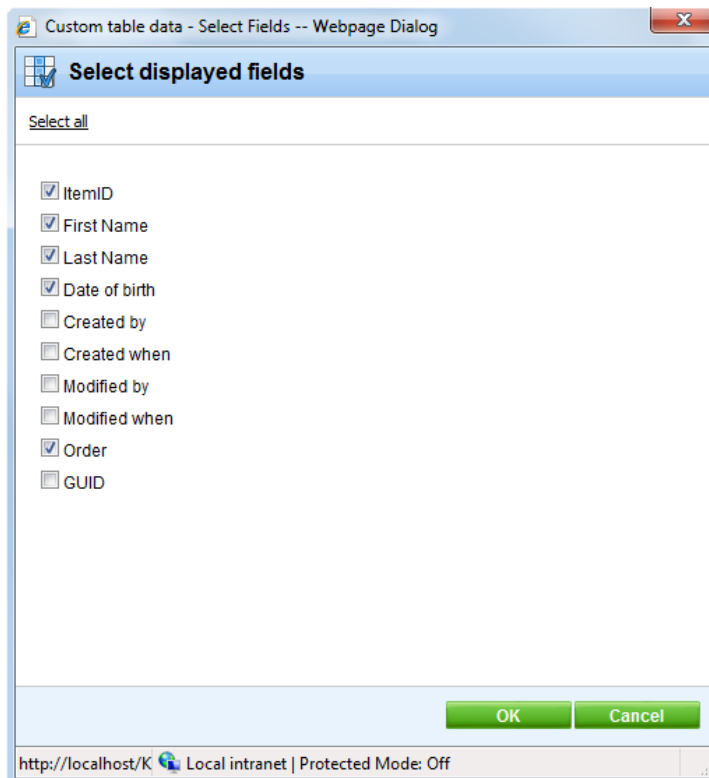
Custom table properties

[Custom tables](#) ▶ People

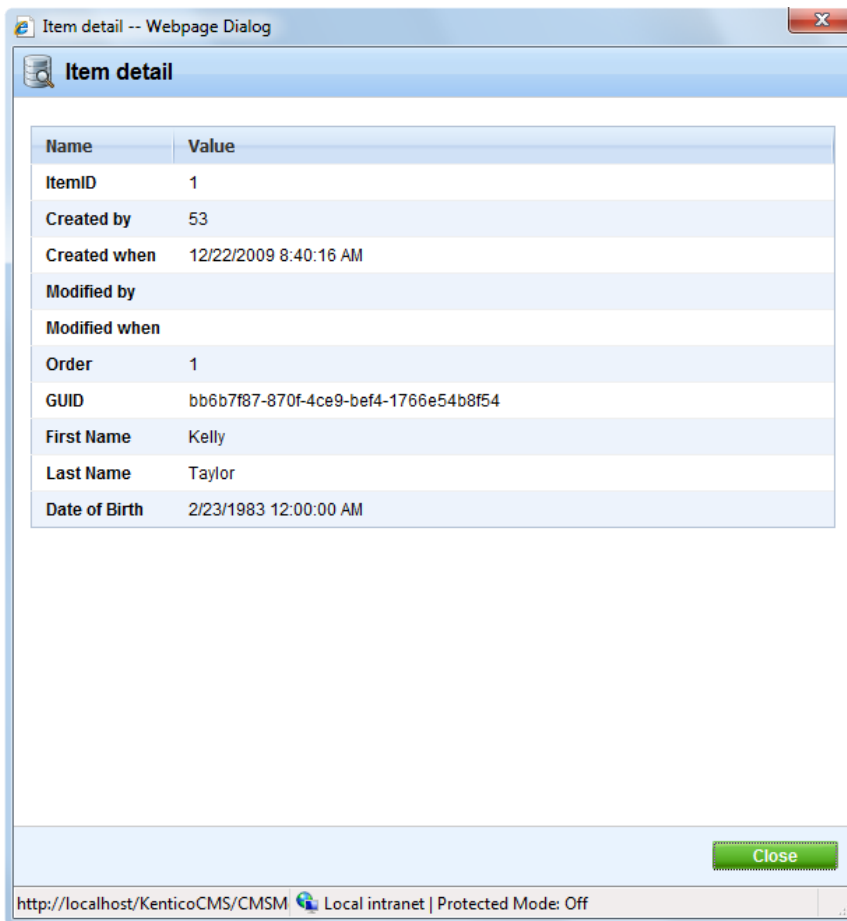
 [New item](#)  [Select displayed fields](#)

| Actions | ItemID | First name | Last name | Date of birth | Created by | Created when |
|---|--------|------------|-----------|-----------------------|------------|-----------------------|
|      | 1 | Mike | Farrell | 3/20/1979 12:00:00 AM | 53 | 3/24/2010 12:43:00 AM |
|      | 2 | Kelly | Taylor | 2/23/1983 12:00:00 AM | 53 | 3/24/2010 12:43:23 AM |
|      | 3 | Jack | McDonald | 3/5/1980 12:00:00 AM | 53 | 3/24/2010 12:43:47 AM |
|      | 4 | fdsaf | dsfs | 3/24/2010 12:00:00 AM | 53 | 3/24/2010 12:44:59 AM |

5. You can choose which fields are to be displayed by clicking the **Select displayed fields** link. The window depicted in the following screenshot will be displayed. Using the check-boxes, you can determine which fields are to be displayed and which are not. When you make the selection and click **OK**, you should see the result immediately.



6. If you click the **View** (🔍) icon next to each of the records, detailed information about the record will be displayed in a pop-up window. All details will be displayed, no matter which fields are selected to be displayed in the list:



7. You can also order the records in the list using the **Up** (↑) and **Down** (↓). The order will then be stored in the **ItemOrder** property of each of the records.

8. Records in the custom table can also be **Edited** (✎) and **Deleted** (✖) on this page.

8.14.4 Available web parts

The Custom tables module comes with three web parts that can be used for displaying custom tables' content. You can find detailed descriptions of each web part's properties in **Kentico CMS Web Parts** reference.

Custom table datagrid

| FirstName ▲ | LastName | DateOfBirth |
|-------------|----------|------------------------|
| Jane | Doe | 6/8/1970 12:00:00 AM |
| Kelly | Taylor | 2/23/1983 12:00:00 AM |
| Mike | Farrel | 12/18/1973 12:00:00 AM |

Custom table datalist

In the screenshot below, you can see the basic appearance of the Custom table repeater web part. The appearance can be changed using transformations. You can find more information about using transformations for custom tables in chapter [Transformations for custom tables](#).

| | |
|---|--|
| First name: Kelly | First name: Mike |
| Last name: Taylor | Last name: Farrel |
| Date of birth: 2/23/1983 12:00:00 AM | Date of birth: 12/18/1973 12:00:00 AM |

Custom table repeater

In the screenshot below, you can see the basic appearance of the Custom table repeater web part. The appearance can be changed using transformations. You can find more information about using transformations for custom tables in chapter [Transformations for custom tables](#).

| |
|---|
| First name: Kelly |
| Last name: Taylor |
| Date of birth: 2/23/1983 12:00:00 AM |

| |
|--|
| First name: Mike |
| Last name: Farrel |
| Date of birth: 12/18/1973 12:00:00 AM |

| |
|--|
| First name: Jane |
| Last name: Doe |
| Date of birth: 6/8/1970 12:00:00 AM |

8.14.5 Transformations for custom tables

Use of transformations is essential for the custom table web parts. In the following example, you will learn how to modify the way data is displayed by changing the transformation code. You can find examples of usage of the web parts on the sample Corporate Site under **Examples -> Webparts -> Custom tables**. We will use the **Custom table repeater** example that can be found on the likely named page. We will also use the **People** custom table that we have created ([read here](#)) and populated with some records ([read here](#)) in the previous chapters.

1. Go to **CMS Desk**, switch to **Edit** mode and select **Examples -> Webparts -> Custom tables -> Custom table repeater**. The repeater is bound to the **Sample table** that is a part of the Corporate site by default. It should appear as in the following screenshot:

Examples > Webparts > Custom tables > Custom table repeater

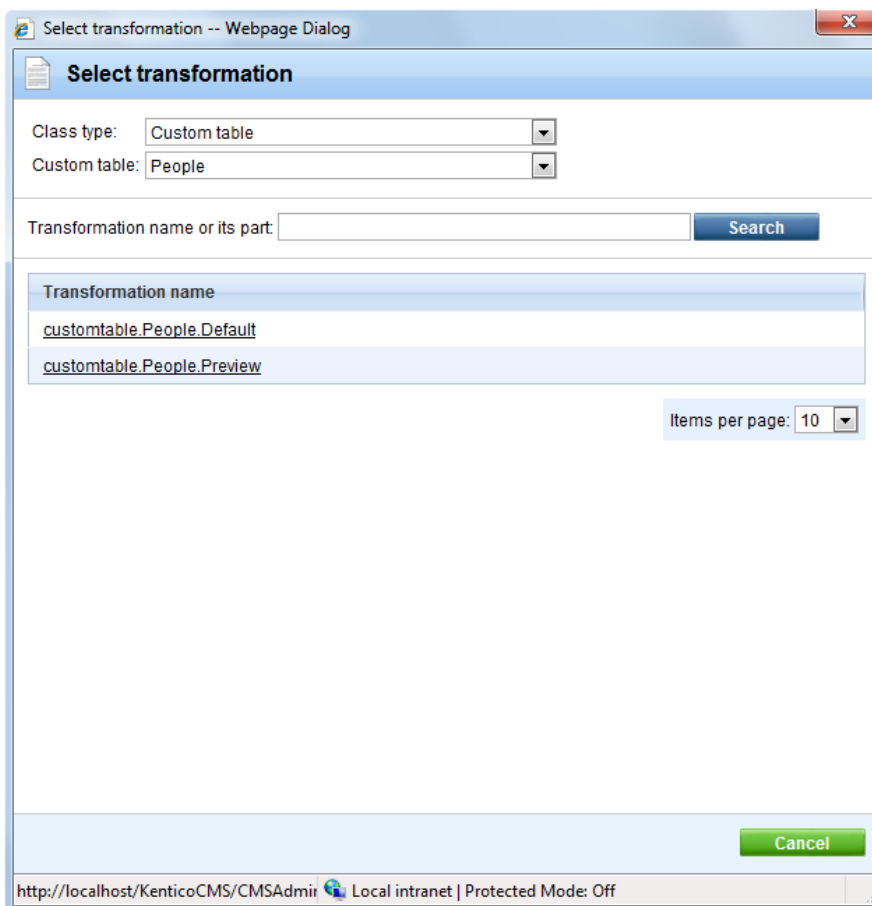
Item text: Sample text 1

Item text: Sample text 2

Item text: Sample text 3

2. Switch to the **Design** tab and choose to **Configure** (⚙️) the repeater's properties. First, select the custom table from that the data will be displayed. It is done by the **Custom table** drop-down list. Choose the **People** custom table.

3. Now it's time to set the used transformation via the **Transformation name** property. If you click the **Select** button next to the mentioned field, you will get the pop-up window as depicted in the following screenshot. There are two default transformations generated by default for each custom table - the **Default** transformation and the **Preview** transformation. Choose the Default transformation and click **OK**. Click **OK** again in the **Web part properties** window.



4. Now if you switch to the Live site, you should see that the repeater is displaying something like the following:

Examples > Webparts > Custom tables > Custom table repeater

```

First name:      Kelly
Last name:       Taylor
Date of birth:   2/23/1983 12:00:00 AM
ItemCreatedBy:   53
ItemCreatedWhen: 10/28/2008 4:47:02 PM
ItemModifiedBy:
ItemModifiedWhen:
ItemOrder:       2
First name:      Jack
Last name:       McDonald
Date of birth:   3/5/1980 12:00:00 AM
ItemCreatedBy:   53
ItemCreatedWhen: 10/28/2008 4:48:21 PM

```

5. As you probably wouldn't want to have all the empty fields displayed and the table to be unformatted on your real website, you would want to edit the transformation code. To do it, switch to the **Edit** mode again, switch to the **Design** tab, choose to **Configure** the web part's properties and click the **Edit** button next to the **Transformation name** property. Now you can edit the transformation code according to your needs.

For the purpose of this tutorial, please replace the transformation code with the following code example. You can notice that it is just a modification of the former **Default transformation** with the unwanted fields deleted and the highlighted tags and properties added:

```

<table border="1" cellpadding="4">
<tr>
<td><b>First name:</b></td>
<td width="180"><%# Eval("FirstName") %></td>
</tr>
<tr>
<td><b>Last name:</b></td>
<td><%# Eval("LastName") %></td>
</tr>
<tr>
<td><b>Date of birth:</b></td>
<td><%# Eval("DateOfBirth") %></td>
</tr>
</table>
<br/>

```

6. Click **Save**. Now if you go to the live site, you should see that the data is displayed in a formatted way, as you can see below.

[Examples](#) > [Webparts](#) > [Custom tables](#) > Custom table repeater

| | |
|----------------|-----------------------|
| First name: | Kelly |
| Last name: | Taylor |
| Date of birth: | 2/23/1983 12:00:00 AM |

| | |
|----------------|------------------------|
| First name: | Mike |
| Last name: | Farrel |
| Date of birth: | 12/18/1973 12:00:00 AM |

| | |
|----------------|----------------------|
| First name: | Jane |
| Last name: | Doe |
| Date of birth: | 6/8/1970 12:00:00 AM |

8.14.6 Security

Permissions of the Custom tables module can be set in **Site Manager** or **CMS Desk** in the **Administration -> Permissions** section, in the **Modules -> Custom tables** permission matrix:

The following permissions can be assigned to the particular roles:

- **Create** - members of the role are allowed to create data in any custom table
- **Delete** - members of the role are allowed to delete data in any custom table
- **Modify** - members of the role are allowed to modify data in any custom table
- **Read** - members of the role are allowed to read any custom table data

Permissions

Site:

Permission type:

Permission matrix:

| | Create | Delete | Modify | Read |
|------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

You can also set these permissions for particular custom tables. This is also done in the **Administration -> Permissions** section of both **Site Manager** and **CMS Desk**. You have to select **Custom tables** from the **Permission type** drop-down list. The Permission matrix drop-down list will then offer you all custom tables assigned to the selected site.

The following permissions can be set for each custom table:

- **Create** - members of the role are allowed to add new records into the table
- **Delete** - members of the role are allowed to delete records from the table
- **Modify** - members of the role are allowed to modify existing records in the table
- **Read** - members of the role are allowed to read data stored in the custom table

Permissions

Site:

Permission type:

Permission matrix:

| | Create | Delete | Modify | Read |
|------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

8.14.7 API examples

The following code examples show how you can handle custom tables data using Kentico CMS API.

Deleting an item from a custom table

[C#]

```
using CMS.SettingsProvider;
using CMS.SiteProvider;
using CMS.DataEngine;
using CMS.CMSHelper;

string customTableClassName = "customtable.SampleTable";

// Get data class using custom table name
DataClassInfo customTableClassInfo = DataClassInfoProvider.GetDataClass
(customTableClassName);

// Check if data class info exists
if (customTableClassInfo != null)
{
    // Initialize custom table item provider with current user info and general
    // connection
    CustomTableItemProvider ctiProvider = new CustomTableItemProvider(
        CMSContext.CurrentUser, ConnectionHelper.GetConnection());

    // Provide ID of item you want to delete
    int itemId = 1;

    // Get custom table item with given item ID
    CustomTableItem item = ctiProvider.GetItem(itemId, customTableClassInfo.
        ClassName);

    // Check if item exists
    if (item != null)
    {
        // Delete item
        item.Delete();
    }
}
```

Adding an item into a custom table

[C#]

```
using CMS.SettingsProvider;
using CMS.SiteProvider;
using CMS.DataEngine;
using CMS.CMSHelper;

string customTableClassName = "customtable.SampleTable";

// Get data class using custom table name
DataClassInfo customTableClassInfo = DataClassInfoProvider.GetDataClass
(customTableClassName);
if (customTableClassInfo == null)
{
    throw new Exception("Given custom table does not exist.");
}

// Initialize custom table item provider with current user info and general
connection
CustomTableItemProvider ctiProvider = new CustomTableItemProvider(CMSContext.
CurrentUser, ConnectionHelper.GetConnection());

// Create new custom table item for given class of custom table
CustomTableItem item = new CustomTableItem(customTableClassInfo.ClassName,
ctiProvider);

// Set value of a custom table item field
item.SetValue("TestField", "Sample item");

// Insert the item
item.Insert();
```

Editing an item in a custom table

[C#]

```
using CMS.SettingsProvider;
using CMS.SiteProvider;
using CMS.DataEngine;
using CMS.CMSHelper;

string customTableClassName = "customtable.SampleTable";

// Get data class using custom table name
DataClassInfo customTableClassInfo = DataClassInfoProvider.GetDataClass
(customTableClassName);
if (customTableClassInfo == null)
{
    throw new Exception("Given custom table does not exist.");
}

// Initialize custom table item provider with current user info and general
```

```
connection
CustomTableItemProvider ctiProvider = new CustomTableItemProvider(CMSContext.
CurrentUser, ConnectionHelper.GetConnection());

// Provide ID of item you want to edit
int itemId = 1;

// Get custom table item with given ID
CustomTableItem item = ctiProvider.GetItem(itemId, customTableClassInfo.
ClassName);

// Set value of the custom table item field
item.SetValue("TestField", "Sample item");

// Update item
item.Update();
```

Getting items from a given custom table

[C#]

```
using CMS.SettingsProvider;
using CMS.SiteProvider;
using CMS.CMSHelper;
using CMS.DataEngine;
using CMS.GlobalHelper;

string customTableClassName = "customtable.SampleTable";

// Get data class using custom table name
DataClassInfo customTableClassInfo = DataClassInfoProvider.GetDataClass
(customTableClassName);
if (customTableClassInfo == null)
{
    throw new Exception("Given custom table does not exist.");
}

// Initialize custom table item provider with current user info and general
connection
CustomTableItemProvider ctiProvider = new CustomTableItemProvider(CMSContext.
CurrentUser, ConnectionHelper.GetConnection());

// Get custom table items
DataSet dsItems = ctiProvider.GetItems(customTableClassInfo.ClassName, null, null
);

// Check if DataSet is not empty
if (!DataHelper.DataSourceIsEmpty(dsItems))
{
    // Handle the retrieved data
}
```

8.15 E-commerce

8.15.1 Overview

For more information about the **E-commerce** module please refer to [Kentico CMS E-commerce Guide](#).

8.16 E-mail queue

8.16.1 Overview

The E-mail queue module was designed to enable sending of large amounts of e-mails, e.g. when sending newsletter issues to the subscribers, etc. The e-mails in the queue are sent **automatically**, no manual sending is necessary as the E-mail queue sender scheduled task handles it. When an e-mail is not sent successfully, it remains in the queue so that it can be resent later.

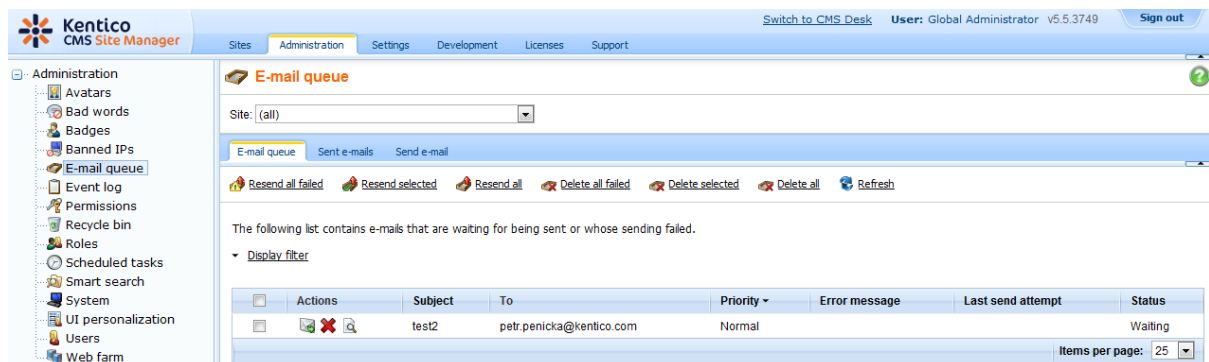
8.16.2 Administrating the e-mail queue

The e-mail queue administration interface is located in **Site Manager -> Administration -> E-mail queue**. Using the **Site** drop-down list, you can choose which site you want to display the e-mail queue for. If (**global**) is selected, e-mails sent from the administration interface will be displayed. If (**all**) is selected, all e-mails in all queues will be displayed. The administration interface is divided into three tabs:

E-mail queue tab

This tab displays the actual e-mail queue. E-mails that are waiting to be sent or that haven't been sent successfully (displayed with an Error message) are displayed here. You can **Resend** (📧) the mail, **Delete** (✖) it or **View** (🔍) its details. There is also a number of links above the list:

- **Resend all failed** - resends all e-mails in the queue that were not successfully sent; new e-mails that have not yet been sent will not be resent
- **Resend selected** - resends all e-mails selected by the check-boxes in the list
- **Resend all** - resends all e-mails in the list
- **Delete all failed** - deletes all e-mails in the queue that were unsuccessfully sent; new e-mails that have not yet been sent will not be deleted
- **Delete selected** - deletes all e-mails selected by the check-boxes in the list
- **Delete all** - deletes all e-mails in the list
- **Refresh** - refreshes the content of the e-mail queue



Sent e-mails tab

This tab displays a list of e-mails that have been successfully sent via the e-mail queue. You can set how long will the e-mails stay in this list by the **Site Manager -> Settings -> E-mails -> Archive e-mails (days)** property.

You can **Resend** (📧) the mail, **Delete** (✖) it or **View** (🔍) its details. There are also two links at the top of the page:

- **Delete all** - deletes all e-mails in the list
- **Delete selected** - deletes e-mails selected by the check-boxes in the list

| <input type="checkbox"/> | Actions | Subject | To | Priority | Last send attempt |
|--------------------------|---------|---------|------------------------------|----------|-----------------------|
| <input type="checkbox"/> | | test2 | petr.penicka@kentico.com | Normal | 4/13/2010 10:41:35 AM |
| <input type="checkbox"/> | | test23 | Show details | Normal | 4/13/2010 10:40:27 AM |

Items per page: 25

E-mail filter

When there is a large number of e-mails in the e-mail queue, you can easily limit which e-mails will be displayed using the filter. It can be displayed by clicking the **Display filter** link above the e-mail lists on both tabs.

From:

To:

Subject:

Body:

Priority:

[Hide filter](#)

Send e-mail tab

From this tab, you can easily send a single e-mail to a specified recipient (not only the site users). For sending e-mails to multiple users, we recommend using [mass e-mails](#) instead of this tab.

8.16.3 Sending mass e-mails

As e-mail queue allows sending of massive amounts of e-mails, we've implemented the Mass e-mail feature. This feature enables you to send the same e-mail to a large amount of user.

You can do this in **Site Manager -> Administration -> Users -> Mass e-mail**.

Using the **Site** drop-down list, you can select which site are the recipients related to. Based on this choice, users and user roles related to the chosen site can be selected using the **Select** buttons in the **Recipients** section. When choosing a user or role, *CTRL+left click* can be used to select multiple users or roles. If you choose **(all)** from the Site drop-down list, the Roles field will be hidden as user roles are always site-related.

You can also add some attachment to the mail using the **Attach file** link.

The screenshot displays the 'Users' mass email configuration page in the Kentico CMS Site Manager. The interface includes a top navigation bar with 'Administration' selected, and a left sidebar with a tree view of administrative functions. The main content area is titled 'Users' and contains the following elements:

- Navigation:** 'Users', 'Mass e-mail', and 'On-line users' tabs.
- Site Selection:** A dropdown menu set to 'Community Site'.
- Form Fields:** 'From: administrator@mydomainXY.com' and 'Subject: Merry Christmas'.
- Recipients:** A section with expandable categories: 'Users' (containing a list of users with checkboxes), 'Roles', and 'Groups'. The 'Users' list includes: Abigail Woodwarth (Abi), Global Administrator (administrator), James Culligan (Jimbo), and Joshua O'Neil (Josh). Buttons for 'Remove selected' and 'Add users' are present.
- Text Editor:** A rich text editor with a toolbar and a text area containing the message: 'Kentico Software wishes you Merry Christmas and Happy New Year 2010!!!'.
- Attachments:** An 'Attach file' button.
- Action:** A green 'Send' button.

In the e-mail queue, you will see the **Show details** link instead of recipient's e-mail address for mass e-mails, as you can see in the screenshot below.

| Actions | Subject | To | Priority | Last send attempt |
|---------|----------------------------|-------------------------------|----------|-----------------------|
| | Merry Christmas | Show details | Normal | 12/21/2009 2:32:23 PM |
| | Subscription confirmation. | administrator@localhost.local | Normal | 12/21/2009 2:27:44 PM |

After clicking the link, a window will appear as in the screenshot below. You can delete recipients from the list, so that the mass e-mail will not be delivered to them. This can be done using the **Delete** (X) icons or by selecting more recipients using the check-boxes and clicking the **Delete selected** link.

MassEmails - Recipients -- Webpage Dialog

Recipients list

[Delete selected](#)

| Actions | Recipient | Error message |
|--------------------------|---|---------------|
| <input type="checkbox"/> | administrator (administrator@localhost.local) | |
| <input type="checkbox"/> | silver () | |
| <input type="checkbox"/> | gold () | |
| <input type="checkbox"/> | Andy () | |

Items per page: 25

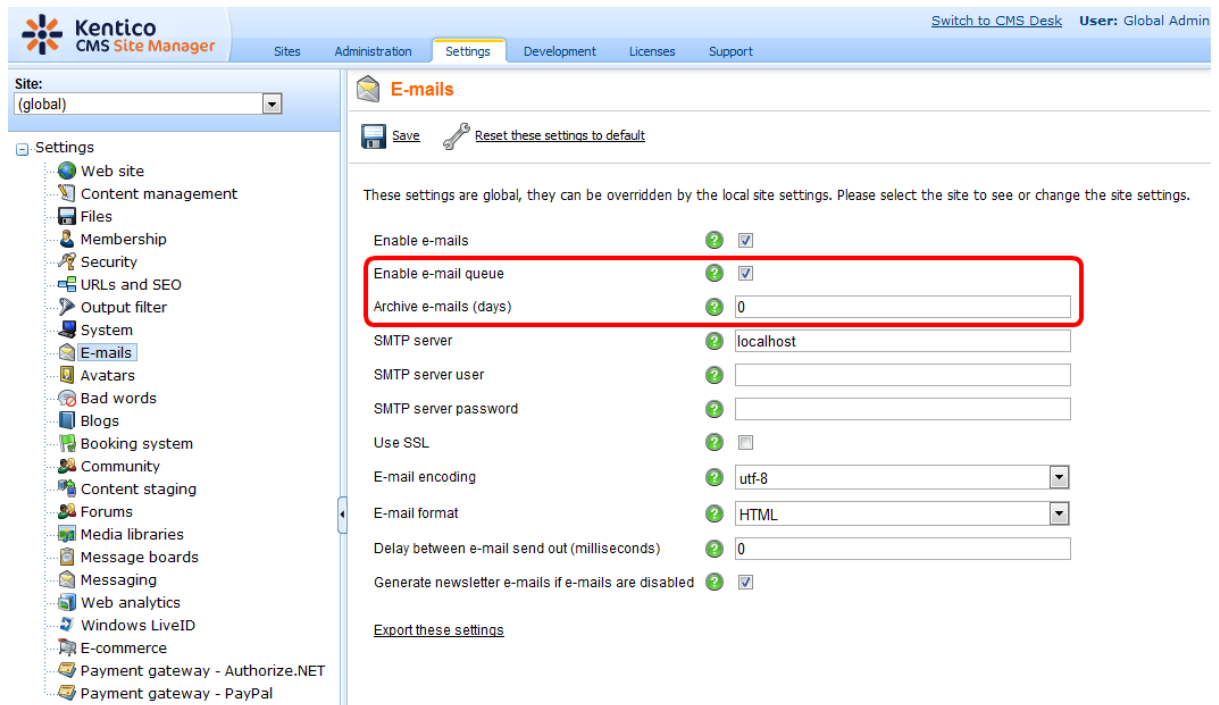
Close

http://localhost/KenticoCMS/CMSModules/EmailQueue/MassEmails_Recipients.aspx?emailid=6 Local intranet | Protected Mode: Off

8.16.4 Settings

E-mail settings are located in **Site Manager -> Settings -> E-mails**. Among other e-mail related settings, these settings are related to the e-mail queue:

- **Enable e-mail queue** - if checked, e-mail queue will be used while sending e-mails.
- **Archive e-mails (days)** - number of days for that will e-mails sent via e-mail queue remain stored on the Sent e-mails tab; if 0, the e-mails are not archived



The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The 'Settings' tab is active, and the 'E-mails' sub-tab is selected. The left sidebar shows a tree view of settings categories, with 'E-mails' selected. The main content area displays the 'E-mails' settings. A red box highlights the 'Enable e-mail queue' and 'Archive e-mails (days)' settings. The 'Enable e-mail queue' setting is checked, and the 'Archive e-mails (days)' setting is set to 0. Other settings include SMTP server (localhost), SMTP server user, SMTP server password, Use SSL (unchecked), E-mail encoding (utf-8), E-mail format (HTML), Delay between e-mail send out (0), and Generate newsletter e-mails if e-mails are disabled (checked).

| Setting | Value |
|---|-------------------------------------|
| Enable e-mails | <input checked="" type="checkbox"/> |
| Enable e-mail queue | <input checked="" type="checkbox"/> |
| Archive e-mails (days) | 0 |
| SMTP server | localhost |
| SMTP server user | |
| SMTP server password | |
| Use SSL | <input type="checkbox"/> |
| E-mail encoding | utf-8 |
| E-mail format | HTML |
| Delay between e-mail send out (milliseconds) | 0 |
| Generate newsletter e-mails if e-mails are disabled | <input checked="" type="checkbox"/> |

8.17 Event calendar

8.17.1 Overview

The Event calendar web part is used for displaying documents ordered by date in a calendar. Its appearance is similar to the ordinary Calendar web part. You can scroll through months by using the two arrow links in the top left and right corners of the calendar.

The web part can be used for displaying documents of various types, but only one type can be displayed at the same time.

| December 2009 | | | | | | |
|----------------|------------------------------|----------------|----------------|----------------|----------------|----------------|
| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
| 29
No event | 30
No event | 1
No event | 2
No event | 3
No event | 4
No event | 5
No event |
| 6
No event | 7
No event | 8
No event | 9
No event | 10
No event | 11
No event | 12
No event |
| 13
No event | 14
No event | 15
No event | 16
No event | 17
No event | 18
No event | 19
No event |
| 20
No event | 21
December
conference | 22
No event | 23
No event | 24
No event | 25
No event | 26
No event |
| 27
No event | 28
No event | 29
No event | 30
No event | 31
No event | 1
No event | 2
No event |
| 3
No event | 4
No event | 5
No event | 6
No event | 7
No event | 8
No event | 9
No event |

8.17.2 Using the web part

You can add the Event calendar web part to any web part zone on any page on your website. Go to **CMSDesk -> Edit**, switch to the page that you want to add the Event calendar to and switch to the **Design** tab. Click the **Add web part** icon of the target web part zone and from the web part list that appears, select **Events -> Event calendar** and click **OK**.

The web part properties dialog appears. Here is a list of properties specific for this web part:

| Content | |
|------------------------------|--|
| Path | Path in the content tree to the displayed documents. |
| Day field | Field with the date that the document will be displayed on in the calendar. |
| Content filter | |
| Document types | Document types that will be displayed in the calendar. If there is a document in the location set in the Path parameter that is not of a type entered here, it will not be displayed in the calendar. |
| Combine with default culture | Indicates if the default language version of a document should be displayed if the document is not available in the current language. |
| Culture code | Culture code of the displayed versions of documents. |
| Maximum nesting level | Specifies the number of sub-levels in the content tree from that the documents will be displayed. |
| ORDER BY expression | The ORDER BY part of the SQL SELECT query used for selecting the documents. |
| Select only published | Indicates if only published documents should be displayed. |
| Site name | Code name of the website from that you want to display the content. If left empty, the current website is used. |
| WHERE condition | The WHERE part of the SQL SELECT query. If multiple links to the same document are displayed, this can be used to display only one of them. |

Click **OK**. The Event calendar should be displayed in the selected web part zone and should be displaying documents from the selected location in the content tree.

8.17.3 Design and Styles

The design is controlled by CSS styles included in your CSS stylesheet for the given site. The following figure shows CSS classes used in the Event Calendar web part:

| December 2009 | | | | | | |
|----------------|---------------------------|----------------|----------------|----------------|----------------|----------------|
| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
| 29
No event | 30
No event | 1
No event | 2
No event | 3
No event | 4
No event | 5
No event |
| 6
No event | 7
No event | 8
No event | 9
No event | 10
No event | 11
No event | 12
No event |
| 13
No event | 14
No event | 15
No event | 16
No event | 17
No event | 18
No event | 19
No event |
| 20
No event | 21
December conference | 22
No event | 23
No event | 24
No event | 25
No event | 26
No event |
| 27
No event | 28
No event | 29
No event | 30
No event | 31
No event | 1
No event | 2
No event |
| 3
No event | 4
No event | 5
No event | 6
No event | 7
No event | 8
No event | 9
No event |

Calendar

8.18 File import

8.18.1 Overview

The file import module allows you to import files or even whole folder structure from the disk to Kentico CMS content repository (content tree). When files are uploaded this way, they are stored as **CMS.File** documents in the content tree. It eliminates the need to upload files into the content tree manually one-by-one.

The module's user interface can be found in **CMS Desk -> Tools -> File import**. The label at the top shows the path to the import folder. If the folder doesn't exist, you may need to create it on the disk.

The default file import folder is `~/CMSImportFiles`. You can define your custom file import path in **Site Manager -> Settings -> Files -> File import folder**.

Importing files

1. Copy your files into the import folder.
2. Go to **CMSDesk -> Tools -> File import**. You should see a list of files that are currently in the import folder.
3. Choose which files should be imported using the check-box next to each file and specify the following properties:
 - **Target alias path:** path within the content tree where the files will be imported
 - **Culture:** culture of to which the uploaded files (documents) will be assigned
 - **Delete imported files from disk:** if enabled, files within the import folder will be deleted after successful upload
 - **Include file extension in name:** includes file extension in the Document name of the uploaded files

Click **Start Import**.

The screenshot shows the Kentico CMS Desk interface with the 'File import' tool selected. The left sidebar lists various tools, with 'File import' highlighted. The main content area displays the 'File import' tool interface. At the top, it says 'Select files to be imported from c:\inetpub\wwwroot\KenticoCMS\cmsimportfiles\;'. Below this is a table with three columns: 'Name', 'Result', and 'Selected'. The table contains three rows of files, all of which are checked in the 'Selected' column. Below the table, it shows 'Total: 3 Selected: 3'. There are four configuration options: 'Target alias path' (set to '/ImportedFiles'), 'Culture' (set to 'English - United States'), 'Delete imported files from disk' (unchecked), and 'Include file extension in name' (unchecked). A green 'Start import' button is at the bottom.

| Selected | Name | Result |
|-------------------------------------|--------------------|---|
| <input checked="" type="checkbox"/> | cms_blog.png | c:\inetpub\wwwroot\KenticoCMS\cmsimportfiles\cms_blog.png |
| <input checked="" type="checkbox"/> | cms_job.png | c:\inetpub\wwwroot\KenticoCMS\cmsimportfiles\cms_job.png |
| <input checked="" type="checkbox"/> | cmsproduct_pda.png | c:\inetpub\wwwroot\KenticoCMS\cmsimportfiles\cmsproduct_pda.png |

Total: 3 Selected: 3

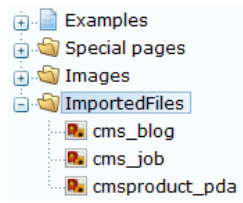
Target alias path:

Culture:

Delete imported files from disk:

Include file extension in name:


4. Now if you switch to the Content tab and locate the alias path that you specified in the previous step, you should see the files uploaded.



8.18.2 Security

The access to the file import module can be controlled in **CMS Desk -> Administration -> Permissions** , after you select the **Modules -> File import** permission matrix: The File import module has only the following single permission:

- **Import files** - members of the role are allowed to import files using the File import module

 **Permissions**

Site: ▼

Permission type: ▼

Permission matrix: ▼

| | Import files |
|------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> |
| CMS Community Administrators | <input type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> |
| CMS Editors | <input checked="" type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> |
| Everyone | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> |

8.19 Forums

8.19.1 Overview

This module allows you to integrate full-featured forums into your website. The forums are highly configurable and allow you to:

- Organize forums into [forum groups](#)
- Open/lock forums
- Perform SQL or index-based full-text [searches](#) of forum content
- [Manage](#) all forum posts and threads of a particular forum
- Create [moderated forums](#) (posts needs to be approved before they are displayed on-line)
- Choose to require and/or display e-mails of the forum users
- [Subscribe](#) to receive notifications about all posts added to a forum or thread by e-mail
- Configure standard forum functions such as [post attachments](#), [BBCode support](#), adding posts to [favorites](#), user avatars and more
- Set forums to use [Friendly URLs](#)
- Use your own [custom forum layouts](#)
- Enable a forum only for authenticated users
- Specify user roles that are allowed to use various forum functions via [Security](#) settings

Forums

Forums

You can set up any number of forum groups and each forum group may have multiple forums on particular topic. The forums are organized into threads. You can also use the Forums module for article comments if you use so called "ad-hoc" forums that are bound to some particular document (article, product, etc.).

Search forums:
[Advanced search](#)

| Forum | Threads | Posts | Last post |
|---|---------|-------|---|
| Site forums | | | |
| Web site forums | | | |
| <u>Announcements</u>
Product announcements come here.
<input type="button" value="Lock"/> | 2 | 6 | Frank Stevens
(11/16/2008 1:08:41 PM) |
| <u>Technical support</u>
Sample forum for technical support questions.
<input type="button" value="Lock"/> | 3 | 4 | David Fishman
(11/16/2008 1:37:45 PM) |

[Site map](#) | [Disclaimer](#)

There are two basic types of forums:

- [Pre-defined forums](#) - created by the administrator and then displayed on the website.
- [Ad-hoc forums](#) (article comments) - created for a single document when a visitor posts the first comment to the given document.

The Message boards module provides another option that allows users to post comments on your website. Please refer to the [Modules -> Message boards](#) chapter to learn more about it.

The Forums module can be managed in **CMS Desk -> Tools -> Forums**. Further settings can be found at **Site Manager -> Settings -> Forums** and are described in more detail in the [Settings](#) chapter.

The [Forums internals and API](#) chapters provide information about the database tables and classes used by the module and examples of how forums can be managed using the API.

8.19.2 Creating a forum group

All forums are a part of some forum group. Pre-defined forums need to be created within some particular forum group and ad-hoc forums are automatically placed into the **AdHoc forum group** upon creation. A **forum group** usually contains forums related to the same topic. For example:

- Computers (forum group)
 - Announcements (forum)
 - Technical questions (forum)
 - FAQ's (forum)
- Web design (forum group)
 - CSS (forum)
 - XHTML (forum)

Creating a new forum group

Go to **CMS Desk -> Tools -> Forums** and click **New forum group** (👤). Fill in the following fields:

- **Group display name:** the forum group name displayed on your website
- **Group code name:** the forum group name used in your code
- **Description:** description of the forum group displayed on your website
- **Forum group base URL:** URL displayed when the user accesses the forum; *eg. ~/MyForums.aspx*
- **Forum group unsubscription URL:** URL of a page where users can unsubscribe from the given forum group

Click **OK** to save.

New forum group

Groups > New forum group

Group display name:

Group code name:

Description:

Forum group base URL: Inherit from settings

Forum group unsubscription URL: Inherit from settings

Continue to the [Creating a pre-defined forum](#) chapter to learn how to create individual forums within a forum group or the [Adding an ad-hoc forum to the web](#) chapter to find out more about ad-hoc forums..

8.19.3 Creating a pre-defined forum

Pre-defined forums need to be created within a forum group before you can publish them on the website. See the [Creating a forum group](#) chapter to learn how to create a forum group.

Creating a new forum

Go to **CMS Desk -> Tools -> Forums** and click **Edit** (✎) for some forum group. Go to the Forums tab and click **Add forum** (➕). Enter the following details:

- **Forum display name:** the name of the forum displayed on your website
 - **Forum code name:** the name of the forum used in your code
 - **Description:** the description displayed on your website
 - **Forum base URL:** URL displayed when the user accesses the forum; e.g. *~/MyForums.aspx*
 - **Forum unsubscription URL:** URL of the page where users can unsubscribe from the given forum
-
- **Require e-mail address:** indicates if e-mail address should be required from the post author
 - **Display e-mail addresses:** indicates if e-mail address of the post author should be displayed to other site visitors
 - **Enable WYSIWYG editor:** indicates if the visitors can use the WYSIWYG editor for entering text
 - **Use security code (CAPTCHA):** indicates if the user needs to retype the security code displayed as an image - this feature helps you avoid spam in the forums
-
- **Forum is open:** indicates if the forum is visible and can be accessed
 - **Forum is locked:** if checked, new posts can't be added to the forum, while the forum is still accessible for viewing
 - **Forum is moderated:** indicates if the posts need to be approved by a forum moderator

Click **OK** to save.

The screenshot shows the 'New forum' configuration form in the Kentico CMS interface. The form is titled 'Forums > New forum' and has three tabs: 'Forums', 'General', and 'View'. The form contains the following fields and options:


- Forum display name:** A text input field.
- Forum code name:** A text input field.
- Description:** A large text area with a vertical scrollbar.
- Forum base URL:** A text input field containing '~/Forums.aspx' and a checked checkbox for 'Inherit from forum group'.
- Forum unsubscription URL:** A text input field containing '~/SpecialPages/Unsubscribe.aspx' and a checked checkbox for 'Inherit from forum group'.
- Require e-mail addresses:** A checked checkbox for 'Inherit from forum group'.
- Display e-mail addresses:** A checked checkbox for 'Inherit from forum group'.
- Enable WYSIWYG editor:** A checked checkbox for 'Inherit from forum group'.
- Use security code (CAPTCHA):** A checked checkbox for 'Inherit from forum group'.
- Forum is open:** A checked checkbox.
- Forum is locked:** An unchecked checkbox.
- Forum is moderated:** An unchecked checkbox.

At the bottom of the form is a green 'OK' button.

Once created, a forum can be placed on a website. The [Publishing a pre-defined forum on the website](#) chapter describes how.

8.19.4 Publishing a pre-defined forum on the website

When you want to publish a forum on your website, you can use the built-in web parts in your page templates. You can find more details on each web part in [Kentico CMS Web Parts](#) reference.



Web parts and ASPX page templates

If you're using ASPX page templates, you simply drag and drop the Forum web parts located in the CMSWebParts/Forums folder to your page and use them in a similar way.

Publishing a forum group on the website

You can publish the whole forum group on the website using the **Forum group** (ForumGroup.ascx) web part. All you need to do is to select the appropriate **Group name** value in the web part properties. The default forum looks like this:

| Forum | Threads | Posts | Last post |
|---|---------|-------|---|
| Site forums | | | |
| Web site forums | | | |
| Announcements
Product announcements come here.
Lock | 2 | 6 | Frank Stevens
(11/16/2008 1:08:41 PM) |
| Technical support
Sample forum for technical support questions.
Lock | 3 | 4 | David Fishman
(11/16/2008 1:37:45 PM) |

The forum threads in the selected forum can be displayed in two ways:

1. As a list of threads

- set the **Forum layout** property to **Flat**

Announcements
Product announcements come here.

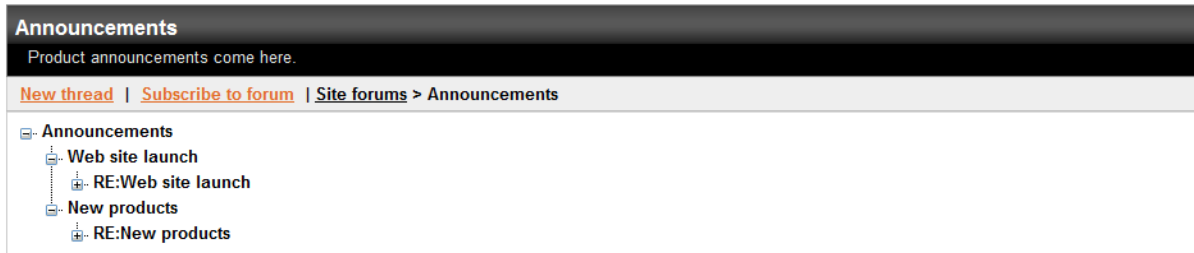
[New thread](#) | [Subscribe to forum](#) | [Site forums > Announcements](#)

| Thread | Created by | Posts | Views | Last post |
|--|---------------|-------|-------|--|
| Web site launch
Unlock Unstick thread Move down Move up | administrator | 3 | 362 | administrator
(10/19/2008 5:45:18 PM) |
| New products
Lock Stick thread | administrator | 3 | 74 | Frank Stevens
(11/16/2008 1:08:41 PM) |

1

2. As a tree of threads and posts

- set the **Forum layout** property to **Tree**



8.19.5 Adding an ad-hoc forum to the web

Ad-hoc forums are useful if you want to enable users to add comments to some page or article, but you do not want to create the forum for each document manually. You may also consider using [Message boards](#) for this purpose if you don't need a structured forum.

Ad hoc forums can be added using the **Forum (Single forum - General)** web part.

If you place the **Forum (Single forum - General)** web part to a page and set its **Forum name** property to "ad-hoc forum" (or "ad_hoc_forum" if you are using ASPX templates), the forum will be displayed on the website, but it will be actually created after some visitor adds a first post to the forum. After that, the forum will be created in the **AdHoc forum group** forum group in **CMS Desk -> Tools -> Forums**.

Ad-hoc forums are uniquely identified by the document they belong to.

The following two web parts are **deprecated**, and they are available only because of **backward compatibility** with versions prior to 4.0:

- **Forum (Single forum - Flat)** - this web part ensures backward compatibility with the former **Forum thread list** web part
- **Forum (Single forum - Tree)** - this web part ensures backward compatibility with the former **Forum tree** web part

8.19.6 Adding forum searching

If you want to let users search forum posts for some given text, you can use the **Forum search** (ForumSearch.ascx) and **Forum search results** (ForumSearchResults.ascx) web parts. You will typically place them both on the same page. However, if you need to place the forum search box on a different page, you can set its **Redirect to URL** property to the page where you have the **Forum search results** web part, such as `~/SearchForum.aspx`. These web parts use the SQL search engine.

Search forums:
[Advanced search](#)

Search results for computer : 3 occurrences found.

[View thread](#)



Jack Johnson - 11/26/2007 10:01:12 AM
How do I switch on my computer?
Please help!!!

Guest

[View thread](#)



administrator - 11/26/2007 10:01:35 AM
RE:How do I switch on my computer?
Use the big red button.

Site admin

[View thread](#)



David Fishman - 11/16/2008 1:37:45 PM
My computer is running slow
Why is my computer running slowly. What steps can I do to fix it?

Guest

Thanks for any advice!

If you prefer index-based searching, this can be provided by various Smart search web parts from the **Full-text search** category if they have a forums type search index set. Please refer to the [Modules -> Smart search](#) chapter for more details.

8.19.7 Managing forum posts

On the **Posts** tab, you can manage threads and posts in the currently edited forum.

Creating a new thread

When you navigate to the tab, you can initially see the **New thread** page, letting you add a new thread to the current forum group. The following details need to be filled in:

- **User name:** user name which will be used for the thread author
- **E-mail:** e-mail of the thread author
- **Subject:** subject of the initial post of the thread
- **Post:** text of the initial post of the thread
- **Signature:** signature under the initial post
- **Subscribe to post:** if enabled, notification e-mails about new posts in the thread will be sent to the e-mail address specified in the *E-mail* field

Forum group properties

Forum groups > Back-packer forums

Forums General View

Forums > General discussion

Posts General Subscriptions Moderators Security View

General discussion

- African travellers
- European travellers
- Asian travellers
- ...click here for more ...

New thread

User name: administrator

E-mail: administrator@localhost.local

Subject:

Post:

Signature:

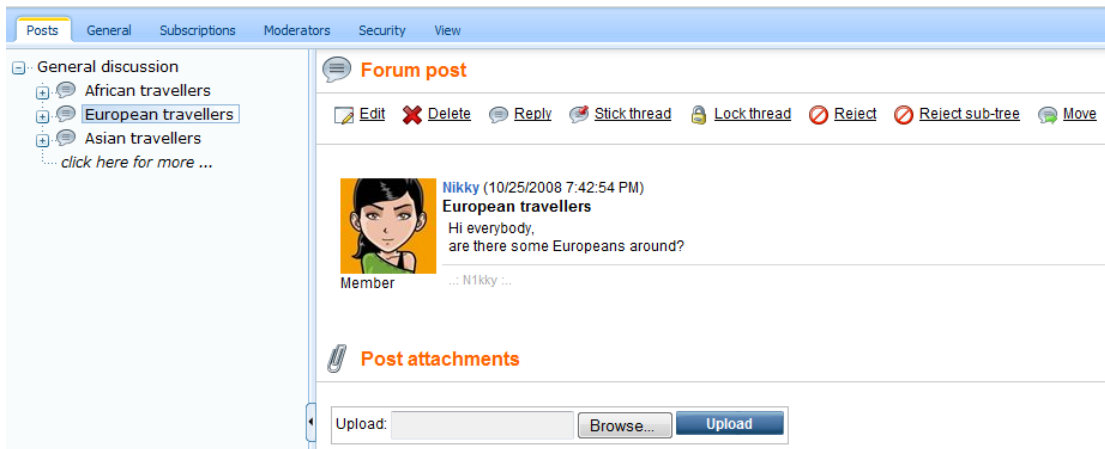
Subscribe to post:

OK Cancel Preview

Managing particular posts

If you select a post from the tree on the left, you can perform the following actions:

- **Edit** - opens the post for editing - you can edit the post text, user's name, signature, etc.
- **Delete** - deletes the post
- **Reply** - opens a dialog using which you can send a reply to the post
- **Stick thread** - sticks this thread so that it will be displayed at the beginning of the forum group
- **Split thread** - moves the post and its replies to a new thread
- **Lock thread** - locks the thread so that no more posts can be added to it
- **Reject** - rejects the post so that it is not displayed and needs approval to be displayed
- **Reject sub-tree** - performs the Reject action for the current posts and all its children

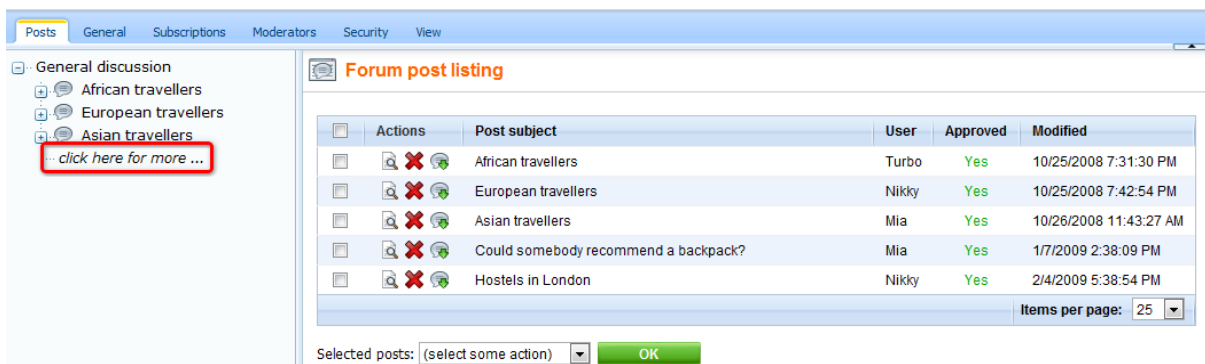


Forum post listing

In case that there are too many threads in the forum, you can limit the number of displayed threads using the **Max forum post nodes** settings key in **Site Manager -> Settings -> Forums**. If you use this key and there are more threads in the forum than the set value, the *Click here for more...* link is displayed at the bottom of the tree. After clicking this link, the **Forum post listing** page is displayed in the main area.

The **Forum posts listing** page initially displays all threads in the forum, while the following actions can be performed:

- **View** - displays the thread's initial post in the main area (this action is identical to clicking the post in the tree)
- **Delete** - deletes the whole thread including all child posts
- **Sub-posts** - displays sub-posts of the post in the grid in the main area
- **Parent post** - displays a list of sub-posts of the parent post in the main area (goes up one level)



8.19.8 Forum moderation

You can configure a forum so that it is moderated. It means that all posts must be approved by one of the forum moderators before they are published in the forum.

Configuring forum moderation

You can enable forum moderation and configure the list of moderators in the **Forum properties -> Moderators** dialog. Even when this option is disabled, approval of posts might be required, e.g. when a [Bad word](#) is detected or when a post has been rejected.

The screenshot shows the 'Forum group properties' dialog for 'Site forums'. The 'Moderators' tab is selected, showing a list of moderators. The 'Forum is moderated' checkbox is checked. The list of moderators includes 'User' and 'Global Administrator (administrator)'. There are 'Remove selected' and 'Add users' buttons at the bottom.

Forum group properties

Forum groups ▶ Site forums

Forums General View

Forums ▶ Technical support

Posts General Subscriptions **Moderators** Security View

Forum is moderated

Moderators:

| | |
|--------------------------|--------------------------------------|
| <input type="checkbox"/> | User |
| <input type="checkbox"/> | Global Administrator (administrator) |

Remove selected Add users

If you're a moderator, you can moderate the forum posts either directly on the website or in the **Forum properties -> Posts** section:

The screenshot shows the 'Forum group properties' page for 'Site forums'. The 'Posts' tab is active, displaying a tree view of forum topics under 'Technical support'. A specific post is selected, showing the user 'Andy' with the subject 'RE:My computer is running slow' and the content 'Have you tried turning it off and on again?'. Below the post, there is an 'Upload' section with a 'Browse...' button and an 'Upload' button.

... or you can find the list of all posts waiting for your approval on the **Forum groups** dialog:

The screenshot shows the 'Forum groups' dialog. It includes a 'New forum group' button and a table of existing groups. Below this, there is a section titled 'Posts waiting for my approval' which contains a table of pending posts.

| Actions | Group name |
|---------|-------------------|
| | AdHoc forum group |
| | Site forums |

| Actions | Forum name | Post content |
|---------|-------------------|--|
| | Technical support | Andy: RE:My computer is running slow
Have you tried turning it off and on again? |

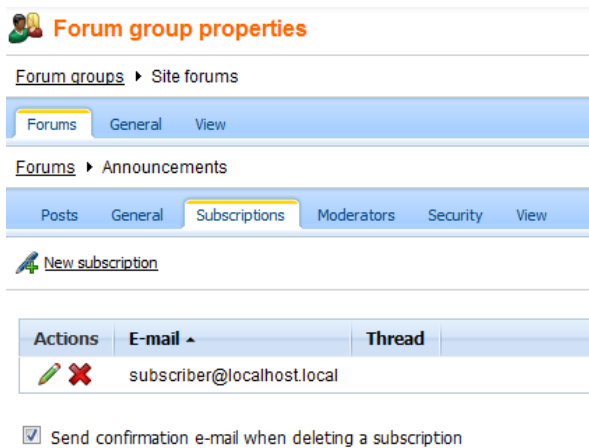
The moderators automatically receive an e-mail notification when a new item is waiting for approval. The e-mail template can be modified in **Site Manager -> Development -> E-mail templates -> Forums - Moderator notification**.


8.19.9 Subscriptions

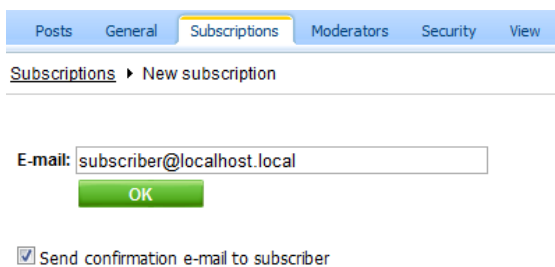
Subscriptions allow users to receive e-mail notification when a new post is added to the selected forum.

There are several ways how a user can subscribe for receiving e-mail notifications:

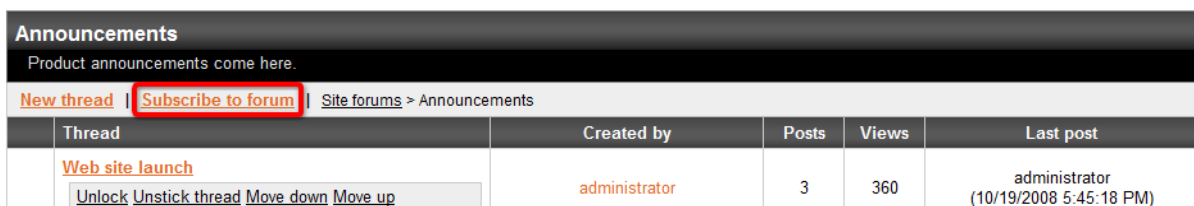
1. The forum administrator can subscribe users to the whole forum and manage all subscriptions in Forum Properties -> Subscriptions.



After clicking the **New subscription** () link, the following dialog depicted in the screenshot below will be displayed. You only need to enter the user's e-mail address and click **OK**. If you do it with the **Send confirmation e-mail to subscriber** check-box checked, the user will receive a confirmation e-mail, telling them that they have been subscribed. These confirmation e-mails are sent automatically when the user subscribes on-site, as described in the following two points.



2. The user clicks the **subscribe to forum** link at the top of the forum:




3. The user subscribes to a particular post and sub-posts:

Announcements

Product announcements come here.

Site forums > Announcements > New products View modes: Threaded

[Reject](#) [Reject all](#) [Move thread](#)




administrator - 11/26/2007 9:59:30 AM
New products
New products were added to our web site.

Site admin
Administrator signature

[Reply](#) | [Quote](#) | [Subscribe to post](#) [Edit](#) [Delete](#) [Report abuse](#)

[Reject](#) [Reject all](#) [Split thread](#)



Matthew - 11/26/2007 9:59:53 AM
RE:New products
Where can I find them?

Guest [Reply](#) | [Quote](#) | [Subscribe to post](#) [Edit](#) [Delete](#) [Report abuse](#)

The e-mails are sent to the subscribed users based on the **Forum new post** e-mail template that can be edited in the **Site Manager -> Development -> E-mail templates** dialog.

The user can unsubscribe using the link in the e-mail.



Forum base URL and forum e-mails

It's important to set a correct **Forum base URL** value in the forum properties so that the notification e-mails contain valid links to the forum. Use URL in format `http://localhost/kenticocms/forums.aspx` - **enter the full URL of the page with the forum, including the domain.**

8.19.10 Forum post attachments

Users can attach files to forum posts. To enable users to do this, you have to assign the **Attach files** permission on the forum's **Security** tab to the desired user roles or all authenticated users. See the [Security](#) chapter for more details. There are also some additional settings related to attachments:

In **Site Manager -> Settings -> Forums**, you can make the following setting:

- **Forum attachments allowed extensions** - you can specify extensions of files that can be attached to forum posts; extensions should be entered without dots and separated by semicolons; if blank, all extensions are allowed

In web part properties of the **Forum group** web part, you can make the following settings:

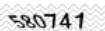
- **Display attachment image** - if checked, attached images will be displayed as images, not only as links
- **Attachment image maximal side size** - if an attached image is larger than the entered value, it will be resized so that its larger side's size is equal to the entered value

When editing a forum in **CMS Desk -> Tools -> Forums**, you can set the following property on the **General** tab:

- **Attachment max. file size (kB)** - you can define the maximal size of an attached file in kB

Adding attachments to a forum post

When adding a post to a forum, users can check the **Attach file(s)** check box at the bottom of the post adding dialog.

Security code:  (please enter the numbers on the image)

Subscribe to post:

Attach file(s):

After clicking **OK**, a new dialog will be displayed, where users can upload the attachments. When all desired images are uploaded, users can click the **Back** button, which will take them back to the forum.

Attachments


Maximum allowed file size is 1024 kB.

| Filename | File size | |
|--------------------------------|--|---|
| computer.png | 21330 B | Delete |
| Blue-hills.jpg | 28521 B | Delete |
| Desert.jpg | 845941 B | Delete |
| <input type="text"/> | <input type="button" value="Browse..."/> | <input type="button" value="Upload"/> <input type="button" value="Back"/> |

Back in the forum thread, links to uploaded attachments will be displayed with the post, as you can see in the screenshot below.

[Reject](#) [Reject all](#) [Split thread](#)



Site admin


Admin - 12/22/2009 9:58:44 AM
RE:New products
I am so smart!

Post attachments:

[computer.png](#) [Blue-hills.jpg](#) [Desert.jpg](#)

[Reply](#) | [Quote](#) | [Subscribe to post](#)

[Edit](#) [Delete](#) [Attachments](#) [Report abuse](#)

8.19.11 BBCode support

BBCode is a lightweight markup language designed to let users format their messages. It can be used in many forums on the web. Its tags are similar to HTML tags and are entered in square brackets.

Users can use Bulletin Board code in their forum posts if it is enabled. You have to allow the use of BBCode in the properties of the forum or forum group on their **General** tab. The following table explains particular BBCode tags and properties that have to be enabled on the General tab in order for the tags to be functional.

| Example | Description | Property on General tab |
|---|--|---------------------------------------|
| [url]http://example.org[/url]
[url=http://example.com]Example[/url] | Makes the text link leading to the URL. | Enable URL macros in posts |
| [img]http://www.imagesxy.com/img.bmp[/img]
[img=200x50]http://www.imagesxy.com/img.bmp[/img]
[img=200]http://www.imagesxy.com/img.bmp[/img] | Displays an image located at the URL. The optional parameter resizes the image. It can be added either in format <code><width>x<height></code> or <code><max side size></code> . | Enable image macros in posts |
| [quote]quoted text[/quote]
[quote=Administrator]quoted text[/quote] | Displays text in a grey box; used for quotations.
The optional parameter displays <i>Administrator wrote:</i> and the quoted text on a new line. | Enable quote macros in posts |
| [code]code example[/code] | Displays text in monospaced format; used for code snippets. | Enable code snippet macros in posts |
| [b]bold text[/b]
[strong]bold text[/strong] | Makes the text bold. | Enable bold font macros in posts |
| [i]italicized text[/i]
[em]italicized text[/em] | Makes the text italic. | Enable italics font macros in posts |
| [u]underlined text[/u] | Underlines the text. | Enable underline font macros in posts |
| [s]strikethrough text[/s] | Strikes the text through. | Enable strike font macros in posts |
| [color=red]Red Text[/color]
[color=#f00]Red Text[/color]
[color=f00]Red Text[/color]
[color=#ff0000]Red Text[/color]
[color=ff0000]Red Text[/color] | Sets the text color. | Enable font color macros in posts |

URLs in BBcode macros

All URLs in macros (URL, IMG) are validated as a URL to avoid XSS and resolved into their absolute URL equivalents. The following URL formats can be used:

- **www.google.com** – URL starting with www.
- **http://devnet.kentico.com** – URL starting with protocol

- ~/CMSDesk/default.aspx – Virtual path
- ../default.aspx – Relative URLs
- /KenticoCMS/default.aspx – Server relative URL

API for the BBcode macros

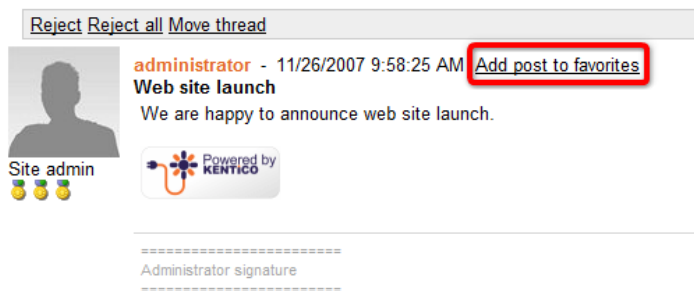
There is an easy way how to resolve macros in ASPX or codebehind code. To resolve all the macros (recommended), use method:

```
string CMS.CMSHelper.CMSContext.ResolveDiscussionMacros(string inputText)
```

Or you can use the **CMS.GlobalHelper.DiscussionMacroHelper** class to resolve macros with particular settings using the **ResolveMacros** method from an object of this class.

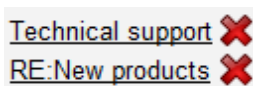
8.19.12 Forum favorites

If you enable the **Enable favorites** web part property of the **Forum group** web part, forum posts will be displayed with the **Add post to favorites** link, as you can see in the screenshot below.



If a user clicks this link, the post will be added to their favorite posts.

If you place the **Forum favorites** web part to some page, the web part will display links to favorite posts of the current user. You can see the appearance of the web part with two favorite posts in the screenshot below.



8.19.13 Friendly URLs

Forums display content based on the current values of the **forumid** and **threadid** query string parameters. By default, the URL of a forum thread might look like the following:

- `<domain>/Forums.aspx?forumid=3&threadid=12`

A friendly URL of the same forum thread looks like the following:

- `<domain>/Forums/f4/t13/Frequently-asked-questions.aspx`

Having your forum URLs in this format is a good practice when it comes to SEO (Search Engine Optimization).

Enabling friendly URLs

For this to be enabled, you have to do the following two tasks:

1. Set the following properties of the **Forum group** web part:

- **Use friendly URLs** - check to enable the Friendly URLs feature
- **Friendly base URL** - enter the base part of the URL, which is displayed after the domain name; e.g. `/Forums` for the example above and for the document aliases listed below
- **URL extension** - extension that will be used at the end of the friendly URL;

2. Assign the following [document aliases](#) to the document containing the Forum group web part. The **/Forums** part of each alias must be equal to the value in the **Friendly base URL** property of the Forum group web part:

- `/Forums/f{forumid}/{whatever}`
- `/Forums/f{forumid}/fp{fpage}/{whatever}`
- `/Forums/f{forumid}/t{threadid}/{whatever}`
- `/Forums/f{forumid}/fp{fpage}/t{threadid}/{whatever}`
- `/Forums/f{forumid}/t{threadid}/tp{tpage}/{whatever}`
- `/Forums/f{forumid}/fp{fpage}/t{threadid}/tp{tpage}/{whatever}`

Single forum friendly URLs

If you want to enable friendly URLs for a [single forum](#), the **Forum (Single forum - General)** web part should be set the same way as described in step 1, but only the following two document aliases need to be added to the document:

- `/Forums/t{threadid}/{whatever}`
- `/Forums/t{threadid}/tp{tpage}/{whatever}`

8.19.14 Customizing forum design

Forum layouts are stored in `<web project>\CMSModules\Forums\Controls\Layouts`. The folder contains three sub-folders by default.

| ↑ Name | Ext | Size |
|----------|-----|-------|
| ↑ [..] | | <DIR> |
| [Custom] | | <DIR> |
| [Flat] | | <DIR> |
| [Tree] | | <DIR> |

The **Flat** and **Tree** folders contain controls for the identically named layouts. The **Custom** folder can be used for defining custom layouts.

To **create a custom layout**, you need to create a sub-folder inside the **Custom** folder. The name of this sub-folder will be used as the name of the layout. The sub-folder has to contain controls with the same names as included in the Flat or Tree folders. You can see a screenshot of these files below. When writing the controls' code, make sure that they inherit from **ForumViewer**.

| ↑ Name | Ext |
|-----------------------|------|
| ↑ [..] | |
| Attachments | ascx |
| Attachments.ascx | cs |
| Forums | ascx |
| Forums.ascx | cs |
| SearchResults | ascx |
| SearchResults.ascx | cs |
| SubscriptionEdit | ascx |
| SubscriptionEdit.ascx | cs |
| Thread | ascx |
| Thread.ascx | cs |
| ThreadEdit | ascx |
| ThreadEdit.ascx | cs |
| Threads | ascx |
| Threads.ascx | cs |

8.19.15 Security

The security model of the Forums module has two parts:

1. Security of the Forums module administration interface.
2. Security of the forums published on the website.

Forums module administration interface

Access to the Forums module administration interface in **CMS Desk -> Tools** can be managed in the **Modules -> Forums** permission matrix in **CMS Desk -> Administration -> Permissions**:

- **Modify** - allows users to modify forum settings
- **Read** - allows users to only read forum settings

Users without any permissions who are moderators of at least one forum are allowed to access the

Posts waiting for my approval dialog only.

Permissions

Site: ▼
Permission type: ▼
Permission matrix: ▼

| | Modify | Read |
|------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> | <input type="checkbox"/> |

Security of forums published on a website

If you **Edit** (✎) some forum and switch to its **Security** tab, the permission matrix displayed in the screenshot below will be displayed.

Columns of the matrix represent the following actions:

- **Access to forum** - defines who can enter the forum and view posts
- **Attach files** - defines who can attach files to forum posts
- **Mark as answer** - defines who can mark posts as answers in Question - Answer forums
- **Post** - defines who can add posts to the forum
- **Reply** - defines who can reply to forum posts
- **Subscribe** - defines who can subscribe for receiving notifications about new posts in the forum

Rows in the top part of the matrix have the following meanings:

- **Nobody** - the action can not be performed by anyone
- **All users** - anybody can perform the action
- **Authenticated users** - only signed-in registered users can perform the action
- **Authorized roles** - only members of roles specified in the lower part of the matrix can perform the action

Below the permission matrix, there is one more check-box:

Allow user to change the name - if checked, users can change their name displayed with a forum post when entering the post; if unchecked, their user name will be used

Posts General Subscriptions Moderators **Security** View

| | Access to forum | Attach files | Mark as answer | Post | Reply | Subscribe |
|---------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Nobody | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| All users | <input checked="" type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |
| Authenticated users | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Authorized roles | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> |

Please select the authorized roles (available only when you select the "Authorized roles" option above):

| | Access to forum | Attach files | Mark as answer | Post | Reply | Subscribe |
|------------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|
| Authenticated users | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Editors | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Allow user to change the name

The following properties of the **Forum group** web part are also related to forum security:

- **Hide forum to unauthorized users** - indicates whether forums for which the user has no permissions are visible for them in the list of forums in a forum group
- **Redirect unauthorized users** - determines whether to redirect unauthorized users to the logon page or whether to display only an info message
- **Access denied page URL** - URL where the user is redirected when trying to access forum for which they are not authorized

8.19.16 Settings

Settings of the Forums module are located in **Site Manager -> Settings -> Forums**. The following settings are available:

- **Forum unsubscription URL** - URL that will be used for unsubscriptions from receiving notifications about new forum posts. Can be inherited by forum groups and further by particular forums. The **Forum unsubscription** web part must be placed on the page for the unsubscriptions to work correctly.
- **Send forum e-mails from** - e-mail address that will be used as the sender address of forum notification e-mails.
- **Forum base URL** - URL that will be displayed when viewing a forum and in forum notification e-mails. e.g. `~/Forum.aspx`
- **Forum attachments allowed extensions** - you can specify extensions of files that can be attached to forum posts; extensions should be entered without dots and separated by semicolons; if blank, all extensions are allowed
- **Max forum post nodes** - maximum number of forum post nodes displayed in the forum post tree when editing a forum in CMS Desk -> Tools -> Forums; when more nodes are in the forum group than this value, the *click here for more ...* link will be displayed at the bottom of the tree, letting you display a list of all nodes in the main area

The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The 'Settings' section is expanded, showing a tree view of settings categories: Web site, Content management, Files, Membership, Security, URLs and SEO, Output filter, System, E-mails, Avatars, Bad words, Blogs, MetaWeblog API, Booking system, Community, Content staging, Forums, and Media libraries. The 'Forums' settings page is displayed, featuring a 'Save' button and a 'Reset these settings to default' button. The settings are global, as indicated by the text: 'These settings are global, they can be overridden by the local site settings. Please select the site to see or cha'. The settings list includes:

- Forum unsubscription URL:
- Send forum e-mails from:
- Forum base URL:
- Forum attachments allowed extensions:
- Max forum post nodes:

At the bottom of the settings list, there is a link: [Export these settings](#).

8.19.17 Forums internals and API

8.19.17.1 Database tables and API classes

The Forums module uses the following database tables:

- **Forums_Forum** - contains forums and their settings
- **Forums_ForumGroup** - contains forum groups and their settings
- **Forums_ForumModerators** - contains information about forum moderators
- **Forums_ForumPost** - contains forum posts and information about them
- **Forums_ForumRoles** - contains information about forum permissions
- **Forums_ForumSubscription** - contains information about forum subscriptions
- **Forums_Attachment** - contains forum post attachments and information about them
- **Forums_UserFavorites** - contains favorite posts of users

The Forums API is provided by the following **CMS.Forums** namespace classes:

- **ForumInfo**, **ForumInfoProvider** - these classes provide functionality for managing individual forums
- **ForumGroupInfo**, **ForumGroupInfoProvider** - these classes provide functionality for managing forum groups
- **ForumPostInfo**, **ForumPostInfoProvider** - these classes provide functionality for managing forum posts and threads

The following chapters show examples of how these classes can be used:

- [Creating forums](#)
- [Creating threads](#)

8.19.17.2 Creating forums

The following sample code shows how you can create a new forum group and forum and add them to the system:

[C#]

```
using CMS.Forums;
using CMS.CMSHelper;
using CMS.SiteProvider;

...

// Create new forum group info
ForumGroupInfo fgi = new ForumGroupInfo();

// Set properties
fgi.GroupName = "CustomForumGroup";
fgi.GroupDisplayName = "Custom forum group";
fgi.GroupSiteID = CMSContext.CurrentSiteID;
fgi.GroupAuthorDelete = true;
fgi.GroupAuthorEdit = true;
fgi.GroupDisplayEmails = true;
```

```
// Save object to database
ForumGroupInfoProvider.SetForumGroupInfo(fgi);

// Get Forum group object
fgi = ForumGroupInfoProvider.GetForumGroupInfo("CustomForumGroup",
CMSContext.CurrentSiteID);

// If forum group exists
if (fgi != null)
{
    // Create new forum object
    ForumInfo fi = new ForumInfo();

    // Set properties
    fi.ForumName = "CustomForum";
    fi.ForumDisplayName = "Custom forum";
    fi.AllowAccess = SecurityAccessEnum.AllUsers;
    fi.AllowAttachFiles = SecurityAccessEnum.AuthenticatedUsers;
    fi.AllowPost = SecurityAccessEnum.AllUsers;
    fi.AllowReply = SecurityAccessEnum.AllUsers;
    fi.AllowSubscribe = SecurityAccessEnum.AllUsers;
    fi.ForumGroupID = fgi.GroupID;
    fi.ForumOpen = true;
    fi.ForumModerated = false;
    fi.ForumThreads = 0;
    fi.ForumPosts = 0;
    fi.ForumSiteID = fgi.GroupSiteID;

    // Save new forum to database
    ForumInfoProvider.SetForumInfo(fi);
}
}
```

8.19.17.3 Creating threads

The following sample code shows how you can create a new thread and add it to a forum:

[C#]

```
using System;
using CMS.Forums;
using CMS.CMSHelper;

...

// Get forum object
ForumInfo fi = ForumInfoProvider.GetForumInfo("CustomForum", CMSContext.
CurrentSiteID);
```



```
// If forum exists
if (fi != null)
{
    // Create new thread object
    ForumPostInfo fpi = new ForumPostInfo();

    // Set properties
    fpi.PostUserID = CMSContext.CurrentUser.UserID;
    fpi.PostUserMail = CMSContext.CurrentUser.Email;
    fpi.PostUserName = CMSContext.CurrentUser.UserName;
    fpi.PostForumID = fi.ForumID;
    fpi.PostTime = DateTime.Now;
    fpi.PostApproved = true;
    fpi.PostText = "This is a forum post";
    fpi.PostSubject = "Post subject";

    // Save thread to database
    ForumPostInfoProvider.SetForumPostInfo(fpi);
}
```

8.20 Friends

8.20.1 Overview

The Friends module allows site members to maintain relationships with other site members and share personal information with them.

8.20.2 Friends management

Site administrators can manage users' friends in both **CMS Desk** and **Site Manager**, in the **Administration -> Users** section. If you choose to **Edit** (✎) some user and switch to the **Friends** tab, you will be offered with the four tabs for friends management that are described below. The same tabs will be offered in **CMS Desk -> My desk -> My friends**, where the currently logged-in user can manage their own friendships. Names of the tabs in **My desk -> My Friends** are stated in brackets:

Friends (My friends)

On this tab, you can see a list of all your current friends. New friendships can be requested using the **Add a friend** link. You also can **Remove** (✖) or **Reject** (⊘) friends in the list. The difference between the two is that rejected friends can't request your friendship anymore while they are in the rejected status, while removed friends can request the friendship again. By checking some of the check-boxes and clicking one of the **Reject all selected friends** and **Remove all selected friends** buttons, you can reject or remove more friends at once. The **Request friendship** link can be used for requesting some user's friendship.

Kentico CMS Site Manager [Switch to CMS Desk](#) **User:** Global Administrator

Sites Administration Settings Development Licenses Support

Administration

- Avatars
- Bad words
- Badges
- Banned IPs
- E-mail queue
- Event log
- Permissions
- Recycle bin
- Roles
- Scheduled tasks
- Smart search
- System
- UI personalization
- Users**
- Web farm

Users

Users Mass e-mail On-line users

Users > administrator

General Password Settings Sites Roles Departments Notifications Categories **Friends** Subscriptions Languages

Friends

Friends Friends waiting for approval Rejected friends Pending requests

[Add a friend](#)

[Select all selected friends](#) [Remove all selected friends](#)

| Actions | <input type="checkbox"/> | User name ^ | Full name | Nickname | Comment | Approved |
|---------|--------------------------|-------------|----------------|----------|---------|---------------|
| | <input type="checkbox"/> | Jimbo | James Culligan | Jimbo | | 12/18/2009 5: |
| | <input type="checkbox"/> | Tessie | Iman Teshome | Tessie | | 12/18/2009 5: |

In the Request friendship dialog, you have to click the **Select** button, which opens the familiar user selection dialog. After selecting a user, you can enter some comment that will be displayed to the user when they receive the friendship request. You can also check the following check-boxes:

- **Send e-mail** - an e-mail with the friendship request will be sent to the user
- **Send message** - messaging module message with the friendship request will be sent to the user
- **Automatically approve** - global administrators and users with Manage permission for the Friends module can use this check-box, which creates the requested friendship without the other user's approval

The screenshot shows a web browser window with the title "Add a new friend -- Webpage Dialog". The main content area is titled "Add a new friend" and contains the following elements:

- A "User:" label followed by a text input field containing "Mia Lee (Mia)". To the right of the input field are two buttons: "Select" and "Clear".
- A "Comment:" label followed by a large, empty text area.
- Three checkboxes:
 - Send e-mail
 - Send message
 - Automatically approve
- At the bottom of the dialog are two buttons: "Request" and "Cancel".

The browser's address bar at the bottom shows "http://localho Local intranet | Protected Mode: Off".

Friends waiting for approval (Friends waiting for my approval)

On this tab, you can see a list of all users who requested your friendship. You can either **Approve** (✓) or **Reject** (✗) their request. By checking some of the check-boxes and clicking one of the **Approve all selected friends** and **Reject all selected friends** links, you can approve or reject more requests at once.

The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a navigation menu with 'Users' selected. The top navigation bar shows 'Administration' as the active tab. The main content area is titled 'Users' and has sub-tabs for 'Users', 'Mass e-mail', and 'On-line users'. Below this, there are tabs for 'General', 'Password', 'Settings', 'Sites', 'Roles', 'Departments', 'Notifications', 'Categories', 'Friends', and 'Subscriptions'. The 'Friends' section is active, showing a sub-tab for 'Friends waiting for approval'. Below the sub-tabs, there are links for 'Approve all selected friends' and 'Reject all selected friends'. A table displays the following data:

| Actions | <input type="checkbox"/> | User name ^ | Full name | Nickname | Comment | Requested |
|---------|--------------------------|-------------|---------------|----------|---------|----------------------|
| ✓ ✗ | <input type="checkbox"/> | David | David Silver | David | | 12/8/2009 5:06:01 PM |
| ✓ ✗ | <input type="checkbox"/> | Pogo | Wayne Pronger | Pogo | | 12/8/2009 5:06:31 PM |

Rejected friends

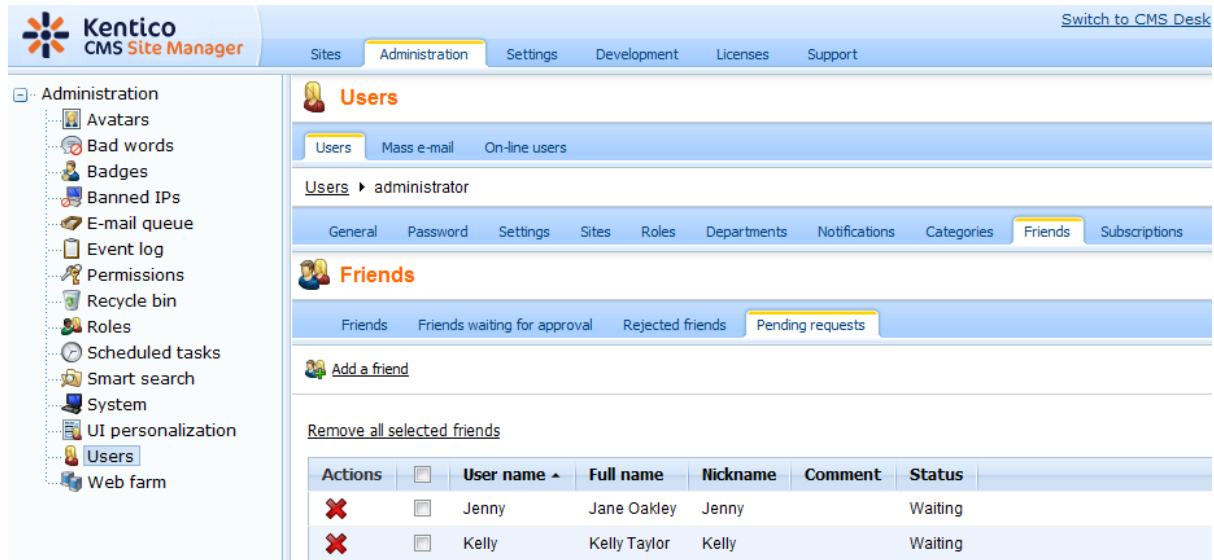
On this tab, you can see a list of all users whose friendship you rejected. Once in the rejected status, the user can't request your friendship anymore. You can either **Approve** (✓) some user's friendship, which makes them your friend, or **Remove** (✗) the user from the list of rejected, which enables them to request your friendship again. By checking some of the check-boxes and clicking one of the **Approve all selected friends** or **Remove all selected friends**, you can approve or remove more users at once.

The screenshot shows the Kentico CMS Site Manager interface with the 'Rejected friends' sub-tab active. The table displays the following data:

| Actions | <input type="checkbox"/> | User name ^ | Full name | Nickname | Comment | Rejected |
|---------|--------------------------|-------------|---------------|----------|---------|----------------------|
| ✓ ✗ | <input type="checkbox"/> | David | David Silver | David | | 12/8/2009 5:08:44 PM |
| ✓ ✗ | <input type="checkbox"/> | Pogo | Wayne Pronger | Pogo | | 12/8/2009 5:08:48 PM |

Pending requests (My pending requests)

On this tab, you can see a list of friends whose friendship you requested. New friendships can be requested using the **Add a friend** link. You can cancel a request by clicking the **Remove** (✘) icon or you can select more users using the check-boxes and click the **Remove all selected friends** link, which cancels more friendship requests at once.



8.20.3 Available e-mail templates

In **Site manager -> Development -> E-mail templates**, you can find the following e-mail templates:

- **Friend approval** - template for e-mail or message confirming that a user approved your friendship request
- **Friend rejection** - template for e-mail or message confirming that a user rejected your friendship request
- **Friend request** - template for e-mail or message notifying you about the fact that some user requested your friendship

If you choose to **Edit** (✎) some of the templates, you will see two large text fields:

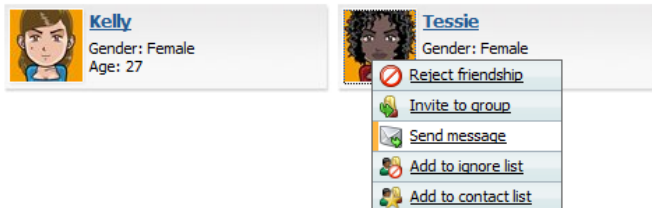
- **Text** - text of the template used for e-mails
- **Plain text** - text of the template used for messaging module messages

8.20.4 Available web parts

The Friends module comes with the following web parts. For the detailed description of each web part's properties please see [Kentico CMS Web parts reference](#).

Friends viewer

This web part can typically be used on user's profile page for viewing their friends. If you right-click the user's avatar image, you will be offered several tasks, as you can see in the screenshot below.



The following web parts are on-site equivalents of the friends management sections of Kentico CMS administration interface described in the [Friends management](#) chapter:

Friends list

This web part displays a list of all friends of the current user.

[Reject all selected friends](#) [Remove all selected friends](#)

| Actions | <input type="checkbox"/> | User name ^ | Full name | Nickname | Comment | Approved |
|---------|--------------------------|-------------|--------------|----------|---------|-----------------------|
| | <input type="checkbox"/> | Kelly | Kelly Taylor | Kelly | | 12/18/2008 6:42:46 PM |
| | <input type="checkbox"/> | Tessie | Iman Teshome | Tessie | | 11/21/2008 3:41:16 PM |

Friends waiting for approval

This web part displays a list of all users waiting for the current user's friendship approval.



[Approve all selected friends](#) [Reject all selected friends](#)

| Actions | <input type="checkbox"/> | User name ^ | Full name | Nickname | Comment | Requested |
|---------|--------------------------|-------------|-------------------|----------|---------|------------------------|
| | <input type="checkbox"/> | Abi | Abigail Woodwarth | Abi | | 12/22/2009 10:17:37 AM |
| | <input type="checkbox"/> | Pogo | Wayne Pronger | Pogo | | 12/22/2009 10:18:50 AM |

Rejected friends

This web part displays a list of all users whose friendship the current user rejected. These users can't request the current user's friendship while they are in this list.

[Approve all selected friends](#) [Remove all selected friends](#)

| Actions | <input type="checkbox"/> | User name ^ | Full name | Nickname | Comment | Rejected |
|---|--------------------------|-------------|---------------|----------|---------|------------------------|
|   | <input type="checkbox"/> | Pogo | Wayne Pronger | Pogo | | 12/22/2009 10:20:02 AM |

My pending requests

This web part displays a list of all users whose friendship the current user requested.

[Remove all selected friends](#)

| Actions | <input type="checkbox"/> | User name ^ | Full name | Nickname | Comment | Status |
|---|--------------------------|-------------|----------------|----------|---------|---------|
|  | <input type="checkbox"/> | Jimbo | James Culligan | Jimbo | | Waiting |
|  | <input type="checkbox"/> | Josh | Joshua O'Neil | Josh | | Waiting |

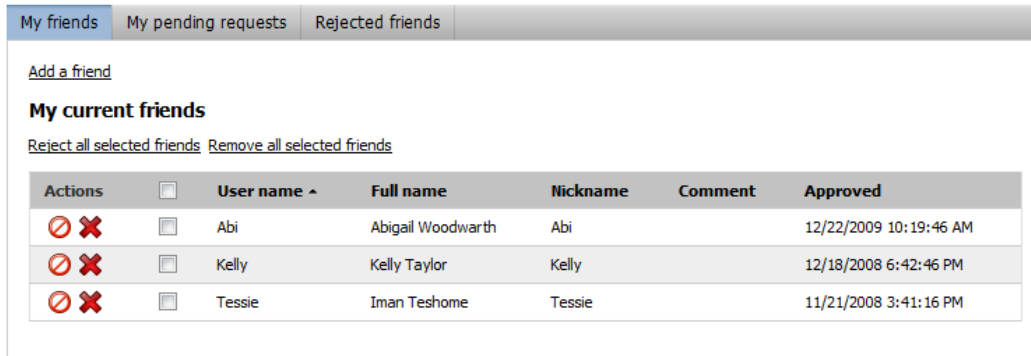
Request friendship

This web part displays only a link that, when clicked, opens the friendship request dialog.

[Request friendship](#)

My friends

This web part combines the five previously mentioned web parts in one web part. It's functionality is fully equal to the **CMS Desk -> My Desk -> My friends** section of Kentico CMS administration interface.








My friends | My pending requests | Rejected friends

[Add a friend](#)

My current friends

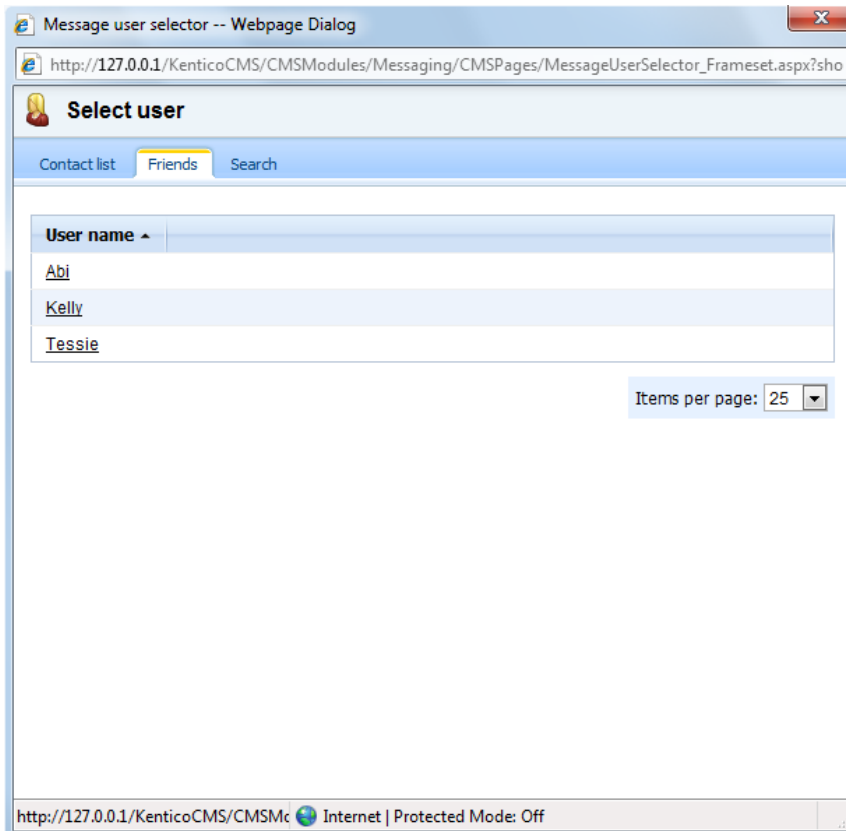
[Reject all selected friends](#) [Remove all selected friends](#)

| Actions | <input type="checkbox"/> | User name ^ | Full name | Nickname | Comment | Approved |
|---|--------------------------|-------------|-------------------|----------|---------|------------------------|
|   | <input type="checkbox"/> | Abi | Abigail Woodwarth | Abi | | 12/22/2009 10:19:46 AM |
|   | <input type="checkbox"/> | Kelly | Kelly Taylor | Kelly | | 12/18/2008 6:42:46 PM |
|   | <input type="checkbox"/> | Tessie | Iman Teshome | Tessie | | 11/21/2008 3:41:16 PM |

8.20.5 Examples of use

Messaging module

When selecting a recipient of a messaging module message, you can conveniently switch to the **Friends** tab and select one of your friends just by clicking their user name.



Fields visibility

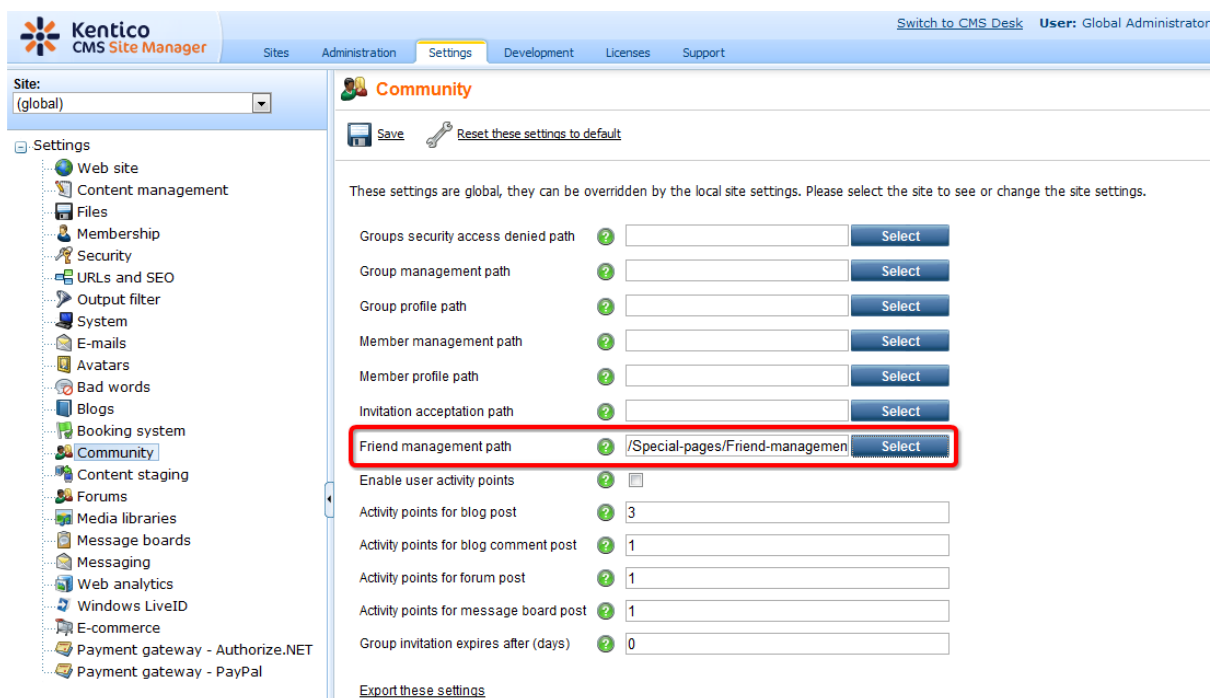
Users can set the visibility of some fields on their public profile to **Display to friends**, which makes the field visible only to their friends. For more information on this topic, please refer to the [Development -> Membership, security and permissions -> Custom fields visibility](#) chapter of this guide.

8.20.6 Settings

There is only one setting related to the Friends module - **Friends management path**. It is located in **Site Manager -> Settings -> Community**.

Its value determines the node alias path of the page on that the **Friendship management** web part is placed. This is a special web part that handles friendship management actions from friendship request e-mails.

If some user receives an e-mail with friendship request, there are links for friendship approval or rejection included in the mail. When the user clicks one of the links, they are redirected to this page and the user guid and type of action is transferred in form of querystring parameters. The Friendship management web part processes the received parameters and performs the necessary tasks for friendship approval or rejection.



The screenshot displays the Kentico CMS Site Manager Administration interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The 'Settings' section is active, and the 'Community' settings page is shown. The left sidebar lists various settings categories, with 'Community' selected. The main content area shows the 'Community' settings, which are global and can be overridden by local site settings. The 'Friend management path' setting is highlighted with a red box and has the value '/Special-pages/Friend-managemen'. Other settings include 'Groups security access denied path', 'Group management path', 'Group profile path', 'Member management path', 'Member profile path', 'Invitation acceptance path', 'Enable user activity points', 'Activity points for blog post', 'Activity points for blog comment post', 'Activity points for forum post', 'Activity points for message board post', and 'Group invitation expires after (days)'. The 'Export these settings' link is visible at the bottom.


| Setting Name | Value | Action |
|--|--|--------|
| Groups security access denied path | | Select |
| Group management path | | Select |
| Group profile path | | Select |
| Member management path | | Select |
| Member profile path | | Select |
| Invitation acceptance path | | Select |
| Friend management path | /Special-pages/Friend-managemen | Select |
| Enable user activity points | <input type="checkbox"/> | |
| Activity points for blog post | 3 | |
| Activity points for blog comment post | 1 | |
| Activity points for forum post | 1 | |
| Activity points for message board post | 1 | |
| Group invitation expires after (days) | 0 | |

8.20.7 Security

Permissions of the **Friends** module can be set in both **Site manager** and **CMS Desk**, in the **Administration -> Permissions** section, in the **Modules -> Friends** permission matrix:

The following permissions can be assigned to particular roles:

- **Manage** - members of the role can manage Friends of particular users in CMS Desk -> Administration -> Users
- **Read** - members of the role can view friends of particular users in CMS Desk -> Administration -> Users

 **Permissions**

Site: ▼

Permission type: ▼

Permission matrix: ▼

| | Manage | Read |
|------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> | <input type="checkbox"/> |

8.21 Geo mapping

8.21.1 Overview

The Geo mapping module allows you to display maps on your site and also display content on these maps. The module has no administration interface and consists only of 3 web parts and 3 widgets derived from these web parts. The web parts or widgets can be found under the **Maps** category in the web part or widget selection dialog.

You can see these web parts configured and working on the sample Corporate Site, under the **/Examples/Webparts/Maps** node of the content tree.

What is it good for

The module can be used for many scenarios in which a geographical position is the key information:

- show your offices
- show your stores
- show your partners
- show real estates you offer
- etc.

You can use it to display virtually any content that has a location. The only requirement is that you tag your content with [longitude and latitude](#). A

An example of how to display content on the map can be found in [this topic](#).

How to get a longitude and latitude for a given place

You can use some on-line service that allows you to enter the country, city and street and shows you its longitude and latitude. One such service is available for example at <http://world.maporama.com>.

Available providers

You can choose from three different map providers:

- [Bing Maps](#) (originally Live Maps)
- [Google Maps](#)
- [Yahoo Maps](#)

Each of these providers has its dedicated web part and widget. Click on the particular map provider to learn more.

8.21.2 Bing maps

The **Bing maps web part** enables displaying of a map with defined location markers using the Bing maps service. It uses **Bing maps API**, which is described in detail in the following location: <http://www.microsoft.com/maps/isdk/ajax/>.

The **Bing maps widget** is derived from the web part. It provides the same functionality and look, while only a limited set of properties can be configured.

You can find an example of use of the web part on the sample Corporate Site, on the **/Examples/ WebParts/Maps/Bing maps** page. In the screenshot below, you can see how the web part looks on page load. It shows the location markers (learn [here](#) how to display them on the map). The map is zoomed according to the settings made by the **Large view scale** property and its middle point is on the coordinates specified by the **Default latitude** and **Default longitude** properties.



The screenshot below shows how the web part looks when one of the location markers is clicked. The map gets zoomed according to the value of the **Detailed view scale** property and a tooltip is displayed, showing the heading loaded from the document type field specified in the **Tooltip field** property and the rest of the content loaded using the transformation specified in the **Transformation** property.



If you enable the **Enable shortcuts** property, the following shortcuts can be used to control the map:

- R - switch to Road view

- A - switch to Aerial view
 - H - switch to Aerial view with labels
 - O - switch to Bird's eye view
 - B - switch to Bird's eye view with labels
-
- Plus Sign (+) - zoom in
 - Minus Sign (-) - zoom out

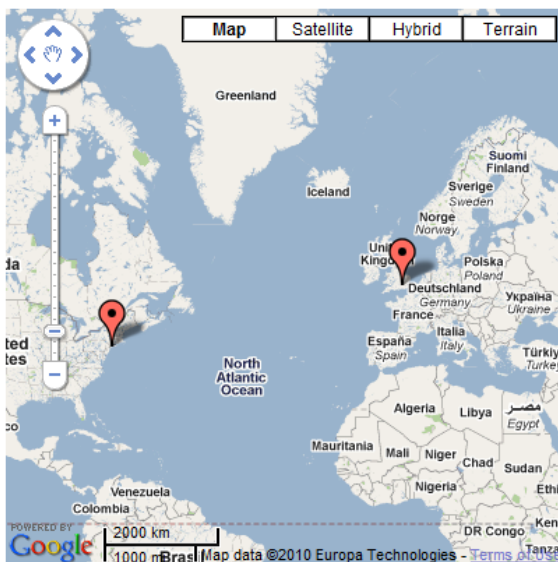
Detailed descriptions of all properties of the web part can be found in [Kentico CMS Web Parts Reference](#) or directly in the Web part properties dialog after clicking the **Documentation** (📘) link at the top right corner of the dialog.

8.21.3 Google maps

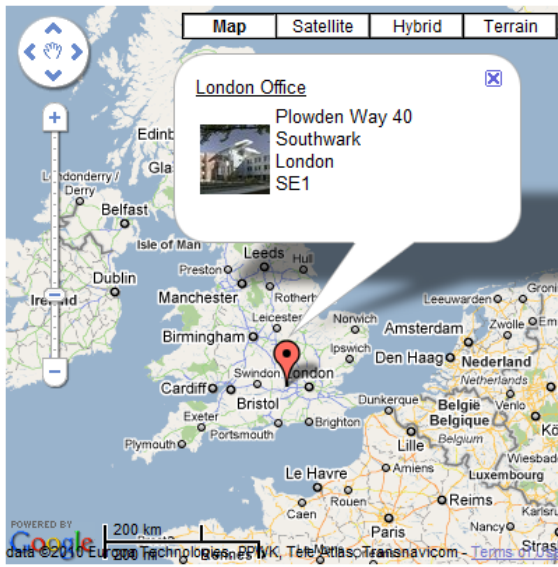
The **Google maps web part** enables displaying of a map with defined location markers using the Google maps service. It uses **Google maps API v3**, which is described in detail in the following location: <http://code.google.com/intl/cs-CZ/apis/maps/documentation/v3/controls.html>.

The **Google maps widget** is derived from the web part. It provides the same functionality and look, while only a limited set of properties can be configured.

You can find an example of use of this web part on the sample Corporate Site, on the **/Examples/WebParts/Maps/Google maps** page. In the screenshot below, you can see how the web part looks on page load. It shows the location markers (learn [here](#) how to display them on the map). The map is zoomed according to the settings made by the **Large view scale** property and its middle point is on the coordinates specified by the **Default latitude** and **Default longitude** properties.



The screenshot below shows how the web part looks when one of the location markers is clicked. The map gets zoomed according to the value of the **Detailed view scale** property and a tooltip is displayed, showing the heading loaded from the document type field specified in the **Tooltip field** property and the rest of the content loaded using the transformation specified in the **Transformation** property.



If you enable the **Enable shortcuts** property, the following shortcuts can be used to control the map:

- **Up Arrow** - move a little north
- **Down Arrow** - move a little south
- **Left Arrow** - move a little west
- **Right Arrow** - move a little east

- **Page Up** - move a large step north
- **Page Down** - move a large step south
- **Home** - move a large step west
- **End** - move a large step east

- **Plus Sign (+)** - zoom in
- **Minus Sign (-)** - zoom out

Detailed descriptions of all properties of the web part can be found in [Kentico CMS Web Parts Reference](#) or directly in the Web part properties dialog after clicking the **Documentation** (📖) link at the top right corner of the dialog.

8.21.4 Yahoo maps

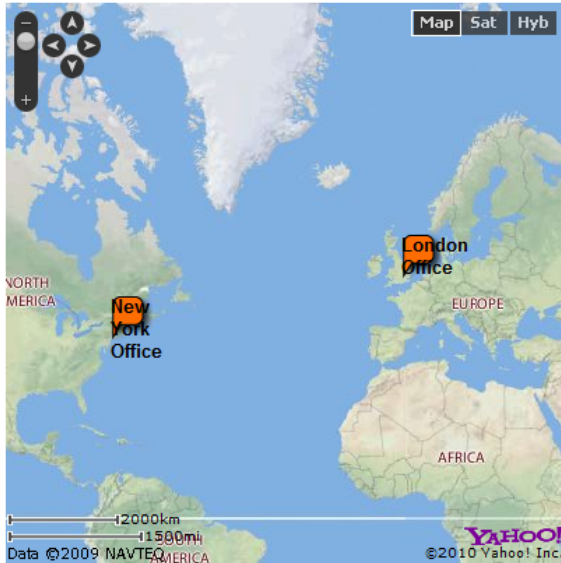
The **Yahoo maps web part** enables displaying of a map with defined location markers using the Yahoo maps service. It uses **Yahoo maps API**, which is described in detail in the following location: <http://developer.yahoo.com/maps/ajax/>

The **Yahoo maps widget** is derived from the web part. It provides the same functionality and look, while only a limited set of properties can be configured.

For Yahoo maps to work, you need to have a **Yahoo AppID** for your application and enter it into the **Yahoo AppID property** of the web part. You can obtain the AppID at <http://developer.yahoo.com/wsregapp/>. Yahoo account is needed in order to obtain the AppID, however, if you don't have one, you will be offered to create it after going to the link above.

You can find an example of use of this web part on the sample Corporate Site, on the **/Examples**

WebParts/Maps/Yahoo maps page. In the screenshot below, you can see how the web part looks on page load. It shows the location markers (learn [here](#) how to display them on the map). The map is zoomed according to the settings made by the **Large view scale** property and its middle point is on the coordinates specified by the **Default latitude** and **Default longitude** properties.



The screenshot below shows how the web part looks when one of the location markers is clicked. The map gets zoomed according to the value of the **Detailed view scale** property and a tooltip is displayed, showing the heading loaded from the document type field specified in the **Tooltip field** property and the rest of the content loaded using the transformation specified in the **Transformation** property.



If you enable the **Enable shortcuts** property, the following shortcuts can be used to control the map:

- **Left Arrow** - pan the map west
- **Right Arrow** - pan the map east
- **Up Arrow** - pan the map north

- **Down Arrow** - pan the map south
- **Page Up** - zoom the map in
- **Page Down** - zoom the map out

Detailed descriptions of all properties of the web part can be found in [Kentico CMS Web Parts Reference](#) or directly in the Web part properties dialog after clicking the **Documentation** (📘) link at the top right corner of the dialog.

8.21.5 Example: Displaying offices on the map

This example will show you how to display a list of offices and their location on the map. We will use the **Google maps** web part in this example. However, the procedure is identical for **Bing maps** and **Yahoo maps** too.

We will use the sample Corporate Site for this example, and create a page for offices directly under the website root. The page will follow the same concept as the **Company/Offices** page on this site. We will create the new one only so that we can see the step-by-step procedure of creating such page from scratch.

How to do it in general

To display content on a map, you need to have this content stored in the content tree as standard documents. These documents can be of any document type as long as the **document type contains two fields for the geographical coordinates** - one for **longitude** and one for **latitude**.

Then you need to configure the properties of the maps web part to display documents of this document type stored within the desired location, and specify which fields of the document type contain the coordinates. This ensures displaying of the location markers. Finally, you need to choose a field for the heading and a transformation for the content of the tooltip displayed when a location marker is clicked.

Step 1 - Creating a new page with offices

1. Sign in as administrator to **CMS Desk -> Content** and click the root of the content tree.
2. Click **New** and choose to create a new **Page (menu item)**. Enter *Offices* for **Page name** and choose to **Create a blank page** using the **Two columns** layout. Click **Save**.
3. First we need to add a list of offices. Switch to the **Design** tab and add the **Listings and viewers/ Repeater** web part to the **zoneLeft** web part zone. Set the following properties:

- **Path:** `/{0}/%`
- **Document types:** cms.office
- **Transformation:** cms.office.simple
- **Selected item transformation:** cms.office.
- **Item separator:** `
`
- **Content before:** `<div class="GeneralList">`
- **Content after:** `</div>`

Click **OK**.

Step 2 - Geo-coding your information

4. Now we will create two documents of the **Office** type. Click the **Offices** page and click **New**. Choose to create a new **Office** and enter the following values:

- **Office name:** New York Office
- **Address line 1:** 1290 Avenue of the Americas
- **City:** New York
- **ZIP code:** 10104
- **State:** NY
- **Country:** USA
- **Phone:** 123456789
- **E-mail:** ny@example.com
- **Office photo:** choose some image from your local disk
- **Latitude:** 40.76
- **Longitude:** -73.98



Please note

The Office document type already contains the **Latitude** and **Longitude** fields. These are the fields that you will specify later in the map web part properties as the **source for the geographical position** of the location markers. If you're using a custom document type, you will need to define these fields manually. They must be of the **Decimal number** type. You can call them as you need, you only need to specify the appropriate name in the web part properties.

Values are valid in the following intervals:

- **Latitude:** from -90 to 90
- **Longitude:** from -180 to 180

Click **Save**.

5. Create another office:

- **Office name:** San Francisco Office
- **Address line 1:** 835 Market Street
- **City:** San Francisco
- **ZIP code:** 94103
- **State:** CA
- **Country:** USA
- **Phone:** 123456789
- **E-mail:** sf@example.com
- **Office photo:** choose some image from your local disk
- **Latitude:** 37.78
- **Longitude:** -122.41

Click **Save**.

Step 3 - Displaying the content on the map

When you see the page now, it displays only a list of offices. Switch to the **Design** tab and add the **Maps/Google maps** web part.

First, we will configure which documents should be displayed on the map. Set the following properties:

- **Path:** /{0}/%
- **Document types:** cms.office

It ensures that all offices in the current site section will be shown. Now we specify the transformation used for the text displayed in the balloon:

- **Transformation:** cms.office.preview


Now we set the following values that specify how the map is displayed:


- **Large view scale:** 3 (the zoom used on page load)
- **Detailed view scale:** 10 (the zoom used a location marker is clicked)
- **Width:** 500 (in pixels)
- **Height:** 400 (in pixels)
- **Default latitude:** 39.27 (latitude of the map center when the overview map is displayed on page load)
- **Default longitude:** -98.20 (longitude of the map center when the overview map is displayed on page load)
- **Latitude field:** OfficeLatitude (the field of the document containing the latitude position)
- **Longitude field:** OfficeLongitude (the field of the document containing the longitude position)
- **Tooltip field:** OfficeName (the field used for the heading of the tooltips)
- **Content before:** <div class="Map">
- **Content after:** </div>

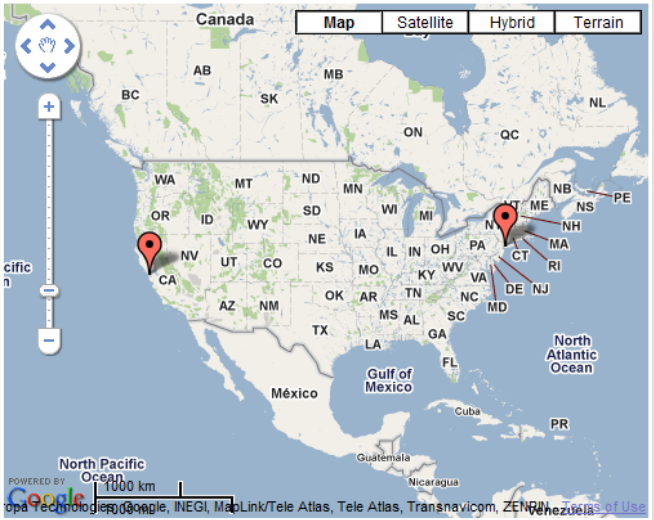
Click **OK**.

Sign out and see the page. It will look like this:

Home **Offices** Services Products News Partners Company Blogs Forums Events Images Wiki Examples

New York Office
 1290 Avenue of the Americas
New York, NY 10104

San Francisco Office
 835 Market Street
San Francisco, CA 94103




The map shows the United States with state abbreviations. Red pins mark the San Francisco Office in California and the New York Office in New York. The map includes navigation controls, a scale bar (1000 km), and a 'POWERED BY Google' logo. The map interface also features a 'Map' tab and options for 'Satellite', 'Hybrid', and 'Terrain' views.

You can see two balloons on the map - these are the location markers. When you mouse-over a balloon, you will see the office name. When you click a balloon or an office link in the list, you will see the detailed view:


Home **Offices** Services Products News Partners Company Blogs Forums Events Images Wiki Examples

New York Office

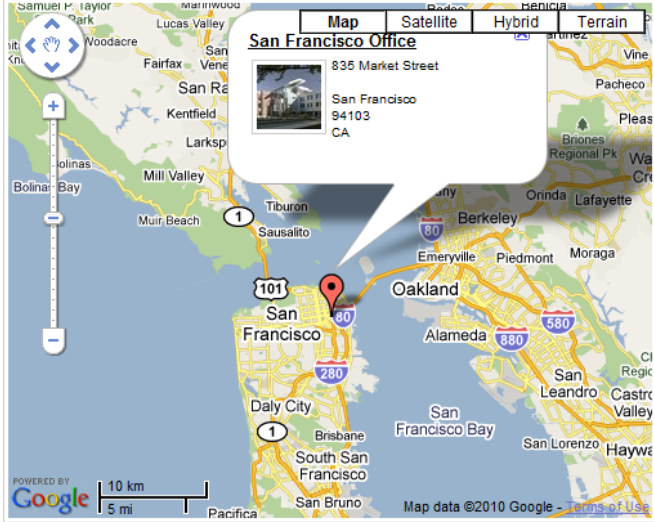


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8.22 Groups

8.22.1 Overview

The groups module allows site members who share an interest in a certain topic or field to access related information and share their own experiences on a subsection of your website. Site users can create new groups or join already existing ones. Groups may contain their own documents' section, [forums](#), [message boards](#), [media libraries](#) and [polls](#) and have the option of defining group roles.

Recently added groups

Sort by: [Group name](#) [Created](#)

| | | |
|--|--|---|
|  European travellers
This is a group of Europe-based travellers. If you are one ... |  Czech Republic fans
This group is intended for people who are interested in the... |  Australian travellers
This is a group of Australian travellers. If you are one of... |
|  Asian travellers
This is a group of Asia-based travellers. If you are living... |  American travellers
This is a group of American travellers. If you live in Amer... |  African travellers
This is a group of travellers living in Africa. If you are ... |

Site administrators can manage groups of a given site through the CMS Desk interface. Learn more in the [Groups management](#) chapter.

Both site administrators and users who are in authorized roles can edit the content and various settings of groups. Learn more about this in the [Editing a group](#) chapter. Further settings only available to global administrators are described in the [Settings](#) chapter.

The [Groups internals and API](#) chapters provide information about the database tables and classes used by the module and examples of how groups can be managed using the API.

To allow users to interact with the groups module, you have to place some group web parts, which can be found in the **Community** web part category, somewhere on your site. An example of this that describes how to enable users to create groups can be found in the [Enabling users to create groups](#) chapter. A full list of group web parts and their function and properties can be found in [Kentico CMS Web Parts](#) reference.

Kentico CMS Community Site Guide contains some additional group examples and tutorials:

- [Community Site Guide -> Part 1 -> Groups](#): Examples of the functionality and customization of groups.
- [Community Site Guide -> Part 2 -> Creating the Groups section](#): A step-by-step tutorial on how to create a sample group pages section of a website.

You will need to have the sample Community Site installed to follow Kentico CMS Community Site Guide.

8.22.2 Groups management

In the screenshot below, you can see the groups management interface located in **CMS Desk -> Tools -> Groups**. On this page, you can see a list of all groups on the site. You can filter displayed groups using the filter above the list. Filtration is possible by the group's **display name** and approval **Status**.

Even though groups are typically created by site users on the live site, you can create new groups in

this section of the administration interface too. It can be done by clicking the **New group** (👤) link at the top part of the page. Groups in the list can be **Edited** (✎) or **Deleted** (✖). The [Editing a group](#) chapter describes editing in more detail.

If an administrator's approval is needed after a user creates a new group, the approval can be done by clicking the **Approve** (✔) icon. By clicking the **Reject** (⊘) icon, groups can be switched back to the state they were in before they were approved. If you do this to an existing group, the group will not be displayed on the live site.

The screenshot shows the Kentico CMS Desk administration interface. The top navigation bar includes 'Content', 'My desk', 'Tools' (selected), and 'Administration'. A 'Switch to Site Manager' link is visible in the top right. The left sidebar contains a 'Tools' menu with various options like 'Abuse report', 'BizForms', 'Blogs', 'Booking system', 'Content staging', 'Custom tables', 'E-commerce', 'File import', 'Forums', 'Groups' (highlighted), 'Media libraries', 'Message boards', 'Newsletters', 'Polls', 'Reporting', and 'Web analytics'. The main content area is titled 'Groups' and features a 'New group' link. Below this, there are search filters for 'Group name' (set to 'LIKE') and 'Status' (set to '(all)'), with a 'Search' button. A table lists existing groups with columns for 'Actions', 'Display name', and 'Approved'.

| Actions | Display name | Approved |
|---------|-----------------------|----------|
| ✎ ✖ ✔ ⊘ | African travellers | Yes |
| ✎ ✖ ✔ ⊘ | American travellers | Yes |
| ✎ ✖ ✔ ⊘ | Asian travellers | Yes |
| ✎ ✖ ✔ ⊘ | Australian travellers | Yes |
| ✎ ✖ ✔ ⊘ | Czech Republic fans | Yes |
| ✎ ✖ ✔ ⊘ | European travellers | Yes |

8.22.3 Editing a group

There are two ways how group properties can be edited:

- On-site management using the **Group profile** web part; this is typically used by group administrators
- Administration interface in **CMS Desk -> Tools -> Groups**, after choosing to **Edit** (✎) a group; this is typically used by site administrators

Both of the two approaches provide the same tabs layout, with the difference that there are some **extra settings** in the administration interface compared to on-site management. These will be marked as **AI only** in the descriptions below.

General tab

On this tab, you can set the general properties of the group:

- **Display name** - name of the group displayed on the site and in the administration interface; *AI only*
- **Code name** - name of the group used in site code; *AI only*
- **Description** - text describing the group
- **Group pages location** - node alias path of the location where group pages of the group are stored
- **Avatar** - group avatar image

- **Approve members** - determines if users can join the group with or without group admin's approval; the last options allows invited members to join without the approval
- **Content access** - determines who can view content of the group pages
- **Notify group admins when a user joins/leaves** - if checked, group administrators will receive notification e-mail when a user joins/leaves a group
- **Notify group admins on pending members** - if checked, group administrators will receive a notification e-mail when a user requests joining a group and admin's approval is needed

- **Created by** - displays who created the group
- **Approved by** - displays who approved the group to be created on the site

 **Group properties**

Groups ▸ Asian travellers

General Security Members Roles Forums Media libraries Message boards Polls

Display name: Asian travellers

Code name: Asian_travellers

Description: This is a group of Asia-based travellers. If you are living in Asia, please register to the group. It is a great chance for you to get in touch with other travellers from your region. They

Group pages location: /Group-pages/Asian_travellers Select Clear



Upload: Browse...

[Select pre-defined avatar](#)

- Approve members:
- Any site member can join
 - Only approved members can join
 - Only approved members can join except for invited members

- Content access:
- Anybody can view the content
 - Site members can view the content
 - Only group members can view the content

Notify group admins when a user joins/leaves:

Notify group admins on pending members:

Created by: administrator

Approved by: administrator

OK

Security tab

On this tab, you can use the matrix to set permissions for group pages. The following permissions can be assigned:

- **Create pages** - users can create group pages
- **Delete pages** - users can delete group pages
- **Edit pages** - users can edit group pages

These permissions can be assigned to:

- **Nobody** - nobody can perform the action
- **All users** - all users can perform the action
- **Authenticated users** - only signed-in users can perform the action, i.e. anonymous public users can not perform it
- **Group members** - only group members can perform the action, i.e. authenticated non-group members and anonymous users can not perform it
- **Authorized roles** - only members of the group roles selected below can perform the action



Group admin's permissions

Group administrators can perform any of these actions, even if they haven't the permissions assigned.



Group properties

Groups ▸ Asian travellers

General Security Members Roles Forums Media libraries Message boards Polls

| | Create pages | Delete pages | Edit pages |
|---------------------|----------------------------------|----------------------------------|----------------------------------|
| Nobody | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| All users | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Authenticated users | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Group members | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Authorized roles | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> |

Please select the authorized roles (available only when you select the "Authorized roles" option above):

| | Create pages | Delete pages | Edit pages |
|-------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Group admin | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Members tab

On this tab, you can see a list of all members of the group. You can **Edit** (✎) or **Delete** (✖) users in the list. You can also **Approve** (✔) members' requests for joining the group or **Reject** (⊘) them from the group. Once rejected, the user can not request joining the group until they are approved again.

Group properties

Groups ▸ Asian travellers

General Security **Members** Roles Forums Media libraries Message boards Polls

Add member Invite member

Username: LIKE

Status: (all)

| Actions | User name | Full name | Member approved | Member rejected |
|-------------------------------------|-----------|-------------|-----------------------|-----------------|
| <input checked="" type="checkbox"/> | Guru | Ratan Gupta | 10/23/2008 4:00:32 PM | |
| <input checked="" type="checkbox"/> | Mia | Mia Lee | 10/23/2008 4:00:43 PM | |

Clicking the (👤) **Add member** link, you can add users to the group directly, without sending an invitation to them. This is possible only in the administration interface. On the live site, only the (👤) **Invite member** link is displayed. When adding a user to a group, you have the following options:

- **User** - select an existing site user who you want to add to the group
- **Comment** - text comment that you can add to the user; this comment is not sent to the user, it is only displayed in the administration interface
- **Approve** - if checked, the user will be automatically approved; if not, a user will need a group admin's approval before they become members of the group
- **Add member to roles** - using the check-boxes, you can assign the user to group roles

Group properties ?

Groups ▸ Asian travellers

General Security **Members** Roles Forums Media libraries Message boards Polls

Members ▸ New member ?

User:

Comment:

Approve:

Add member to roles
No roles selected.

After clicking the **Invite member** link, the dialog displayed in the screenshot below will be displayed. There are two ways of invitation:

- **Invite existing site member** - after selecting an existing site user in the **User name** field, an e-mail will be sent to the user's e-mail address based on the **Groups - member invitation** e-mail template; text entered to the **Comment** field will be included in the e-mail; the user can join the group either by clicking a link in the e-mail, or via the **My sent invitations** web part
- **Invite via e-mail** - this way, you can send the invitation to any e-mail address that you enter into the **E-mail** field; in this case, user will be required to register to the site after clicking the join link in the e-mail; text entered to the **Comment** field will be included in the e-mail

Group properties

Groups ▸ Asian travellers

General Security **Members** Roles Forums Media libraries Message boards Polls

Members ▸ Invite member

Invite: existing site member via e-mail

User name:

Comment:

Roles tab

On this tab, you can see a list of roles defined for the group. These roles are applicable only in the context of the group. Don't confuse them with website roles, which can be set in Site Manager -> Administration -> Roles.

Roles in the list can be **Edited** (✎) and **Deleted** (✖).

Group properties

Groups ▸ Asian travellers


General Security Members **Roles** Forums Media libraries Message boards Polls

[New role](#)

| Actions | Role name ▾ |
|---------|-------------|
| | Group admin |

If you click the **New role** link above the list, you can define a new role for the group. The following properties need to be entered:

- **Role display name** - name of the role that will be used on the live site and in the administration interface
- **Role code name** - name of the role used in your code; *AI only*
- **Role description** - text description of the role
- **Can manage the group** - indicates if members of the role can manage the group by means of the **Group profile** web part

 **Group properties**

Groups ▸ Asian travellers

General Security Members **Roles** Forums Media libraries Message boards Polls



Roles ▸ New role


Role display name:

Role code name:

Role description:

Can manage the group:

When **Editing** () a role, two tabs are offered. On the **General** tab, you can change the details entered when creating the role, as described above. On the **Users** tab, you can see a list of all members of the role. These can be **Deleted** () , which removes them from the role. New users can be added to the role using the **Add user to role** link above the list.

 **Group properties**

Groups ▸ Asian travellers

General Security Members **Roles** Forums Media libraries Message boards Polls

Roles ▸ Group content editor

General **Users**

Following users are assigned to the role:

| | |
|--------------------------|--------------------|
| <input type="checkbox"/> | User name |
| <input type="checkbox"/> | Ratan Gupta (Guru) |

Forums tab

On this tab, you can create and manage the group's forums. As these forums are standard Kentico CMS forums set into the context of the group, please refer to the [Modules -> Forums](#) chapter of this guide for more information on their management.

Media libraries tab

On this tab, you can create and manage the group's media libraries. As these are standard Kentico CMS media libraries set into the context of the group, please refer to the [Modules -> Media libraries](#) chapter of this guide for more information on their management.

Message boards tab

On this tab, you can manage the group's message boards. As these are standard Kentico CMS message boards set into the context of the group, please refer to the [Modules -> Message boards](#) chapter of this guide for more information on their management.

Polls tab

On this tab, you can manage the group's polls. As these are standard Kentico CMS polls set into the context of the group, please refer to the [Modules -> Polls](#) chapter of this guide for more information on their management.

8.22.4 Enabling users to create groups

You can enable site users to create new groups by placing the **Community -> Group registration** web part on your site. You have to set the following properties of the web part:

- **Template source alias path** - alias path of a location where group template source files are stored
- **Template target alias path** - alias path where files created from group template source files will be loaded when the group is created
- **Combine with default culture** - if checked, default culture will be used when creating group pages under a culture where the source or target nodes were not found
- **Group name label text** - text that will be displayed in the form before the field where group name is entered
- **Text after successful registration** - text displayed when a group is successfully created
- **Text after successful registration with approving** - text displayed when a group is successfully created, but requires administrator's approval to be published on the web

- **Require approval** - if checked, the group will have to be approved by a site administrator before it is published on the site
- **Redirect to URL** - URL where the user will be redirected after creating the group
- **Hide form after registration** - if checked, the form will be hidden after creating the group

Group pages templates

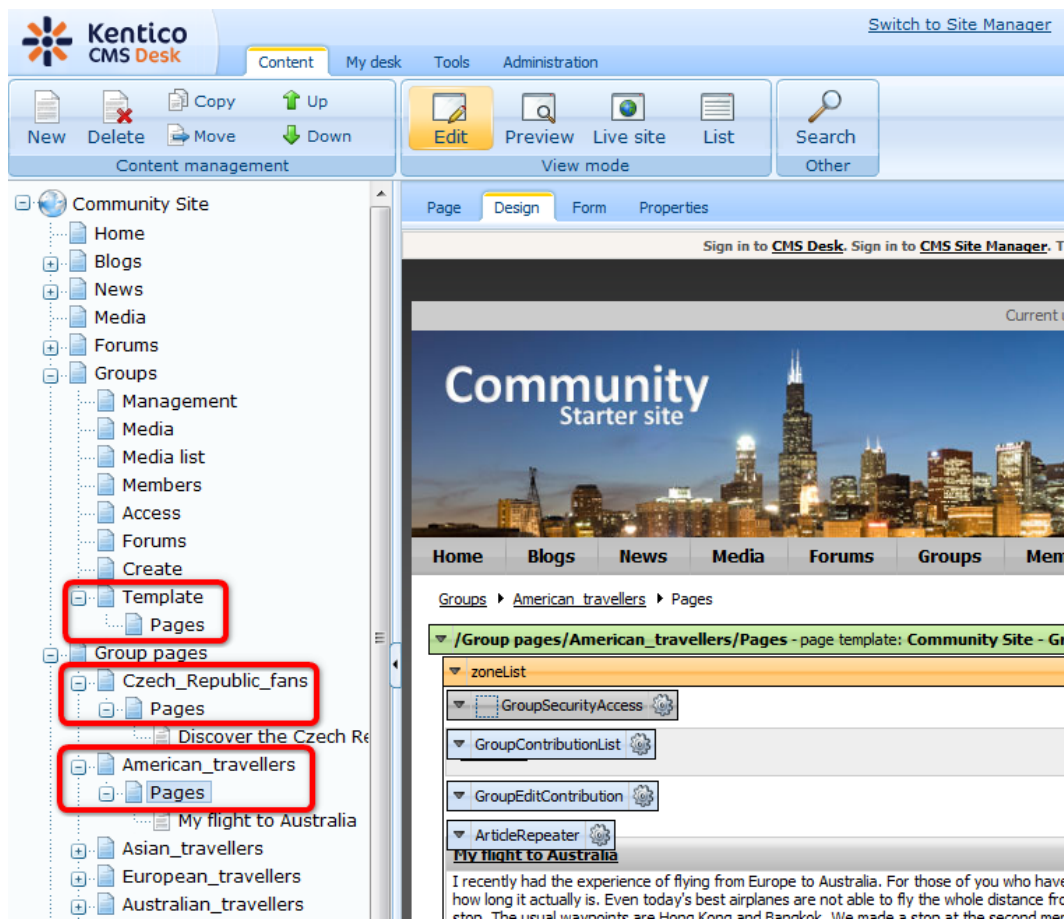
Each group has its own section on the website where its content is stored - so called group pages. When adding the **Group registration** web part to your site, you have to specify the **Template source alias path** and **Template target alias path** properties. These two properties are essential when creating the **group pages section** of each group.

The page specified by the **Template source alias path** and all its sub-pages are copied to the location specified by the **Template target alias path**.

To get a better idea of how this works, you can take a look at our sample **Community Starter site**. On the site, the **Group registration** web part is configured the following way:

- **Template source alias path:** /Groups/Template
- **Template target alias path:** /Group-pages

As you can see in the screenshot below, there is the **/Groups/Template** page with one sub-page: **Pages**. When a new group is created, its title page is created under **/Group-pages** and the **Pages** page is created under it. As you have probably noticed, the web parts placed on the title page are identical to those placed on the **Template** page. Web parts on the **Pages** page are also identical to the source **Pages** page. Under **Pages**, all group's documents will be stored.



All Kentico CMS documents can be set to be owned by a group. This can be done by signing into CMS

Desk, selecting a document from the content tree, switching to **Edit** mode and going to **Properties -> General -> Owned by group** and choosing a group from the drop-down list displayed after clicking the **Change** button. This property is most useful for group pages and it is mainly informative. It does however influence the editing permissions of Group administrator widget zones. To learn more about widgets, please refer to the [Development -> Widgets](#) chapter of this guide.

The screenshot shows the Kentico CMS 5.5 Desk interface. The left sidebar displays a content tree for 'Widget community' with various folders and documents. The main area shows the 'Properties' dialog for a document named 'Czech_Republic_fans'. The 'General' tab is active, and the 'Owned by group' field is highlighted with a red box. The 'Change' button next to it is also visible. Other fields include 'Design', 'Other properties', 'Owner', and 'Cache'.

| Field | Value |
|------------------|---|
| Design | (default) [Edit] |
| CSS stylesheet | <input checked="" type="checkbox"/> Inherit |
| Document name | Czech_Republic_fans |
| Type | Page (menu item) |
| Created by | Global Administrator |
| Created | 10/23/2008 8:44:08 AM |
| Last modified by | Ratan Gupta |
| Last modified | 5/28/2010 2:39:06 PM |
| Rating | ☆☆☆☆☆☆☆☆ [Reset] |
| N/A | N/A |
| Node ID | 9639 |
| Node GUID | 8967fa66-8adc-44ef-aa56-f107f85f9dfd |
| Alias path | /Group-pages/Czech_Republic_fans |
| Culture | English - United States |
| Name path | /Group pages/Czech_Republic_fans |
| Live URL | /KenticoCMS_5.5/Groups/Czech_Republic_fans.aspx |
| Published | Yes |
| Owner | Global Administrator (administrator) [Select] [Clear] |
| Owned by group | Czech Republic fans [Change] |
| Cache | <input checked="" type="radio"/> Inherit |

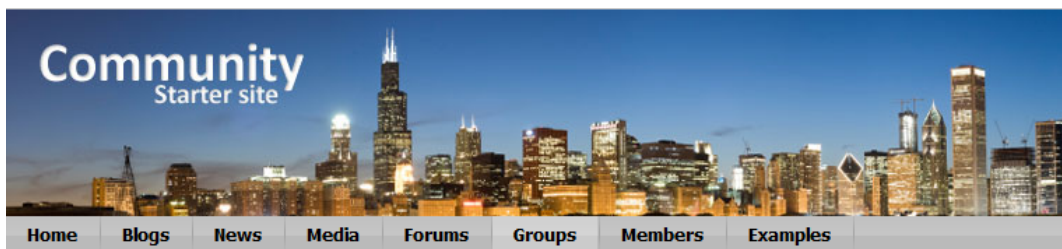
Please refer to [Community Site Guide -> Part 2 -> Creating the Groups section](#) for a step-by-step tutorial on how to create a sample group pages section of a website.

8.22.5 How site users create a new group

When a user wants to create a new group on the live site using the **Group registration** web part, they have to fill in the following details:

- **Group name** - name of the group displayed on the site and in the administration interface
- **Description** - text describing the group
- **Approve members** - determines if users can join the group with or without group admin's approval; the last options allows invited members to join without the approval
- **Content access** - determines who can view content of the group pages

After clicking **OK**, the group will be created and group pages added to the site. In case that site administrator's approval is needed, these actions will be performed after the approval.



Create new group

By entering the details into the form below, you can create your new user group. Make sure you give the group a name and description according to the group's field of interest. It is a good way of attracting site users with the same interest to join your group.

Group name:

Description:

Approve members: Any site member can join
 Only approved members can join
 Only approved members can join except for invited members

Content access: Anybody can view the content
 Site members can view the content
 Only group members can view the content

8.22.6 Security

Permissions of the Groups module can be set in **Site Manager -> Administration -> Permissions**. The following permissions can be assigned to members of the particular roles:

- **Manage** - allows managing of groups via the administration interface
- **Read** - allows viewing group settings, but does not allow to make any changes to them



Permissions

Site: ▼

Permission type: ▼

Permission matrix: ▼

| | Manage | Read |
|------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> | <input type="checkbox"/> |

Group pages permissions

- **Create pages** - users can create group pages
- **Delete pages** - users can delete group pages
- **Edit pages** - users can edit group pages

These permissions can be assigned to:

- **Nobody** - nobody can perform the action
- **All users** - all users can perform the action
- **Authenticated users** - only signed-in users can perform the action, i.e. anonymous public users can not perform it
- **Group members** - only group members can perform the action, i.e. authenticated non-group members and anonymous users can not perform it
- **Authorized roles** - only members of the group roles selected below can perform the action



Group admin's permissions

Group administrators can perform any of these actions, even if they haven't the permissions assigned.

Group properties ?

Groups > American travellers

General **Security** Members Roles Forums Media libraries Message boards Polls

| | Create pages | Delete pages | Edit pages |
|---------------------|----------------------------------|----------------------------------|----------------------------------|
| Nobody | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| All users | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Authenticated users | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Group members | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Authorized roles | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> |

Please select the authorized roles (available only when you select the "Authorized roles" option above):

| | Create pages | Delete pages | Edit pages |
|-------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Group admin | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

8.22.7 Settings

Settings of the groups module are located in **Site Manager -> Settings -> Community**. The following settings can be done:

- **Groups security access path** - alias path of a document to which users will be redirected when they try to access pages of a group to which they don't have permissions; this page should contain the Group security message web part; e.g. `/Groups/{GroupName}/Access`
- **Group management path** - alias path of the group management page, containing the Group profile web part; e.g. `/Groups/{GroupName}/Management`
- **Group profile path** - alias path of the group profile page; e.g. `/Groups/{GroupName}`
- **Invitation acceptance path** - alias path of the document containing the Group invitation web part; this is a special web part handling requests for joining a group when a user clicks the joining link in group invitation e-mail; e.g. `/Special-pages/Invitation-acceptation`
- **Group invitation expires after (days)** - when some user receives a group invitation e-mail, the link for joining the group included in the e-mail will be active for the number of days entered here; after this time, the link will no longer be functional; when 0 is entered, the link will be functional permanently

The screenshot shows the Kentico CMS Site Manager interface for the 'Community' settings. The left sidebar contains a tree view of settings categories, with 'Community' selected. The main content area displays the 'Community' settings page. At the top, there are 'Save' and 'Reset these settings to default' buttons. Below this, a note indicates that these settings are global and can be overridden by local site settings. The settings list includes:

- Groups security access denied path: `/Groups/{GroupName}/Access` (Select)
- Group management path: `/Groups/{GroupName}/Management` (Select)
- Group profile path: `/Groups/{GroupName}` (Select)
- Member management path: (Select)
- Member profile path: (Select)
- Invitation acceptance path: `/Special-pages/Invitation-acceptation` (Select)
- Friend management path: (Select)
- Enable user activity points:
- Activity points for blog post: 3
- Activity points for blog comment post: 1
- Activity points for forum post: 1
- Activity points for message board post: 1
- Group invitation expires after (days): 0

The 'Invitation acceptance path' and 'Group invitation expires after (days)' settings are highlighted with red boxes in the original image.

8.22.8 Groups internals and API

8.22.8.1 Database tables and API classes

The Groups module uses the following database tables:

- **Community_Group** - contains groups and their settings
- **Community_GroupMember** - contains information about group members
- **Community_GroupRolePermission** - contains group role permissions
- **Community_Invitation** - contains information about invitations to groups

The Groups API is provided by the following **CMS.Community** namespace classes:

- **GroupInfo**, **GroupInfoProvider** - these classes provide functionality for managing groups
- **GroupMemberInfo**, **GroupMemberInfoProvider** - these classes provide functionality for managing group members
- **InvitationInfo**, **InvitationInfoProvider** - these classes provide functionality for managing group invitations

The following chapters show examples of how these classes can be used:

- [Getting group data](#)
- [Modifying and creating groups](#)
- [Managing group members](#)
- [Managing group roles](#)
- [Creating a group invitation](#)

8.22.8.2 Getting group data

The following sample code shows how you can get a group as a *GroupInfo* object:

[C#]

```
using CMS.Community;

...

    // Get group object by GroupID
    GroupInfo gi = GroupInfoProvider.GetGroupInfo(1);

    // Get group object by GroupCodeName and SiteName
    GroupInfo gi2 = GroupInfoProvider.GetGroupInfo("customGroupName",
"CommunitySite");
```

The following sample code shows how you can get a `DataSet` containing all groups in the system with a `GroupID` greater than 5, ordered by their `Display name`:

[C#]

```
using System.Data;
using CMS.Community;

...

// Get DataSet of group objects
DataSet ds = GroupInfoProvider.GetGroups("GroupID > 5", "GroupDisplayName"
);
```

8.22.8.3 Modifying and creating groups

The following sample code shows how you can modify the `Display name` of an existing group:

[C#]

```
using CMS.Community;

...

// Get group object by GroupID
GroupInfo gi = GroupInfoProvider.GetGroupInfo(1);

// Change group display name
gi.GroupDisplayName = gi.GroupDisplayName + "_Updated";

// Save object
GroupInfoProvider.SetGroupInfo(gi);
```

The following sample code shows how you can create a new group and add it to the system:

[C#]

```
using System;
using CMS.Community;
using CMS.SiteProvider;
using CMS.UIControls;

...

// Create empty group object
GroupInfo gi = new GroupInfo();

// Set properties
```

```
gi.GroupDisplayName = "New group";
gi.GroupName = "NewGroup";
gi.GroupSiteID = 2;
gi.GroupDescription = "";
gi.GroupApproveMembers = GroupApproveMembersEnum.AnyoneCanJoin;
gi.GroupAccess = SecurityAccessEnum.AllUsers;
gi.GroupApproved = true;
gi.GroupApprovedByUserID = CurrentUser.UserID;
gi.GroupCreatedByUserID = CurrentUser.UserID;
gi.AllowCreate = SecurityAccessEnum.GroupMembers;
gi.AllowDelete = SecurityAccessEnum.GroupMembers;
gi.AllowModify = SecurityAccessEnum.GroupMembers;
gi.GroupNodeGUID = Guid.Empty;

// Save object to database
GroupInfoProvider.SetGroupInfo(gi);
```

8.22.8.4 Managing group members

The following sample code shows how you can add the user *gold* as a member of the group:

[C#]

```
using System;
using CMS.Community;
using CMS.SiteProvider;
using CMS.UIControls;

...

// Get group object by GroupName and SiteName
GroupInfo gi = GroupInfoProvider.GetGroupInfo("GroupName", "SiteName");

// If group exist
if (gi != null)
{
    // Get user object
    UserInfo ui = UserInfoProvider.GetUserInfo("gold");

    // If user exists
    if (ui != null)
    {
        // Create new group member object
        GroupMemberInfo gmi = new GroupMemberInfo();

        //Set properties of member
        gmi.MemberGroupID = gi.GroupID;
        gmi.MemberApprovedByUserID = CurrentUser.UserID;
        gmi.MemberApprovedWhen = DateTime.Now;
        gmi.MemberInvitedByUserID = CurrentUser.UserID;
        gmi.MemberUserID = ui.UserID;
        gmi.MemberJoined = DateTime.Now;
```

```
        // Save object to database
        GroupMemberInfoProvider.SetGroupMemberInfo(gmi);
    }
}
```

The following sample code shows how you can remove the user *gold* from the group:

[C#]

```
using CMS.Community;
using CMS.SiteProvider;

...

// Get user object
UserInfo ui = UserInfoProvider.GetUserInfo("gold");

// If user exists
if (ui != null)
{
    // Get group member object by UserID and GroupID
    GroupMemberInfo gmi = GroupMemberInfoProvider.GetGroupMemberInfo(ui.
UserID, 13);

    // Delete group member object from database
    GroupMemberInfoProvider.DeleteGroupMemberInfo(gmi);

}

// Delete group member object from database by GroupMemberID
GroupMemberInfoProvider.DeleteGroupMemberInfo(1);
```

The following sample code shows how you can modify the *Comment* property of a group member:

[C#]

```
using CMS.Community;

...

// Get group member object by GroupMemberID
GroupMemberInfo gmi = GroupMemberInfoProvider.GetGroupMemberInfo(1);

// Change member comment property
gmi.MemberComment = gmi.MemberComment + " Updated";

// Save object
GroupMemberInfoProvider.SetGroupMemberInfo(gmi);
```

The following sample code shows how you can get a DataSet containing all group members in the

system with a *GroupMemberID* greater than 2, ordered by their *GroupMemberID*:

[C#]

```
using System.Data;
using CMS.Community;

...

// Get DataSet of group member objects
DataSet ds = GroupMemberInfoProvider.GetGroupMembers("GroupMemberID > 2",
"GroupMemberID");
```

8.22.8.5 Managing group roles

The following sample code shows how you can add a role to a group:

[C#]

```
using CMS.Community;
using CMS.SiteProvider;
using CMS.CMSHelper;

...

// Get group object
GroupInfo gi = GroupInfoProvider.GetGroupInfo("CustomGroup",
"CorporateSite");

// If group exists
if (gi != null)
{
    // Create role object
    RoleInfo ri = new RoleInfo();

    // Set role properties
    ri.RoleName = "CustomGroupRole";
    ri.DisplayName = "Custom group role";
    ri.RoleGroupID = gi.GroupID;
    ri.SiteID = CMSContext.CurrentSiteID;

    // Save role to database
    RoleInfoProvider.SetRoleInfo(ri);
}
```

The following sample code shows how you can add a group member to a group role:

[C#]

```
using CMS.SiteProvider;

...

    // Get role object
    RoleInfo ri = RoleInfoProvider.GetRoleInfo("CustomGroupRole",
"CorporateSite");

    // Get user object
    UserInfo ui = UserInfoProvider.GetUserInfo("CustomGroupMember");

    // If role and user exist
    if ((ri != null) && (ui != null))
    {
        // Add user to role
        UserRoleInfoProvider.AddUserToRole(ui.UserID, ri.RoleID);
    }
}
```

8.22.8.6 Creating a group invitation

The following sample code shows how you can create an invitation to a group:

[C#]

```
using System;
using CMS.Community;
using CMS.UIControls;

...

    // Create new invitation object
    InvitationInfo ii = new InvitationInfo();

    // Set properties
    ii.InvitationComment = "Invitation comment";
    ii.InvitationGroupID = 1;
    ii.InvitationUserEmail = "admin@localhost.local";
    ii.InvitedByUserID = CurrentUser.UserID;
    ii.InvitationCreated = DateTime.Now;
    ii.InvitationValidTo = DateTime.Now.AddDays(1);

    // Save object
    InvitationInfoProvider.SetInvitationInfo(ii);
}
```

8.23 Image gallery

8.23.1 Overview

The module is used for effortless creating of image gallery pages. It encompasses three page templates and three web parts suitable for creating image galleries.

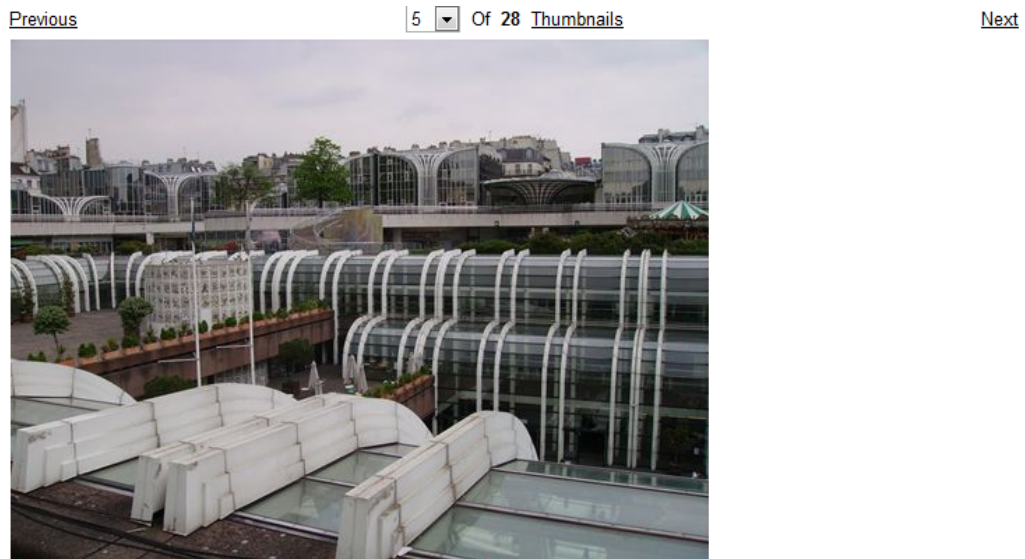
8.23.2 Available web parts

Image gallery

This is the basic web part for image galleries. In its initial view, it displays a set of picture thumbnails:



After clicking one of the thumbnails, the detail view will be displayed:

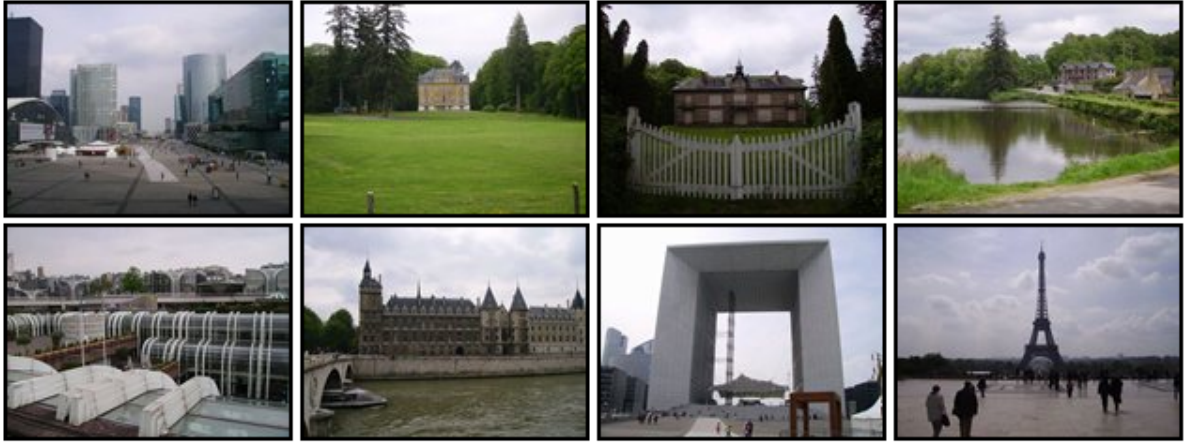


Besides the usual parameters common for all web parts, these properties can be set to customize the appearance of the gallery:

| Transformations | |
|-----------------------------|--|
| Detail transformation | Transformation used for displaying a selected image. |
| Thumbnail transformation | Transformation used for displaying gallery thumbnails. |
| Layout | |
| Columns | Number of thumbnail columns in the thumbnail view. |
| Rows per page | Number of thumbnail rows per page in the thumbnail view. |
| Paging | |
| Paging mode | Paging parameter transfer type:
<u>Query string</u> - the paging parameter is transferred through URL
<u>Postback</u> - the actual page is transferred through ViewState, no URL parameter is used |
| Query string key | Name of the URL parameter containing the page number. |
| Show first and last buttons | If checked, buttons leading to the first and last page of the gallery will be displayed. |
| Show buttons on top | If checked, paging buttons will be shown above the thumbnails. Otherwise, they will be displayed below them. |

Lightbox

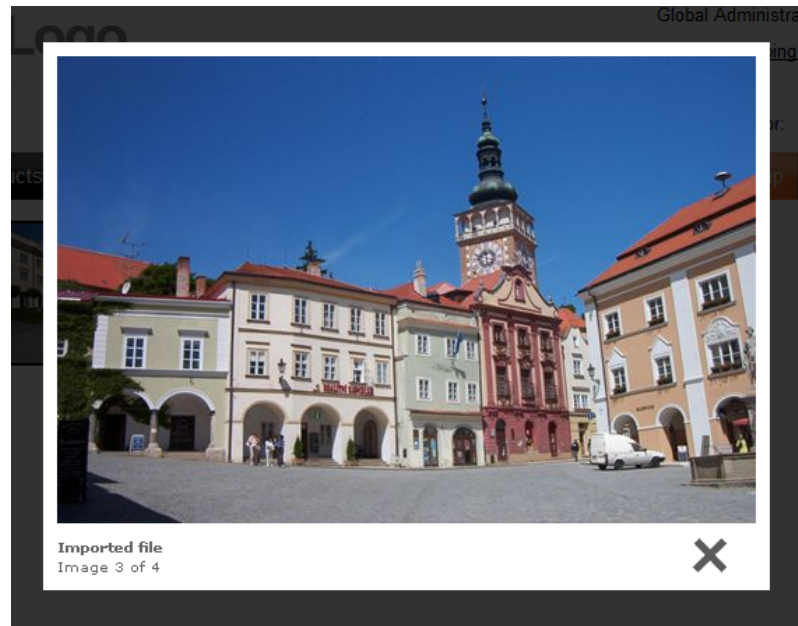
This web part's thumbnail view is similar to that of the Image gallery web part:



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|< < 1 - 2 - 3 - 4 ≥ >|

After clicking one of the thumbnails, the whole page will be grayed out and a lightbox with the selected image will be displayed on the top it, as you can see in the screenshot below:



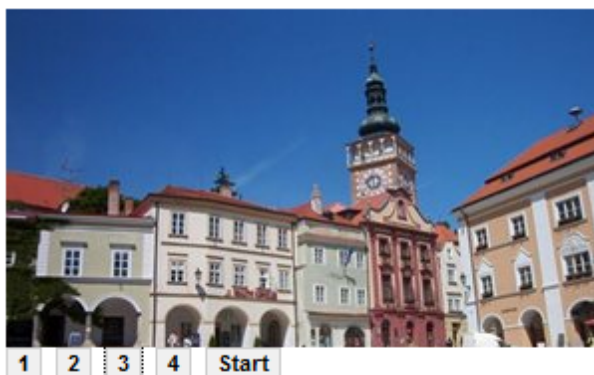
Here is a list of properties specific for the **Lightbox** web part:

| Transformations | |
|------------------------------|--|
| Transformation | Transformation used for displaying the list of thumbnails. |
| Alternating transformation | Transformation used for even items in the thumbnail view. |
| Selected item transformation | Transformation used in the detail view mode. |
| Item separator | Separator displayed between thumbnails. |
| Nested controls ID | <p>Sets the nested controls IDs. Use ';' as a separator; Example: myRepeaterID;myDatalistID;myRepeaterID2</p> <p>This property replaces the previously used NestedRepeaterID and NestedDataListID properties. If you are still using these properties, no changes to functionality will occur, but it is advisable to rewrite your code to use the new property instead.</p> |
| Layout | |
| Columns | Number of thumbnail columns in the thumbnail view. |
| Rows per page | Number of thumbnail rows per page in the thumbnail view. |
| Paging | |
| Enable paging | Indicates if paging is enabled. If unchecked, all thumbnails in the gallery will be displayed on a single page. |
| Paging mode | Paging parameter transfer type:
<u>Query string</u> - the paging parameter is transferred through URL
<u>Postback</u> - the actual page is transferred through ViewState, no URL |

| | |
|-------------------------------|--|
| | parameter is used |
| Pager position | Determines position of the pager. Available options are <i>Bottom</i> , <i>Top</i> and <i>Top and bottom</i> . |
| Page size | Number of thumbnails displayed per page |
| Query string key | Name of the URL parameter containing the page number. |
| Show first and last buttons | If checked, buttons leading to the first and last page of the gallery will be displayed. |
| LightBox Configuration | |
| Frame width | Width of the lightbox frame. |
| Frame height | Height of the lightbox frame. |
| Path to external scripts | URL path to the external JavaScripts required by the lightbox. |
| Overlay opacity | Opacity of lightbox background. Enter values ranging from 0 (transparent) to 1 (opaque black). |
| Animate | Enables lightbox animation. |
| Resize speed | Defines the speed of resizing images. Choose values ranging from 1 (slowest) to 10 (fastest). |
| Border size | Size of the image border. |
| Loading image | Image displayed while loading the lightbox image. |
| Close button image | Image of the Close button. |
| Previous button image | Image of the Previous button. |
| Next button image | Image of the Next button. |

Content slider

The Content slider is a web part that can be used for displaying various document types, hence it is also very suitable for displaying images. Contrary to the previous two web parts, the Content slider provides no thumbnail view. It displays a full sized image slide show with a pager below. The pager allows for browsing through the images using the numbered buttons. After clicking any of these buttons, the slide show stops and the **Start** button appears. This button launches the slide show again.



Specific properties of the Content slider web part:

| Transformations | |
|-----------------------------|---|
| Transformation | Transformation used for displaying the list of thumbnails. |
| Alternating transformation | Transformation used for even items in the thumbnail view. |
| Item separator | Separator displayed between thumbnails. |
| Nested repeater ID | ID of the nested CMSRepeater control as specified in transformation code. |
| Nested datalist ID | ID of the nested CMSDataList control as specified in transformation code. |
| Div options | |
| Width (px) | Width of the scrolling text area in pixels. |
| Height (px) | Height of the scrolling text area in pixels. |
| Style | Style assigned to the DIV tag of the area. |
| JavaScript options | |
| FadeIn time (milliseconds) | Fade in time of the image. |
| FadeOut time (milliseconds) | Fade out time of the image. |
| Break time (milliseconds) | Time for that the image will be displayed. |
| Auto start | If checked, the slide show will automatically start from the beginning. |

8.23.3 Available page templates

There are three basic page templates that can be used for image galleries.

List of galleries

This page template is used for displaying a list of all galleries under a selected path. For each gallery, it displays a thumbnail with a gallery name above it. By clicking one of the thumbnails, you will be redirected to the main page of the gallery.

The Teaser image of each gallery's menu item is used as the thumbnail in the list of galleries. To change some of the thumbnails, select the appropriate gallery's menu item in the content tree and switch to **CMSSDesk -> Edit -> Form**. On the displayed page, select a new Teaser image and click **Save**. The selected image will now be displayed as a thumbnail of the gallery in the list of galleries.

Images

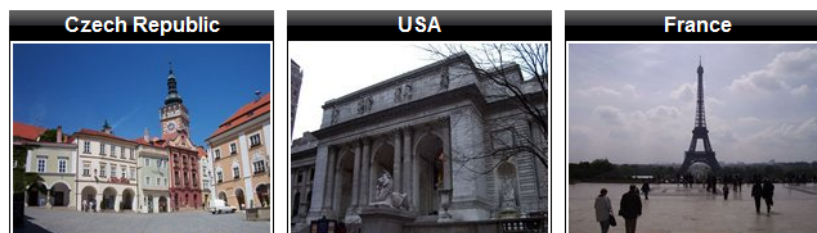


Image gallery

This is a basic page template used for displaying image galleries. It uses the Image gallery web part for displaying images under a given path in the content tree. See the [Available web parts](#) chapter for detailed info.

Lightbox gallery

This page template uses the Lightbox gallery web part for displaying images. See the [Available web parts](#) chapter for detailed info.

8.23.4 Importing images

Images used in galleries are imported the same way as any other files, as described in the [File import](#) chapter.

8.23.5 Transformations

Use of transformations is essential for all Image gallery web parts. You can view and alter transformations in the **Transformations** section of a web part properties window. For each transformation, by the means of the appropriate buttons, you can **Select** a predefined transformation from a list or **Edit** the current transformation and add a custom code to it.

Here are some examples of how you can alter the appearance of the Image gallery web part. This is the default thumbnail transformation code of the Image gallery web part:

```
<a href="?imagepath=<%# System.Web.HttpUtility.UrlEncode(DataBinder.Eval
(Container, "DataItem.NodeAliasPath").ToString()) %>">
<%# IfEmpty(Eval("FileAttachment"), "no image", "<img alt=\"\" + Eval("FileName") +
\"\" src=\"\" + GetFileUrl("FileAttachment") + "?maxsize=180\" border=\"0\" /
>") %>
</a>
```

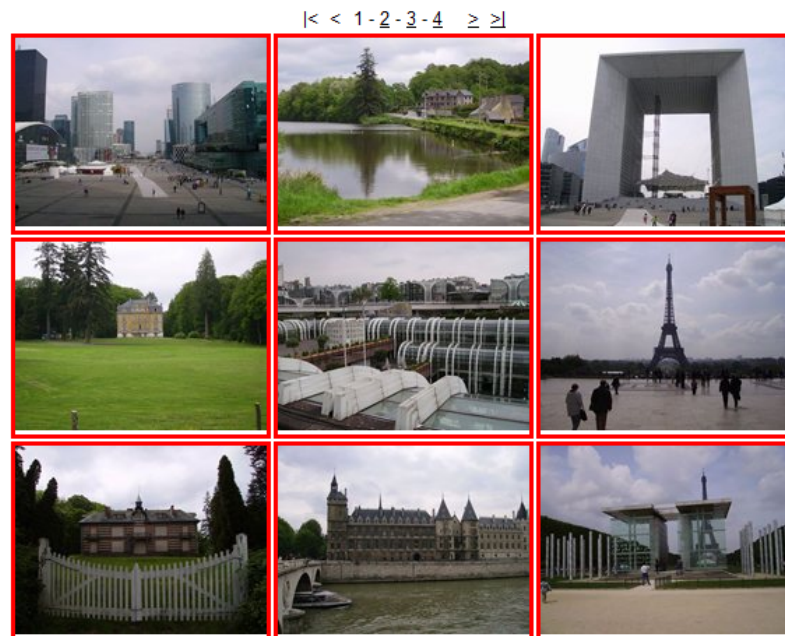
And this is how the gallery created using this transformation looks like:



In the following example, we will add a red border around each thumbnail.

```
<div style="border: solid 3px Red">  
<a href="?imagepath=<%# System.Web.HttpUtility.UrlEncode(DataBinder.Eval  
(Container, "DataItem.NodeAliasPath").ToString()) %>">  
<%# IfEmpty(Eval("FileAttachment"), "no image", "<img alt=\"\" + Eval("FileName") +  
\"\" src=\"\" + GetFileUrl("FileAttachment") + "?maxsize=180\" border=\"0\" /  
>") %>  
</a>  
</div>
```

This is how the result looks like:



This example shows how to display the file name and date and time of creation for each thumbnail in the gallery:

```
<a href="?imagepath=<## System.Web.HttpUtility.UrlEncode(DataBinder.Eval
(Container, "DataItem.NodeAliasPath").ToString()) %>">
<## IfEmpty(Eval("FileAttachment"), "no image", "<img alt=\"\" + Eval("FileName") +
\"\" src=\"\" + GetFileUrl("FileAttachment") + "?maxsize=180\" border=\"0\" /
>") %>
</a>
<## Eval("DocumentName") %> <br/>
<## GetDateTime("DocumentCreatedWhen") %>
```



Transformations for the Lightbox web part

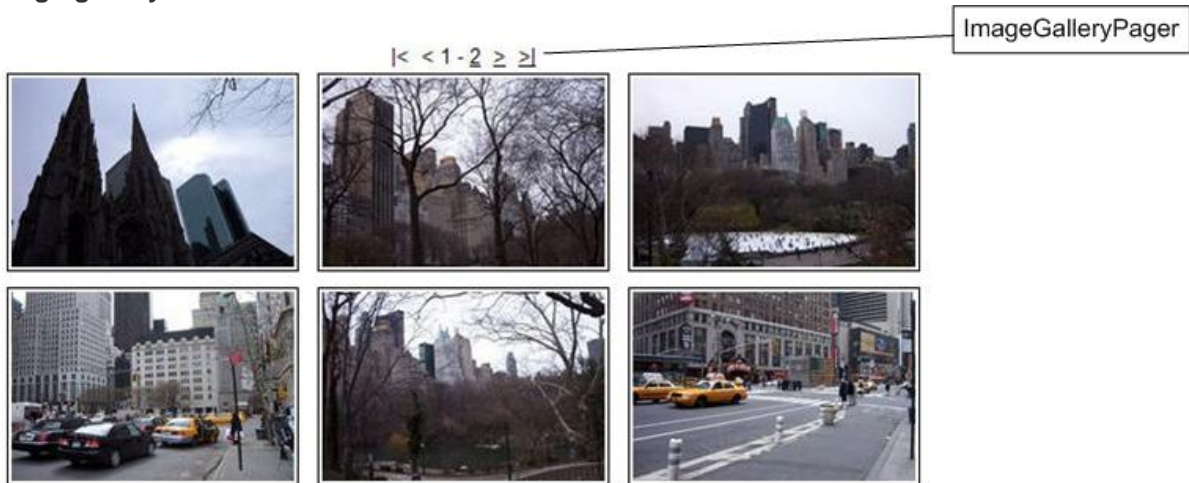
When writing a custom transformation for the Lightbox web part, it is necessary to use the 'rel' and 'rev' parameters as highlighted in the transformation code below. The 'title' parameter is used to determine the description of the image displayed in the lightbox.

```
<a href="<## GetDocumentUrl() %>" rel="lightbox[group]" rev="<## Eval
("NodeAliasPath") %>"
title="<## Eval("FileDescription") %>">?maxsize=150"
alt="<## Eval("FileName") %>" /></a>
```

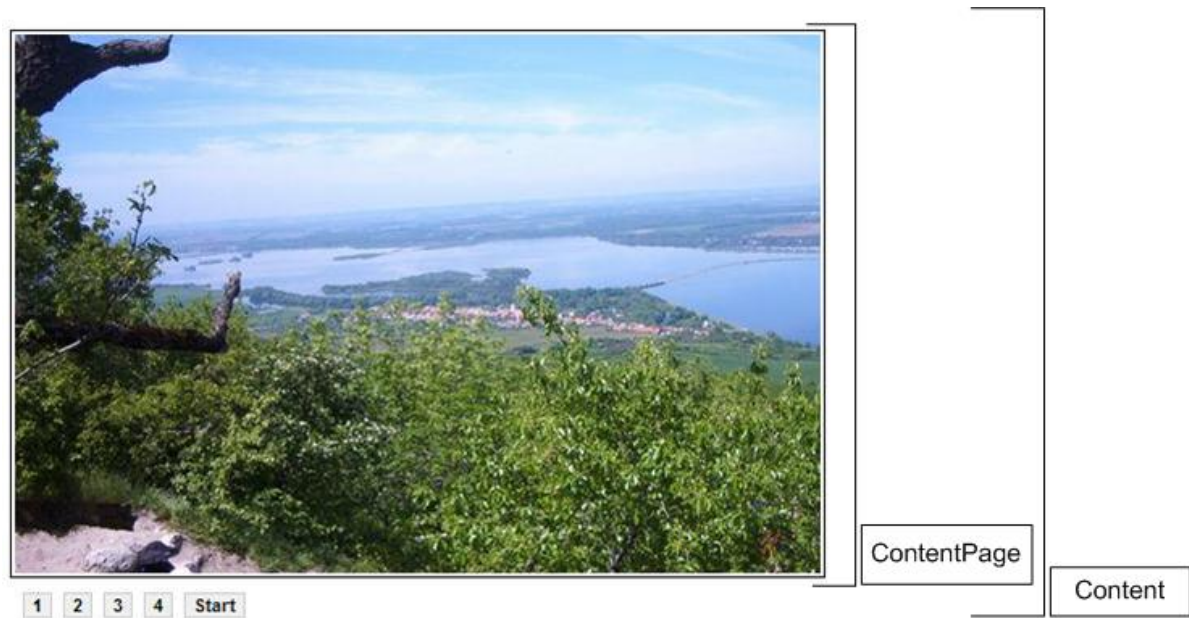
8.23.6 Design and styles

The web parts contain the following CSS classes. The style of these is controlled by the CSS styles included in your CSS stylesheet for a given site.

Image gallery:



Content slider:



The **Lightbox gallery** web part contains no CSS classes.

8.24 Media libraries

8.24.1 Overview

The Media libraries module enables storing of various files, such as photos, sound, videos, package files, presentation files, etc. This means that not only media files, but also other types of files can be stored in the media libraries.

Main features of the media libraries:

- Support for storage of large amount of files (photo galleries)
- Support for storage of large files (video files)
- Each group of users can have any number of libraries
- Files can be uploaded to the libraries externally, e.g. using FTP

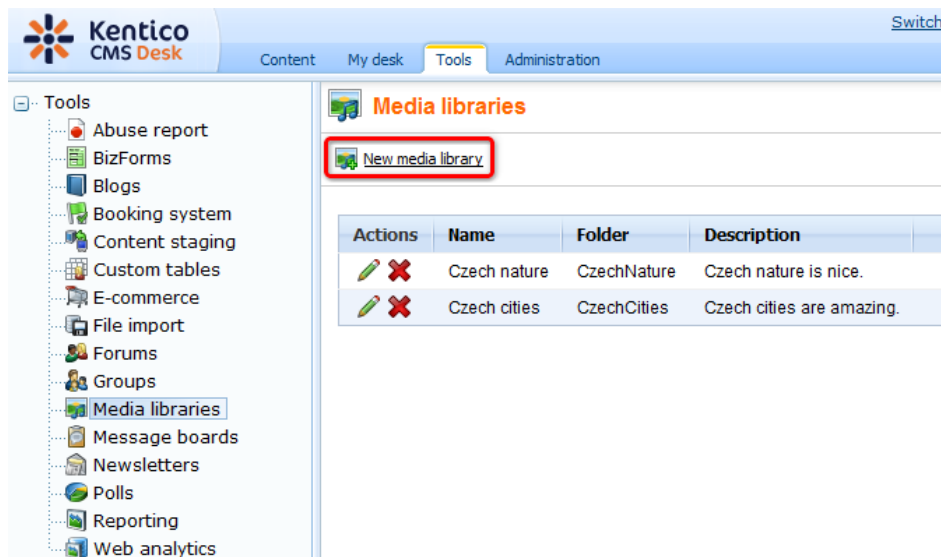
Media library files are stored directly in the file system, organized in folders. The default location of all libraries of a particular site is `~/<sitename>/media`. You can customize the location as described [here](#). Each media library is either global in the context of a particular site or belongs to a group.

8.24.2 Creating media libraries





There are two ways how media libraries can be created:

- **Live site:** group administrators can create group media libraries on the live site using the **Group profile** web part
- **Administration interface:** site administrators can create global media libraries in **CMS Desk -> Tools -> Media libraries** or group media libraries in **CMS Desk -> Tools -> Groups -> Edit a group (✎) -> Media libraries**

In all of these cases, media libraries can be created by clicking the **New media library** link above the list of libraries, as you can see in the screenshot below.



The screenshot shows the Kentico CMS Desk Administration interface. The top navigation bar includes 'Content', 'My desk', 'Tools', and 'Administration'. The 'Tools' section is expanded, showing a list of tools including Abuse report, BizForms, Blogs, Booking system, Content staging, Custom tables, E-commerce, File import, Forums, Groups, Media libraries, Message boards, Newsletters, Polls, Reporting, and Web analytics. The 'Media libraries' tool is selected, displaying a 'Media libraries' section with a 'New media library' link highlighted by a red box. Below this link is a table listing existing media libraries.

| Actions | Name | Folder | Description |
|---|--------------|-------------|---------------------------|
|   | Czech nature | CzechNature | Czech nature is nice. |
|   | Czech cities | CzechCities | Czech cities are amazing. |

After clicking the link, the following details need to be entered:

- **Display name** - name of the media library displayed in the administration interface and on the live site
- **Code name** - name of the media library used in site code
- **Description** - text describing the media library
- **Teaser image** - image used as the media library teaser
- **Folder name** - name of the folder where files will be stored; this folder will be created under **<web project>\<site name>\media** or a custom location set in Site Manager -> Settings -> Media libraries -> Media libraries folder

Click **OK** to create the library. After doing so, you will be redirected to the media library's editing interface - just as if you clicked the **Edit** (✎) icon in the list of libraries.

The screenshot shows the Kentico CMS Desk administration interface. The left sidebar contains a 'Tools' menu with various options, including 'Media libraries'. The main content area displays the 'New media library' form. The form has the following fields and values:

- Display name:** My first media library
- Code name:** MyFirstMediaLibrary
- Description:** This is my first media library.
- Teaser image:** Upload: C:\Users\Public\Pictures\ Browse...
- Folder name:** my_library1

A green 'OK' button is located at the bottom of the form.

8.24.3 Uploading files into media libraries

There are three ways how files can be uploaded into a media library:

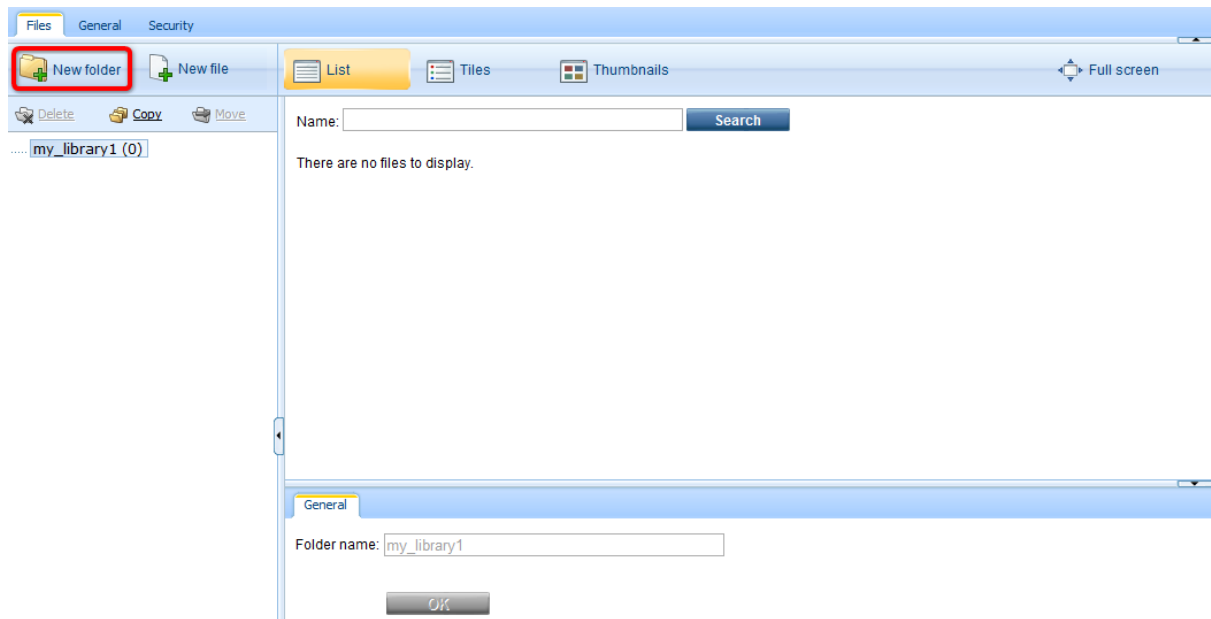
- **Via the administration interface**
- **On the live site via the Media gallery web part**
- **Externally, directly into the file system - e.g. via FTP**

In the following examples, you will learn how to add files into media libraries via the administration interface, on the live site and via FTP.

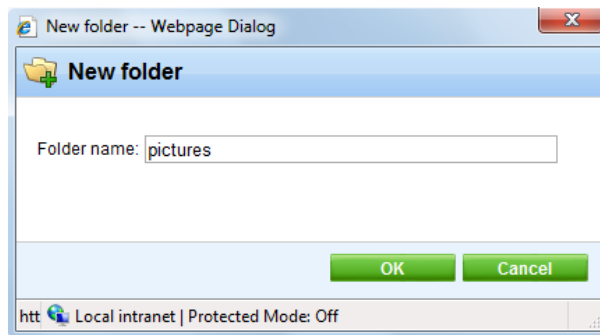
Uploading files via the administration interface


If you choose to **Edit** (✎) a media library in **CMS Desk -> Tools -> Media libraries**, you can manage files in the library on the **Files** tab.

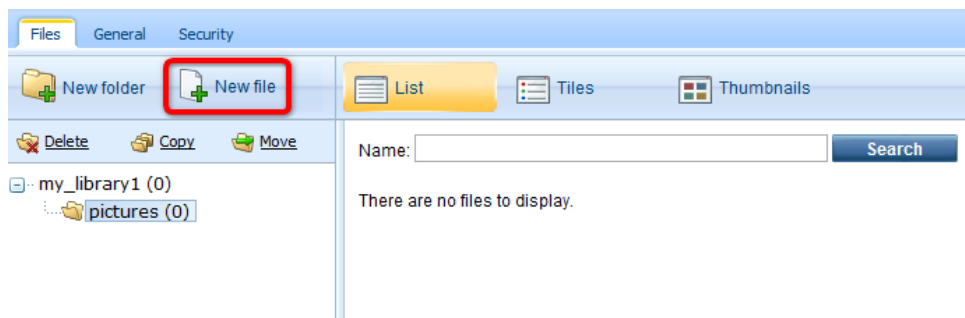
1. It is a good idea to keep your files organized in folders within the media library. To create a new folder, click the **New folder** (📁) button shown in the top left corner of the page.



2. Enter the name of the folder, e.g. *pictures*, and click **OK**.



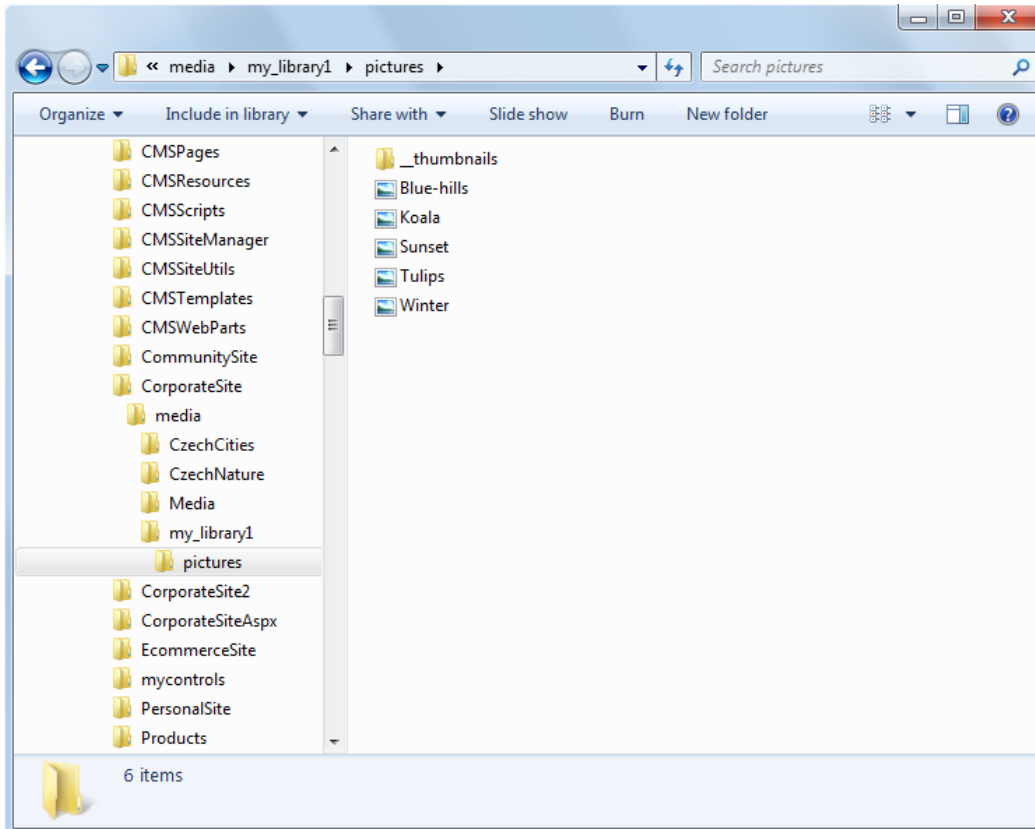
3. The folder is now created. You can upload files into the selected folder by clicking the **New file** () button.



4. A dialog appears, letting you upload the file. Just select the right folder and the file to be uploaded, then click the **Open** button.

5. Now if you go to the site folder in your file system, you will find the media library under the **media** folder, as you can see the screenshot below. The location of the folder may be customized as

described [here](#).

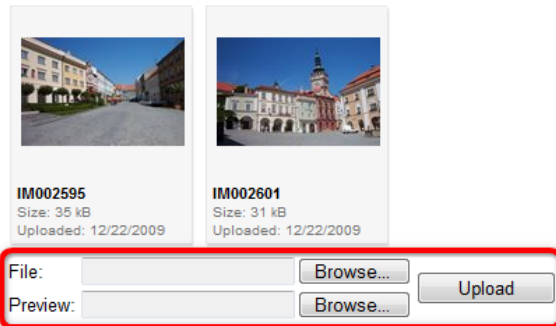


On-site upload via the Media gallery web part

The **Media gallery** web part has the following two properties enabling on-site file upload:

- **Allow upload** - enables on-site upload of files
- **Allow upload thumbnail** - enables on-site upload of file previews

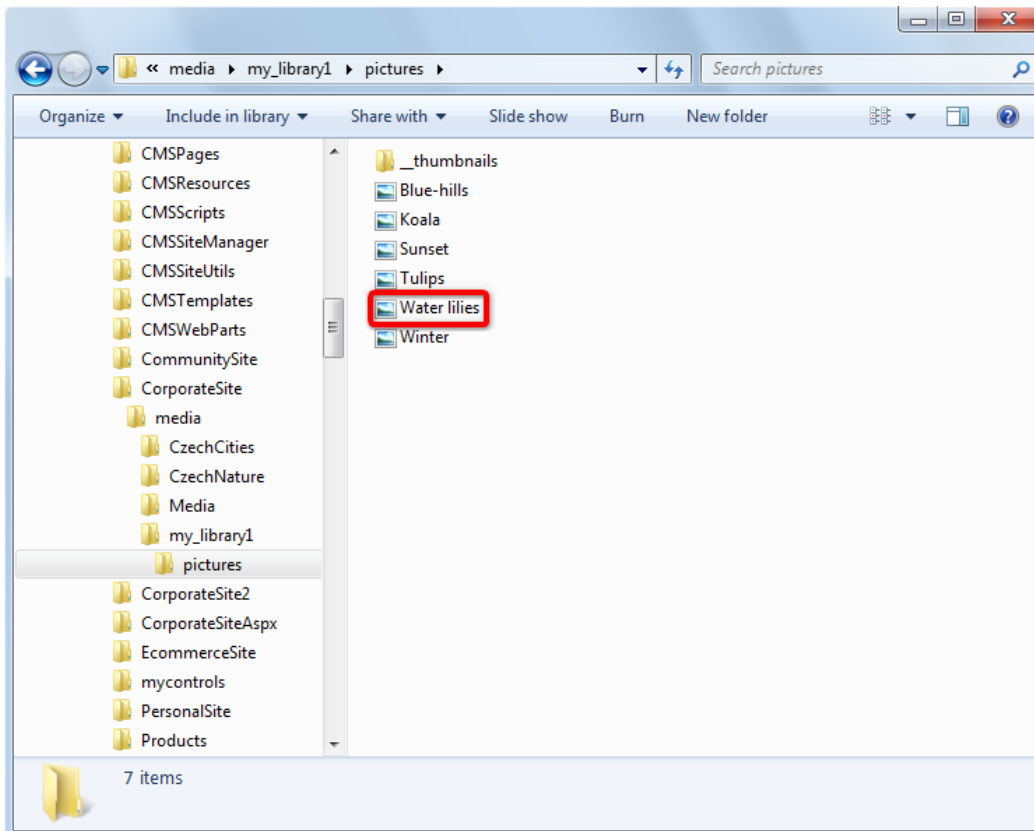
If these properties are enabled, the controls highlighted in the screenshot below will be displayed in the web part, letting users upload the files and thumbnails:



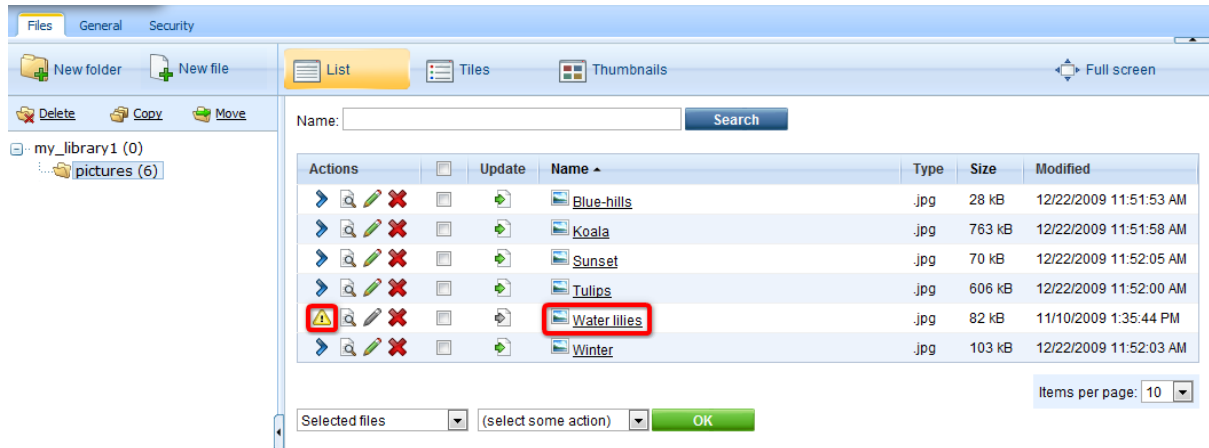
External upload

Files can also be uploaded **externally**, without any use of Kentico CMS administration interface or on-site web parts, e.g. using **FTP**. To do this, you simply need to copy the files into the appropriate folder of the media library.

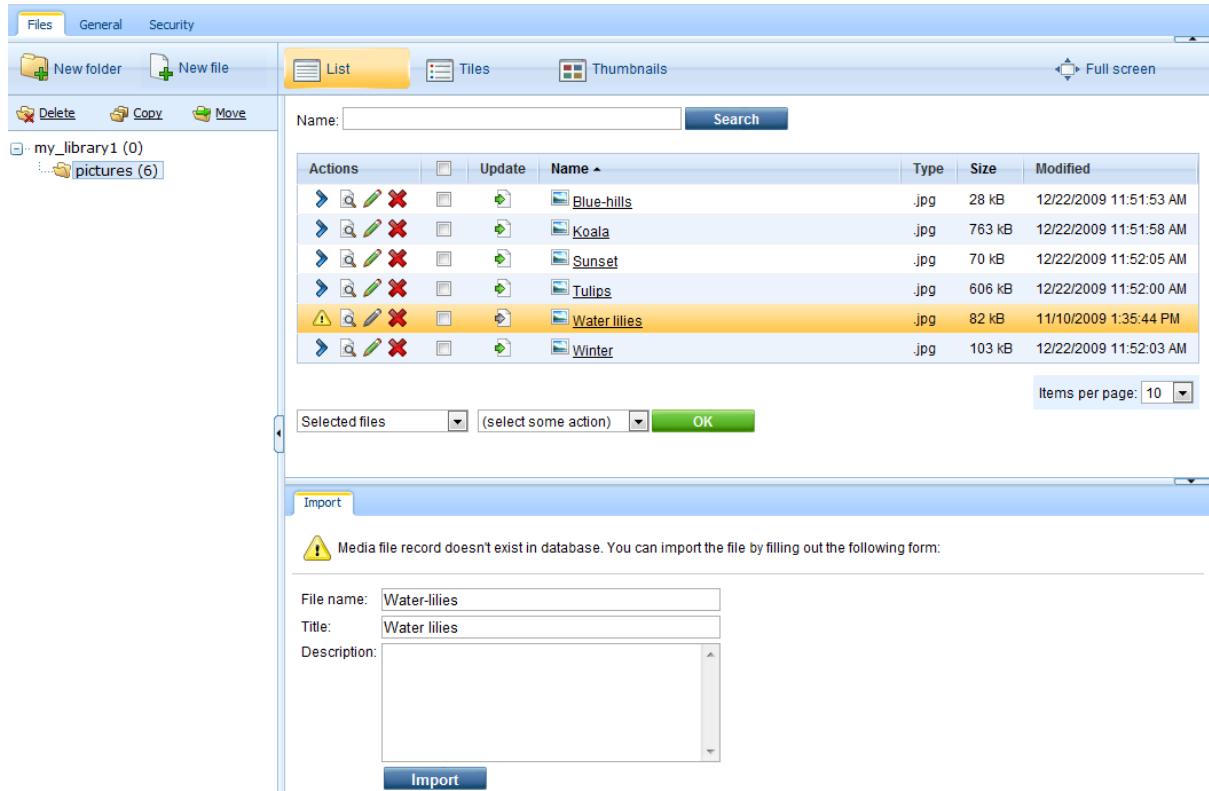
1. For the purposes of this example, try uploading another file into the **pictures** folder by copying it using Windows Explorer or any other file manager.



2. If you go back to the Media library administration interface, you will see the file present in the list. As you can notice, this file is marked with the warning (⚠) icon indicating that the file has not been imported yet. This means that the file **has not yet been registered in the database**. Such files can not be used on the site and have to be registered first. This happens only to externally uploaded files, files uploaded via the administration interface are registered in the database automatically.



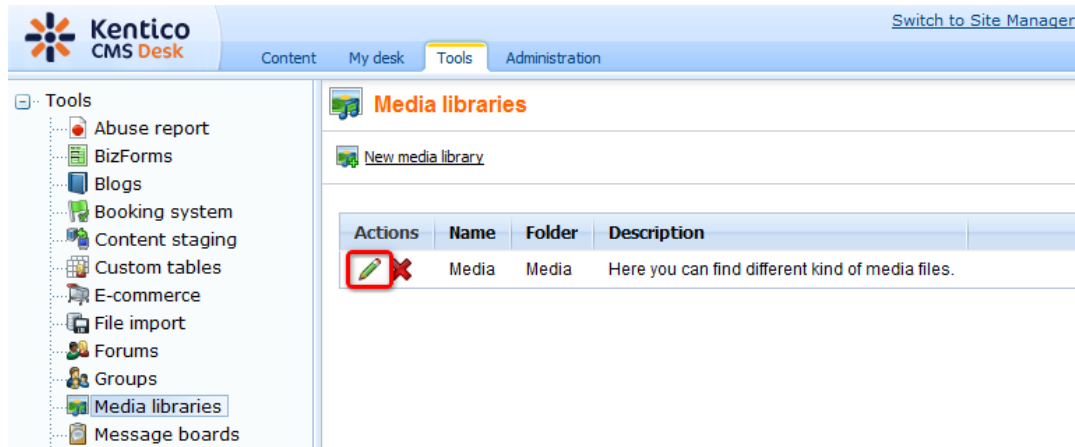
To register the file, you have to click the **Import** (⚠ icon, which creates the file's record in the database. Please note that the files are not physically copied into the database, they remain in the file system only and a record linking to the physical file is created in the database.



Multiple files can also be imported conveniently as a batch. See [Batch operations](#) in the **File management** chapter for more details.

8.24.4 File management





To manage files stored in a media library, you need to go to **CMS Desk -> Tools -> Media libraries** and click the **Edit** (✎) icon next to the appropriate media library.



The library editing interface will be displayed on the **File** tab where the files can be managed.







Folder operations

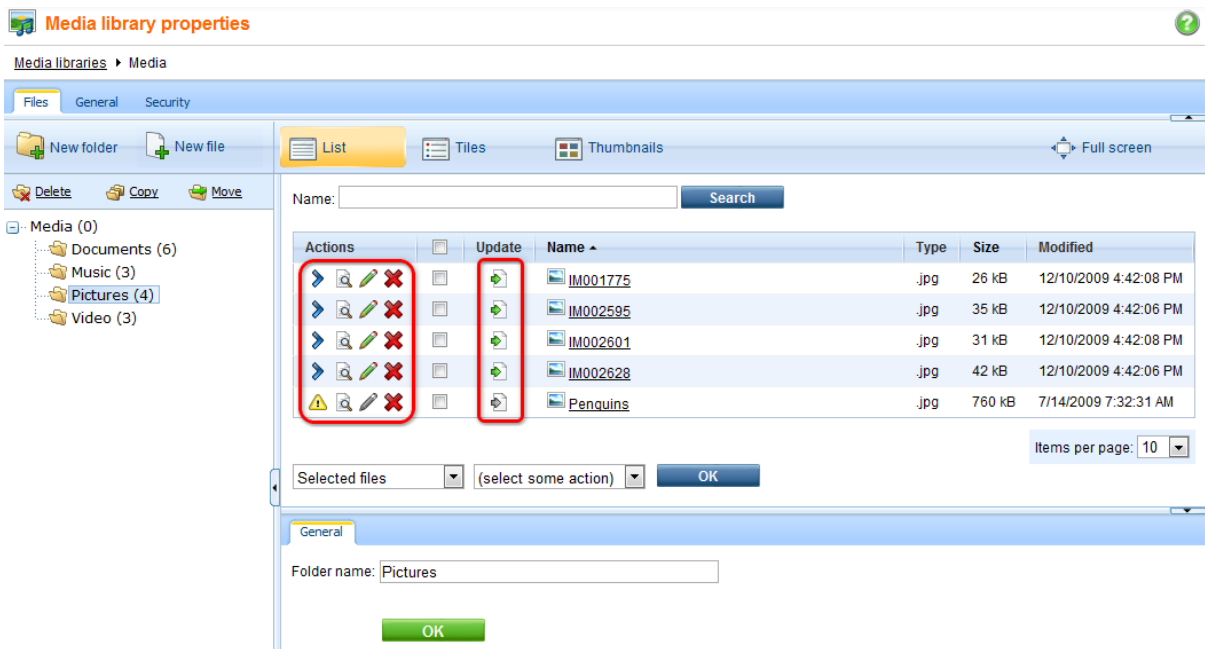
The following actions can be performed with the folders in the media library:

-  **New folder** - creates a new folder under the currently selected folder
-  **Delete** - deletes the currently selected folder
-  **Copy** - uploads the folder and its content to another location and keeps the original folder
-  **Move** - uploads the folder into another location and deletes the original folder

Single file operations

You can perform the following operations by clicking the icons next to particular files:

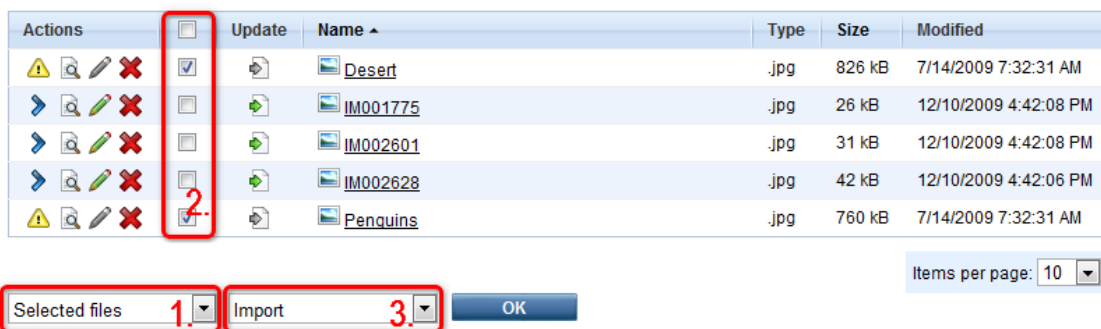
-  **Select** - selects the file and opens its editing interface in the bottom section
-  **View** - downloads the file and opens it in your default application for the file type
-  **Edit** - this icon appears only with images and when clicked, the image gets opened in the built-in [image editor](#)
-  **Delete** - deletes the file
-  **Update** - replaces the file with another file; the original file gets deleted and replaced by the new one
-  **Import** - this icon is displayed only with files that have been uploaded to the library folder externally (e.g. via FTP) and have not yet been registered in the database; by clicking the icon, you register the file in the database as described [here](#)



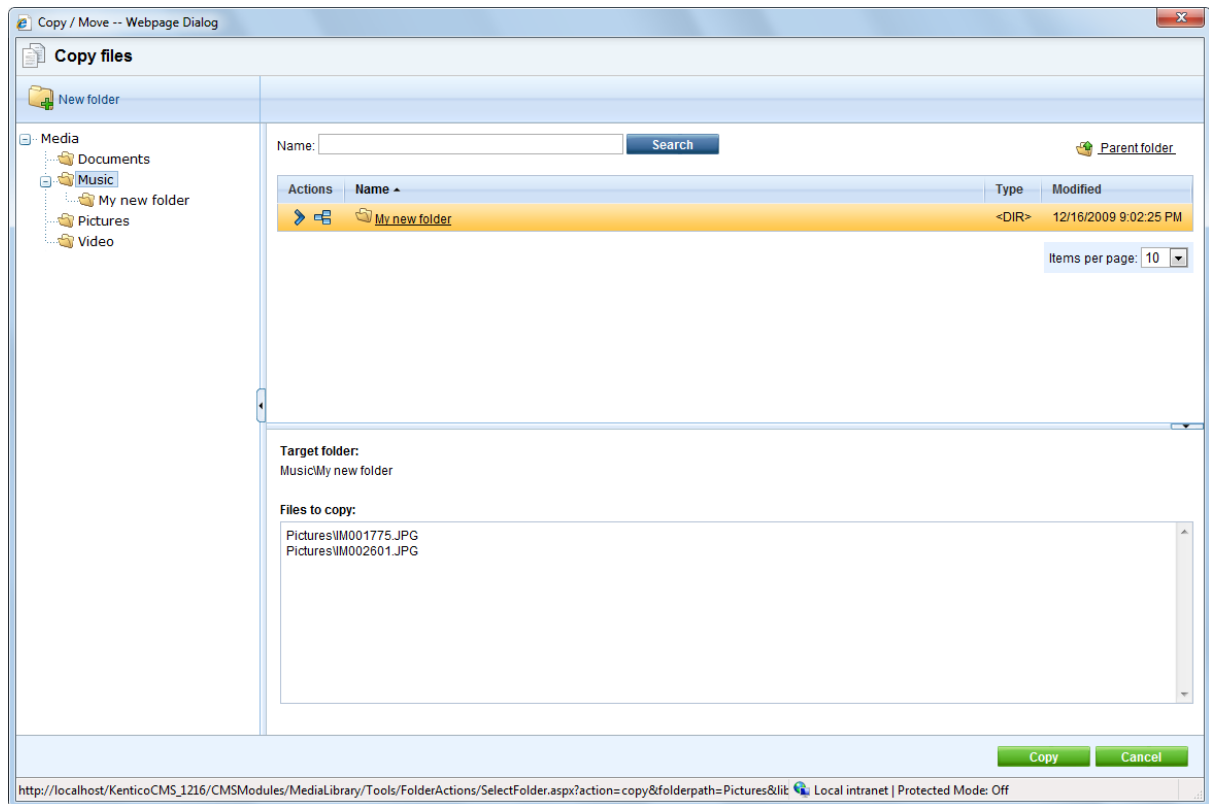
Batch file operations

You can also perform the **Copy**, **Move**, **Delete** and **Import** operations for multiple files at once. To perform a batch operation, take the following steps:

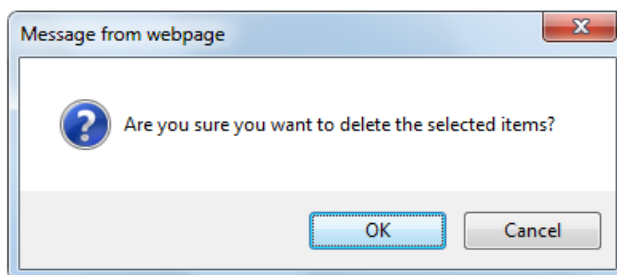
1. Use the first drop-down list (1. in the screenshot) to select if you want to perform the operation for:
 - **All files** - performs the operation for all files in the current folder
 - **Selected files** - performs the operation only for files selected by the check-boxes (☑)
2. If you selected **Selected files** in the previous step, use the check-boxes (2. in the screenshot) to select the files to perform the operation with.
3. Choose the operation to perform using the second drop-down list (3. in the screenshot) and click **OK**.



4a. If you are performing the **copy** or **move** operation, the following dialog is displayed. Choose the target folder (or create a new one using the **New folder** (📁) button if needed) and click the **Copy/Move** button.



4.b If you are performing the **delete** operation, you will be prompted to confirm the deletion. Click **OK** to delete the files.

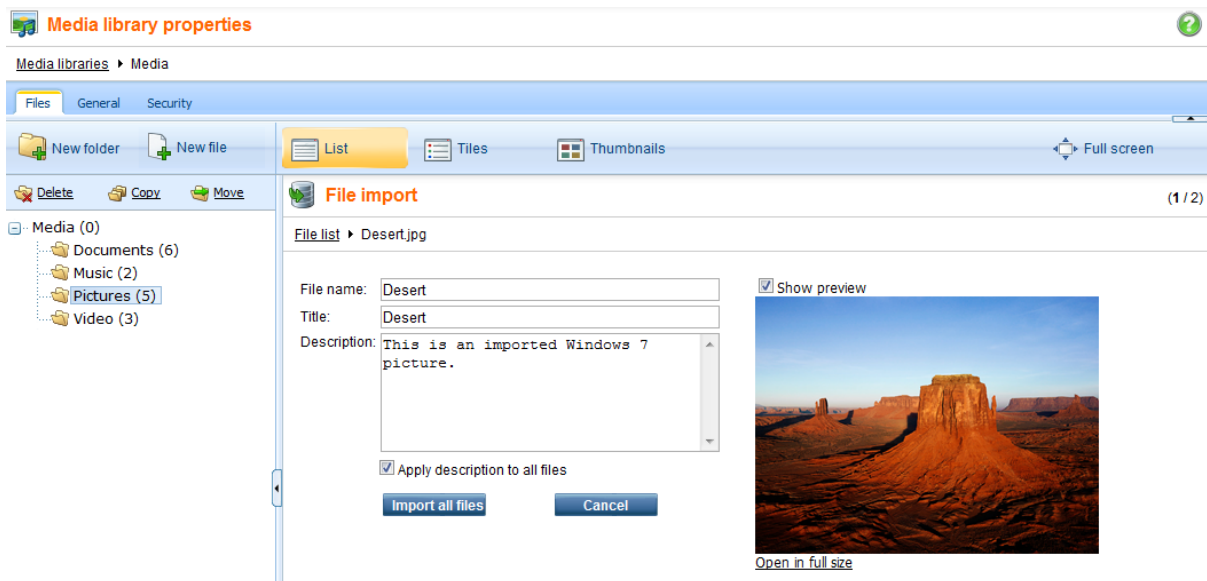


4.c If you are performing a batch **import**, the dialog as in the following screenshot will appear for each imported file. You need to specify the following details for each imported file:

- **File name:** name of the file displayed in the administration interface
- **Title:** name of the file displayed on the live site
- **Description:** text describing the image

Click the **Import file** button to proceed to the following file.

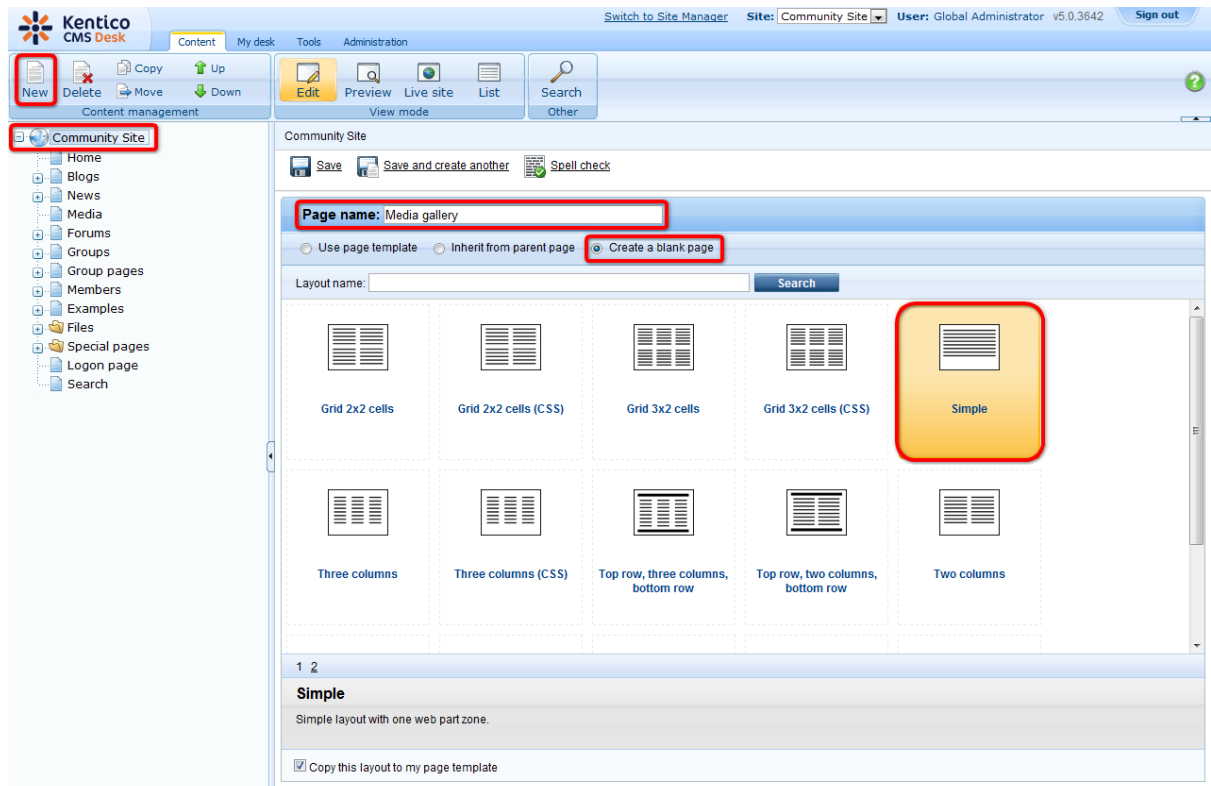
You can also enable the **Apply description to all files** option, which imports all files in one click on the **Import all files** button. All files will have the entered **Description** and the **File name** and **Title** fields will contain the names of the physical files without extension.



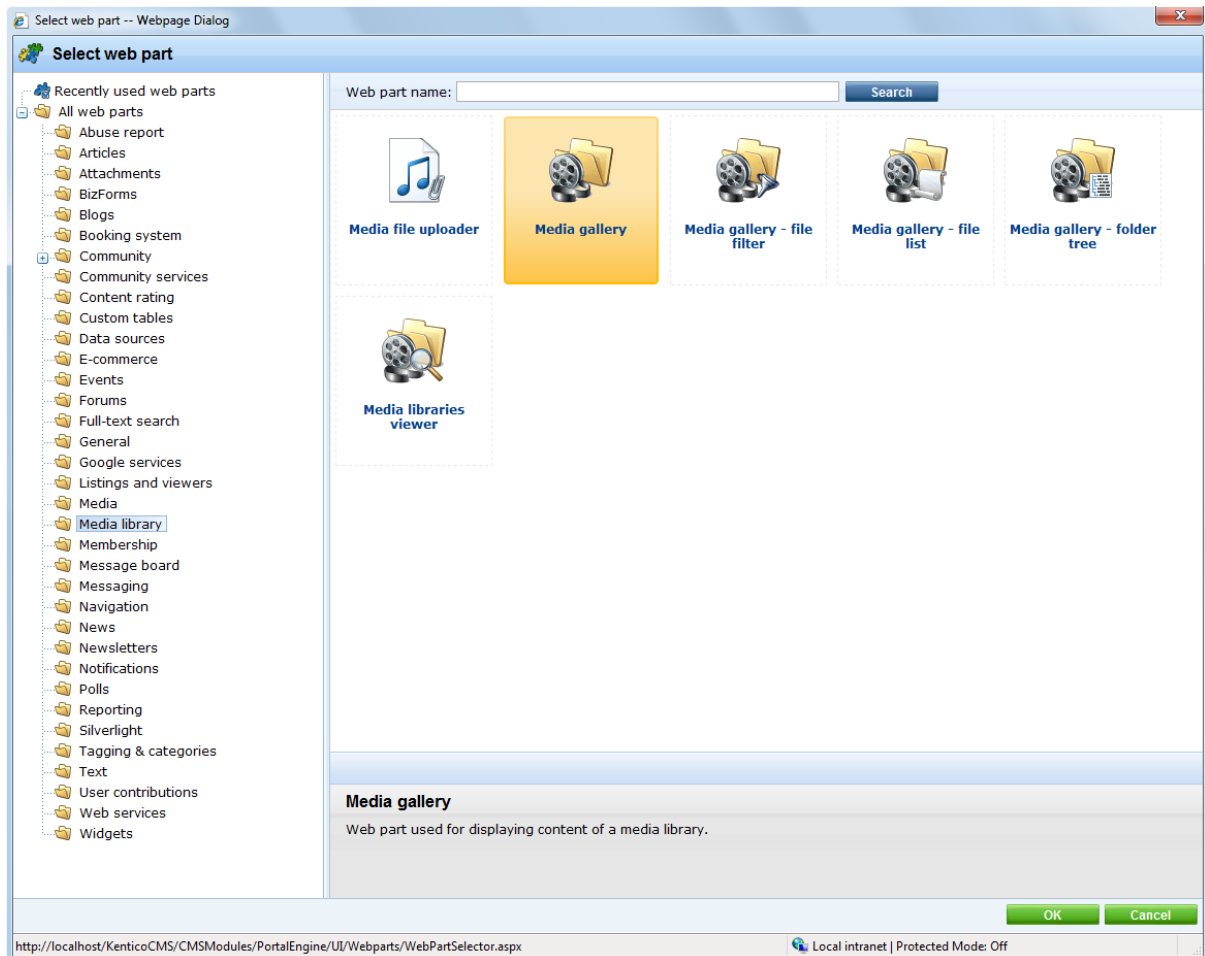
8.24.5 Displaying Media gallery content on your site

The Media gallery web part can be used to display content of media libraries on the live site. In the following example, you will learn how to let site visitors view content of a media library using this web part. We will use the sample **Community Starter site** as the base for our example.

1. Go to **CMS Desk**. Create a new **Page (menu item)** document in the root of the content tree, name it **Media gallery**. Choose to **Create a blank page** and use the **Simple** layout.



2. Click the **Add web part** (+) icon at the top right corner of the only web part zone on the page and select **Media library -> Media gallery**. Click **OK**.

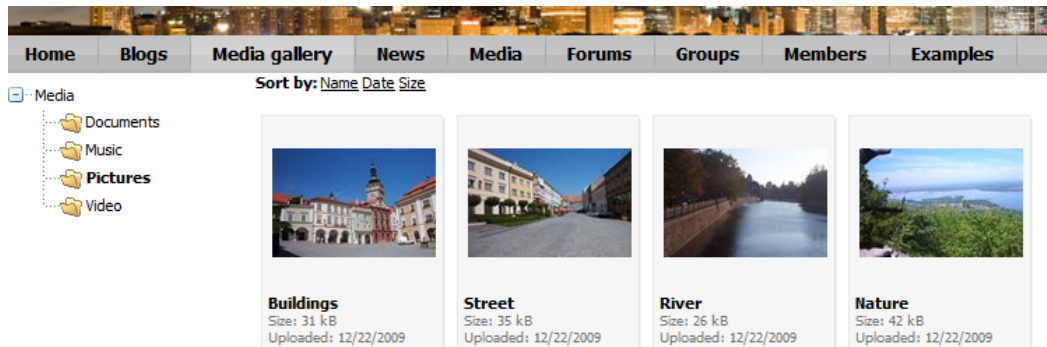


3. In the web part properties window, you only have to choose the media library that you want to display:

- **Media library - Media**

Click **OK**.

4. And that's it! If you switch to the live site, and select Pictures for instance, you should see the web part displaying content of the selected media library.



8.24.6 Support in WYSIWYG editor

Media library files can be inserted into text using the WYSIWYG editor's **Insert image or media** (🖼️) and **Insert link dialogs** (🔗). You can find more information in the [WYSIWYG editor](#) chapter.

8.24.7 Available web parts

Below, you can find a list of web parts that come with the Media libraries module and a brief description of each of them. You can find a detailed description of their properties in **Kentico CMS Web Parts** reference guide.

Web parts -> Media library

- **Media file uploader:** enables users to upload files to the specified media library
- **Media gallery:** displays content of the media library (folder tree, file list and sorting at once)

Gallery separate web parts:

- **Media gallery – folder tree:** Displays media library folder tree structure and enables user to browse it
- **Media gallery – file list:** Displays media files from the specified folder (list + detail)
- **Media gallery – file filter:** Displays simple sorting control which enables users to sort files
- + **Media files data source**
- **Media libraries viewer:** Displays list of media libraries
- + **Media libraries data source**

Web parts -> Data sources

- **Media files data source:** Creates data source from media files.
- **Media libraries data source:** Creates data source from media libraries.

Webparts -> Community

- **Group media libraries:** Displays administration interface for managing media libraries of the

specified group

- **Group media libraries viewer:** Displays list of media libraries of the specified group
- + **Group media libraries data source**

8.24.8 Supported file types

The following file types are supported and can be played or displayed on your site by default:

- **Images:** bmp, gif, png, wmf, jpg, jpeg, tiff, tif
- **Audio:** wav, wma, mp2, mp3, mid, midi, mpga
- **Video:** avi, mp4, mpg, mpeg, wmv, qt, mov, rm
- **Flash:** swf

Custom media types can also be defined, as described in [this chapter](#).



Please note

All other file types will be recognized as **documents**, which means that they can not be played as videos, displayed as pictures, etc., but they can still be stored in the library and downloaded by users on the live site.

8.24.9 Defining custom media types

You can allow custom media types by a simple modification to the site's **web.config** and **MediaControl.ascx** inline control. Any media types can be enabled to be recognized by the system in case that you have the right player for the file type.

The following example shows how to enable .flv videos in the system.

1. Add the following keys into the **appSettings** section of your **web.config** file. Add your custom extensions for the particular document types here for the files to be recognized as image/audio/video by the system, as we did with the highlighted **flv** extension.

```
<add key="CMSImageExtensions" value="bmp;gif;ico;png;wmf;jpg;jpeg;tiff;tif" />
<add key="CMSAudioExtensions" value="wav;wma;mp2;mp3;mid;midi;mpga" />
<add key="CMSVideoExtensions" value="avi;mp4;mpg;mpeg;wmv;qt;mov;rm;flv" />
```

2. Add the **flv** extension to the enumeration in **Site Manager -> Settings -> Media libraries -> Media file allowed extensions**, which will allow upload of these files into media libraries, and click **Save** button.

You may also want to add the extension to the **Site Manager -> Settings -> Files -> Upload extensions** enumeration, which will allow upload of these files as CMS.File documents and document attachments, and click **Save** button.

3. Download a player for your media type. In this example, we will use the JW FLV Player available here: <http://www.longtailvideo.com/players/jw-flv-player/>.

4. Extract the **swfobject.js** and **player.swf** files and put them in a folder under your website folder, e.g. **~/FlvPlayer**. This path will be used in the **CreateFlvObject()** which we will create in step 5.

5. Open the **~/CMSInlineControls/MediaControl.ascx.cs** inline control in Visual Studio and replace the **Page_PreRender** method with the following code. It is the original code of the method with the first condition added. The added code ensures that when the file extension is **.flv**, the **CreateFlvObject()** method is called.

[C#]

```
protected void Page_PreRender(object sender, EventArgs e)
{
    if ((this.Type != null) && (this.Type.TrimStart('.').ToLower() == "flv"))
    {
        CreateFlvObject();
    }
    else if (MediaHelper.IsFlash(this.Type))
    {
        CreateFlash();
    }
    else if (ImageHelper.IsImage(this.Type))
    {
        CreateImage();
    }
    else
```

```

    {
        CreateMedia();
    }
}

```

6. The last thing that we need to do is to add the **CreateFlvObject()** private method to the control, in this example, it looks like the code sample below.

The method creates a new DIV tag for the FLV player, with ID generated in the `divID` variable. It also handles the player URL in a special way - the URL must be absolute and must end with "flv". Support for the Autoplay and Loop properties of the player is also ensured.

[C#]

```

private void CreateFlvObject()
{
    string playerId = Guid.NewGuid().ToString("N");
    string flvUrl = UrlHelper.GetAbsolutePath(this.Url)
        .Replace("?", "%3F")
        .Replace("=", "%3D")
        .Replace("&", "%26");

    string flashVars = "file=" + flvUrl + "&provider=video&";
    flashVars += "controlbar=" + (AVControls ? "bottom" : "none") + "&";
    flashVars += "autostart=" + (AutoPlay ? "true" : "false") + "&";
    flashVars += "repeat=" + (Loop ? "always" : "none");

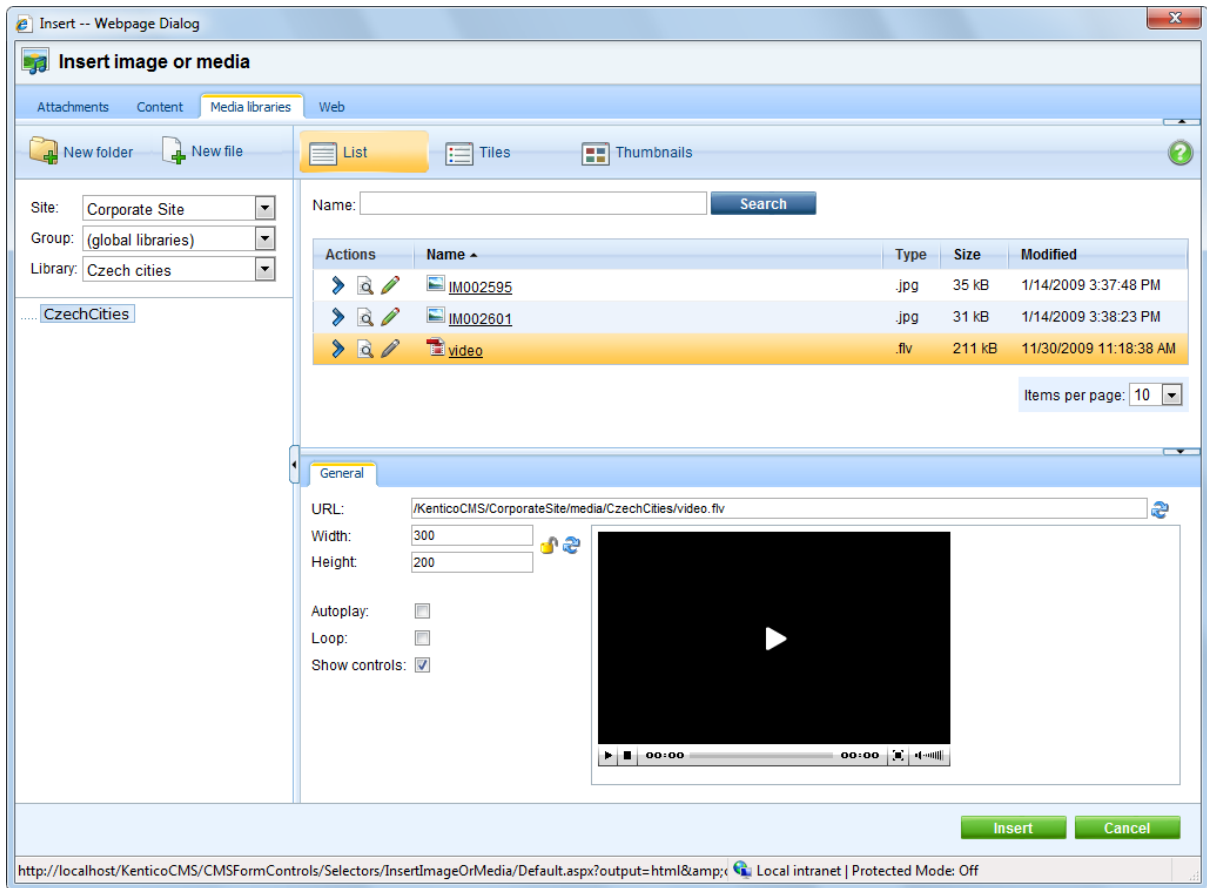
    string player = "";
    player += "<object id=\"" + playerId + "\"";
    player += "classid=\"clsid:D27CDB6E-AE6D-11cf-96B8-444553540000\"";
    player += "codebase=\"http://download.macromedia.com/pub/";
    player += "shockwave/cabs/flash/swflash.cab#version=9.0.115\"";
    player += "width=\"" + Width + "\" height=\"" + Height + "\">";
    player += "<param name=bgcolor value=\"#FFFFFF\">";
    player += "<param name=movie value=\"" + ResolveUrl("~/FlvPlayer/player."
swf") + "\">";
    player += "<param name=allowfullscreen value=\"true\">";
    player += "<param name=allowsriptaccess value=\"always\">";
    player += "<param name=\"flashvars\" value=\"" + flashVars + "\">";
    player += "<embed name=\"" + playerId + "\" ";
    player += "type=\"application/x-shockwave-flash\" ";
    player += "pluginspage=\"http://www.macromedia.com/go/getflashplayer\" ";
    player += "width=\"" + Width + "\" height=\"" + Height + "\" ";
    player += "bgcolor=\"#FFFFFF\" ";
    player += "src=\"" + ResolveUrl("~/FlvPlayer/player.swf") + "\" ";
    player += "allowfullscreen=\"true\" ";
    player += "allowsriptaccess=\"always\" ";
    player += "flashvars=\"" + flashVars + "\">";
    player += "</embed>";
    player += "</object>";

    this.ltlMedia.Text = player;
}

```

7. Now .flv files are recognized as videos by the system. The custom player is used for the files on the

live site and also in the Insert image or media dialog, as you can see in the screenshot below.



8.24.10 Configuring maximal uploaded file size

The default maximal uploaded file size setting on IIS6/7 is 30MB. To enable uploads of larger files, which is essential for the functionality that the media libraries were designed for, you need to add the following keys to your **web.config** file:

IIS 6

All you need to do is to set the value of the following property, which is already present in your **web.config**, to the desired value, while the value is entered in **kiloBytes**:

```
<httpRuntime maxRequestLength="2000000" />
```

IIS 7

You need to do the same setting as described above for IIS 6. Besides this, you also need to add the following highlighted code to the end of your **web.config**. The value of the **maxAllowedContentLength** property is entered in **Bytes**:

```
...  
  
<system.webServer>  
  <security>  
    <requestFiltering>  
      <requestLimits maxAllowedContentLength="2147483648" />  
    </requestFiltering>  
  </security>  
  <validation validateIntegratedModeConfiguration="false" />  
  <modules>  
    <add name="ScriptModule" preCondition="integratedMode" type="System.Web.  
    Handlers.ScriptModule, System.Web.Extensions, Version=3.5.0.0, Culture=neutral,  
    PublicKeyToken=31bf3856ad364e35" />  
    <add name="XhtmlModule" type="CMS.CMSOutputFilter.OutputFilterModule, CMS.  
    OutputFilter" />  
  </modules>  
  <handlers>  
    <remove name="WebServiceHandlerFactory-Integrated" />  
    <add name="ScriptHandlerFactory" verb="*" path="*.asmx" preCondition="integratedMode" type="System.Web.Services.ScriptHandlerFactory, System.Web.Extensions, Version=3.5.0.0, Culture=neutral, PublicKeyToken=31bf3856ad364e35" />  
    <add name="ScriptHandlerFactoryAppServices" verb="*" path="*_AppService.axd" preCondition="integratedMode" type="System.Web.Services.ScriptHandlerFactory, System.Web.Extensions, Version=3.5.0.0, Culture=neutral, PublicKeyToken=31bf3856ad364e35" />  
    <add name="ScriptResource" preCondition="integratedMode" verb="GET,HEAD" path="ScriptResource.axd" type="System.Web.Handlers.ScriptResourceHandler, System.Web.Extensions, Version=3.5.0.0, Culture=neutral, PublicKeyToken=31bf3856ad364e35" />  
  </handlers>  
</system.webServer>  
</configuration>
```

8.24.11 Secured vs. Non-secured libraries

Media libraries on your site can be secured or non-secured. To ensure the required functionality, several settings need to be done as described below.



Please note!

By default, files in media libraries are NOT secured and can be accessed directly by anybody who knows the exact link to the file. If you want to prevent this behavior, please set up your media library as a secured one.

Secured libraries

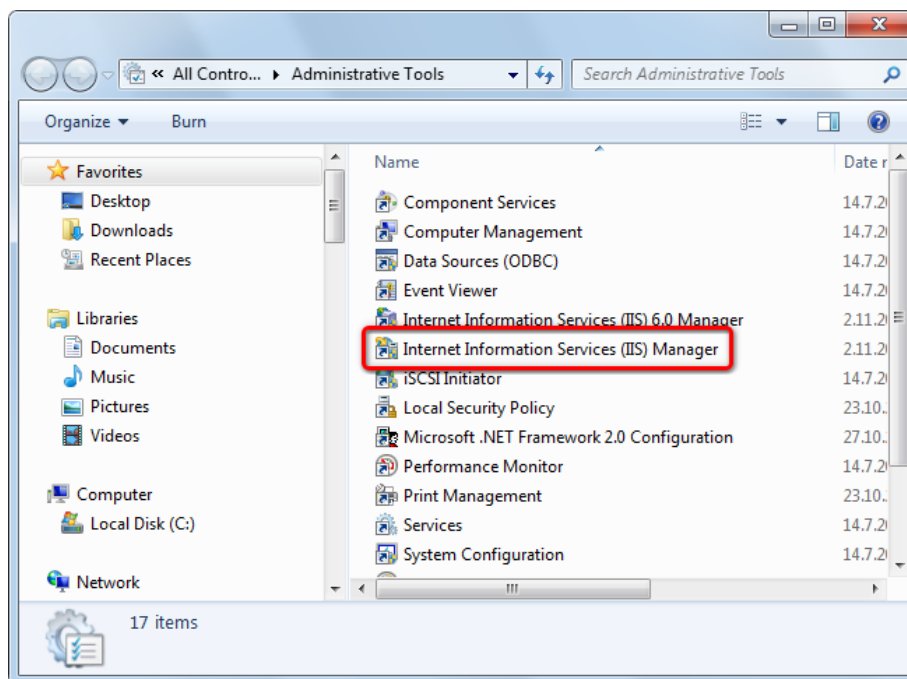
Secured media libraries allow viewing of their content only to members of authorized roles or only to authenticated users, based on the settings made on the library's Security tab. Secured libraries are also slower than the non-secured ones as permission checking involves some processing overhead.

To set up a media library to behave as a secured library, you have to take the following steps:

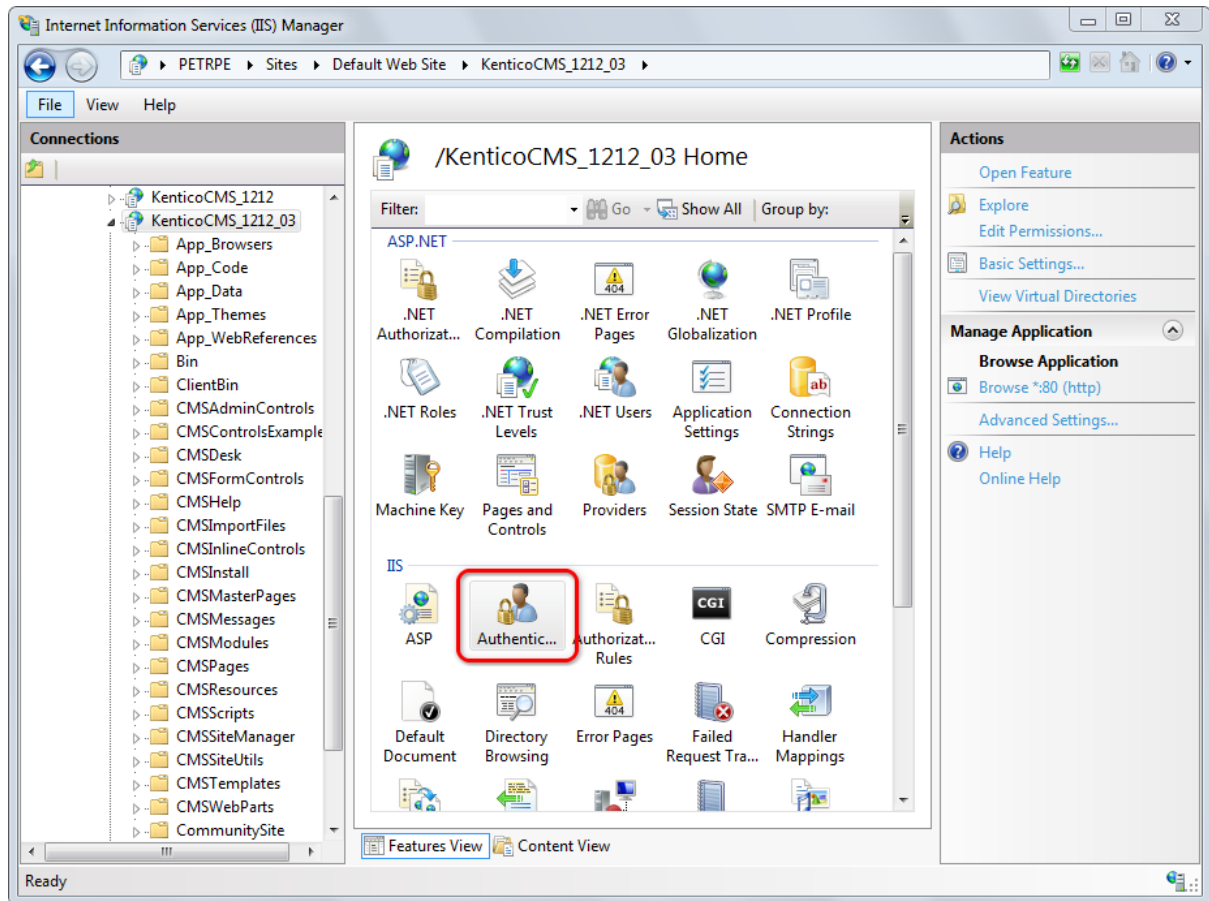
1. IIS setup

You have to **set up your IIS** so that files can not be downloaded directly from the library by typing the link to the file like `<site url>/media/file.jpg` into the browser.

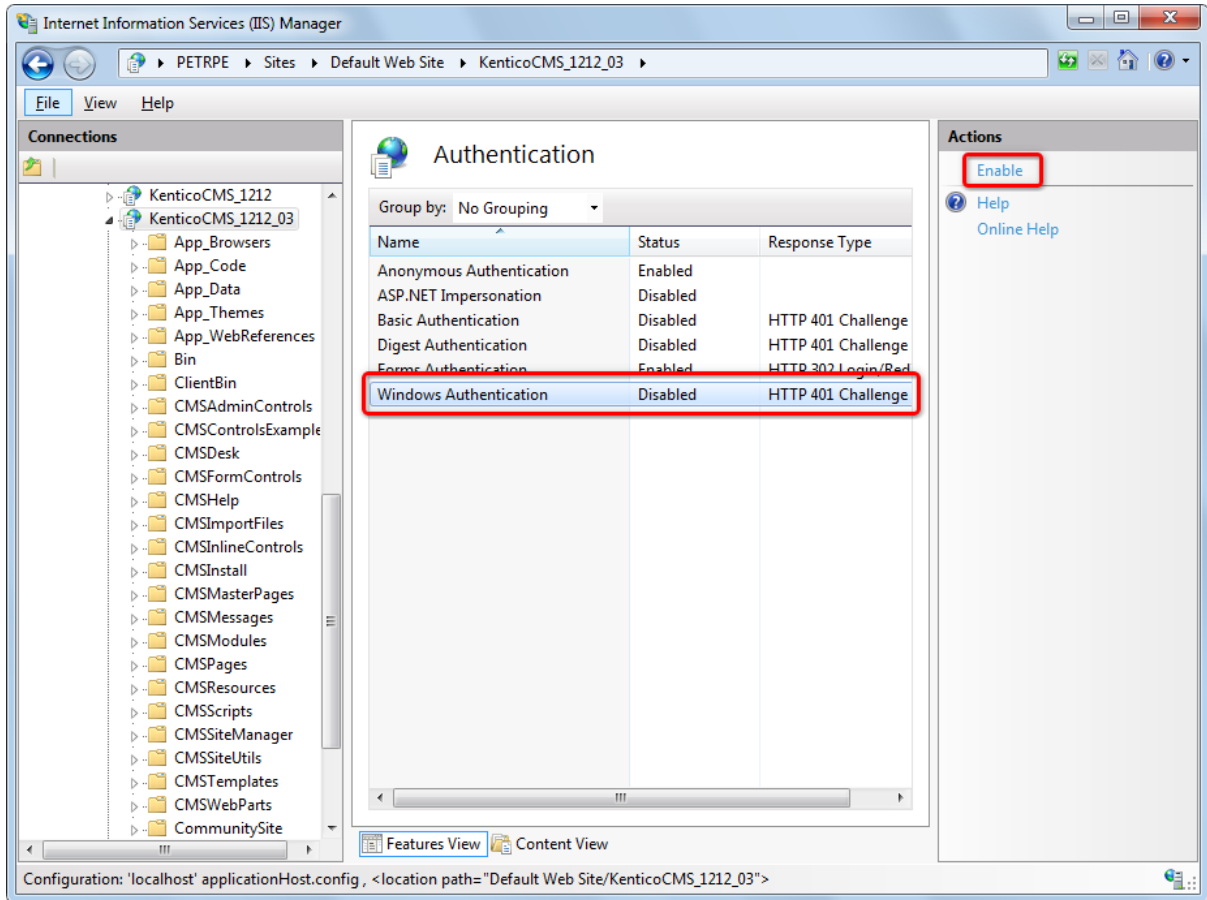
a) Go to **Start -> Control Panel -> Administrative Tools** and start the **Internet Information Services (IIS) Manager**.



b) Locate and select the media library folder in IIS tree, then click on the **Authentication** icon.



c) Disable the **Anonymous Authentication** by clicking on the **Disable** link in the **Actions** list. If enabled, disable also the **Windows Authentication**.



2) Media library security settings

You have to assign the **See media library content** permission to the appropriate roles or all authenticated users on the media library's **Security** tab.

The screenshot shows the 'Media library properties' window with the 'Security' tab selected. It displays two tables of permissions. The first table shows permissions for 'Nobody', 'All users', 'Authenticated users', and 'Authorized roles'. The 'See library content' column for 'Authorized roles' is highlighted with a red box and has a selected radio button. Below this is a note: 'Please select the authorized roles (available only when you select the "Authorized roles" option above):'. The second table lists specific roles with checkboxes for various permissions. The 'See library content' column for 'CMS Community Administrators', 'Everyone', and 'Live ID users' has green checkmarks.

| | Create file | Delete file | Modify file | Create folder | Delete folder | Modify folder | See library content |
|---------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Nobody | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| All users | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> |
| Authenticated users | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Authorized roles | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |

Please select the authorized roles (available only when you select the "Authorized roles" option above):

| | Create file | Delete file | Modify file | Create folder | Delete folder | Modify folder | See library content |
|------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Editors | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

You also have to make sure that the **Check files permissions** option is enabled in **Site Manager -> Settings -> Media libraries**. With this option disabled, permission checks would not be performed.

3) Media gallery web part settings

a) You need to enable the **Use secure links** web part property.

b) When writing your transformations for the Media gallery web part, you should stick to the following rules:

File previews and **file details** should be displayed using the following control:

```
<ccl:MediaFilePreview ID="filePreview" runat="server" maxsize="117" />
```

Download links should be obtained using the following method:

```
<%# MediaLibraryFunctions.GetMediaFileUrl(Eval("FileLibraryID"), Eval("FilePath"), Eval("FileGUID"), Eval("FileName"), GetDataControlValue<bool>("UseSecureLinks")) %>
```

You can see an example of a real-world use of this web part, including the defined the transformations, on the sample **Community Starter site**, in the **Media** section.

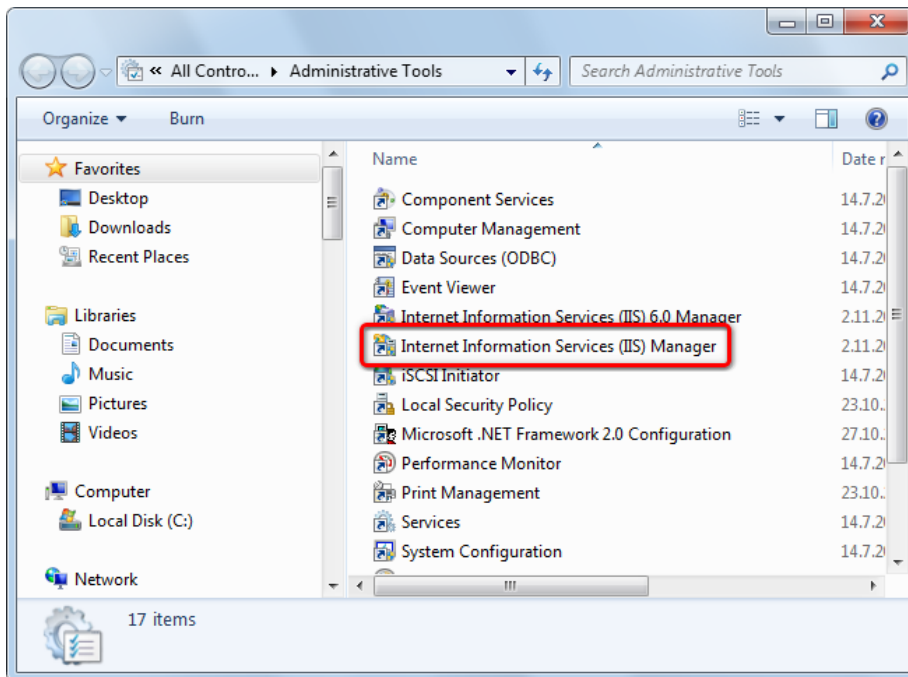
Non-secured libraries

Content of non-secured media libraries is accessible to all site users or visitors. These libraries are also faster than the secured ones, as no permissions need to be checked.

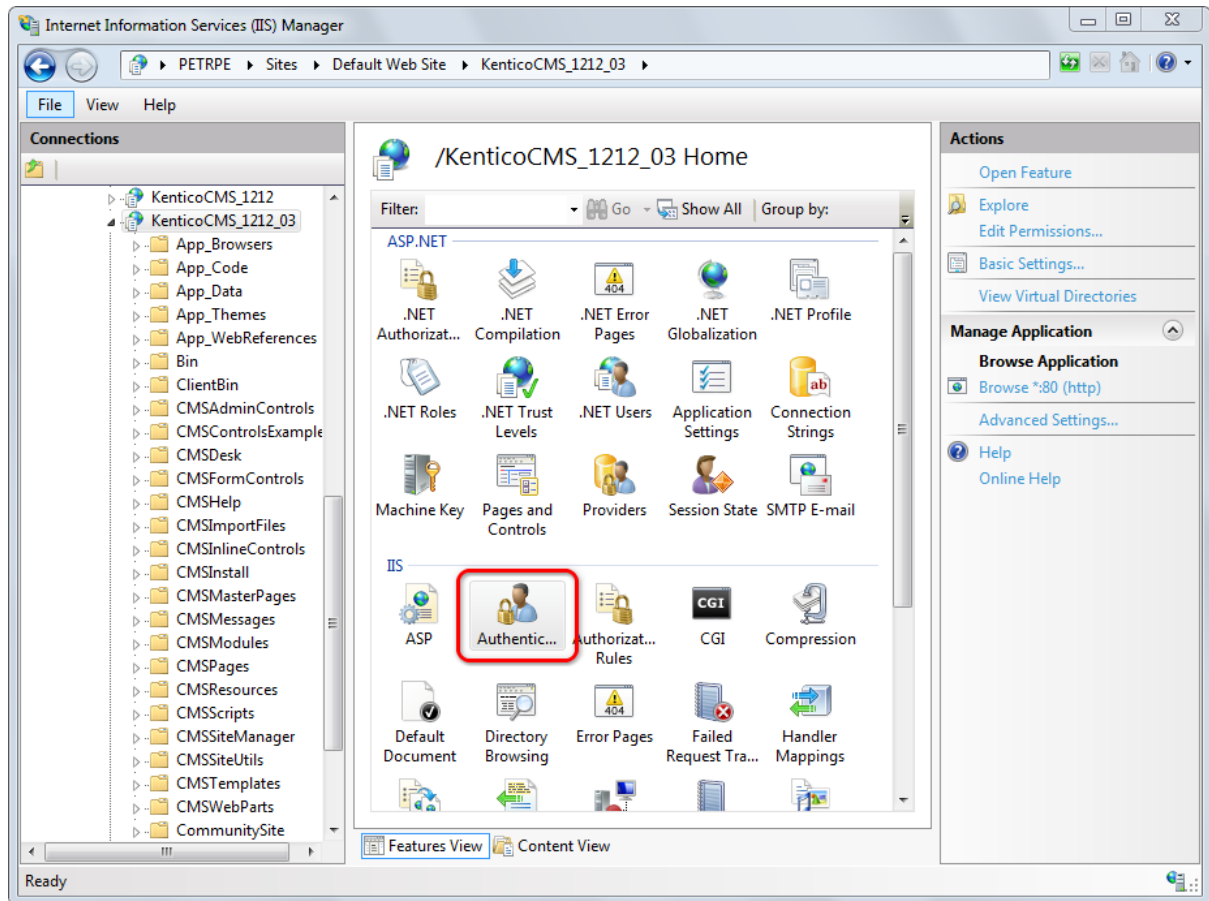
1. IIS setup

You have to **set up your IIS** so that files in the library can be accessed directly by anonymous users.

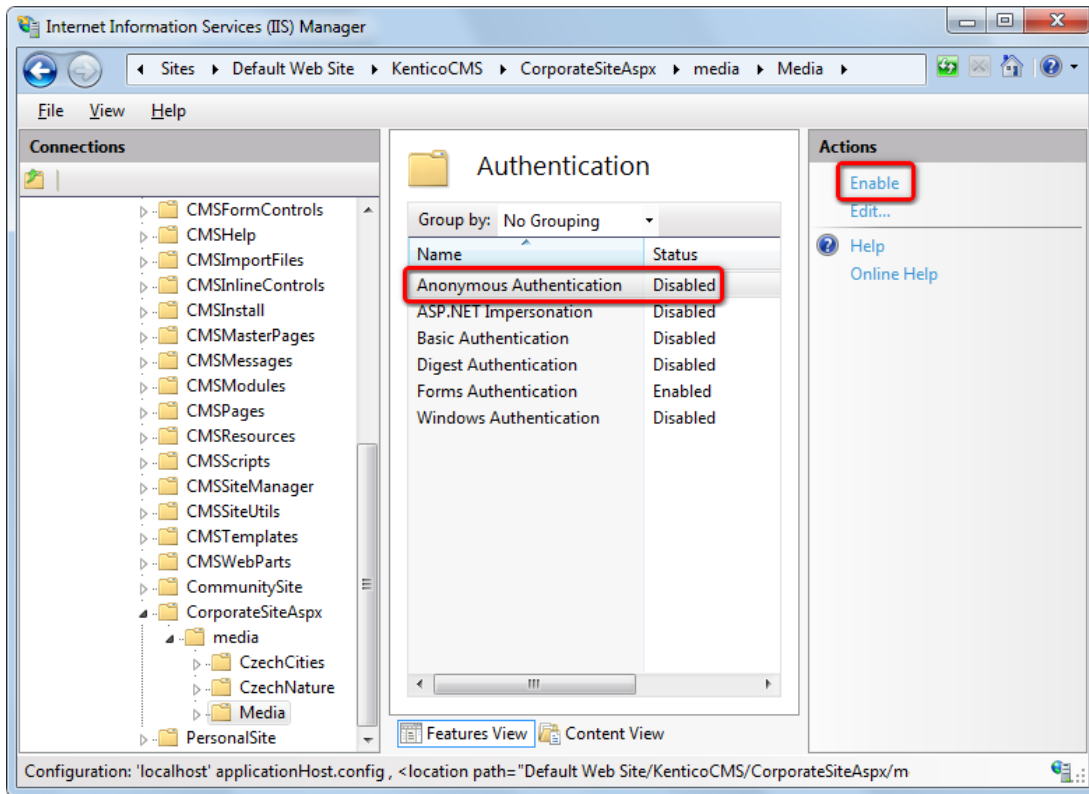
a) Go to **Start -> Control Panel -> Administrative Tools** and start the **Internet Information Services (IIS) Manager**.



b) Locate and select the media library folder in the IIS tree, then click on the **Authentication** icon.



c) Enable the **Anonymous Authentication** by clicking on the **Enable** link in the **Actions** list.



2) Media library security settings

You have to assign the **See library content** permission to **All users** on the media library's **Security** tab.

Media library properties

Media libraries ▶ Media

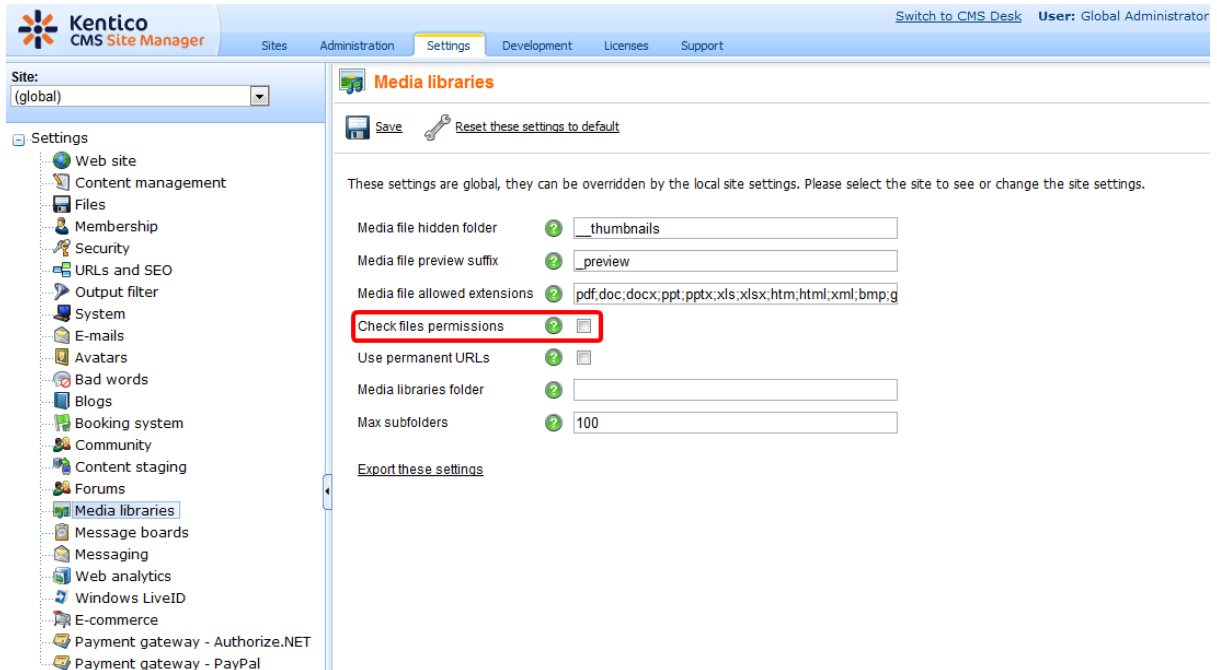
Files General **Security**

| | Create file | Delete file | Modify file | Create folder | Delete folder | Modify folder | See library content |
|---------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Nobody | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| All users | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> |
| Authenticated users | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Authorized roles | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Please select the authorized roles (available only when you select the "Authorized roles" option above):

| | Create file | Delete file | Modify file | Create folder | Delete folder | Modify folder | See library content |
|------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Editors | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Alternatively, if all media libraries on the site are non-secured, you can disable the **Check files permissions** option in **Site Manager -> Settings -> Media libraries**. This disables all permission checks for all media libraries on the site, which enables all users to see the libraries' content.



3) Media gallery web part settings

a) The **Use secured links** web part property should be disabled for the file requesting to be faster.

b) When writing your transformations for the Media gallery web part, you should stick to the following rules:

Image previews and **image details** should be obtained using the following method because they need to be resized:

```
<ccl:MediaFilePreview ID="filePreview" runat="server" maxsize="117" />
```

Other file types' previews and **details** should can be obtained using direct links. **Download links** can be obtained directly too.

8.24.12 Defining custom media libraries folder

The default location of all libraries of a particular site is `~/<site name>/media`. You can customize the location by entering a path in **Site Manager -> Settings -> Media libraries -> Media libraries folder**.

You can enter the folder location in the following formats:

- **physical path:** e.g. `c:\Libraries`
- **virtual path:** e.g. `~/Libraries`
- **UNC path:** e.g. `\\<server name>\Libraries`



Please note

In case that you are running the system on a **web farm** and have **the same UNC root defined** on all servers, it is necessary to add the following key into your `web.config` in order for the files stored in the libraries not to be transferred when synchronizing the web farm content:

```
<add key="CMSWebFarmSynchronizeMediaFiles" value="false" />
```

8.24.13 Names of files and thumbnails

When a file is being uploaded to a media library, users can upload the file itself and its thumbnail. The **thumbnail** will be displayed in the file list in the **Media gallery** web part. Thumbnails are typically used if you want to upload some non-image file and attach an image which will be displayed as the file's thumbnail in the file list. For image files, the thumbnail can, but doesn't have to be done as the image itself will be used for this purpose.

When the thumbnail image or the image itself is larger than the required thumbnail image size, its resized copy will be created with the required size. Both thumbnails and resized copies are stored in a **hidden folder** in the root of the media library folder. Name of the hidden folder can be set in **Site Manager -> Settings -> Media libraries -> Media library hidden folder**.

Format of media library files on the disk

- **File:** <file name>.<file extension>
- **Resized file:** <hidden folder>/<file name>_<file extension>_<width>_<height>.<extension>

- **Thumbnail:** <hidden folder>/<file name>_<file extension><thumbnail suffix>.<thumbnail extension>
- **Resized thumbnail:** <hidden folder>/<file name>_<file extension><thumbnail suffix>_<width>_<height>.<thumbnail extension>

Example

If you upload the following files:

- **Uploaded file:** MyImage.jpg
- **Uploaded thumbnail:** MyPhoto.bmp

with the following settings defined in **Site Manager -> Settings -> Media libraries**:

- **Media file hidden folder:** __thumbnails
- **Media file thumbnail suffix:** _preview

the uploaded files will be stored in the following locations in the media library folder, with the following names:

- **File:** MyImage.jpg
- **Resized file:** __thumbnails/MyImage_jpg_100_200.jpg

- **Thumbnail:** __thumbnails/MyImage_jpg_preview.bmp
- **Resized thumbnail:** __thumbnails/MyImage_jpg_preview_20_30.bmp

8.24.14 Site restarts

Because of ASP.NET architecture, **site restart** will occur when:

- a media library is deleted
- a group containing a media library is deleted
- one of the following actions is performed when editing a library in **CMS Desk -> Tools -> Media libraries -> Files** or on the live site:
 - folder is deleted
 - folder is renamed
 - folder is moved
 - large number of files is deleted (100 by default, this can be set in the `<system.web>` section of your web.config by the following key: `<compilation debug="true" numRecompilesBeforeAppRestart="100">`)

Because of this, it is highly recommended to allow performing of these actions only to system administrators or to the least possible number of users. The recommended practice is for the site administrators to pre-define the folder structure of the libraries when they are created and don't allow users to further modify it.

8.24.15 Settings

Settings related to the Media libraries module are located in **Site Manager -> Settings -> Media libraries**. The following settings are related to the module:

- **Media file hidden folder** - name of the folder where resized media files, thumbnails and resized thumbnails are stored; this folder is hidden in the file system by default
- **Media file thumbnail suffix** - suffix added to thumbnail files; thumbnail file names are in the following format: `< file name >_< file extension >< thumbnail suffix >.< thumbnail extension >`
- **Media file allowed extensions** - extensions of files which can be uploaded to media libraries; should be entered divided by semicolons
- **Check files permissions** - indicates if the "See media library content" permission is checked when retrieving media files using permanent URLs
- **Use permanent URLs** - if true, URLs of medial library files will be generated in permanent format (`~/getmedia/<file guid>/<file name>.<files friendly URL extension>`), otherwise direct path to the file without its extension will be used (e.g.: `~/MySite/Media/MyLibrary/MyImage`)
- **Media libraries folder** - physical path to the folder where the root folders of all media libraries are stored; more info [here](#)
- **Max subfolders** - maximal number of subfolders shown under an expanded node in the tree view

The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The 'Settings' tab is active. On the left, a tree view shows various settings categories, with 'Media libraries' selected. The main content area displays the 'Media libraries' settings page. At the top of this page, there is a 'Save' button and a 'Reset these settings to default' link. Below this, a message states: 'These settings are global, they can be overridden by the local site settings. Please select the site to see or change the site settings.' The settings are as follows:

| | |
|-------------------------------|--|
| Media file hidden folder | <input type="text" value="thumbnails"/> |
| Media file thumbnail suffix | <input type="text" value="_preview"/> |
| Media file allowed extensions | <input type="text" value="pdf,doc,docx;ppt;pptx;xls;xlsx;htm;html;xml;bmp;g"/> |
| Check files permissions | <input checked="" type="checkbox"/> |
| Use permanent URLs | <input type="checkbox"/> |
| Media libraries folder | <input type="text"/> |
| Max subfolders | <input type="text" value="100"/> |

At the bottom of the settings list, there is a link: 'Export these settings'.

8.24.16 Security

On the Security tab of each media library, you can assign permissions for particular actions to:

- **Nobody** - nobody can perform the action
- **All users** - all users including anonymous site visitors can perform the action
- **Authenticated users** - only signed-in site members can perform the action
- **Authorized roles** - only members of roles selected by the check-boxes below can perform the action

Files General Security

| | Create file | Delete file | Modify file | Create folder | Delete folder | Modify folder | See library content |
|---------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Nobody | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| All users | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> |
| Authenticated users | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Authorized roles | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Please select the authorized roles (available only when you select the "Authorized roles" option above):

| | Create file | Delete file | Modify file | Create folder | Delete folder | Modify folder | See library content |
|------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Editors | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

When editing media library of some group, permissions for particular actions can be assigned to:

- **Nobody** - nobody can perform the action
- **All users** - all users including anonymous site visitors can perform the action
- **Authenticated users** - only signed-in site members can perform the action
- **Group members** - only members of the group can perform the action
- **Authorized roles** - only members of group roles selected by the check-boxes below can perform the action

Groups ▶ Czech Republic fans

General Security Members Roles Forums **Media libraries** Message boards Polls

Media libraries ▶ Czech cities

Files General **Security**

| | Create file | Delete file | Modify file | Create folder | Delete folder | Modify folder | See library content |
|---------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Nobody | <input type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> |
| All users | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Authenticated users | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Group members | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |
| Authorized roles | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Please select the authorized roles (available only when you select the "Authorized roles" option above):

| | Create file | Delete file | Modify file | Create folder | Delete folder | Modify folder | See library content |
|-------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Group admin | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

The following table shows which permissions need to be assigned to allow users to perform particular actions. Global administrators can perform all of these actions for all general and group media libraries on the site. Group administrators can perform all of these actions for group media libraries of groups where they are group administrators.

| Action/Permission | | | | File | | | Folder | | | See library content |
|--|------|--------|----|--------|--------|--------|--------|--------|--------|---------------------|
| | Read | Manage | | Create | Delete | Modify | Create | Delete | Modify | |
| Media library content administration - files | | | | | | | | | | |
| upload | | X | or | X | | | | | | |
| rename / change title and description | | X | or | | | X | | | | |
| delete | | X | or | | X | | | | | |
| copy | | X | or | X | | | | | | |
| move | | X | or | | | X | | | | |
| Media library content administration - folders | | | | | | | | | | |
| create | | X | or | | | | X | | | |
| rename | | X | or | | | | | | X | |
| delete | | X | or | | | | | X | | |
| copy | | X | or | | | | X | | | |
| move | | X | or | | | | | | X | |
| CMSDesk administration | | | | | | | | | | |
| See media libraries UI | X | | | | | | | | | |
| Modify media libraries UI | | X | | | | | | | | |
| Live site administration | | | | | | | | | | |
| See media libraries UI | X | | | | | | | | | |
| Modify media libraries UI | | X | | | | | | | | |
| CMSDesk & Live site | | | | | | | | | | |
| Select image/flash/ media dialogs in WYSIWYG editor | X | | | | | | | | | |
| Live site | | | | | | | | | | |
| See and browse library content (Media gallery webpart) | X | | or | | | | | | | X |
| Upload file (Media file uploader webpart) | | X | or | X | | | | | | |

Module permissions

The following permissions can be set in **Site Manager -> Administration -> Permissions**, when you choose the **Modules -> Media libraries** permission matrix:

- **Manage** - allows creating, deleting and editing media libraries and managing media library content via the administration interface
- **Read** - allows seeing media library content and its properties when editing a media library, but does not allow to make any changes to it

| | Manage | Read |
|------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> | <input type="checkbox"/> |

8.25 Message boards

8.25.1 Overview

The Message boards module enables site visitors to comment the content of a particular page. The module comes with the following web parts:

- **Message board** - displays messages on the board and allows adding new messages; used for general documents or for user profiles
- **Group message board** - similar to Message board, but optimized for group profiles
- **Message board viewer** - displays messages on a particular board, but doesn't allow adding new messages

Each message board is related to a document on which it is placed, and optionally to a user or a group. Board messages can be moderated by board moderators. Users can also subscribe to receiving notifications about new messages and rate the content of the document the same way as when using the [Content rating](#) web part.

Abi

Hello Guru...

12/22/2009 1:34:21 PM

[Report abuse](#)

Leave message

[Subscribe](#)

Name:

Your URL:

Your e-mail:

Message:

Subscribe me to this message board

8.25.2 Using the Message board web part

Message board can be placed on any page (document) on your website. It allows site visitors to send instant comments on the content of the particular page. You can have unlimited number of message boards on one page.

In the following example, you will see the basic process of adding a message board to your site. Our goal will be to add a Message board to the **Your first news** document on the sample **Corporate site**.

1. Log in to CMS Desk as *administrator* with blank password. From the content tree, select **News -> Your first news**.
2. Click the **Add web part** (+) icon at the top right corner of **zoneLeft** web part zone and in the web part selection window, choose **Message board -> Message board** and click **OK**.
3. In the web part properties window, you can set a number of properties. As there is quite a lot of them, we will leave default values and set only those listed below. If you want exact explanation of the meanings of each of the properties, please refer to [Kentico CMS Web Parts Reference](#) or click the **Documentation** (🔗) link at the top right corner of the web part properties window.
 - **Message transformation** - transformation used for displaying board messages; you can use *Community.Transformations.MessageBoard*, which is a default predefined transformation for board messages
 - **No messages text** - text message that will be displayed to site visitors when there are no messages in the board
 - **Display name** - display name of the message board, it will be used in the administration interface to identify the message board, so it is advisable to use some well-descriptive name under that you will recognize the message board; it is useful to use macros, such as `{%SiteName%} - my first message board`

Click **OK** when you are finished entering the values.



!! Board default settings !!

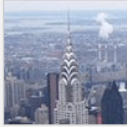
Properties in the **New board settings** section will be used when the message board is created (after first message or subscription). Thereafter, changes made to the web part properties will take no effect. To change some of these properties, you will have to edit the message board in **CMS Desk -> Tools -> Message boards -> Boards tab**.

4. If you switch to **Live Site** mode now, you should see the for for entering board messages and the 'No messages text' displayed above it, as you can see in the following screenshot.

Home Services Products **News** Partners Company Blogs Forums Events Images Wiki Examples

[News](#) > Your first news




Your first news



1/10/2008

Here you can enter the summary of the news item. You can use WYSIWYG editor to format the text, insert links and images. The summary will be used in news item preview.

This is the news text. It's displayed in combination with news title and summary. Depending on transformation chosen by the web developer, the news item may be displayed in various formats, with or without teaser image.

RSS

☆☆☆☆☆
Current rating: 4 (1 ratings)

Leave message

Name:

Your URL:

Your e-mail:

Message:

5. If you go to the administration interface located in **CMS Desk -> Tools -> Message boards**, you won't see the message board yet as message boards are created in the administration interface section **after first message is added** to it, **not after adding the web part** to the site. Try adding some message now. After doing so, go to **CMS Desk -> Tools -> Message boards**. You should see the new message board in the list as in the following screenshot.

The screenshot shows the Kentico CMS 5.5 administration interface. The top navigation bar includes 'Content', 'My desk', 'Tools', and 'Administration'. The user is logged in as 'Global Administrator' on the 'Corporate Site'. The 'Tools' menu is expanded, and 'Message boards' is selected. The main content area shows the 'Message boards' section with a 'Boards' tab. Below the tab, there is a text box for 'Board name:' and a 'Show' button. A table lists the existing message boards:

| Actions | Board name | Enabled | Open | Moderated | Posts | Last post | Document |
|---------|---------------------------------------|---------|------|-----------|-------|-----------------------|---|
| | Corporate Site - sample message board | Yes | Yes | No | 3 | 9/8/2008 11:45:28 AM | /Examples/Webparts/Message boards/Message board |
| | My first message board | Yes | Yes | No | 1 | 12/22/2009 1:42:22 PM | /News |

The second row, 'My first message board', is highlighted with a red box. The 'Items per page' dropdown is set to 25.

8.25.3 Administrating message boards

Message boards administration can be performed in **CMS Desk -> Tools -> Message boards**. The section is divided into two tabs.

Messages tab

On this tab, moderators can manage board messages. By default, there are only messages requiring approval displayed when you access the page, so that the moderator sees only new messages that need to be approved or rejected. Until the messages are approved, they won't be displayed on the message board. Rejected messages won't be displayed either.

Using the filter above the list, you can determine which messages you want to display. The following filtering parameters are available:

- **Site name** - only messages from the selected site will be displayed
- **Board name** - only messages from the selected message board will be displayed
- **User name** - only messages posted by the user specified here will be displayed; you can also enter only a part of the user name
- **Text** - only messages containing the entered text will be displayed
- **Is approved** - you can choose whether to display only approved or disapproved messages
- **Is SPAM** - you can choose whether to display only messages (not) marked as SPAM

The screenshot shows the Kentico CMS Desk interface. The top header includes the Kentico logo, navigation tabs (Content, My desk, Tools, Administration), and user information (Switch to Site Manager, Site: Corporate Site, User: Global Administrator, v5.0.3642, Sign out). The left sidebar lists various tools, with 'Message boards' selected. The main content area is titled 'Message boards' and has two tabs: 'Messages' (active) and 'Boards'. Below the tabs are filter fields: Site name (Corporate Site), Board name (all), User name, Text, Is approved (No), and Is SPAM (all). A 'Show' button is below the filters. Below the filters is a table of messages:

| Actions | User name | Text | Approved | Is SPAM | Message board | Inserted |
|---------|-----------|--------------|----------|---------|---------------|-----------------------|
| | Jane | Some text | No | No | new board | 12/22/2009 1:50:58 PM |
| | Henry | Oh yeah! | No | No | new board | 12/22/2009 1:50:16 PM |
| | David | Hello world! | No | No | new board | 12/22/2009 1:49:13 PM |

At the bottom of the table, there is a 'Selected items:' dropdown menu with '(select some action)' and an 'OK' button. A 'Items per page: 25' dropdown is also present.

Messages in the list can be **Approved** (✓), **Rejected** (⊘), **Deleted** (✗) or **Edited** (✎). If you choose to edit a message, the following window pops-up, letting you make changes to it. You can also select more messages using the check-boxes and perform one of these actions for all of them using the **Selected items** drop-down list and clicking the **OK** button.

Boards tab

On this tab, you can see a list of all message boards on the current site. Using the **Board name** field above the list, you can filter the displayed message boards. You don't need to enter the exact name, you can enter only a part of it and the list will display all message boards with name containing the entered expression. It is a good idea to give your message boards well-descriptive names so that you can tell one from another and search efficiently.

Message boards can be **Edited** (✎) and **Deleted** (✗) on this tab.

| Actions | Board name | Enabled | Open | Moderated | Posts | Last post | Document |
|---------|---------------------------------------|---------|------|-----------|-------|-----------------------|---|
| ✎ ✗ | Corporate Site - sample message board | Yes | Yes | No | 3 | 9/8/2008 11:45:28 AM | /Examples/Webparts/Message boards/Message board |
| ✎ ✗ | My first message board | Yes | Yes | No | 1 | 12/22/2009 1:42:22 PM | /News |
| ✎ ✗ | new board | Yes | Yes | Yes | 2 | 12/22/2009 1:50:58 PM | /News |

8.25.4 Editing message boards

You can edit message board properties at **CMS Desk -> Tools -> Message boards**, on the **Boards** tab. If you click the **Edit** (✎) icon next to some message board, its editing interface will be displayed.

The administration interface reflects the Message board web part's properties. When you add the web part to a page, you can set its properties in the web part properties dialog. When first message is added to the board, the message board is created in this section of the administration interface. At this point, changes made to the web part properties have no effects and you have to make all changes only in this section!

The administration interface for editing message boards is divided into five tabs:

Messages tab

This tab displays a list of all messages on the message board. Using the **New message** link, you can add new messages to the board directly from the administration interface. Below is a filter, letting you display only messages matching specified criteria. The following filtering parameters are available:

- **User name** - only messages posted by the user specified here will be displayed; you can also enter only a part of the user name
- **Text** - only messages containing the entered text will be displayed
- **Is approved** - you can choose whether to display only approved or disapproved messages
- **Is SPAM** - you can choose whether to display only messages marked or not marked as SPAM

Messages can be **Edited** (✎), **Deleted** (✖), **Approved** (✔) or **Rejected** (⊘). You can also select more messages using the check-boxes and perform one of these actions for all of them using the **Selected items** drop-down list and clicking the **OK** button.

The screenshot shows the 'Messages' tab in the administration interface. At the top, there are tabs for 'Messages', 'General', 'Subscriptions', 'Moderators', and 'Security'. Below the tabs is a 'New message' link. The filter section includes input fields for 'User name' and 'Text', and dropdown menus for 'Is approved' (set to '(all)') and 'Is SPAM' (set to '(all)'). A 'Show' button is located below the filter options. The main area contains a table of messages with columns for 'Actions', 'User name', 'Text', 'Approved', 'Is SPAM', and 'Inserted'. Two messages are listed: one by 'Andy' and one by 'Admin'. At the bottom, there is a 'Selected items' dropdown menu (set to '(select some action)') and an 'OK' button. On the right side, there is an 'Items per page' dropdown menu set to '25'.

| Actions | <input type="checkbox"/> | User name | Text | Approved | Is SPAM | Inserted |
|---------|--------------------------|-----------|-------------|----------|---------|-----------------------|
| ✎ ✖ ⊘ | <input type="checkbox"/> | Andy | 1st message | Yes | No | 12/22/2009 1:58:30 PM |
| ✎ ✖ ⊘ | <input type="checkbox"/> | Admin | Hello | Yes | No | 12/22/2009 1:42:22 PM |

General tab

On the general tab, you can specify the following properties of the message board:

- **Display name** - display name of the message board
- **Code name** - code name of the message board
- **Description** - text describing the message board
- **Enable** - if unchecked, the message board will be hidden; if checked, the message board works normally
- **Open** - if checked, adding messages is enabled; if unchecked, messages are displayed but can't be added
- **Open from / to** - using these fields, you can define the time interval during that new messages can be added to the board
- **Enable subscriptions** - if checked, users can subscribe to receiving notifications about new messages on the board
- **Unsubscription URL** - URL of the page containing the Message board unsubscription web part; the web part handles notification unsubscription requests; if not set, value in Settings -> Message boards -> Board unsubscription URL will be used
- **Base URL** - URL used as the URL base of links to message boards in notification e-mails; if empty, value from Site Manager -> Settings -> Message boards -> Board base URL will be used; if that property is empty too, message boards can not be placed on pages with wildcard URLs
- **Require e-mail address** - if checked, users are required to enter their e-mail address when posting board messages


The screenshot shows the 'General' tab of a message board configuration interface. The tabs are 'Messages', 'General', 'Subscriptions', 'Moderators', and 'Security'. The configuration is for a 'Public message board'. The 'Display name' is 'My first message board' and the 'Code name' is 'MessageBoard'. The 'Description' field is empty. The 'Enable' checkbox is checked. The 'Open' checkbox is checked. The 'Open from' and 'Open to' fields are empty, with 'Now' buttons next to them. The 'Enable subscriptions' checkbox is checked. The 'Base URL' field is empty, with an 'Inherit from settings' checkbox. The 'Unsubscription URL' is '~ /SpecialPages/BoardUnsubscribe.aspx', with an 'Inherit from settings' checkbox. The 'Require e-mail addresses' checkbox is checked. A green 'OK' button is at the bottom.







| | |
|---------------------------|--|
| Board owner: | Public message board |
| Display name: | <input type="text" value="My first message board"/> |
| Code name: | <input type="text" value="MessageBoard"/> |
| Description: | <div style="border: 1px solid #ccc; height: 60px;"></div> |
| Enable: | <input checked="" type="checkbox"/> |
| Open: | <input checked="" type="checkbox"/> |
| Open from: | <input type="text"/> Now |
| Open to: | <input type="text"/> Now |
| Enable subscriptions: | <input checked="" type="checkbox"/> |
| Base URL: | <input type="text"/> <input type="checkbox"/> Inherit from settings |
| Unsubscription URL: | <input type="text" value="~/SpecialPages/BoardUnsubscribe.aspx"/> <input type="checkbox"/> Inherit from settings |
| Require e-mail addresses: | <input checked="" type="checkbox"/> |

Subscriptions tab

On this tab, you can see a list of subscriptions to receiving notifications about new board messages. You can create new subscriptions using the **New subscription** link. Displayed subscriptions can be filtered by E-mail address and User name. You can also **Edit** (✎) or **Delete** (✖) subscriptions in the list.

Messages General Subscriptions Moderators Security

 [New subscription](#)

| Actions | E-mail | User name |
|---|------------------------|-----------|
|   | gold@localhost.local | gold |
|   | silver@localhost.local | - |
|   | andy@localhost.local | - |

Moderators tab

On this tab, you can make the message board moderated by checking the Message board is moderated check-box. In such case, new messages will be displayed only after approval by some of the moderators listed in the Moderators list-box below. Moderators can be **Added** or **Removed** using the corresponding buttons.

Messages General Subscriptions Moderators Security

Message board is moderated

Moderators:

| <input type="checkbox"/> | User |
|--------------------------|--------------------------------------|
| <input type="checkbox"/> | Global Administrator (administrator) |

Remove selected Add users

Security tab

On this tab, you can set security-related properties of the message board.

If the **Use security code (CAPTCHA)** check-box is checked, users will have to retype the CAPTCHA security code before adding a new message.

The Allow comments to section can be used to define which users can add new messages to the board. The following options are available:

- **All users** - everyone can add messages to the board
- **Only authenticated users** - only signed-in users can add messages to the board
- **Only authorized roles** - only members of the roles in the list-box below can add messages to the board

The following two options can be set only for group message boards:

- **Only group members** - only members of the group can add messages to the board
- **Only group admin** - only administrators of the group can add messages to the board

The screenshot shows the 'Security' tab selected in a configuration window. The 'General' section has the 'Use security code (CAPTCHA)' checkbox checked. The 'Allow comments to' section has three radio button options: 'All users', 'Only authenticated users', and 'Only authorized roles', with the last one selected. Below these options is a list box containing the roles 'CMSDesigner', 'CMSLiveIDUsers', and '_authenticated_'. To the right of the list box are 'Add roles' and 'Remove' buttons. At the bottom of the window is an 'OK' button.

8.25.5 Setting Board base URL

Board base URL is the URL which will be used as the URL base for unsubscription links in notification e-mails. It can be set two ways:

- In **Site Manager -> Settings -> Message boards -> Board base URL**, from here, it can be inherited by the web parts.
- Directly in **Message board web part properties**.

As user and group profile pages use [Wildcard URLs](#), the following rules should be followed when creating user and group message boards placed on these pages in order for the unsubscription links to work correctly:

1. When you create a **user message board**, which is a message board placed on a user's profile, it is recommended to set the **Board base URL** directly in web part properties, for example like this:

```
~/Members/{%SiteContext.CurrentUser.UserName%}.aspx
```

You can find a live example of this setting on the sample

2. When you create a **group message board**, which is a board placed on a group's profile, it is recommended to set the **Board base URL** directly in web part properties, for example like this:

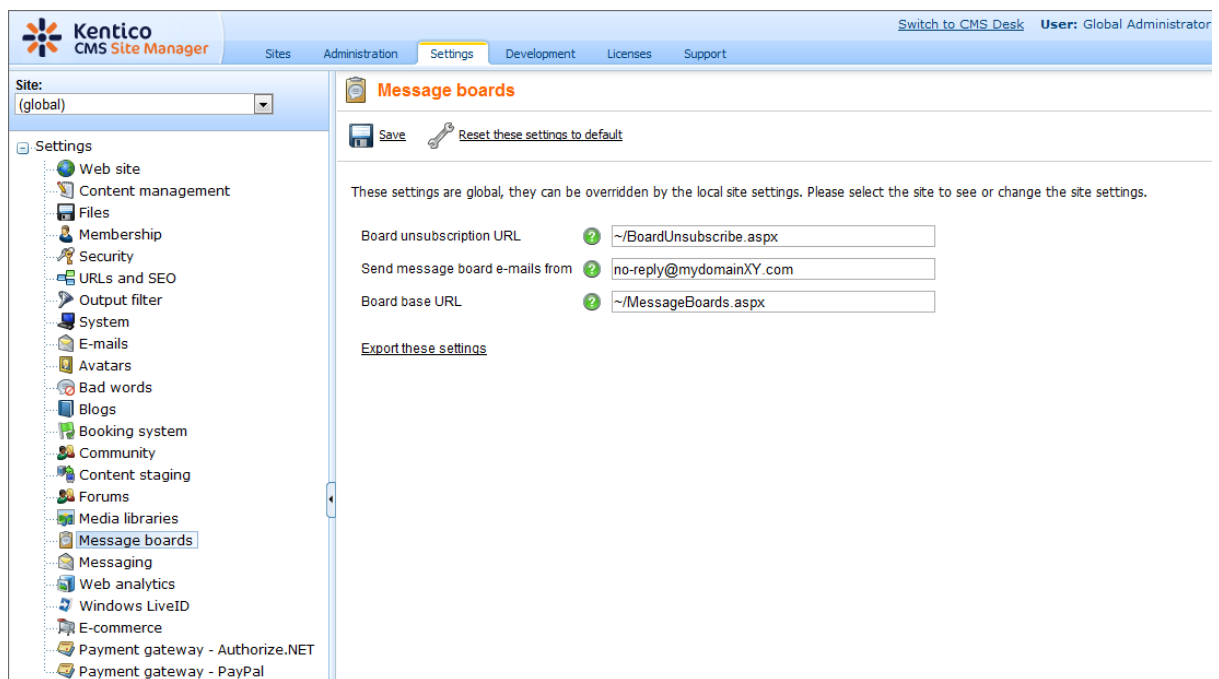
```
~/Groups/{%CommunityContext.CurrentGroup.GroupName%}.aspx
```

3. When you create a public message board, which is a board placed on any document without a wildcard URL, the Board base URL property needn't be set.

8.25.6 Settings

Settings of the Message boards module are located in **Site Manager -> Settings -> Message boards**. Among other community-related settings, the following settings are related to the Message boards module:

- **Board unsubscription URL** - URL of the site on that the Message board unsubscription web part is placed; this web part handles requests for unsubscription from notifications about new message board messages
- **Send message board e-mails from** - e-mail address that will appear in the From field of notification messages about new message board messages
- **Board base URL** - global board base URL that can be inherited by message boards; it can be used by board notification e-mails and message board viewers



The screenshot displays the Kentico CMS Site Manager interface. The top navigation bar includes the Kentico logo, "CMS Site Manager", and tabs for "Sites", "Administration", "Settings" (selected), "Development", "Licenses", and "Support". The user is identified as "Global Administrator".

The left sidebar shows a tree view of settings categories, with "Message boards" selected. The main content area is titled "Message boards" and contains the following settings:

- Board unsubscription URL:
- Send message board e-mails from:
- Board base URL:

Buttons for "Save" and "Reset these settings to default" are visible. A note states: "These settings are global, they can be overridden by the local site settings. Please select the site to see or change the site settings." An "Export these settings" link is also present.

8.25.7 Security

Message board

Based on the **Access** and **Message board owner** properties of the message board web part, you can determine who will be allowed to add new messages to the board.



Changing the values

Remember that once the message board is created (after first message or subscription), you cannot make changes to these settings in the **New board settings** section of web part's properties. You can only modify values of the **Access** property on the Security tab when editing the corresponding message board in **CMS Desk -> Tools -> Message boards**.

The following table explains **who can add messages to the board** under particular configurations. The difference between **User** and **Public boards** is that Public boards are always related to a document, while User boards are always related to a document and a user.

Public boards are typically used when you want multiple users to post messages to it. User boards are typically used on user profiles, as you can see on the sample **Community starter site**, on the **Members -> Profile** page.

| Message board owner | Access | Anonymo us user | Authentic ated user | Authoriz ed role | Owner | Owner in authorize d role |
|---------------------|---------------------|-----------------|---------------------|------------------|-------|---------------------------|
| Public board | All users | Yes | Yes | Yes | Yes | Yes |
| Public board | Authenticated users | | Yes | Yes | Yes | Yes |
| Public board | Authorized roles | | | Yes | | Yes |
| Public board | Owner | | | | | |
| User | All users | Yes | Yes | Yes | Yes | Yes |
| User | Authenticated users | | Yes | Yes | Yes | Yes |
| User | Authorized roles | | | Yes | | Yes |
| User | Owner | | | | Yes | Yes |

When a board is in the **User x Owner** configuration, the following conditions need to be met in order for the current user to be able to post messages:

- the page must be accessed with *userid* or *username* parameter in querystring
- the current user must be the same as the one whose *userid* or *username* is passed in querystring
- the current user must not be hidden (configured by the *Is hidden* option when editing the user)

This can be typically used on user profiles, where messages to such board can be posted only by the owner of the profile, while other users can only read these messages. An example of such board is the **MessageBoardAnnouncements** board on the **/Members/Profile** page of the sample Community Site.

Group message board

The Group message board is always related to some group, hence only the **Access** property can be set. You can see a typical usage of this web part on the sample **Community starter site**, on the **Groups -> Profile** page.

| Access | Anonymous user | Authenticated user | Authorized role | Group member | Group member in authorized role | Group admin |
|---------------------|----------------|--------------------|-----------------|--------------|---------------------------------|-------------|
| All users | Yes | Yes | Yes | Yes | Yes | Yes |
| Authenticated users | | Yes | Yes | Yes | Yes | Yes |
| Authorized roles | | | Yes | | Yes | Yes |
| Group members | | | | Yes | Yes | Yes |
| Group admin | | | | | | Yes |

When the **Group members** option is set, the following conditions need to be met in order for the current user to be able to post messages:


- the page must be accessed with *groupid* parameter in querystring
- the current user must be member of the group whose *groupid* is in the querystring
- the current user must not be hidden (configured by the *Is hidden* option when editing the user)

This can be typically used on group profiles, where messages to such board can be posted only by members of the group, while other users can only read these messages. An example of such board is the **GroupMessageBoard** board on the **/Group-pages/<group name>** page of the sample Community Site.

Permissions

Permissions for access to Message boards administration interface can be set in **Site Manager -> Administration -> Permissions**. You have to select the **Modules -> Message boards** permission matrix.

- **Modify** - members of the roles are allowed to edit message board settings, delete the boards and manage message board posts
- **Read** - selected role members are allowed to read the records and configuration of particular message boards, but are not allowed to modify them

 **Permissions**

Site:

Permission type:

Permission matrix:

| | Modify | Read |
|------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> | <input type="checkbox"/> |

8.25.8 Message board notifications

8.25.8.1 Who can be notified

When a new board message is added or during message editing, notifications can be sent to:

- **Board moderators**
- **Subscribers**

The following text explains to whom are the notifications sent under specific conditions:

New message

1. has been added by the board moderator, global administrator, board owner (in case of a user board), user with the Modify permission or group administrator (in case of group boards)
 - the message is marked as APPROVED
 - the e-mail is sent to subscribers
2. has been added by anybody else
 - a) board is moderated
 - the message is marked as NOT APPROVED
 - the e-mail is sent to moderators
 - b) board is not moderated
 - the message is marked as APPROVED
 - the e-mail is sent to subscribers

Message editing

1. the message is switched from NOT APPROVED to APPROVED
 - the e-mail is sent to subscribers
2. other message changes
 - no e-mail is sent

8.25.8.2 User subscriptions

Message board notifications

You can let users subscribe to receiving notifications about new messages added to the message board. You need to check the **Enable subscriptions** check-box in Message board web part's properties. Alternatively, when the message board is already created, you can allow subscriptions in **CMS Desk -> Tools -> Message boards -> Boards**. If you choose to **Edit** (✎) the message board and switch to the **General** tab, you can check the same **Enable subscriptions** check-box here, which enables the subscriptions.

The subscription itself can be done two ways. Users can either check the **Subscribe to message board** check-box, which subscribes them along with adding the message. They can also click the **Subscribe to board** link, which displays only one **E-mail** field. After entering their address and clicking the **Subscribe** button, they can subscribe to notifications about this board without leaving any message.

Leave message Subscribe

Name:

Your URL:

Your e-mail:

Message:

Subscribe me to this message board

Subscriptions management

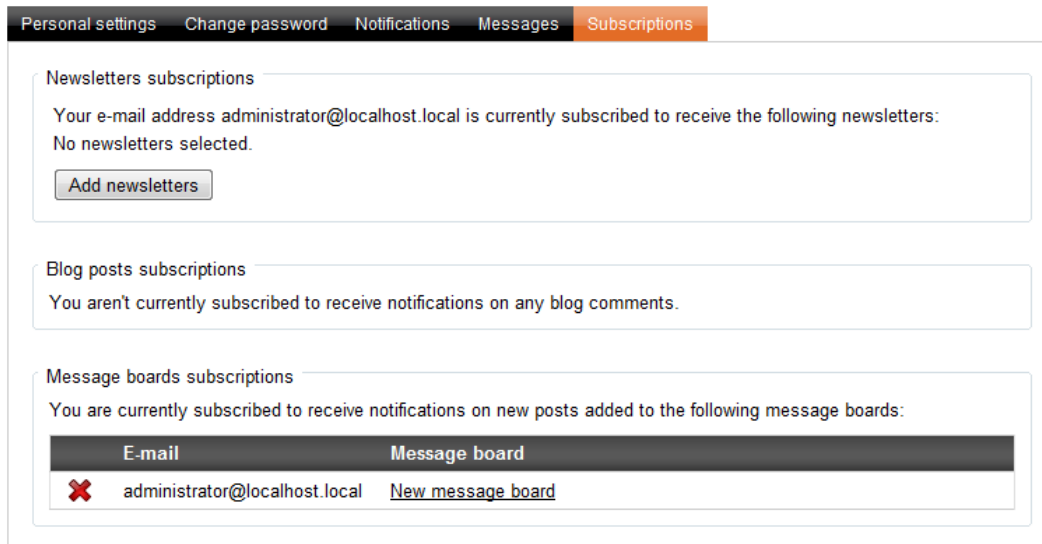
Users can view their subscriptions and eventually **unsubscribe** using the **Delete** (X) icon at the following two places:

1. Users with access to **CMS Desk** can view their subscriptions on the **My Desk -> My profile -> Subscriptions** tab.

The screenshot shows the Kentico CMS Desk interface. The top navigation bar includes 'Content', 'My desk', 'Tools', and 'Administration'. The left sidebar shows 'My desk' with various document and profile-related links. The main content area is titled 'My profile' and has tabs for 'Details', 'Change password', 'Notifications', and 'Subscriptions'. Under the 'Subscriptions' tab, there are three sections: 'Newsletters subscriptions' (no newsletters selected), 'Blog posts subscriptions' (not currently subscribed), and 'Message boards subscriptions' (subscribed to 'temp'). A table below the message boards section shows the subscription details with a red 'X' icon for deletion.

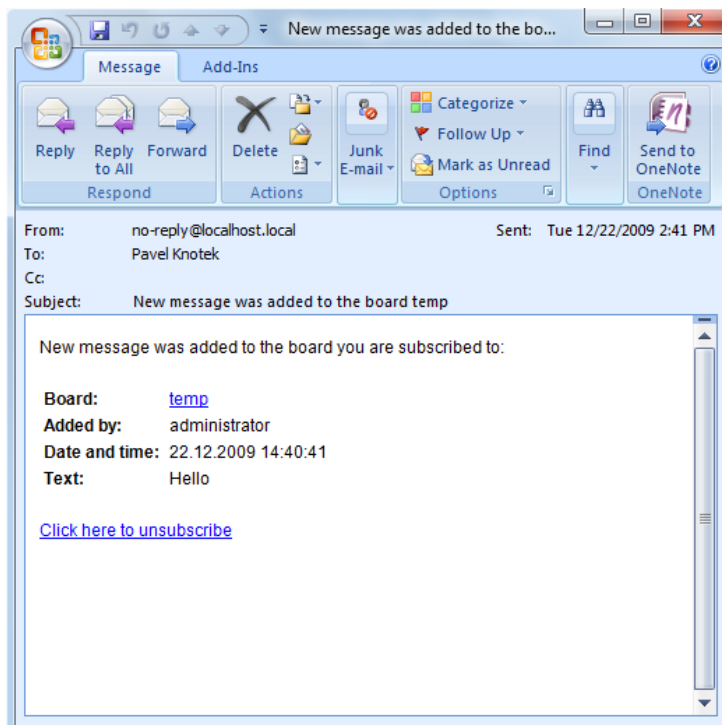
| E-mail | Message board |
|-------------------------------|---------------|
| administrator@localhost.local | temp |

2. On live site, users can view their subscriptions in the **My account** web part. The **Display subscriptions** property of the web part must be enabled for this to be possible.



Unsubscription links configuration

Each message board notification e-mail contains an unsubscription link. By clicking the link, users can unsubscribe from receiving notifications about new messages.



For the unsubscription links to work, you have to do the following tasks:

1. Place the **Message board unsubscription** web part to some page. It is recommended to create a special page for this purpose, as you can see at *Corporate site -> Special pages -> Board unsubscribe* or *Community site -> Special-pages -> Board unsubscribe*. You can set only one property of the web part - **Confirmation text** - this is the text that will be displayed after successful unsubscription.
2. Set the URL of the page created in step 1 as the **Unsubscription URL** property of the message board. This can be done three ways:
 - Enter the URL into the **Board unsubscription URL** field in **Site Manager -> Settings -> Message boards**. This URL will be used by default when no URL is entered in web part properties of the message board.
 - When adding the Message board web part, you can set set its **Unsubscription URL** property. This setting overrides the option in Site Manager -> Settings -> Message boards.
 - When the message board is created, you can edit the **Unsubscription URL** property in **CMS Desk -> Tools -> Message boards -> Boards tab -> Edit (✎)the message board -> General** tab.

8.25.8.3 E-mail templates

There are two different e-mail templates that can be used when sending notifications to subscribers and board moderators:

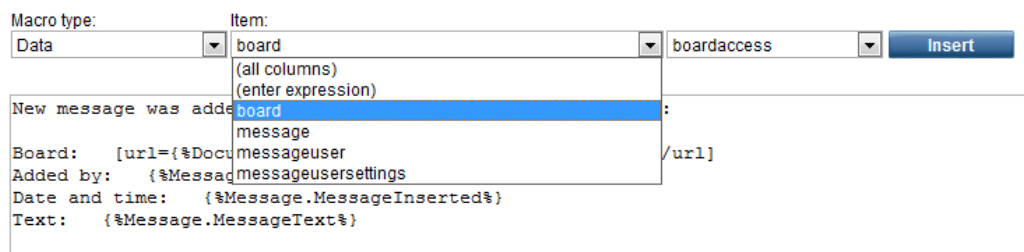
- **Subscribers** - e-mails are based on the **Boards - Notification to board subscribers** template
- **Moderators** - e-mails are based on the **Boards - Notification to board moderators** template

The following macros can be used in the notification e-mails:

Data macros

- **Board.XXX** - where XXX are columns of the Board_Board table
- **Message.XXX** - where XXX are columns of the Board_Message table
- **MessageUser.XXX** - where XXX are columns of the CMS_User table
- **MessageUserSettings.XXX** - where XXX are columns of the CMS_UserSettings table

Example: {%Message.MessageEmail%}



Source macros

- **DocumentLink** - link to the document where the board is placed
- **UnsubscriptionLink** - unsubscription link

Example:: {%DocumentLink %}

Macro type: Item:

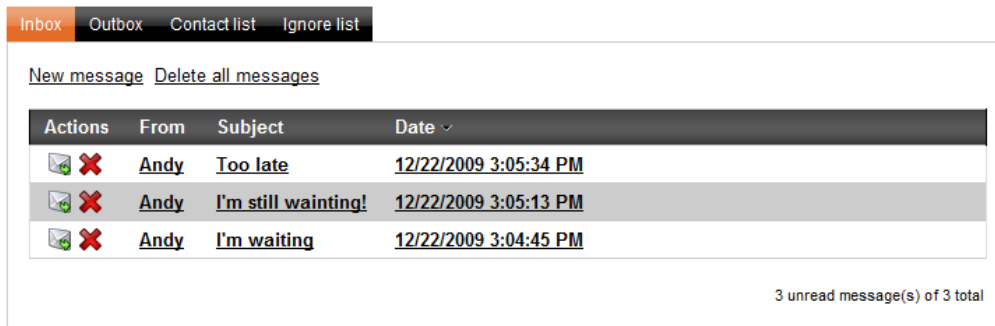
New message was added and now is waiting for your approval:

```
Board:  [url={%DocumentLink%}] {%Board.BoardDsisplayName%} [/url]
Added by:  {%MessageUser.FullName%}
Date and time:  {%Message.MessageInserted%}
Text:  {%Message.MessageText%}
```

8.26 Messaging

8.26.1 Overview

The **Messaging** module allows you to send, receive and manage messages. Its purpose is to provide an internal way of communication with other users of the website.



The **My messages** web part, shown in the screenshot above, is an all-in-one web part consisting of particular messaging web parts found under the **Messaging** folder in the **Web Parts** directory, namely:

- **Contact list:** Allows you to add registered users to your contact list or to remove them from the list.
- **Ignore list:** Allows you to define which users you don't want to receive any messages from.
- **Inbox:** Shows a list of received messages and allows replying to and deleting them.
- **Outbox:** Shows a list of sent messages and allows deleting them.
- **Send message:** Allows users to send messages.

These web parts can be used separately on any page of the website, providing the same functionality as when used as a part of the **My messages** web part. You can also choose which of these web parts will be included in the **My messages** web part.

8.26.2 Adding the messaging functionality

Only developers can add the messaging functionality to a website. If you want to do so, switch to **CMS Desk -> Design** and select the page you want to add the functionality to. On the page, click the **Add web part** button in the top right corner of any of the web zones. From the list, select **Messaging** and select the particular web part you want to add. A **Web part properties** window appears, define the specific properties according to which web part you have selected:

My messages

| | |
|----------------------|---|
| Display inbox | Includes a list of received messages. |
| Display outbox | Includes a list of sent messages. |
| Display contact list | Includes a list of your contacts. |
| Display ignore list | Includes a list of users you don't want to receive messages from. |

Contact list

| | |
|----------------------|--|
| Page size | Defines the number of contacts per page. |
| No record found text | Defines the text displayed in case there are no contacts in your contact list. |

Ignore list

| | |
|----------------------|---|
| Page size | Defines the number of contacts per page. |
| No record found text | Defines the text displayed in case there are no contacts in your ignore list. |

Inbox

| | |
|------------------------|---|
| Page size | Defines the number of messages per page. |
| No record found text | Defines the text displayed in case there are no messages in your inbox. |
| Paste original message | Defines if original message text is inserted in the replying message. |
| Show original message | Defines if original message is displayed when replying to it. |

Outbox

| | |
|-----------------------|--|
| Page size | Defines the number of messages per page. |
| No record found text | Defines the text displayed in case there are no messages in your outbox. |
| Show original message | Defines if original message is displayed. |

Send message

| | |
|---|--|
| Allow anonymous users | Allows anonymous users to send messages to registered user of the website. |
| Allow anonymous users to select recipient | Allows anonymous users to select the recipient of their message from a list of all registered users. |
| Default recipient of the message | Defines the default recipient of the message. |

Confirm by clicking the **OK** button.

8.26.3 Security

Anonymous users

Even unregistered users can send messages to registered users of your website. This is possible only from the **Send message** web part, the **My messages** web part can be used only by registered users.

To allow this functionality, go to **Send message** web part properties and check the **Allow anonymous users** check-box. By checking the **Allow anonymous users to select recipient** check-box below, you can give anonymous users permission to view a list of all registered users and select a user from this list.

8.26.4 Design and Styles

The design is controlled by CSS styles included in your CSS stylesheet for the given site. The following figures show the messaging web parts' CSS classes:

My messages:

The screenshot shows the 'My messages' web part interface. It features a tabbed header with 'Inbox', 'Outbox', 'Contact list', and 'Ignore list'. Below the header is a table of messages with columns for 'From', 'Subject', and 'Date'. Callout boxes on the right identify the following CSS classes: 'MyMessages' (the entire web part), 'TabsHeader' (the tabbed header), 'TabsContent' (the message list area), and 'MessagingBox' (the message list area).

| From | Subject | Date |
|---------------|--------------------------------------|-----------------------|
| administrator | Change your password | 2/27/2008 11:21:17 AM |
| administrator | Change your password | 2/27/2008 11:20:55 AM |
| administrator | Cheers | 2/27/2008 11:09:50 AM |

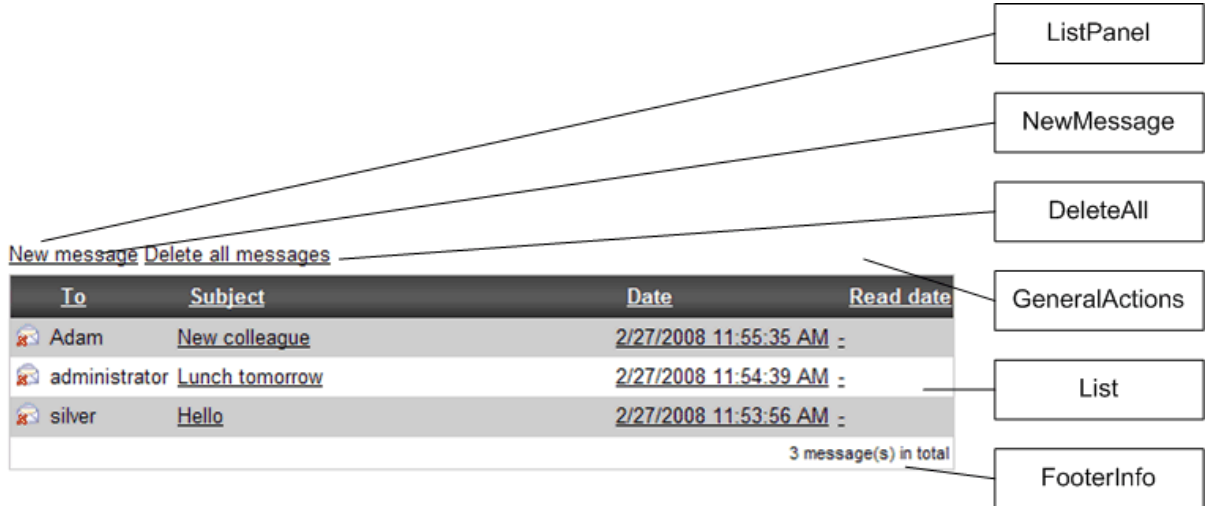
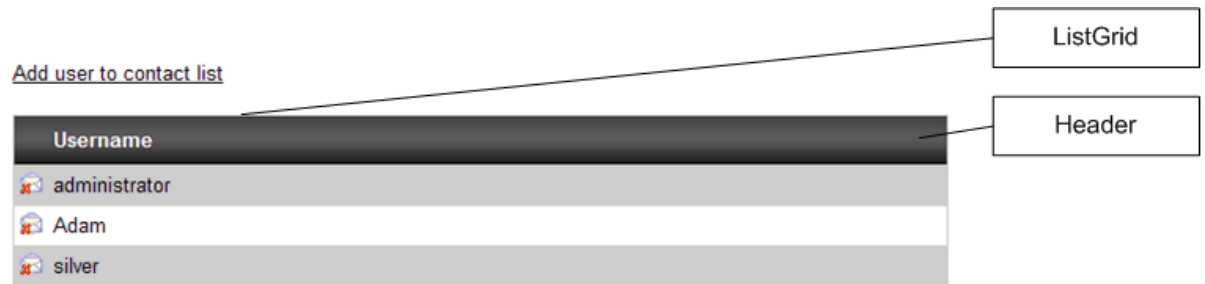
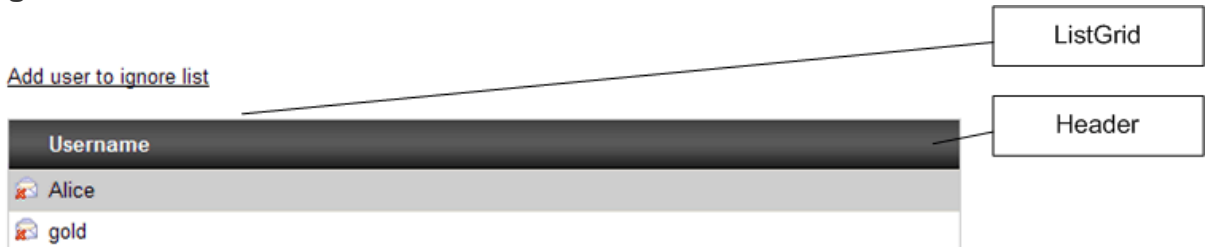
2 unread message(s) of 3 total

Inbox:

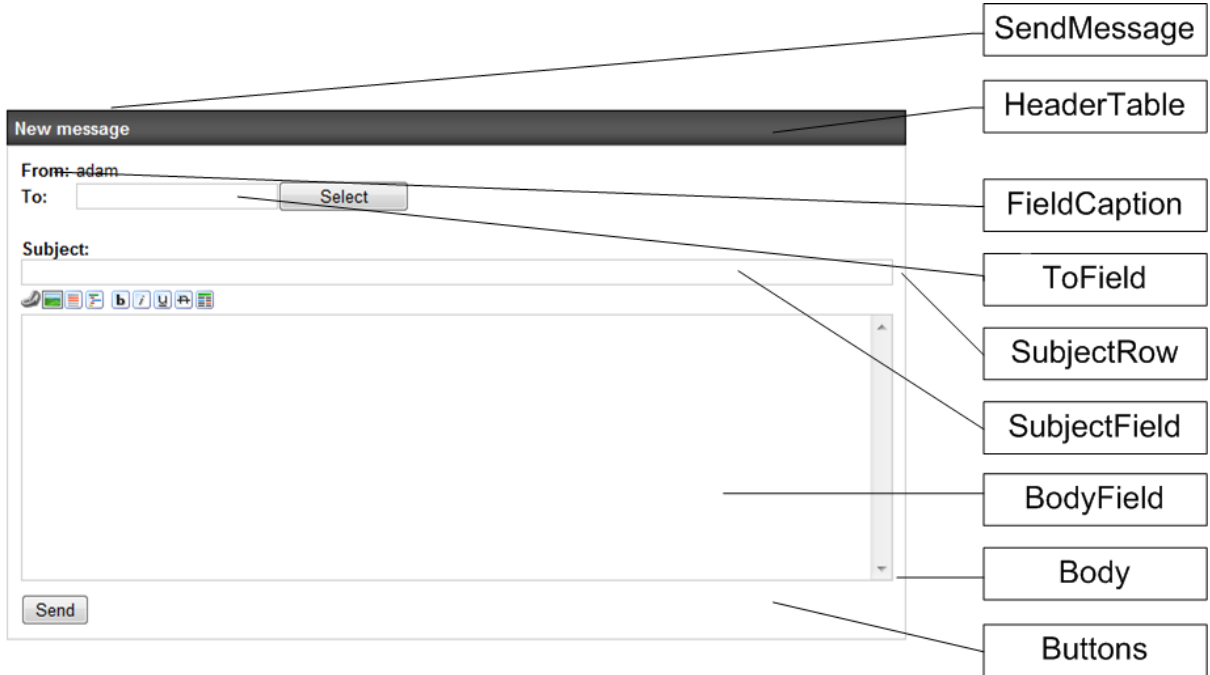
The screenshot shows the 'Inbox' web part interface. It features a 'New message' link and a 'Delete all messages' link above a table of messages with columns for 'From', 'Subject', and 'Date'. Callout boxes on the right identify the following CSS classes: 'ListPanel' (the entire web part), 'NewMessage' (the 'New message' link), 'DeleteAll' (the 'Delete all messages' link), 'GeneralActions' (the table header), 'List' (the message list area), and 'Footer Info' (the footer text).

| From | Subject | Date |
|---------------|----------------------------------|-----------------------|
| Adam | New colleague | 2/27/2008 11:55:35 AM |
| administrator | Meeting tomorrow | 2/27/2008 11:24:10 AM |

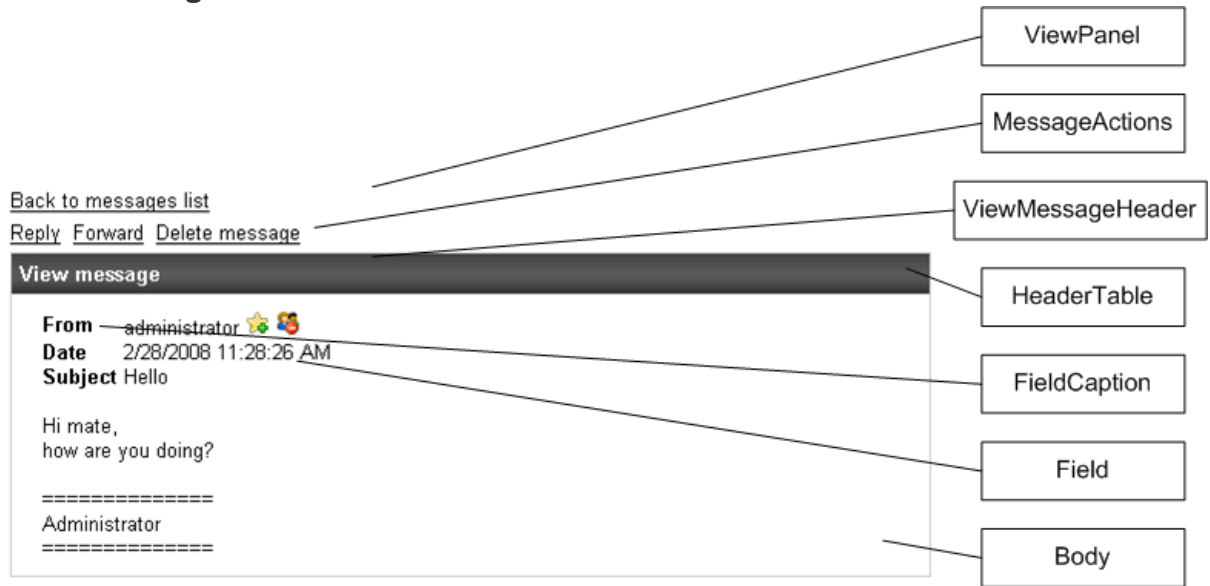
2 unread message(s) of 2 total

Outbox:**Contact list:****Ignore list:**

Send message:



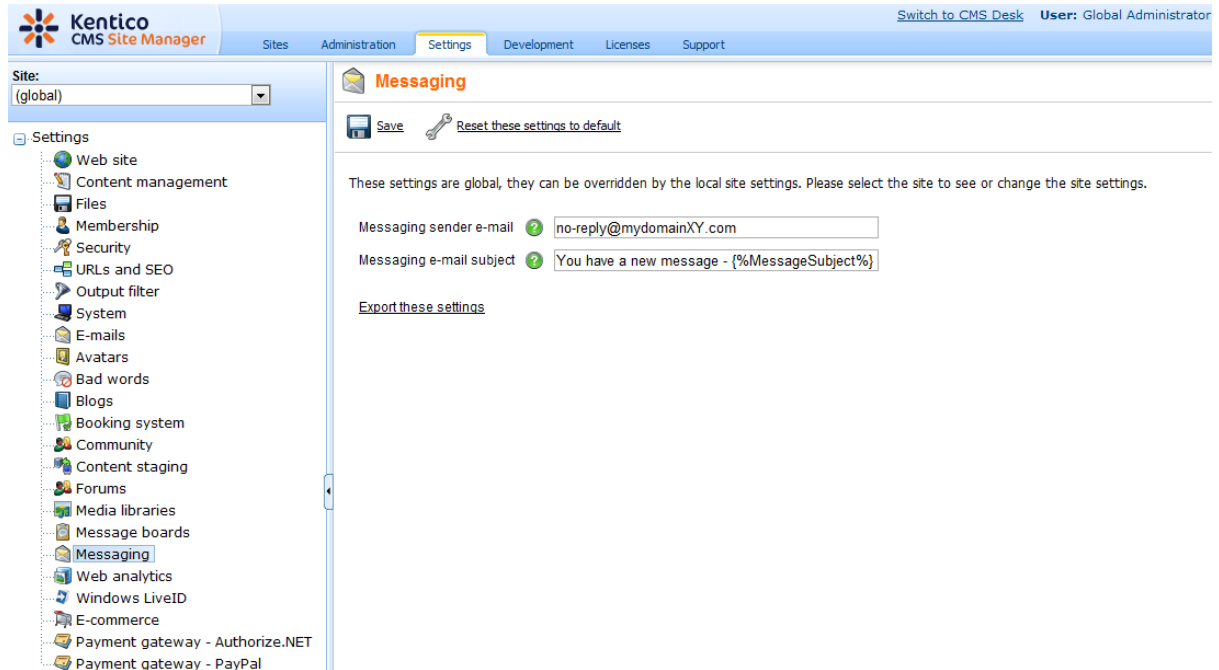
View message:



8.26.5 Settings

Settings of the Messaging module can be done in **Site manager -> Settings -> Messaging**. The following settings are available:

- **Messaging sender e-mail** - e-mail address that will be used as the Sender ('From') address of notification e-mails
- **Messaging e-mail subject** - entered text will be used as content of the Subject field of notification e-mails



8.26.6 Messaging API and Internals

8.26.6.1 Database tables and API classes

The Messaging module uses the following database table:

- **Messaging_Message** - this is the only database table used for storing messages

The messaging API is provided by the **CMS.Messaging** namespace classes:

- **MessageInfo**, **MessageInfoProvider** - these classes provide functionality for managing messages

The following chapters show how to use these classes.

8.26.6.2 Creating a new message

The following sample code shows how you can create a new message, edit its text and finally delete it, all using the API.

[C#]

```
using CMS.Messaging;
using CMS.CMSHelper;
using CMS.SiteProvider;
using CMS.GlobalHelper;

...

// Creates a new message from CurrentUser to administrator
MessageInfo message = new MessageInfo();
message.MessageSubject = "Subject";
message.MessageBody = "Hello world!";
message.MessageSenderUserID = CMSContext.CurrentUser.UserID;
message.MessageRecipientUserID = UserInfoProvider.GetUserInfo(
"administrator").UserID;
message.MessageSent = DateTime.Now;
MessageInfoProvider.SetMessageInfo(message);

// Gets the previously created message and edits its body
MessageInfo messageToEdit = MessageInfoProvider.GetMessageInfo(message.
MessageID);
messageToEdit.MessageBody += " This message was edited";
MessageInfoProvider.SetMessageInfo(messageToEdit);

// Deletes the previously created and edited message
MessageInfoProvider.DeleteMessageInfo(message.MessageID);
```

8.26.6.3 Deleting all messages

The following sample code shows how you can delete all messages in current user's outbox using the API.

[C#]

```
using CMS.Messaging;
using CMS.CMSHelper;
using CMS.SiteProvider;
using CMS.GlobalHelper;

...

// Deletes all messages in CurrentUser's outbox
MessageInfoProvider.DeleteSentMessages(CMSContext.CurrentUser.UserID);
```

8.26.6.4 Adding a user to contact list

The following sample code shows how you can add a user to current user's contact list using the API.

[C#]

```
using CMS.Messaging;
using CMS.CMSHelper;
using CMS.SiteProvider;
using CMS.GlobalHelper;

...

// Adds administrator to CurrentUser's Contact list
UserInfo user = UserInfoProvider.GetUserInfo("administrator");
ContactListInfoProvider.AddToContactList(CMSContext.CurrentUser.UserID, user.UserID);
```

8.26.6.5 Removing a user from ignore list

The following sample code shows how you can remove a user from current user's ignore list using the API.

[C#]

```
using CMS.Messaging;
using CMS.CMSHelper;
using CMS.SiteProvider;
using CMS.GlobalHelper;

...

// Removes administrator from CurrentUser's Ignore list
UserInfo user = UserInfoProvider.GetUserInfo("administrator");
IgnoreListInfoProvider.RemoveFromIgnoreList(CMSContext.CurrentUser.UserID, user.UserID);
```

8.27 Newsletters

8.27.1 Overview

The Newsletter module allows you to author and mail out e-mail newsletters. The newsletters can be of two types:

- [Static newsletters](#) - you edit and send out every issue manually. The newsletters are based on predefined templates.
- [Dynamic newsletters](#) - the e-mails are sent out to all subscribers on a specified interval. The content is dynamically taken from specified page.

Newsletters can be managed in **CMS Desk -> Tools -> Newsletter** section.

8.27.2 Creating a static newsletter

In this chapter, you will learn how to create a static newsletter and author your first newsletter issue.

Go to **CMS Desk -> Tools -> Newsletter** and click **New newsletter**. Enter the following details:

- **Newsletter display name:** My newsletter (*this is the name displayed to the users*)
- **Newsletter name:** MyNewsletter (*this is the code name used in web parts and code*)
- **Subscription confirmation:** Subscription confirmation template
- **Unsubscription confirmation:** Unsubscription confirmation template
- **Sender name:** enter your full name
- **Sender e-mail:** enter your e-mail address

Choose **Template based newsletter** and use the **Newsletter issue template**. Click **OK**. The following three options can now be entered additionally:

- **Base URL:** the base URL of your website used to convert relative links to absolute; It's necessary to set this property in order for the unsubscription links to work properly. It's also useful if you encounter any issues with links in newsletter e-mails - e.g. if you're using a different URL for your editing environment than for the live website. Example: <https://www.example.com>
- **Unsubscription page URL:** ~/SpecialPages/Unsubscribe.aspx (the page with Newsletter unsubscription web part)
- **Send issues via e-mail queue** - if enabled, newsletter issues are sent to the SMTP server via the [e-mail queue](#); this is recommended for newsletters with a large number of recipients; if disabled, the issues are sent directly to the SMTP server

The screenshot shows the 'Newsletters module' configuration page. At the top, there is a navigation bar with tabs for 'Newsletters', 'Subscribers', 'Templates', 'Newsletter queue', 'Import subscribers', and 'Export subscribers'. Below this, the current configuration is for 'My newsletter', with sub-tabs for 'Issues', 'Configuration', and 'Subscribers'. The 'Configuration' tab is active, showing a form with the following fields:

- Newsletter display name: My newsletter
- Newsletter name: MyNewsletter
- Sender name: Admin
- Sender e-mail: admin@localhost.local
- Base URL: (empty)
- Unsubscription page URL: (empty)
- Subscription confirmation: Subscription confirmation template
- Unsubscription confirmation: Unsubscription confirmation template
- Send issues via e-mail queue:

Below the main form is a section titled 'Template-based newsletter configuration:' with a dropdown menu for 'Newsletter template' set to 'Newsletter issue template'. A green 'OK' button is located at the bottom of the configuration area.

Click **OK**. We will create a new subscriber now. Go to the main **Subscribers** tab (in the top tab menu) and click **New subscriber**. Enter the following details:

- **E-mail:** subscriber's e-mail address
- **First name:** subscriber's first name
- **Last name:** subscriber's last name

The screenshot shows the 'Newsletters module' interface. At the top, there is a navigation bar with tabs for 'Newsletters', 'Subscribers', 'Templates', 'Newsletter queue', and 'Import subscribers'. Below this, a breadcrumb trail reads 'Subscribers > New subscriber'. The form contains three input fields: 'E-mail:' with the value 'john@localhost.local', 'First name:' with the value 'John', and 'Last name:' with the value 'Smith'. A green 'OK' button is positioned below the last name field.

Click **OK**. The subscriber has been created. Now we will assign this subscriber to our previously created newsletter.

Go to the **Subscriptions** tab, check the **My newsletter** check-box and click **OK**.

The screenshot shows the 'Subscriptions' tab for the subscriber 'john@localhost.local'. The interface has two tabs: 'General' and 'Subscriptions'. Under the 'Subscriptions' tab, there is a section titled 'Selected subscriptions' containing a list with two items: 'Newsletter' and 'My newsletter', each with an unchecked checkbox. Below the list are two buttons: 'Remove selected' and 'Add newsletters'. At the bottom of the form, there is a checkbox labeled 'Send e-mail confirmation to the subscriber' which is currently unchecked.

If you check the **Send e-mail confirmation to the subscriber** check-box, the subscriber will also receive an e-mail confirmation of their subscription.

Your newsletter is configured. Now you can create new issues.

Authoring newsletter issues

Go to **Newsletters** and edit **My newsletter**. Click **New issue** on the **Issues** tab. The wizard will guide you through the process of creating a new newsletter issue.

Enter the following **subject**: Welcome to issue #1 of My newsletter

Enter the following text into the **body**:

```
Dear ,  
  
welcome to the first issue.  
  
Yours,  
  
Me
```

place the cursor after the Dear word, choose **First name** value in the **Insert field** drop-down list and click the **Insert** button. The macro text `{%FirstName%}` is placed into the text. This macro is automatically replaced with subscriber's first name during the e-mail merge.

The issue now looks like this:

The screenshot displays the 'Step 1 | Edit the content' interface for creating a newsletter issue. At the top, the subject is 'Welcome to issue #1 of My newsletter' and there is a checkbox for 'Show newsletter issue in archive:'. Below this is a rich text editor toolbar with various formatting options. The main content area shows a 'CompanyLogo' placeholder and a text box containing the draft content: 'Dear ,', 'welcome to the first issue.', 'Yours,', and 'Me'. At the bottom of the editor, there are controls for inserting macros: 'Insert field:' (set to 'E-mail'), 'Macro type:' (set to 'Context value'), and 'Item:' (set to '(general context)'). There are 'Insert' buttons for each of these fields. Below the editor is an 'Attachments' section with the instruction 'If you wish to add attachments, please click Save first.' At the bottom right, there are 'Save' and 'Next >' buttons.



Newsletter templates

The structure of the newsletter text is defined by the newsletter issue template that can be edited in the **Templates** section. Templates are described in chapter [Newsletter templates](#).

Click **Next**. Now you can preview the newsletter text for each subscriber. You can click **Back** and modify the text.

Step 2 | Preview newsletter

Subscriber: < Back john@localhost.local Next >

Subject: Welcome to issue #1 of My newsletter

CompanyLogo

Dear ,

welcome to the first issue.

Yours,

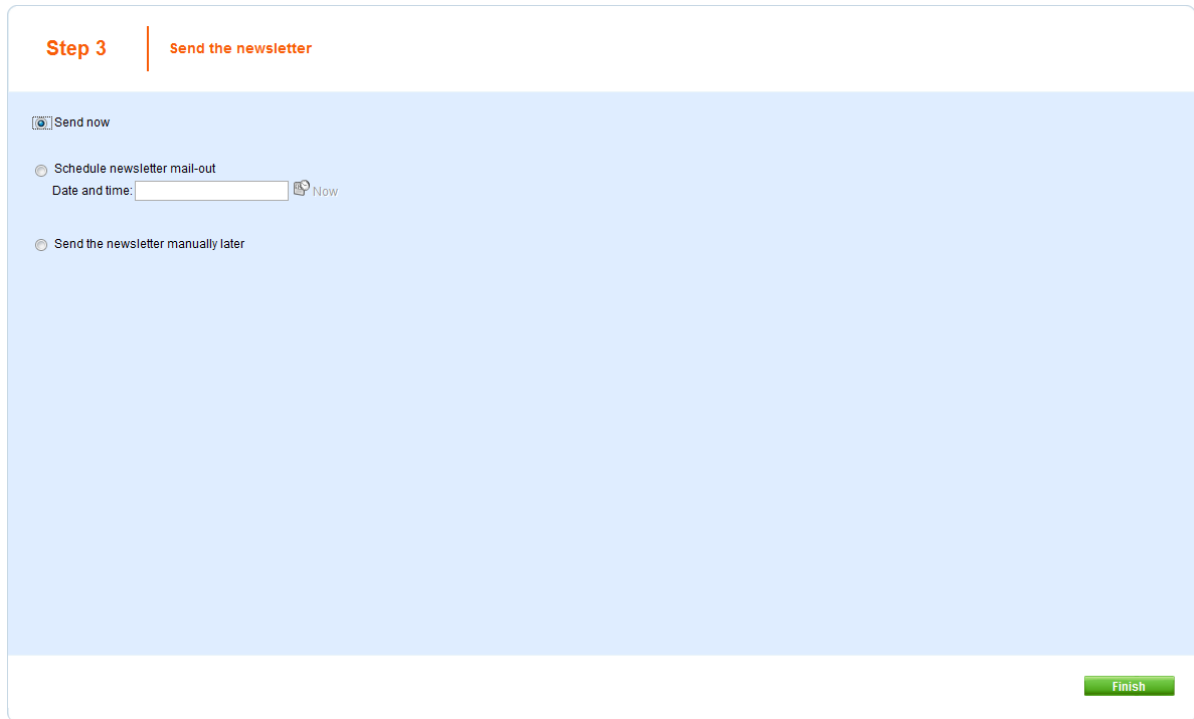
Me

Company, address, state All rights reserved. You can unsubscribe here: [Unsubscribe](#)

< Back Next >

Click **Next**. Now you can choose when the newsletter issue should be sent out:

- **Send now** - the newsletter issue is sent out immediately to all subscribers
- **Scheduled newsletter mail-out** - the newsletter issue is sent out on specified date and time.
- **Send the newsletter manually later** - the newsletter is not sent and you can decide on the mail-out time later.



Step 3 | Send the newsletter

Send now

Schedule newsletter mail-out
Date and time:

Send the newsletter manually later

Choose **Send now** and click **Finish**. On the Issues tab, you can see how many e-mails have been already sent out and how many subscribers unsubscribed after receiving this issue:



Newsletters module

Newsletters Subscribers Templates Newsletter queue Import subscribers Export subscribers

[New newsletter](#)

| Actions | Newsletter ^ | Subscribers | Last issue |
|---|----------------------|-------------|-----------------------|
|    | Corporate Newsletter | 0 | 11/6/2008 5:12:46 PM |
|    | My newsletter | 1 | 12/22/2009 3:58:35 PM |

If you do not receive the e-mail, please follow the instructions in chapter [Troubleshooting the problems with e-mails](#).

8.27.3 Creating a dynamic newsletter

Dynamic newsletters contain content of the given page and they are sent out automatically on a regular basis, using the built-in scheduling system.

Go to **CMS Desk -> Tools -> Newsletter** and click **New newsletter**. Enter the following details:

- **Newsletter display name:** My dynamic newsletter
- **Newsletter name:** MyDynamicNewsletter
- **Subscription confirmation:** Subscription confirmation template
- **Unsubscription confirmation:** Unsubscription confirmation template
- **Sender name:** enter your full name
- **Sender e-mail:** enter your e-mail address
- **Base URL:** the base URL of your website used to convert relative links to absolute; It's necessary to set this property in order for the unsubscription links to work properly. It's also useful if you encounter any issues with links in newsletter e-mails - e.g. if you're using a different URL for your editing environment than for the live website. Example: <https://www.example.com>
- choose **Dynamic newsletter** and enter the following details:
 - **Source page URL:** <http://www.google.com>
 - **Schedule mail-outs:**
 - **Period:** Minute
 - **Start time:** use the date-time picker to select the current date and time (Now)
 - **Every:** 1 minute
 - **Between:** 00:00 and 23:59
 - **Days:** check all days

Click **OK**.

Newsletters module

Newsletters
Subscribers
Templates
Newsletter queue
Import subscribers
Export subscribers

Newsletters ▶ My dynamic newsletter

Issues
Configuration
Subscribers
Send

Newsletter display name:

Newsletter name:

Sender name:

Sender e-mail:

Base URL:

Unsubscription page URL:

Subscription confirmation:

Unsubscription confirmation:

Send issues via e-mail queue:

Dynamic newsletter configuration:

Subject: Use page title for subject
 Use the following subject:

Source page URL:

Schedule mail-outs:

Period:

Start time: [Now](#)

Every: Minute

Between: : and :

Days:

Monday Saturday

Tuesday Sunday

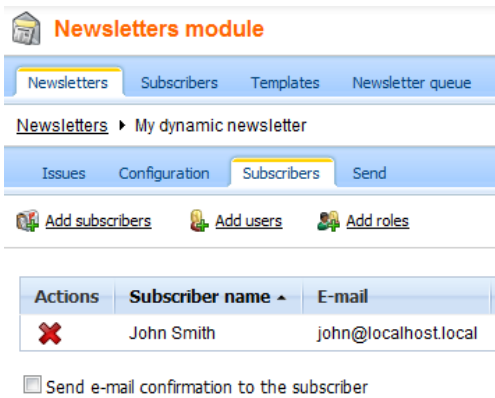
Wednesday

Thursday

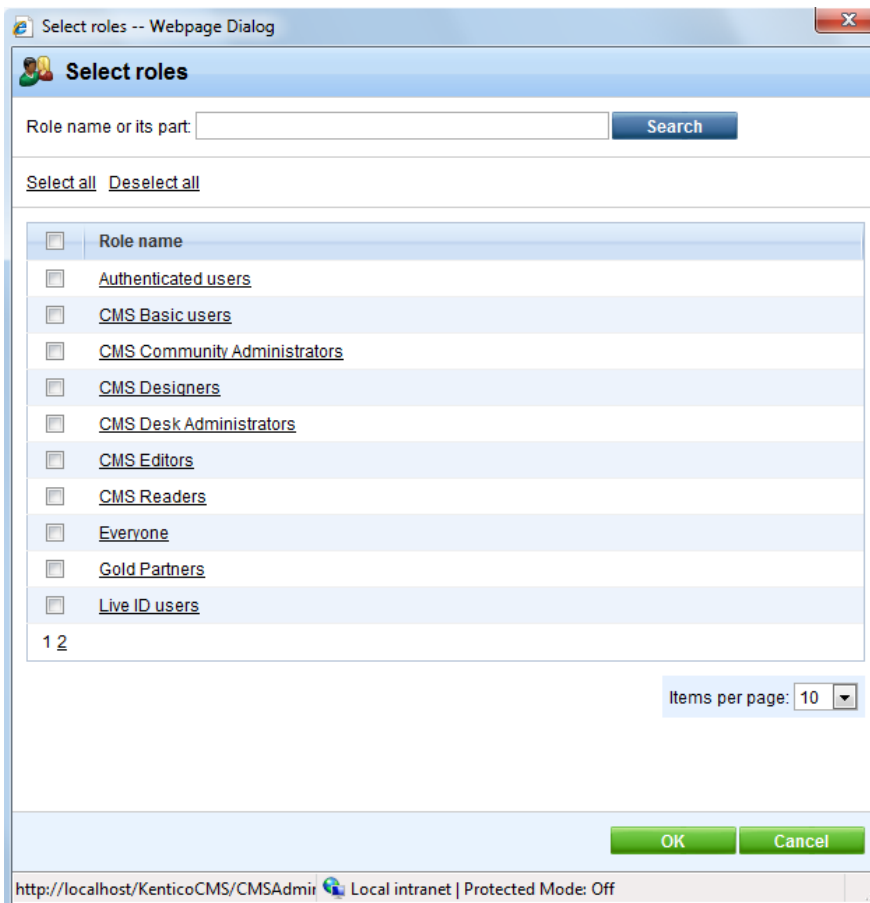
Friday

OK

Go to the **Subscribers** tab for this newsletter and add the previously created subscriber to this newsletter.



To do this, click the **Add subscriber** link, the following window appears:



The three radio buttons at the top of the window are used for selecting the searched category. You can search among subscribers of all newsletters, users of the website or among user roles. Make the selection, enter the text you are searching for into the text field and click the **Search** button.

The searched text can be an e-mail address, a name or its part. If no search text is entered, a list of all entries in the selected category will be displayed. Select the subscribers you want to add and click the **Add subscriber** button. If you do this with the **Send e-mail confirmation to the subscriber** check-box checked, a notification e-mail will be sent to the selected users, informing them about the changes in their subscriptions.

Go to the **Issues** tab. Here, you will see the list of sent issues. You may need to wait up to 2 minutes until the first issue is sent out. You can refresh the page by clicking the **Issues** tab again.

| Actions | Issue subject | Send on | Sent e-mails | Unsubscribed |
|---------|---|-----------------------|--------------|--------------|
| | ASP.NET CMS .NET open content management system portal C# free - Home | 12/22/2009 4:10:44 PM | 1 | 0 |
| | ASP.NET CMS .NET open content management system portal C# free - Home | 12/22/2009 4:13:15 PM | 1 | 0 |

Check your mail box, you should receive the content of the given page by e-mail:

ASP.NET CMS .NET open content management system portal C# free - Home - Message (HTML)

Message Add-Ins

Reply Reply Forward Delete Move to Create Other Block Safe Lists Categorize Follow Mark as Find Related Send to OneNote
to All to All Respond Actions Junk E-mail Options Find OneNote

From: Jack Sender [jack.sender@localhost.local] Sent: Tue 12/22/2009 4:24 PM
To: Pavel Knotek
Cc:
Subject: ASP.NET CMS .NET open content management system portal C# free - Home

KENTICO CMS for ASP.NET

Home Features Download Demo Buy Partners Showcase DevNet Support Company

Kentico CMS for ASP.NET
flexible, all-in-one solution for web developers

Easy-to-use
Rich functionality
Unlimited flexibility

CMS for ASP.NET
All-in-One Solution

- ✓ Robust and stable
- ✓ Low implementation costs
- ✓ 4000 websites around the globe

Download

For Developers
• Rapid web site development

For Site Owners
• User-friendly interface

For Partners
• Reliable and flexible

In this way, you can send out any page from your website. You can create a new page only for the newsletter purposes that will display e.g. new articles added to your website during the last month.

Blocking dynamic newsletter mail-out

If you want to block the mail-out of the page (e.g. if there are no new articles), set the page title to `##DONOTSEND##` and the newsletter will not be sent.

8.27.4 Integrating newsletters into the site

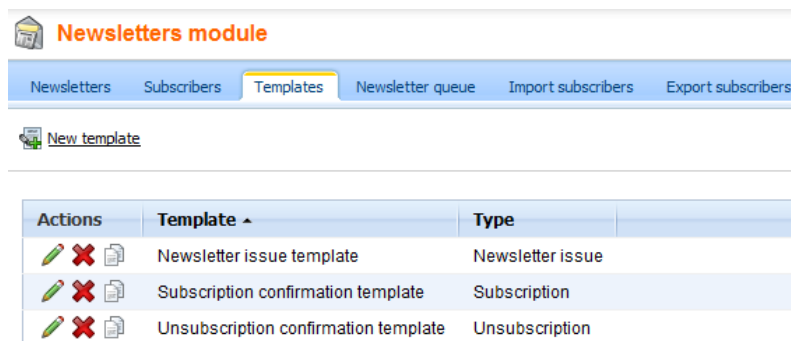
You can integrate the newsletter into your website using the following web parts:

- **Newsletter subscription** - displays newsletter subscription dialog
- **Newsletter unsubscription** - unsubscribes the user and displays a confirmation message when the user clicks the "**Unsubscribe**" link in the newsletter issue
- **Unsubscription request** - this web part allows newsletter subscribers to request unsubscription e-mail by submitting their e-mail address
- **My subscriptions** - this web part can be used by users to add or remove their newsletter subscriptions
- **My account** - if configured to display newsletter subscriptions, this web part can be used by users to add or remove their subscriptions

You can find more details on the properties of these web parts in **Kentico CMS Web Parts Reference**.

8.27.5 Newsletter templates

The e-mails sent by the Newsletter module can be modified using the templates. The templates can be managed in **CMS Desk -> Tools -> Newsletter -> Templates**.



There are three types of templates:

- **Newsletter issue** - this is template that defines the layout and design of newsletter issues. It contains editable regions where newsletter authors can enter the content.
- **Subscription** - e-mail message sent when the user subscribes to the newsletter.
- **Unsubscription** - e-mail message sent when the user unsubscribes.

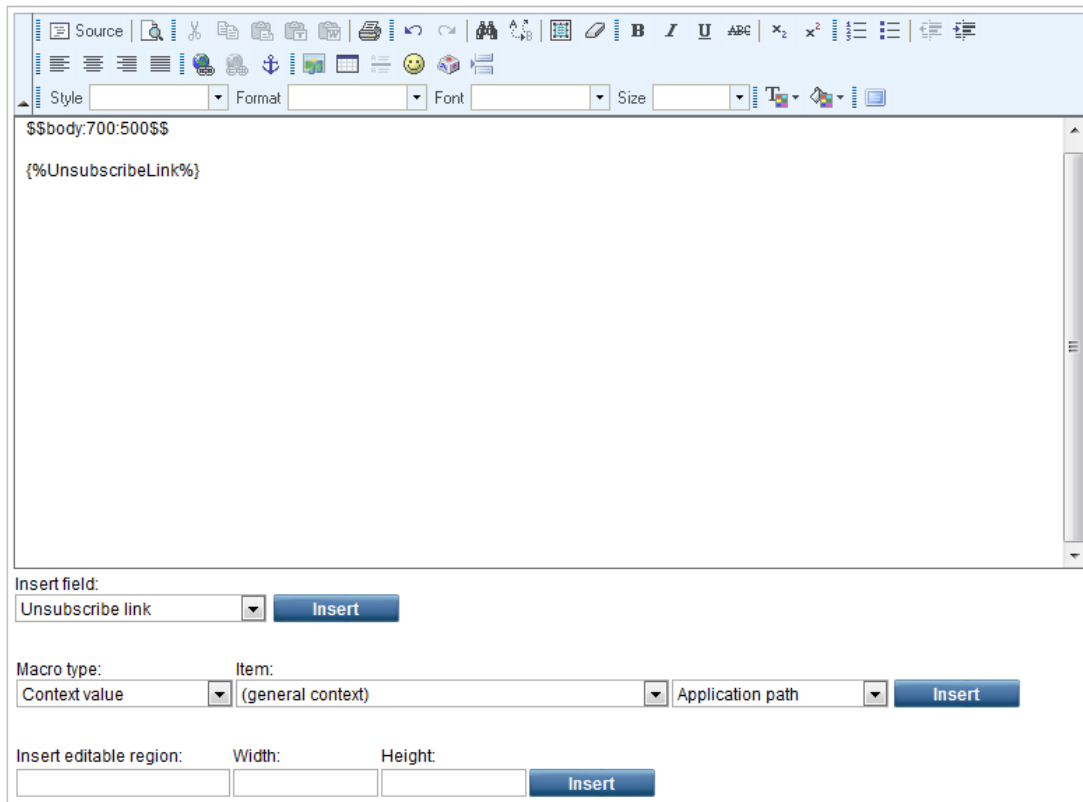
All types of newsletter templates can contain the following macro expressions anywhere in the text:

- {%Email%}
- {%FirstName%}
- {%LastName%}
- {%UnsubscribeLink%}

Editing newsletter issue templates

The issue templates consist of:

- **Header** (the leading HTML code including the <html> element - here you can place your CSS styles.
- **Body** - the layout of the e-mail - here you can place static text, macros and editable regions. The editable regions allow users to enter content of the particular newsletter issue. They can be inserted using the **Insert editable region** section:



The region is inserted as a macro expression in format: \$\$regionName:width:height\$\$

- **Footer** - the closing HTML code.
- **CSS stylesheet** - the CSS styles used for the newsletter; these styles are used by the newsletter issue editor and they are included in the e-mails.

8.27.6 Subscriber import and export

Importing subscribers

Import of subscribers can be carried out using the **CMS Desk -> Tools -> Newsletters -> Import subscribers** dialog.

Newsletters module

Newsletters Subscribers Templates Newsletter queue **Import subscribers** Export subscribers

Import subscribers

Available actions:

- Subscribe imported users to selected newsletters
 - Do not subscribe existing users to selected newsletters
- Unsubscribe the users from selected newsletters
- Delete the subscribers

List of subscribers to be processed:

Please note: Please enter one subscriber per line in format e-mail;firstname;lastname (firstname and lastname may be omitted). It's recommended that you do not import more than 1000 subscribers at once.

List of newsletters:

| | |
|--------------------------|----------------------|
| <input type="checkbox"/> | Newsletter |
| <input type="checkbox"/> | Corporate Newsletter |

Remove selected Add newsletters

Send e-mail confirmation to the subscriber

Import

You need to prepare a list of subscribers in the following format:

- **email;firstname;lastname**

Copy it to the **'List of subscribers to be processed'** text area. Each line should contain one record in the mentioned format. The following examples are all valid:

```
david.scott@company.com;David;Scott  
marry.jones@mail.com; ;Jones  
frank.maguire@web.com;Frank  
monica@italy.com
```

By selecting one of the three radio buttons above the text area in combination with some of the newsletters in the list below it, the following actions can be done:

- **Subscribe imported users to the selected newsletters** - subscribes imported users to newsletters selected in the list below
- **Unsubscribe the users from selected newsletters** - entered users will be unsubscribed from the newsletters selected below
- **Delete the subscribers** - entered users will be deleted from the list of subscribers

Click **OK** to import the subscribers. If one of the lines contains an invalid entry, the import is not processed for any of the records and an error is displayed. If a subscriber e-mail address already exists, the first name and last name are updated instead of creating a new subscriber.

Exporting subscribers

If you need to export the list of subscribers to some other application, you can export them using the **CMS Desk -> Tools -> Newsletters -> Export subscribers** dialog.

You can choose if you want to export all subscribers (do not specify any newsletter) or only subscribers of chosen newsletter(s). The subscribers are exported in format:

- **email;firstname;lastname**




Then, you can copy and paste the list of subscribers from the textbox to your application.





8.27.7 Subscriber management

You can manage subscribers in **CMS Desk -> Tools -> Newsletter -> Subscribers**.

Newsletters ▶ My newsletter

Issues Configuration Subscribers

 Add subscribers  Add users  Add roles

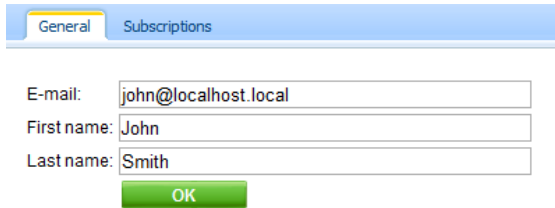
| Actions | Subscriber name ▲ | E-mail |
|---|----------------------|----------------------|
|  | Jane Lee | jane@localhost.local |
|  | John Smith | john@localhost.local |
|  | Role 'CMS Designers' | |
|  | Tony Dangerous | tony@localhost.local |

Send e-mail confirmation to the subscriber

At the bottom of the page, you can see a list of all subscribers of any of the website's newsletters. You can filter these by e-mail or type, by searching for a text entered in the appropriate search text box and clicking the **Show** button.

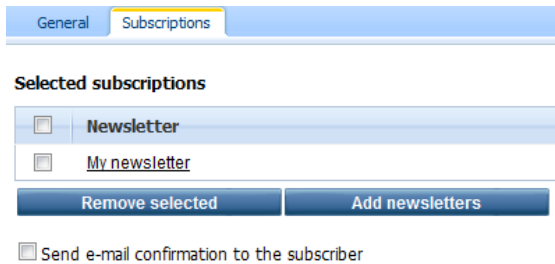
By clicking the **Delete** icon next to a subscriber record, you can remove the subscriber from the list.

By clicking the **Edit** icon next to a subscriber record, you can change the subscriber's details on the **General** tab. You have the same options here as when creating a new subscriber.



The screenshot shows the 'General' tab of a subscriber edit form. It features three input fields: 'E-mail' with the value 'john@localhost.local', 'First name' with 'John', and 'Last name' with 'Smith'. A green 'OK' button is positioned below the last name field.

On the **Subscriptions** tab, you can select to which of all newsletters this subscriber will be subscribed. If you check the **Send e-mail confirmation to the subscriber** check-box, a notification e-mail will be sent to the user, informing them about the subscription changes.



The screenshot shows the 'Subscriptions' tab of the subscriber edit form. It has a section titled 'Selected subscriptions' containing two items: 'Newsletter' and 'My newsletter', each with an unchecked checkbox. Below this list are two buttons: 'Remove selected' and 'Add newsletters'. At the bottom, there is a checkbox labeled 'Send e-mail confirmation to the subscriber' which is currently unchecked.

8.27.8 Troubleshooting

Problems with e-mails

If you do not receive newsletter e-mails, please check the following:

1. The newsletter issues are sent out using a scheduled task that is executed every 1 minute by default. You may need to wait for up to 2 minutes before you receive newsletter issue e-mail. The scheduled task status can be checked in **CMS Desk -> Administration -> Scheduled tasks**.
2. Go to **CMS Desk -> Tools -> Newsletter -> Newsletter queue**. If some e-mail failed, you will find here the exception. After you resolve the technical issue, you can resend all failed e-mails by clicking **Resend all failed**.
3. Make sure you're using correct e-mail addresses.
4. Make sure the newsletter issue is not blocked by some antispam software.
5. Go to **Site Manager -> Settings -> E-mails** and make sure your SMTP server is configured correctly. You can find some additional details on SMTP server configuration in chapter [SMTP server configuration](#). You can also test e-mail settings in **Site Manager -> Administration -> System -> E-mail**.

Newsletter e-mails debugging might be helpful when solving problems with newsletter e-mails. To enable it, add the following keys to the *web.config* file of your web project. The first key enables logging of all sent e-mails to `<web root>/AppData/logemails.log`. The second key ensures that all sent e-mails are logged, but not actually sent. This is helpful when you need to test the functionality but do not want the testing e-mails to really be sent.

```
<add key="CMSLogEmails" value="true"/>
<add key="CMSDebugEmails" value="true"/>
```

Problems with unsubscription links

If you encounter problems with unsubscription link resolving, you should set the **Base URL** property of the newsletter. This property can be set in **CMS Desk -> Tools -> Newsletter**, if you choose to **Edit** (✎) the newsletter and switch to its **Configuration** tab.



Problems with role subscribers

If you have a user role set as a subscriber for your newsletter, it is highly recommended to send the newsletter issues via the [e-mail queue](#) in order for the issues to be successfully sent to all members of the role. To set the newsletter for using the newsletter queue, go to **CMS Desk -> Tools -> Newsletter**, choose to **Edit** (✎) your newsletter, switch to its **Configuration** tab and enable the **Send issues via e-mail queue** check-box.

8.27.9 Security

You can control the access to the Newsletter module in **CMS Desk -> Administration -> Permissions**, after you select **Modules -> Newsletter** permission matrix. The Newsletter module has the following permissions:

- **Author newsletter issues** - members of the role are allowed to create and edit newsletter issues
- **Configure newsletters** - members of the role are allowed to configure newsletter settings
- **Manage subscribers** - members of the role are allowed to add and remove newsletter subscribers
- **Manage templates** - members of the role are allowed to create, edit and delete newsletter templates
- **Read** - members of the role are allowed to view all data in the Newsletter module interface

 **Permissions** 

Site:

Permission type:

Permission matrix:

| | Author newsletter issues | Configure newsletters | Manage subscribers | Manage templates | Read |
|------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Community Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

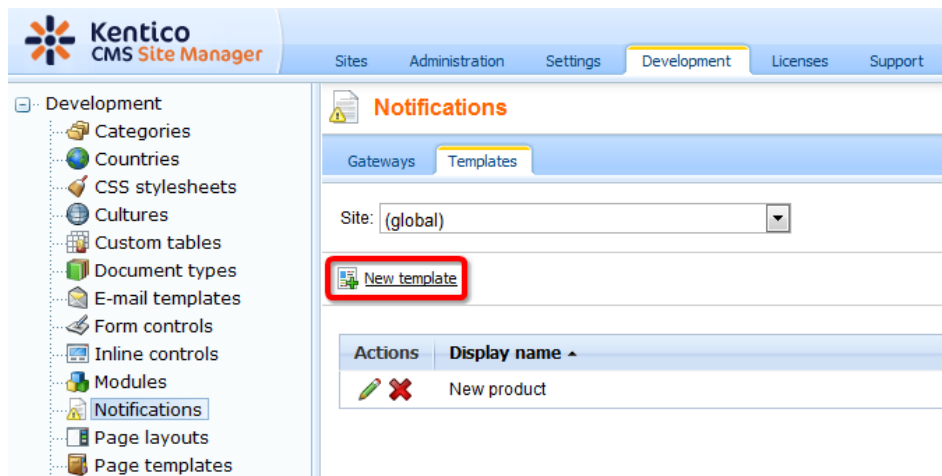
8.28 Notifications

8.28.1 Overview

The Notifications module enables sending of notification messages using notification providers. Kentico CMS comes with a built-in e-mail notification gateway, however, you can create your custom gateway, such as an SMS or ICQ provider. Site visitors or CMS Desk administrators can subscribe to receiving notifications about specific events and choose the providers they want to obtain notification messages from. It means that for one event, users can obtain notification messages from multiple providers. By default, there are several built-in events (document updated, document deleted, etc.), however, you can create and use your custom ones.

8.28.2 Creating a notification message template

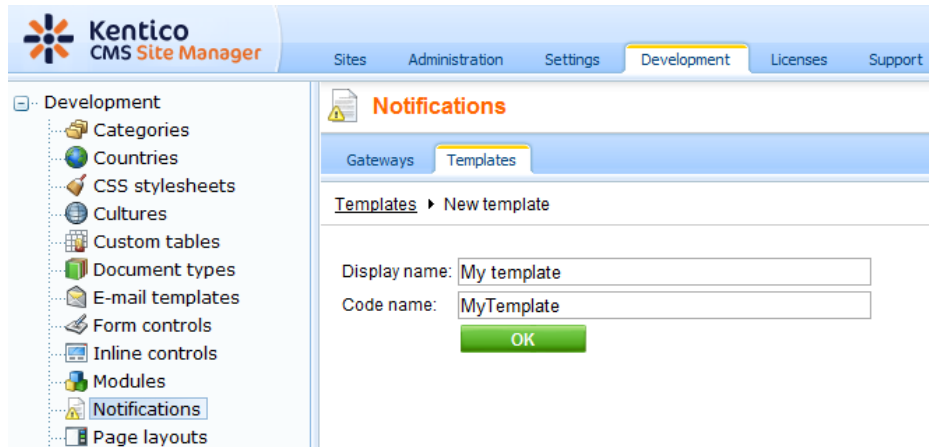
1. Go to **Site Manager -> Development -> Notifications** and switch to the **Templates** tab. Using the **Sites** drop-down list, you can select which site will be the template used by. If you choose **(global)**, the template will be available for all sites. When selected, click the **New template** link. You will be redirected to the New template form.



2. On the **New template** form, enter the following details:

- **Display name** - display name of the template
- **Code name** - code name of the template

Click **OK**. The template will be created.



3. Now you should see the same form that you've just filled, but in a **General** tab, while another tab called **Text** is also available. Switch to the **Text** tab.

On this tab, the text of the notification message can be defined. You should see **sections for each of the defined gateways**. Texts can be set separately for each gateway, so that for one event, you can have different texts sent via e-mail and via SMS. Each of the sections contains the gateway name and some of the following three fields, depending on the gateway settings:

- **Subject** - message subject text
- **HTML text** - text of the message in HTML format
- **Plain text** - text of the message in plain text format

The following macros can be used in your notification templates:

- **{%notificationsubscription.SubscriptionID%}** - displays the value of specified data column from the Notification_Subscription table; this represents subscription information
- **{%notificationgateway.GatewayID%}** - displays the value of specified data column from the Notification_Gateway table; this represents the notification gateway which performs the sending of the notification message
- **{%notificationuser.UserID%}** - displays the value of specified user data column from the CMS_Usertable table; this represents the user the notification message is being sent to
- **{%notificationcustomdata.XXX%}** - displays the value of specified data column from custom data source. Columns from View_CMS_Tree_Joined and the document type's table can be used (e.g. CONTENT_article for cms.article document type).
- **{%documentlink%}** - displays the link to the document (for content event notifications only)

The screenshot displays the Kentico CMS Site Manager interface. The top navigation bar includes the Kentico logo, the text "CMS Site Manager", and several menu items: Sites, Administration, Settings, Development (highlighted), Licenses, and Support. On the right side of the top bar, there are links for "Switch to CMS Desk" and "User:". A left-hand navigation pane lists various development categories, with "Notifications" selected and highlighted. The main content area is titled "Notifications" and contains sub-tabs for "Gateways" and "Templates". Under "Templates", there is a sub-section for "New product" with "General" and "Text" tabs. A "Save" button is visible. Below this, there is a link for "Click here for template macro examples". The configuration is for a gateway named "Email gateway". It shows a "Subject" field with the text "New product has been added!". The "HTML text" field contains a rich text editor with the following content: "Hi there, New product in '{%notificationsubscription.subscriptioneventdata1%}' section has been added. This is automatically generated notification. Please do not reply to this e-mail." The "Plain text" field shows the corresponding plain text version of the HTML content, with the macro placeholder visible as `{%notificationsubscription.subscriptioneventdata1%}`.

8.28.3 Subscribing users to content changes notifications

The Content subscription web part is a pre-configured version of the Notification subscription web part. It can be conveniently used to let site visitors subscribe to notifications about the following three events:

- **Document has been created**
- **Document has been updated**
- **Document has been deleted**

Subscribe for new product notification:

E-mail:

In the following example, you will learn how to add the Content subscription web part to your site and set it up. We will use the sample Corporate site as the starting point. Let's presume that we want to enable site visitors to receive an e-mail whenever a new product is added.

In order for you to see the full functionality, it is necessary to have SMTP server configured correctly. For more information on how to do this, please refer to the [SMTP server configuration](#) chapter.

1. Sign in to **CMS Desk** as the system administrator (login *administrator* with blank password by default). From the content tree on the left, select the **Products** title page and switch to the **Design** tab.

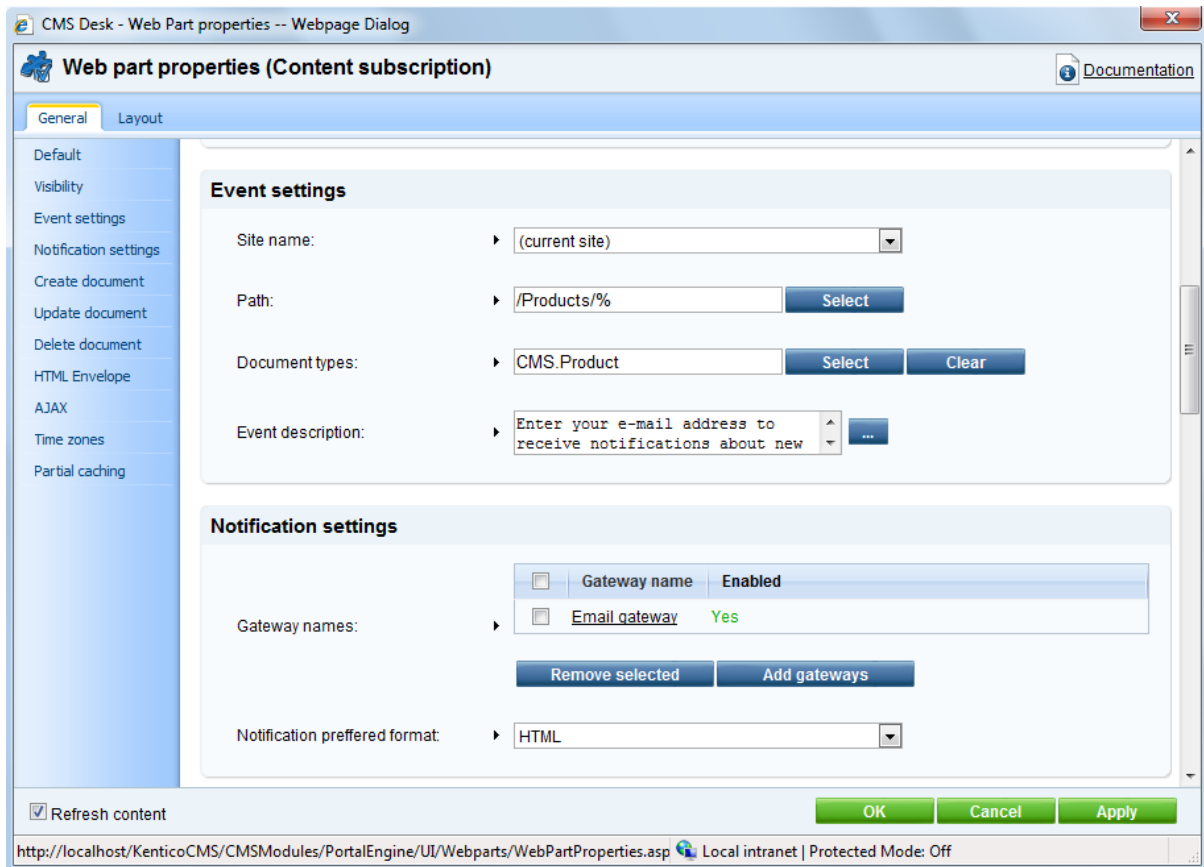
2. Add the **Content subscription** web part to the zoneLeft web part zone, below the Left tree menu. In the Web part properties dialog, set the following properties:

- **Site name** - (current site)
- **Path** - /Products/%
- **Document type** - CMS.Product
- **Event description** - Enter your e-mail address to receive notifications about new products:

- **Gateway names** - CMS.EmailGateway
- **Notification preferred format** - HTML

- **Create event enabled** - true
- **Create event display name** - New product notification
- **Create event template name** - New product

and click **OK**.



3. Let's switch to the **site visitor's** perspective now. Sign out of CMS Desk.

As notifications are available only for registered users, the web part is not visible unless you log in. Use the **My account** link at the top of the page to display a logon form and sign in; use e.g. user name *Gold* with blank password. Once signed in, switch to the **Products** page. You should see the **Content subscription** web part underneath the tree menu as highlighted in the screenshot below.

If you want to receive notifications about new products on this page, you can just type in your e-mail address into the **E-mail** field and click **Subscribe**. In case that you want to verify the functionality later on, enter your own e-mail address so that you can check your inbox for notification e-mails.

CompanyLogo

Sample Gold Partner (gold) [Sign out](#)

[Shopping cart](#) [My account](#) [My wishlist](#)
Your shopping cart is empty

Search for:


Home Services **Products** News Partners Company Blogs Forums Events Images Wiki Examples

• Cell phones
• PDAs
• Laptops

Products

Enter your e-mail address to receive notifications about new products:
E-mail:

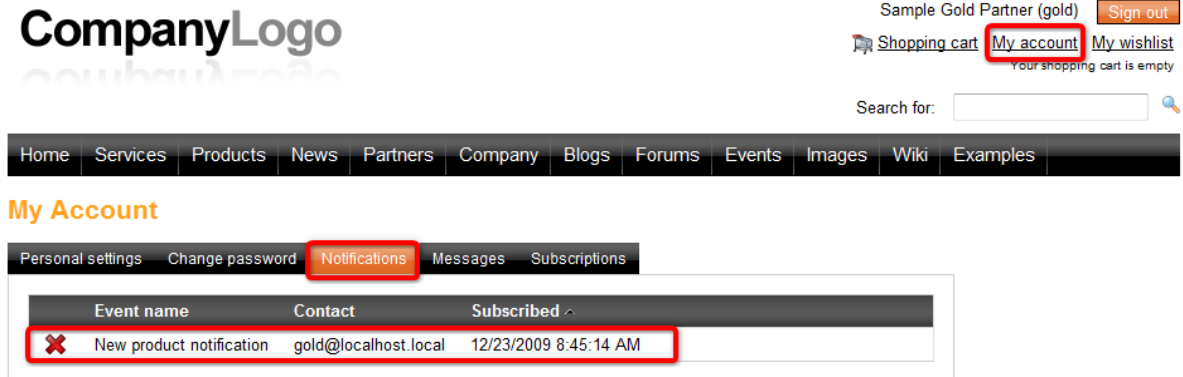
[Subscribe](#)

| | | | |
|--|---|--|---|
| 
Samsung SGH E250
Our price: \$249.00
Add to shopping cart | 
HP iPAQ 114
Our price: \$389.00
Add to shopping cart | 
Nokia N73
Our price: \$399.00
Add to shopping cart | 
Asus A639
Our price: \$470.00
Add to shopping cart |
| 
Acer Aspire 3105WLMi
Our price: \$490.00
Add to shopping cart | 
Asus F3U AP059C
Our price: \$999.00
Add to shopping cart | | |

[Site map](#) | [Disclaimer](#)

POWERED BY
 **Kentico**

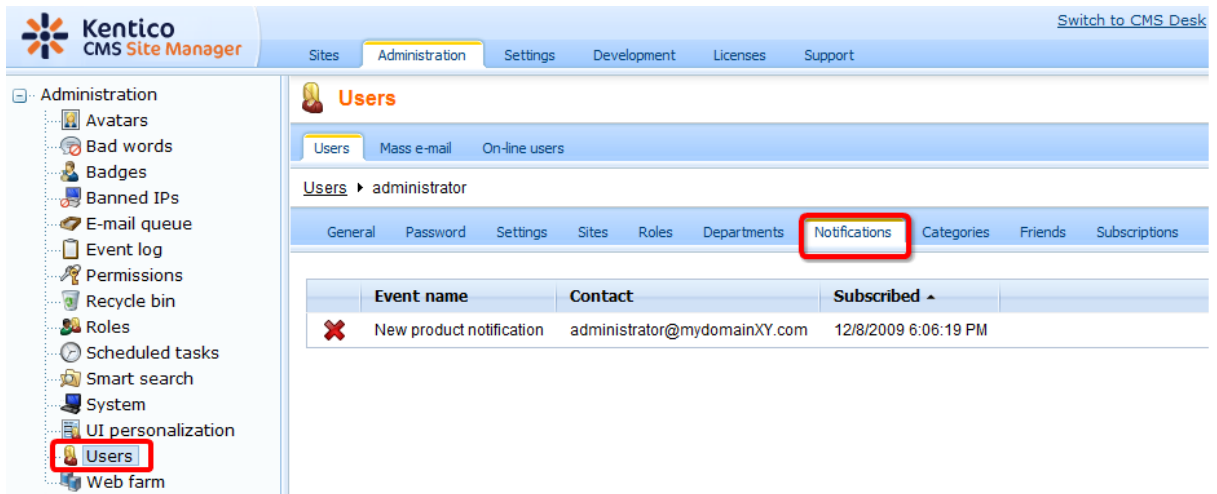
4. You can immediately verify your subscription by going to the **My account** section again. If you switch to the **Notifications** section of the My account web part, you should see the notification subscription present.



5. Now you can verify that the whole setup works. Log in to **CMS Desk** as the *administrator* again. From the content tree, select **Products** and click the **New** icon above the content tree. Choose to create some new product, e.g. a Cell phone, enter some sample data about the cell phone and click **Save**. Check your e-mail inbox in a few minutes. You should have received a new notification message about the newly added product.

8.28.4 Managing users' notifications

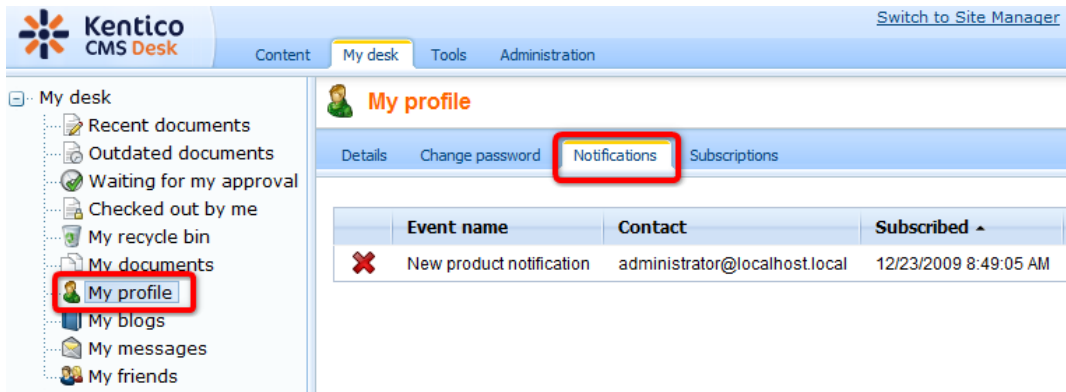
Site administrators can manage subscriptions of particular users in **Site Manager -> Administrator -> Users**. If you choose to **Edit** (✎) a user and switch to the **Notifications** tab, you will see all notifications that the current user is subscribed to. You can unsubscribe the user from a notification by clicking the **Delete** (✖) icon next to it.



The screenshot shows the Kentico CMS Site Manager Administration interface. The left sidebar contains a tree view of administration options, with 'Users' highlighted. The main content area shows the 'Users' section for the 'administrator' user. The 'Notifications' tab is selected and highlighted with a red box. Below the tabs is a table of notifications:

| Event name | Contact | Subscribed ▾ |
|----------------------------|------------------------------|----------------------|
| ✖ New product notification | administrator@mydomainXY.com | 12/8/2009 6:06:19 PM |

CMS Desk users can manage their own subscriptions the same way in **CMS Desk -> My Desk -> My profile -> Notifications**.

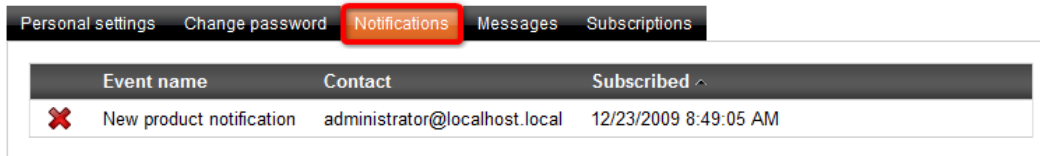


The screenshot shows the Kentico CMS Desk interface. The left sidebar contains a tree view of 'My desk' options, with 'My profile' highlighted. The main content area shows the 'My profile' section. The 'Notifications' tab is selected and highlighted with a red box. Below the tabs is a table of notifications:

| Event name | Contact | Subscribed ▾ |
|----------------------------|-------------------------------|-----------------------|
| ✖ New product notification | administrator@localhost.local | 12/23/2009 8:49:05 AM |

Site visitors registered to the site can manage their subscriptions the same way using the **My account** web part, on its **Notifications** tab.

My Account



| Personal settings | Change password | Notifications | Messages | Subscriptions |
|----------------------------|-------------------------------|-----------------------|----------|---------------|
| Event name | Contact | Subscribed | | |
| ✘ New product notification | administrator@localhost.local | 12/23/2009 8:49:05 AM | | |

8.28.5 Custom notification gateway

8.28.5.1 Overview

In this chapter, you will get familiar with the process of creating a custom notification gateway and using it on your site. The general description is supplied by code examples of a sample e-mail notification gateway.

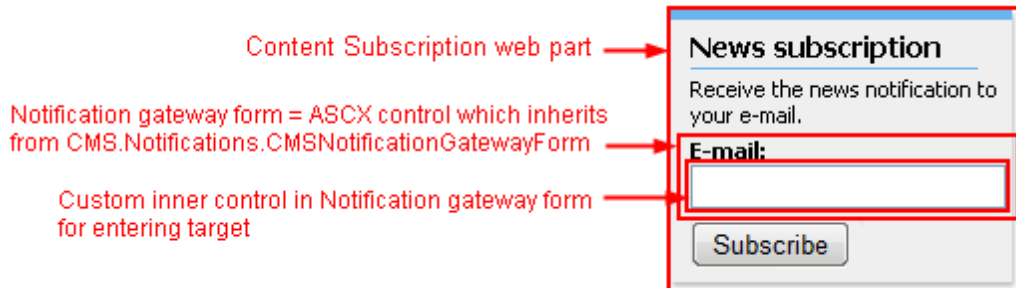
General steps

Here is a general overview of the steps that need to be taken when implementing a custom notification gateway:

1. [Create a custom notification gateway form](#) with your custom inner control(s) for entering the target where the notification messages should be sent.
2. [Create a custom notification gateway class](#) which handles loading of correct notification gateway form and sending notification messages.
3. [Register the custom notification gateway](#) in *Site Manager -> Development -> Notifications* and [create a template](#) for notification messages.
4. [Use the gateway](#) with the Content subscription web part on the live site.

8.28.5.2 Custom notification gateway form

In the picture below, you can see how the default **E-mail notification gateway form** is contained within the **Content subscription** web part.



The following steps need to be taken to create a custom notification gateway form:

1. Create a new web user control (*.ascx) and place it into your site folder which is located in the root of your web project. You can place it anywhere in your web project, but since the control is located in the site folder, it will be included in your site's export packages.
2. Set the control's class to inherit from the **CMS.Notifications.CMSNotificationGatewayForm** class.
3. There are two methods and one property you will need to override to reach the required functionality:
 - **object Value** - gets or sets the value from the custom inner control (e.g gets or sets the text of the inner TextBox in the picture above)
 - **string Validate()** – validates the inner control's value and returns an error message if the value doesn't meet the requirements of the notification gateway (e.g. the TextBox value is validated for e-mail address format for the E-mail notification gateway)
 - **void ClearForm()** – Your custom code inside this method should set the inner control to the default state. Example: Text of the TextBox should be cleared (set to the empty string).

Example - E-mail notification gateway form

The following code samples show how a custom e-mail notification gateway form can be implemented:

EmailNotificationForm.ascx

```
<%@ Control Language="C#" AutoEventWireup="true" CodeFile="EmailNotificationForm.
ascx.cs"
    Inherits
    ="CMSModules_Notifications_Controls_NotificationSubscription_EmailNotificationForm
" %>
<asp:Label ID="lblEmail" runat="server" />
<asp:TextBox ID="txtEmail" runat="server" CssClass="EmailNotificationForm"
    EnableViewState="false" />
```

EmailNotificationForm.ascx.cs

[C#]

```
using System;
using System.Data;
using System.Configuration;
using System.Collections;
using System.Web;
using System.Web.Security;
using System.Web.UI;
using System.Web.UI.WebControls;
using System.Web.UI.WebControls.WebParts;
using System.Web.UI.HtmlControls;

using CMS.Notifications;
using CMS.GlobalHelper;
using CMS.CMSHelper;
using CMS.EventLog;

public partial class
CMSModules_Notifications_Controls_NotificationSubscription_EmailNotificationForm :
CMSNotificationGatewayForm
{
    #region "Variables"

    private bool mEnableMultipleEmails = false;

    #endregion

    #region "Properties"

    /// <summary>
    /// Gets or sets the e-mail(s) from/to textbox.
    /// </summary>
    public override object Value
    {
        get
        {
            return this.txtEmail.Text.Trim();
        }
        set
        {
            this.txtEmail.Text = ValidationHelper.GetString(value, "");
        }
    }

    /// <summary>
    /// Gets or sets the value which determines whether to allow multiple e-mails
    separated with semicolon.
    /// </summary>
    public bool EnableMultipleEmails
    {
        get
        {
            return this.mEnableMultipleEmails;
        }
        set
        {

```

```
        this.mEnableMultipleEmails = value;
    }
}

#endregion

protected void Page_Load(object sender, EventArgs e)
{
    this.lblEmail.Text = (this.EnableMultipleEmails ? ResHelper.GetString(
"general.emails") : ResHelper.GetString("general.email")) + ResHelper.Colon;

    // Fill in the default e-mail
    if ((!RequestHelper.IsPostBack()) && (CMSContext.CurrentUser != null) &&
(!String.IsNullOrEmpty(CMSContext.CurrentUser.Email)))
    {
        this.txtEmail.Text = CMSContext.CurrentUser.Email;
    }
}

#region "Public methods"

/// <summary>
/// Checks whether the input is correct e-mail address (or multiple e-mail
addresses).
/// </summary>
public override string Validate()
{
    if (this.EnableMultipleEmails)
    {
        if (!ValidationHelper.AreEmails(this.txtEmail.Text.Trim()))
        {
            return ResHelper.GetString("notifications.emailgateway.formats");
        }
    }
    else
    {
        if (!ValidationHelper.IsEmail(this.txtEmail.Text.Trim()))
        {
            return ResHelper.GetString("notifications.emailgateway.format");
        }
    }

    return String.Empty;
}

/// <summary>
/// Clears the e-mail textbox field.
/// </summary>
public override void ClearForm()
{
    this.txtEmail.Text = "";
}

#endregion
```

```
}
```

8.28.5.3 Custom notification gateway class

The following steps need to be taken to create a custom notification gateway class:

1. Create a new library (assembly) as a part of your solution and a new class inside this library.
2. Set your class to inherit from the **CMS.Notifications.CMSNotificationGateway** abstract class.
3. There are two methods you will need to override to reach the required functionality:
 - **void SendNotification()** – sends a single notification; it is automatically called after the specified event is raised
 - **CMSNotificationGatewayForm GetNotificationGatewayForm()** – loads and returns notification gateway form for the notification gateway
4. Compile the library.
5. Ensure the library file (*.dll) is included in the **/Bin** directory.

Example - E-mail notification gateway class

The following code sample shows how a custom e-mail notification gateway class can be implemented:

EmailNotificationGateway.cs

[C#]

```
using System;
using System.Collections.Generic;
using System.Text;
using System.Web.UI;

using CMS.EventLog;
using CMS.EmailEngine;
using CMS.GlobalHelper;
using CMS.SiteProvider;
using CMS.SettingsProvider;
using CMS.Notifications;

namespace EmailNotification
{
    /// <summary>
    /// Base class for e-mail notification gateway.
    /// </summary>
    public class EmailNotificationGateway : CMSNotificationGateway
    {
        /// <summary>
        /// Returns the e-mail gateway form.
        /// </summary>
        public override CMSNotificationGatewayForm GetNotificationGatewayForm()
        {
            try
            {
                Control ctrl = this.NotificationSubscriptionControl.Page.
                    LoadControl("~/CMSModules/Notifications/Controls/NotificationSubscription/
                    EmailNotificationForm.ascx");
            }
        }
    }
}
```

```
        ctrl.ID = ValidationHelper.GetIdentificator("notif" + this.
NotificationGatewayObj.GatewayName);

        return (CMSNotificationGatewayForm)ctrl;
    }
    catch (Exception ex)
    {
        try
        {
            // Log the event
            EventLogProvider eventLog = new EventLogProvider();
            eventLog.LogEvent("EmailGateway", "EXCEPTION", ex);
        }
        catch
        {
            // Unable to log the event
        }
    }
    return null;
}

/// <summary>
/// Sends the notification via e-mail.
/// </summary>
public override void SendNotification()
{
    try
    {
        if (this.NotificationSubscriptionObj != null)
        {
            // Get template text
            NotificationTemplateTextInfo templateText =
NotificationTemplateTextInfoProvider.GetNotificationTemplateTextInfo(this.
NotificationGatewayObj.GatewayID, this.NotificationSubscriptionObj.
SubscriptionTemplateID);
            if (templateText != null)
            {
                // Get the site name
                string siteName = null;
                SiteInfo si = SiteInfoProvider.GetSiteInfo(this.
NotificationSubscriptionObj.SubscriptionSiteID);
                if (si != null)
                {
                    siteName = si.SiteName;
                }

                // Create message object
                EmailMessage message = new EmailMessage();

                // Get sender from settings
                message.From = SettingsKeyProvider.GetStringValue(siteName
+ ".CMSSendEmailNotificationsFrom");

                // Do not send the e-mail if there is no sender specified
                if (message.From != "")
                {
                    // Initialize message
```

```

        message.Recipients = this.NotificationSubscriptionObj.
SubscriptionTarget;

        // Body
        if ((this.NotificationSubscriptionObj.
SubscriptionUseHTML) &&
            (this.NotificationGatewayObj.
GatewaySupportsHTMLText) &&
            (templateText.TemplateHTMLText != ""))
        {
            // HTML format, set Body property, resolve macros
            if possible
                message.EmailFormat = EmailFormatEnum.Html;
            if (this.Resolver != null)
            {
                message.Body = this.Resolver.ResolveMacros
(templateText.TemplateHTMLText);
            }
            else
            {
                message.Body = templateText.TemplateHTMLText;
            }
        }
        else
        {
            // Plaintext format, set PlainTextBody property,
            resolve macros if possible
                message.EmailFormat = EmailFormatEnum.PlainText;
            if (this.Resolver != null)
            {
                message.PlainTextBody = this.Resolver.
ResolveMacros(templateText.TemplatePlainText);
            }
            else
            {
                message.PlainTextBody = templateText.
TemplatePlainText;
            }
        }

        // Subject, resolve macros if possible
        if (this.Resolver != null)
        {
            message.Subject = this.Resolver.ResolveMacros
(templateText.TemplateSubject);
        }
        else
        {
            message.Subject = templateText.TemplateSubject;
        }

        // Send email via Email engine API
        EmailSender.SendEmail(siteName, message);
    }
}
}
}
catch (Exception ex)

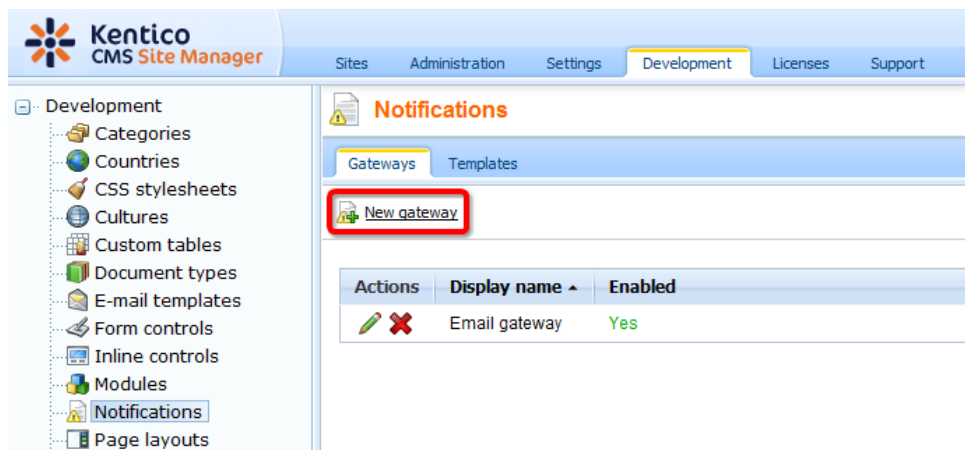
```

```
    {  
        try  
        {  
            // Log the event  
            EventLogProvider eventLog = new EventLogProvider();  
            eventLog.LogEvent("EmailGateway", "EXCEPTION", ex);  
        }  
        catch  
        {  
            // Unable to log the event  
        }  
    }  
}
```



8.28.5.4 Registering a custom gateway

When you have developed a custom notification gateway, you need to take the following steps to register your gateway in the system:

1. Go to **Site Manager -> Development -> Notifications**. On the **Gateways** tab, you can find the **New gateway** () link at the top of the page. Click it, the New gateway form will be displayed.

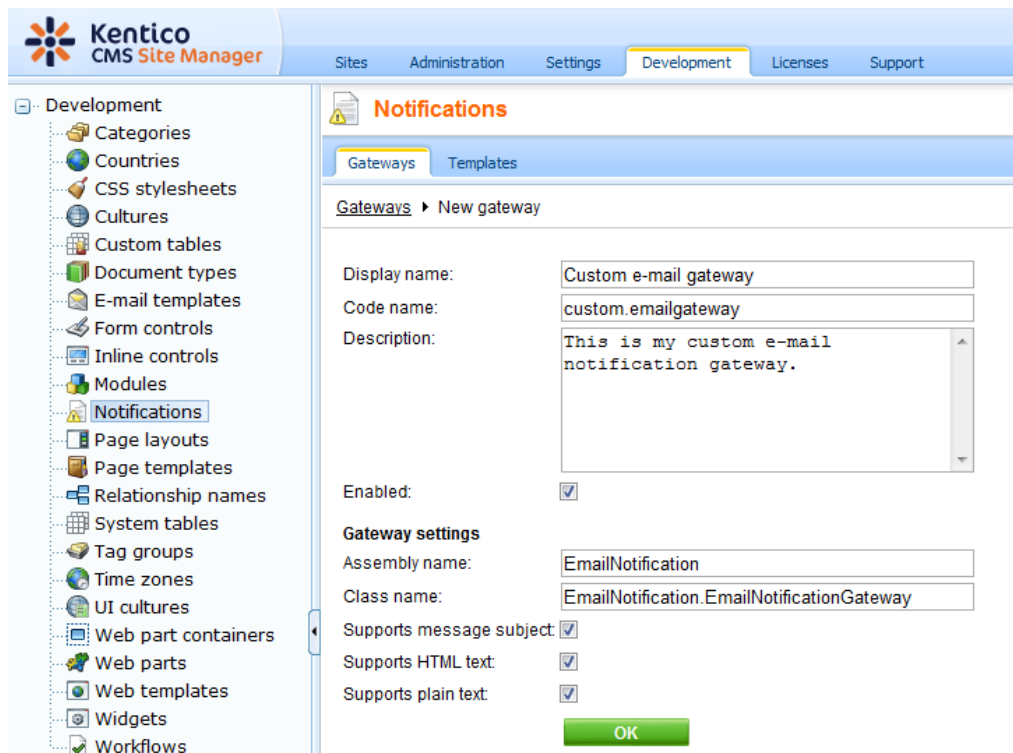


The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The left sidebar shows a tree view of the 'Development' section, with 'Notifications' selected. The main content area is titled 'Notifications' and has two tabs: 'Gateways' and 'Templates'. Under the 'Gateways' tab, there is a 'New gateway' link with a plus icon, which is highlighted with a red box. Below this, there is a table with the following structure:

| Actions | Display name ^ | Enabled |
|---|----------------|---------|
|   | Email gateway | Yes |

2. Enter the following details into the **New gateway** form:

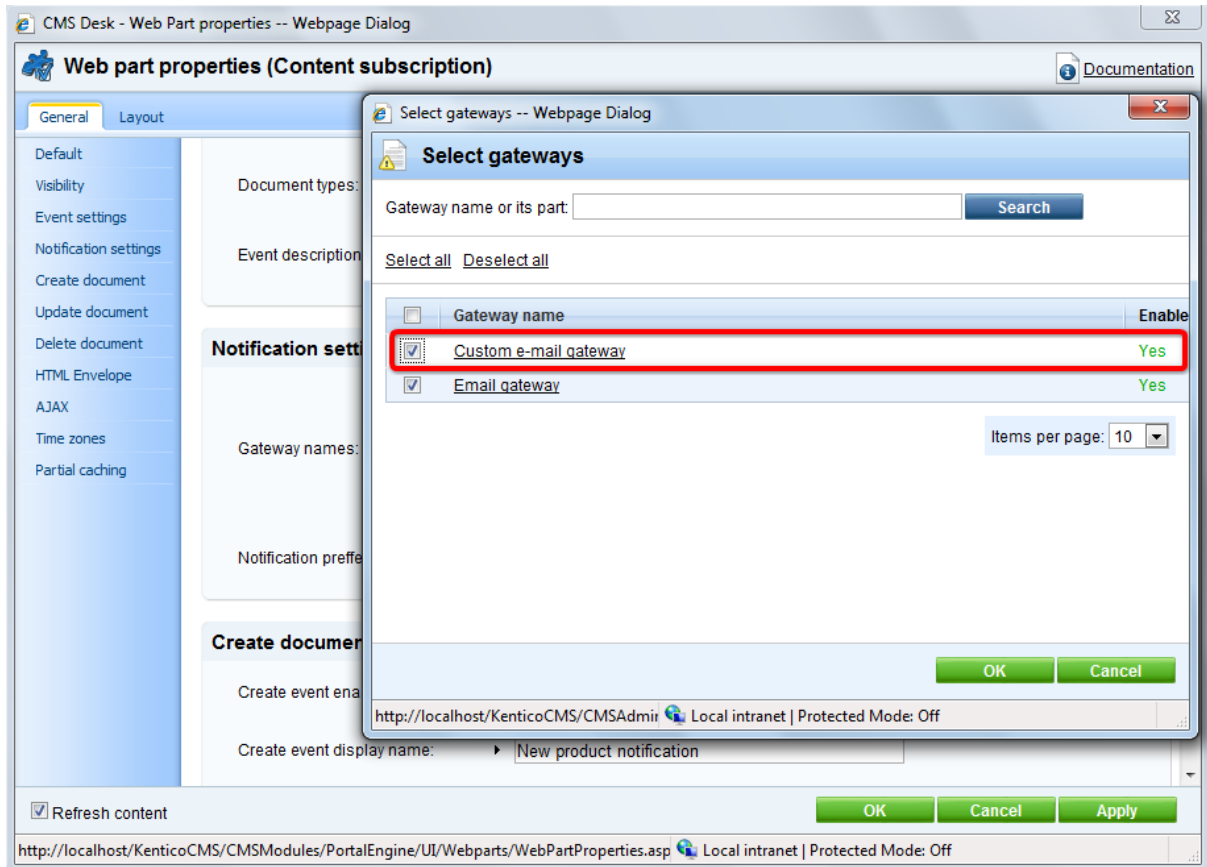
- **Display name** - display name of the notification gateway
- **Code name** - code name of the gateway
- **Description** - text describing the gateway
- **Enabled** - if unchecked, the notification gateway is not functional - this can be useful if you want to temporarily disable the gateway so that no messages will be sent, e.g. when you are performing some administration tasks; if checked, the gateway works normally
- **Assembly name** - name of the assembly in that the gateway code is stored
- **Class name** - name of the class containing the gateway code; must be entered including the assembly name, as you can see in the screenshot below
- **Supports message subject** - enable if the gateway's message format supports message subjects
- **Supports HTML text** - enable if the gateway supports messages in HTML format (e.g. for e-mails)
- **Supports plain text** - enable if the gateway supports plain text format (e.g. for SMS)



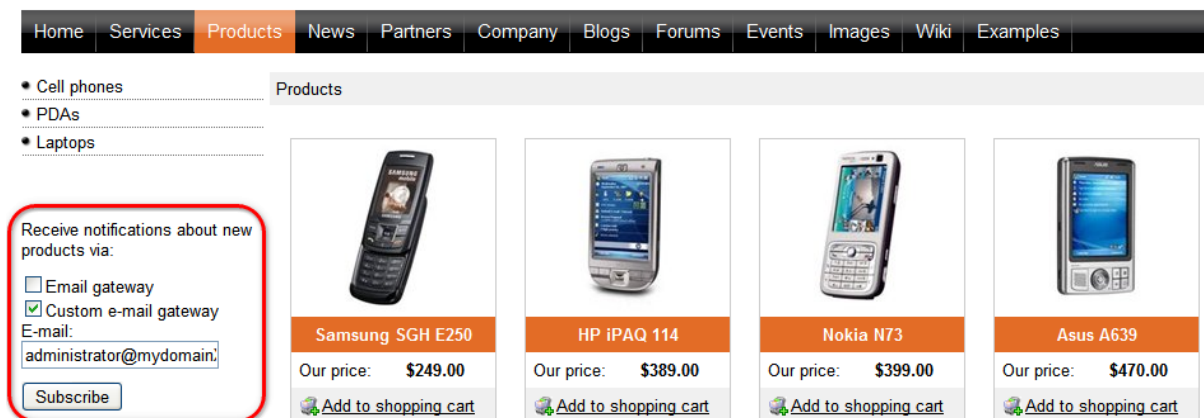
3. After entering all the details, click **OK**. You will be redirected back to the notification gateways list and you should be able to see your new gateway in the list.

8.28.5.5 Using the gateway on your site

On the live site, you can enable users to subscribe using the Content subscription web part, just as described [here](#). You only need to enable your gateway in the **Gateway names** property of the web part.



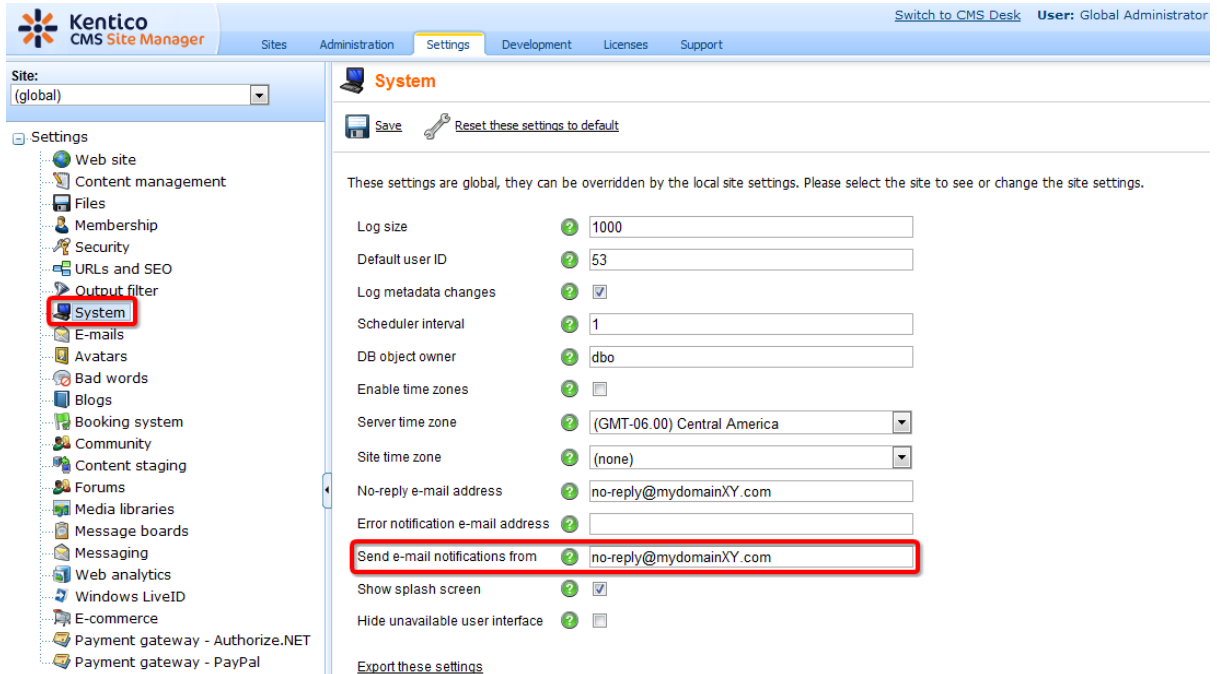
On the live site, the web part displays a check-box for each gateway when multiple gateways are selected. If you enable a particular check-box, the gateway's form is displayed, as you can see in the screenshot below.



8.28.6 Settings

The Notifications module has only one setting to be done in **Site Manager -> Settings -> System**:

- **Send e-mail notifications from** - sets the e-mail address that will be used as the sender address ('From' field) of notification e-mails



The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The 'Settings' tab is active, and the 'System' category is selected in the left sidebar. The main content area displays the 'System' settings, which are global and can be overridden by local site settings. The 'Send e-mail notifications from' setting is highlighted with a red box, showing the value 'no-reply@mydomainXY.com'. Other settings include Log size (1000), Default user ID (53), Log metadata changes (checked), Scheduler interval (1), DB object owner (dbo), Enable time zones (unchecked), Server time zone ((GMT-06.00) Central America), Site time zone (none), No-reply e-mail address (no-reply@mydomainXY.com), Error notification e-mail address (empty), Show splash screen (checked), and Hide unavailable user interface (unchecked).

8.28.7 Security

This Notifications module has no permissions to be set in **CMS Desk/Site Manager -> Administration -> Permissions**.

Subscription to notifications is **allowed only for registered users**. This is why the Content subscription and Notification subscription web parts are **hidden to public anonymous users** by default.

8.29 On-line users

8.29.1 Overview

The On-line users module allows monitoring of users connected to the website. The module comes with the On-line users web part that can be used for displaying information about on-line users.

The module identifies a new user when a new session between the client browser is started. The user is considered off-line if the session expires or when the user logs off. This means that the user is still considered on-line when they close their web browser without signing off.

8.29.2 Enabling the module

The On-line users module can be enabled in **Site Manager -> Settings -> Membership** by checking the **Monitor online users** check-box.

If you are running the system on a web farm, you also have to check the **Store online users in database** check-box. This causes information about on-line users to be saved in the database.

The **Deny login interval** property determines how long users will not be able to log-in when they are kicked. The value is entered in minutes.

Finally, the **Update online users (minutes)** property defines how often information about users accessing the site will be reloaded. The value is entered in minutes. When running the system on a web farm, you need to enter the same value which is set for the **Sessions remove expired sessions** scheduled task (you can read the value in Site Manager -> Administration -> Scheduled tasks -> edit (✎) Sessions remove expired sessions -> Task interval -> Every: X minutes).

The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The 'Settings' section is active, and the 'Membership' settings are displayed. The 'Monitor online users', 'Store online users in database', and 'Update online users (minutes)' settings are highlighted with a red box. The 'Update online users (minutes)' setting is set to 1. The 'Deny login interval' is set to 10. The 'Administrator's e-mail' is set to admin@mydomainXY.com. The 'Reserved user names' are admin,root,administrator,sysadmin,sa. The 'Registration requires e-mail confirmation' and 'Registration requires administrator's approval' are unchecked. The 'Delete non-activated user after (days)' is set to 5. The 'Shared user accounts' and 'Require unique user e-mails' are checked. The 'Export these settings' link is visible at the bottom.

| Setting | Value |
|--|--------------------------------------|
| Administrator's e-mail | admin@mydomainXY.com |
| Monitor online users | <input checked="" type="checkbox"/> |
| Store online users in database | <input checked="" type="checkbox"/> |
| Deny login interval | 10 |
| Update online users (minutes) | 1 |
| Reserved user names | admin,root,administrator,sysadmin,sa |
| Registration requires e-mail confirmation | <input type="checkbox"/> |
| Registration requires administrator's approval | <input type="checkbox"/> |
| Delete non-activated user after (days) | 5 |
| Shared user accounts | <input checked="" type="checkbox"/> |
| Require unique user e-mails | <input checked="" type="checkbox"/> |

8.29.3 On-line users tab

If you go to **Site Manager -> Administration -> Users** and switch to the **On-line users** tab, you can see a list of all users that are currently accessing the website. By clicking some of the letters at the top of the page, you can view only those users whose user names begin with the clicked letter.

Below the letters, you can find a filter. This filter can further limit displayed users according to specified criteria. The filter can work in two modes between which you can switch by clicking the **Display advanced filter** or **Display simplified search** links respectively.

Simplified search

This option offers only one field. The expression entered into the field will be searched in users' User Name, Full Name, E-mail Address and Nickname properties.

The screenshot shows the 'Users' management interface with the 'On-line users' tab selected. It features a navigation bar with 'Users', 'Mass e-mail', and 'On-line users'. Below the navigation bar, there's a section for 'On-line users' with a search bar and a 'Search' button. A filter section is visible with a dropdown menu set to 'Display advanced filter'. The main content is a table listing active users.

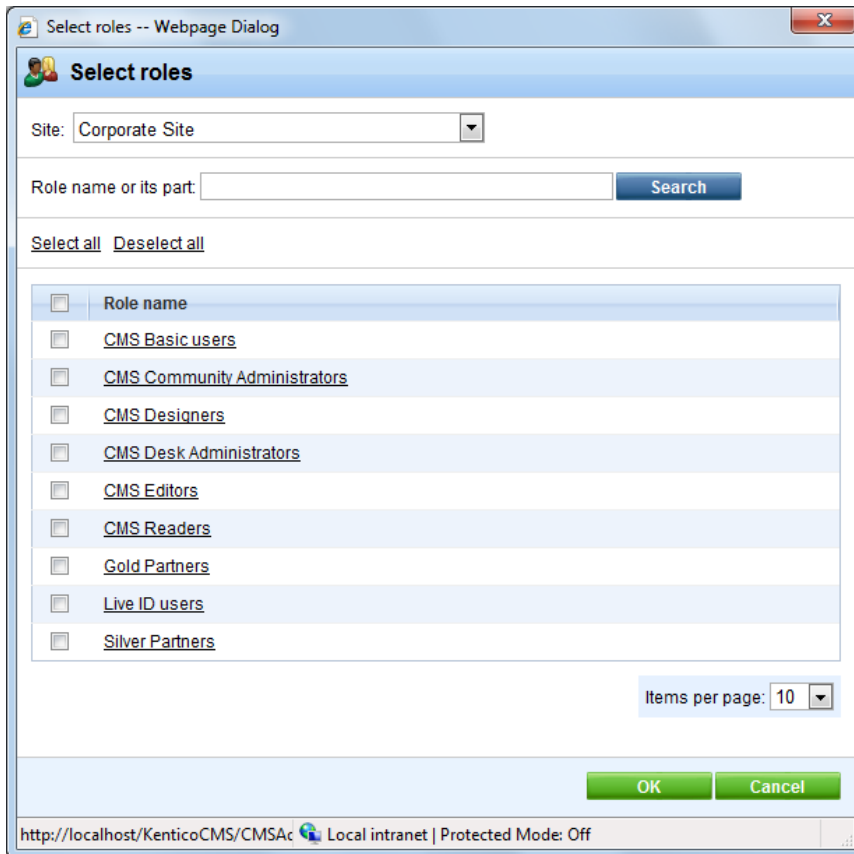
| Actions | User name | Full name | Email | Nickname | Created | Enabled |
|---------|---------------|----------------------|------------------------------|----------|----------------------|---------|
| | administrator | Global Administrator | administrator@mydomainXY.com | Admin | | Yes |
| | gold | Sample Gold Partner | | | 12/8/2009 2:37:00 PM | Yes |

2 user(s) on-line: 2 registered and 0 guest(s) Items per page: 25

Advanced filter

The advanced filter offers searching by User Name, Full Name, E-mail Address and Nickname. You can also filter on-line users by the roles they belong to. You can specify which roles the listed users are (**In roles**) or are not (**Not in roles**) members of.

You can type in code names of the user roles manually into the fields, divided by a semicolon (;). Using the **Select** buttons, you can open the role selection pop-up window. SHIFT and CTRL can be used for multiple selection. Click **OK** to confirm the selection.



When you have entered all search criteria, click the **Search** button.

Only those users that match the specified criteria will be listed.

Users

Users Mass e-mail On-line users

On-line users

(all) A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

User name:

Full name:

E-mail Address:

Nickname:

In roles:

Not in roles:

▾ Display simplified filter

| Actions | User name ▾ | Full name | Email | Nickname | Created | Enabled |
|---------|---------------|----------------------|------------------------------|----------|----------------------|---------|
| | administrator | Global Administrator | administrator@mydomainXY.com | Admin | | Yes |
| | gold | Sample Gold Partner | | | 12/8/2009 2:37:00 PM | Yes |

2 user(s) on-line: 2 registered and 0 guest(s) Items per page: 25 ▾


Kicking a user

If you click the **Kick** () icon next to one of the listed users, you can kick the user off of the website, which means that the user will be logged out of the website. After doing so, there will be a label (**kicked**) written in red letters after the user's user name. If you want to take back the kick, you can do it easily by clicking the **Take back** () icon.

| Actions | User name ▾ | Full name |
|---------|------------------------|----------------------|
| | administrator | Global Administrator |
| | gold (kicked) | Sample Gold Partner |

8.29.4 On-line users web part

The module comes with the **On-line users** web part. In the web part selection dialog, you can find the web part in the **Membership** folder. In the screenshot below, you can see the web part enclosed in the Orange box web part container.



1 user(s) on-line: 0 registered and 1 guests

The web part displays a summary defined by the **Additional info text** property, followed by a list of on-line users that is displayed based on the transformation defined by the **Transformation name** property.

The web part has the following specific properties:

| | |
|-----------------------|---|
| Transformation name | Name of the transformation that will be used to display on-line users.

If you choose to Select the transformation, you can find the default transformation that has been used in the screenshot above under Document type -> CMS.Root -> CMS.Root.OnLineUsers. |
| Path | If you specify an alias path here, only users that are accessing locations found under the specified path will be displayed. |
| Select top N | Number of listed users. |
| Additional info text | Text of the additional information that will be displayed above the list of users.

You can use the following formatting macros that will be substituted by the appropriate number:

{0} - number of all connected users
{2} - number of connected registered users
{1} - number of connected anonymous users |
| No users on-line text | Text that will be displayed in the case that no users are currently online. |
| Columns | Enumeration of columns of the CMS_User or CMS_UserSettings tables that should be loaded - useful for performance optimization. Column names need to be separated with semicolons. |

8.29.5 API

Session management methods are located in the **SessionManager** class found in the **CMS.CMSHelper** library.

For detailed API documentation, please refer to **Kentico CMS API Reference** guide that is a part of your Kentico CMS installation and can be accessed through the program folder in Windows Start menu.

Let's mention the following three methods which are the most important ones:

| | |
|--|---|
| <p>GetOnlineUsers(String, String, Int32, String, String)</p> | <p>Returns UserInfos of online users according to the WHERE condition and ordered by the ORDER BY expression.</p> <p>String - WHERE condition
 String - ORDER BY expression
 Int32 - TOP N expression
 String - location (alias path) of users on the website
 String - site name</p> |
| <p>IsUserOnline(Int32)</p> | <p>Returns true when the user with the specified ID is online.</p> <p>Int32 - ID of the user</p> |
| <p>KickUser(Int32)</p> | <p>Performs all the necessary actions to kick the user with the specified ID.</p> <p>Int32 - ID of the user</p> |

8.30 Polls

8.30.1 Overview

The Polls module allows you to create and publish polls with single or multiple answers.

Do you like our product?

Yes, I do.
 No, I don't.
 I don't know your product.

The polls can be managed in the **CMS Desk -> Tools -> Polls** dialog.

The polls module uses a cookie to ensure that the same visitor (using the same browser) cannot vote twice in the same poll.

8.30.2 Managing Polls

You can manage polls in **CMS Desk -> Tools -> Polls**.

Creating a new poll

Click **New poll** and fill in the following values:

| | |
|--------------|--|
| Display name | The name of the poll displayed to the poll administrators. |
| Code name | The name of the poll used in the code. |
| Title | The title of the poll displayed in the poll view (optional). |
| Question | Poll question displayed in the poll view. |

Click **OK**.

Editing poll properties

Now you can define more poll details on the **General** tab:

| | |
|------------------------|--|
| Display name | The name of the poll displayed to the poll administrators. |
| Code name | The name of the poll used in the code. |
| Title | The title of the poll displayed in the poll view (optional). |
| Question | Poll question displayed in the poll view. |
| Open from | When the visitors can start voting. |
| Open to | When the voting is closed. |
| Message after vote | Message displayed after vote. |
| Allow multiple choices | Indicates if visitor can select more than one option. |

Defining answers

Then, you can define the list of available answers on the **Answers** tab. To create a new answer, click **New answer** and enter the answer text.

You can also choose if the given answer should be enabled which means it's displayed in the list of options - this is useful if you need to remove some answer from the poll while keeping the number of votes in the history. The disabled option is then not calculated into the displayed results.

Defining who can vote

On the **Security** tab, you can choose which users can vote:

- all users
- only authenticated users (site members)
- only authorized roles that you specify

Sharing the poll between sites

On the **Sites** tab, you can choose on which sites the poll can be used. The poll will be offered to content editors of the websites so that they can put the poll into the text through the WYSIWYG editor. By default, the site where you created the poll is added.

Previewing the poll

You can preview the poll on the View tab. The actual poll on your website may use different design depending on the design of your website and may behave differently depending on the web part settings (if you publish it using a web part).

8.30.3 Publishing Polls

There are two ways how you can publish a poll on the website:

- **Content editors** can place the poll on the page using the Insert Poll button in the WYSIWYG editor

toolbar

- **Developers** can place the poll on the page using the Polls -> Poll web part; this options provides more configuration options

Publishing polls for content editors

Once you define the poll, you need to go to the CMS Desk -> Content section and edit the page where you want to display the poll. Edit the page content using the built-in WYSIWYG editor and click **Insert Poll** in the editor toolbar. Then, you can choose the poll you want to display from the list of polls. The editor inserts special expression like this at the cursor position:

- `%%control:PollControl?ProductSurvey%%`

Publishing polls for developers

If you're a developer, you can go to **CMS Desk -> Content -> ...** choose the page where you want to put the poll ... -> click **Design** and add the **Polls -> Poll** web part on the page.

You need to choose the Poll name and then you can configure some additional settings of the poll that are described in **Kentico CMS Web Parts and Controls Reference**.

If you're using **ASPX page templates**, you need to drag-and-drop the user control (web part) CMSWebParts\Polls\Poll.ascx on your ASPX page.



Tip: Poll not showing up in the list

If the poll is not showing up in the list of polls and you cannot insert it, you may need to enable the poll for the given website. You can do that in **CMS Desk -> Tools -> Polls**. Click the **Sites** tab and assign the poll to the required site.

8.30.4 Multilingual support

When you use the Polls module on a multilingual website, you can choose from two options:

- You can create a **new poll for every language** - this is useful if you wish to track votes for different cultures/countries of your website.

or

- You can create a **single poll for all languages** - in this case, all votes are tracked together. In order to localize the texts of the poll, you need to use [Localization Expressions](#).


8.30.5 Security

Access to the Polls module

The access to the Polls module can be configured in **CMS Desk -> Administration -> Permissions -> ...** select the **Modules -> Polls** permission matrix.

The following permissions can be assigned to particular roles:

- **Manage** - members of the role can create, edit and delete polls
- **Read** - members of the role can view polls and their configuration, but are not allowed to make any changes to them

 **Permissions**

Site: ▼

Permission type: ▼

Permission matrix: ▼

| | Modify | Read |
|------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> | <input type="checkbox"/> |

Access to voting

You can configure the poll and specify which users are authorized to vote on the **Security** tab of the **Poll properties** dialog. Here you can choose one of the following options:

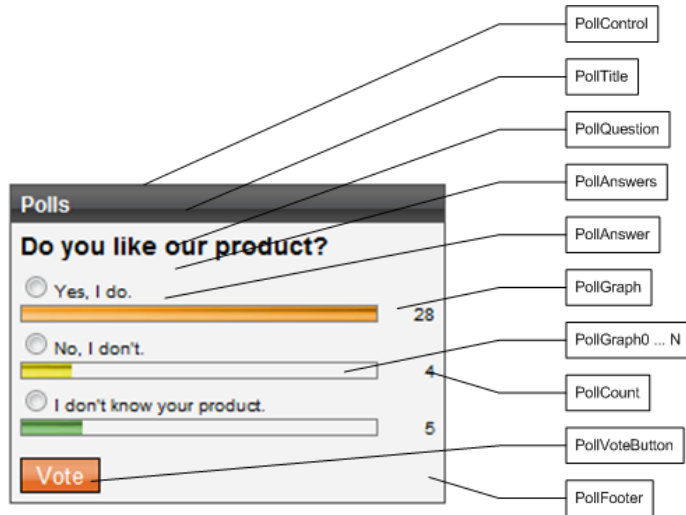
- **All users** - any visitor can vote
- **Only authenticated users** - only site members who sign in can vote
- **Only authorized roles** - only authenticated members of chosen roles can vote

The developers can also customize the behavior of the Polls web part using the following web part properties:

- **Check permissions** - Indicates if permissions for voting specified for the given poll should be checked.
- **Hide to unauthorized users** - Hides the web part if the user is not authorized to vote.

8.30.6 Design and styles

The design is controlled by CSS styles included in your CSS stylesheet for the given site. The following figure shows the polls styles:



8.30.7 Polls API and Internals

8.30.7.1 Database tables and API classes

The Polls module uses the following tables:

- Polls_Poll - polls
- Polls_PollAnswer - answers for polls (1:N)
- Polls_PollRoles - roles authorized to vote (M:N)
- Polls_PollSite - sites where the poll can be used (M:N)

The polls API is provided by the CMS.Polls namespace classes:

- PollAnswerInfo, PollAnswerInfoProvider - manage answers
- PollInfo, PollInfoProvider - manage polls

The following chapters show how to use these classes.

8.30.7.2 Creating a new poll

The following sample code shows how you can create a new poll using the API:

[C#]

```
using CMS.Polls;
using CMS.SettingsProvider;
using CMS.CMSHelper;
using CMS.DataEngine;
using CMS.GlobalHelper;

...

// Create new poll info
PollInfo pollObj = new PollInfo();

// Set the fields
pollObj.PollCodeName = "testingsitepoll";
pollObj.PollDisplayName = "Testing site poll";
pollObj.PollTitle = "Your free time";
pollObj.PollQuestion = "What do you do in your free time?";
pollObj.PollResponseMessage = "Thank you for your vote.";
pollObj.PollAllowMultipleAnswers = false;
pollObj.PollAccess = PollInfoProvider.ACCESS_ALL;
pollObj.PollOpenFrom = DateTime.Now;
pollObj.PollOpenTo = DateTime.Now.AddMonths(1);

// Save the object
PollInfoProvider.SetPollInfo(pollObj);

// Add poll to current site
if (CMSContext.CurrentSite != null)
{
    PollInfoProvider.AddPollToSite(pollObj.PollID, CMSContext.CurrentSite.
SiteID);
}
```

8.30.7.3 Updating an existing poll

The following sample code shows how you can modify poll properties using the API:

[C#]

```
using CMS.Polls;
using CMS.SettingsProvider;
using CMS.DataEngine;
using CMS.GlobalHelper;

...

string pollName = "testingpoll"; // Testing poll code name

// Get poll info by code name
PollInfo pollObj = PollInfoProvider.GetPollInfo(pollName);

if (pollObj != null)
{
    // Set the field values
    pollObj.PollResponseMessage = "Thank you for your time.";
    pollObj.PollAllowMultipleAnswers = true;

    // Save the changes
    PollInfoProvider.SetPollInfo(pollObj);
}
```

8.30.7.4 Add a new answer

The following sample code shows how you can create a new answer for an existing poll using the API:

[C#]

```
using CMS.Polls;
using CMS.SettingsProvider;
using CMS.DataEngine;
using CMS.GlobalHelper;

...

string pollName = "testingpoll"; // Poll code name

// Get poll info for the specified code name
PollInfo pollObj = PollInfoProvider.GetPollInfo(pollName);

if (pollObj != null)
{
    // Create a new answer object
    PollAnswerInfo pollAnswerObj = new PollAnswerInfo();

    // Set the fields
    pollAnswerObj.AnswerOrder = PollAnswerInfoProvider.GetLastAnswerOrder
(pollObj.PollID) + 1;
```



```
pollAnswerObj.AnswerCount = 0;
pollAnswerObj.AnswerPollID = pollObj.PollID;
pollAnswerObj.AnswerEnabled = true;
pollAnswerObj.AnswerText = "Yes, I love it.";

// Save the answer
PollAnswerInfoProvider.SetPollAnswerInfo(pollAnswerObj);
}
```

8.30.7.5 Change the number of votes

The following sample code shows how you can increase the number of votes for a given answer using the API. It's useful if you want to create your own voting dialog.

[C#]

```
using CMS.Polls;
using CMS.SettingsProvider;
using CMS.DataEngine;
using CMS.GlobalHelper;

...

string pollName = "testingpoll"; // Poll code name

// Get poll info for the specified code name
PollInfo pollObj = PollInfoProvider.GetPollInfo(pollName);

if (pollObj != null)
{
    // Get all answers of the poll
    DataSet ds = PollAnswerInfoProvider.GetAnswers(pollObj.PollID);

    if (!DataHelper.DataSourceIsEmpty(ds))
    {
        // Get first pollanswerinfo object
        PollAnswerInfo pollAnswerObj = new PollAnswerInfo(ds.Tables[0].
Rows[0]);

        if (pollAnswerObj != null)
        {
            // Increment votes by 1
            pollAnswerObj.AnswerCount++;

            // Save the data
            PollAnswerInfoProvider.SetPollAnswerInfo(pollAnswerObj);
        }
    }
}
```

8.30.7.6 Add authorized roles

The following sample code shows how you can add roles authorized for voting.

[C#]

```
using CMS.Polls;
using CMS.SettingsProvider;
using CMS.SiteProvider;
using CMS.DataEngine;
using CMS.GlobalHelper;

...

string pollName = "testingpoll"; // Poll code name
string roleName = "cmseditor"; // Role code name
string siteName = "CMSTestingSite"; // Role's site code name

// Get poll info for the specified code name
PollInfo pollObj = PollInfoProvider.GetPollInfo(pollName);

// Get role info for specified role name and site name
RoleInfo roleObj = RoleInfoProvider.GetRoleInfo(roleName, siteName);

if ((pollObj != null) && (roleObj != null))
{
    // Change poll access to access for specified roles only
    pollObj.PollAccess = PollInfoProvider.ACCESS_ROLES;

    // Save the object
    PollInfoProvider.SetPollInfo(pollObj);

    // Check if the role has already been added
    if (!PollInfoProvider.IsRoleAllowedForPoll(pollObj.PollID, roleName))
    {
        // Add role to the poll
        PollInfoProvider.AddRoleToPoll(roleObj.RoleID, pollObj.PollID);
    }
}
```

8.30.7.7 Deleting a Poll

The following sample code shows how you can delete a poll including its answers.

[C#]

```
using CMS.Polls;

...

string pollName = "testingpoll";

// Get poll info for the specified code name
PollInfo pollObj = PollInfoProvider.GetPollInfo(pollName);
```

```
if (pollObj != null)
{
    // Delete the poll
    PollInfoProvider.DeletePollInfo(pollObj.PollID);
}
```

8.30.7.8 Deleting a Poll Answer

The following sample code shows how you can delete a poll answer.

[C#]

```
using CMS.Polls;
using CMS.SettingsProvider;
using CMS.DataEngine;
using CMS.GlobalHelper;

...

string pollName = "testingpoll";

// Get poll info for the specified code name
PollInfo pollObj = PollInfoProvider.GetPollInfo(pollName);

if (pollObj != null)
{
    // Get all poll answers
    DataSet answers = PollAnswerInfoProvider.GetAnswers(pollObj.PollID);

    if (!DataHelper.DataSourceIsEmpty(answers))
    {
        // Create pollanswerinfo object from datarow
        PollAnswerInfo pollAnswerObj = new PollAnswerInfo(answers.Tables
[0].Rows[0]);

        if (pollAnswerObj != null)
        {
            // Delete poll answer
            PollAnswerInfoProvider.DeletePollAnswerInfo(pollAnswerObj.
AnswerID);

            lblInfo.Text = "The poll answer was deleted successfully.";
        }
        else
        {
            this.lblInfo.Text = "Failed to delete the poll answer.";
        }
    }
    else
    {
        this.lblInfo.Text = "No poll answers found.";
    }
}
```

8.31 Reporting

8.31.1 Overview

The Reporting module allows you to create internal reports to watch the activity in the Kentico CMS system and on the website, such as recently created documents, expired documents, website visits, user registration etc. The data the module uses is gathered from the database by using SQL queries and can be displayed in highly customizable reports including tables and graphs.

Report categories are used to group related reports together. See the [Managing report categories](#) chapter for more details.

The following chapters provide more details and examples on how reports can be created and used:

- [Creating a new report](#)
- [Defining report parameters](#)
- [Saving a report](#)
- [Displaying a report on a web site](#)

The [Security](#) chapter describes how permissions can be set for the module.

The [Reporting internals and API](#) chapters provide information about the database tables and classes used by the module and examples of how reports can be accessed using the API.

Reports are also used by the Web analytics module, which you can learn more about at [Modules -> Web analytics](#).

Reports can be managed in **CMS Desk -> Tools -> Reporting**.

8.31.2 Managing report categories

All reports are organized into categories. It is recommended to keep reports that monitor related actions in one category. You can manage the categories in **CMS Desk -> Tools -> Reporting**.



Example:

The following steps describe how to create a sample report and how to display it on your website:


To start, you need to create a report category. Go to **CMS Desk -> Tools -> Reporting**, click () **New report category** and enter the following values:

- **Category display name:** User reports
- **Category code name:** UserReports

Click **OK**.

Continued in the example section of the [Creating a new report](#) chapter.

8.31.3 Creating a new report

New reports can be created at **CMS Desk -> Tools -> Reporting -> Edit report category** under the **Reports** tab. Here you can also see a list of all the reports in this category and **Edit** () or **Delete** () them if you wish.

When editing a report, you can alter its layout using the WYSIWYG editor, attach files and add graphs, tables and values to display the required data on its **General** tab. The output of the report can be seen on the **View** tab.



Localizing strings in reports

If you need to create a single report in multiple languages, please use [Localization Expressions](#).

Tables

Writing queries for tables

The queries you write for the tables are standard SQL queries that pull data from the Kentico CMS database. You can find the description of Kentico CMS database tables and views in **Kentico CMS Database Reference** that is a part of the standard installation.

For information about documents, you can use the View_CMS_Tree_Joined table that returns published versions of all documents.

Table column names

The table column names use the column names from the returned data set. If you need to use user friendly names, you can use the following syntax:

```
SELECT PageTemplateDisplayName as [Template Name], ...
```

Graphs

Here is a complete list of graph properties and their descriptions:

| | |
|---------------------|--|
| Display name | Display name of the graph |
| Code name | Code name of the graph |
| Query | Database query that extracts a dataset that will be displayed in the graph; it must return at least two columns - first one for categories, the other columns are used for values. |
| Is stored procedure | Determines if the specified query is a stored procedure. |
| Graph type | <p>The following graph types are available:</p> <p>Pie - pie graph, accepts only one column for values, value in the third column is used for setting the 'pie pieces' offset</p> <p>Bar - bar graph, accepts multiple values and displays them next to each other</p> <p>Bar overlay - bar graph, accepts multiple values and displays them behind each other with the lower values in the front</p> <p>Bar stacked - bar graph, accepts multiple values and displays them on top of each other</p> <p>Bar percentage - bar graph, accepts multiple values, displays one column for each category and divides it by percentage determined by the values</p> <p>Line - line graph, accepts multiple values and displays them as separate lines</p> |
| Use vertical bars | If checked, the bars are displayed vertically instead of horizontally; used only for bar graphs |
| Reverse y-axis | Reverses the vertical axis; used only for bar and line graphs |
| Use ten powers | If large values are present in the graph, they are divided by appropriate ten powers and the divide ratio is displayed with the y-axis title |
| Show grid | Shows a thin dotted line grid in the graph chart; used only for bar and line graphs |
| Fill curves | Fills the space under the curves with a color; used only for line graphs |
| Smooth curves | Smooths lines of the line graph |
| Title | Title of the graph |
| X axis title | Title of the horizontal axis in the graph |
| Y axis title | Title of the vertical axis in the graph |
| Width | Width of the graph image |
| Height | Height of the graph image |

| | |
|-----------------|---|
| Legend position | Position of the legend in the graph |
| Title font | Determines font properties of the graph title |
| Axis font | Determines font properties of axis titles |
| X-axis angle | Determines declination angle of X-axis descriptions; setting this parameter to 90 causes upright descriptions |
| Y-axis angle | Determines declination angle of Y-axis descriptions |
| Scale min | Determines the minimum value from that will values in the graph be displayed |
| Scale max | Determines the maximum value up to that will values in the graph be displayed |
| Use colors | Determines colors used for graph items; accepts standard HTML color names or hexadecimal color codes divided by a semicolon; if it contains a lower number of colors than required, the remaining colors are generated automatically |
| Use symbols | Determines symbols used for values in the line graphs; accepts: <i>Circle</i> , <i>Diamond</i> , <i>HDash</i> , <i>Plus</i> , <i>Square</i> , <i>Star</i> , <i>Triangle</i> , <i>TriangleDown</i> , <i>VDash</i> , <i>XCross</i> ; if <i>None</i> is entered, no symbols will be used |
| Graph gradient | Gradient of the graph background; The From and To fields accept standard HTML color names or hexadecimal color codes, the Angle field sets gradient declination |
| Chart gradient | Gradient of the graph chart; The From and To fields accept standard HTML color names or hexadecimal color codes, the Angle field sets gradient declination; used only for line and bar graphs |
| Item gradient | Gradient of the items in the graph; The From field accepts standard HTML color names or hexadecimal color codes, the Angle field sets gradient declination; the To field is disabled here |



Writing queries for pie charts

The queries for pie chart graphs must return two columns: the categories and their values. The graph automatically calculates the displayed size of the given category. If you return a constant value in the third column, this value will set the offset of pie pieces.

Writing queries for bar graphs

The queries for bar graphs must return at least two columns: the categories and their values. If you specify more than two columns, the additional columns will be displayed next to the second column value in the graph (Bar), in front of each other (Bar overlay), on top of each other (Bar stacked) or they will divide one column by percentage (Bar percentage).

Scalar Values

Writing queries for scalar values

The queries for scalar values may return any number of columns and rows, but the only value that will be displayed is the value in the first column of the first row of the result set.

Formatting scalar values

You can format the displayed value using the standard .NET expressions. Examples:

- {0} - displays the value
- {0:F1} - displays number in format 10.5

You can find more details in .NET Framework documentation.

Example:

1. Click  **New report** and enter the following values:

- **Report display name:** Pages by page template
- **Report code name:** PagesByPageTemplate

Click **OK**. Now you can edit the layout of the report and insert tables, graphs and values.

2. You will be redirected to the **General** tab of the report editing interface. Enter the following text in the **Layout** text area: *Pages by page template*. Select the text and use the WYSIWYG editor to set its **Format** to *Heading 1*.

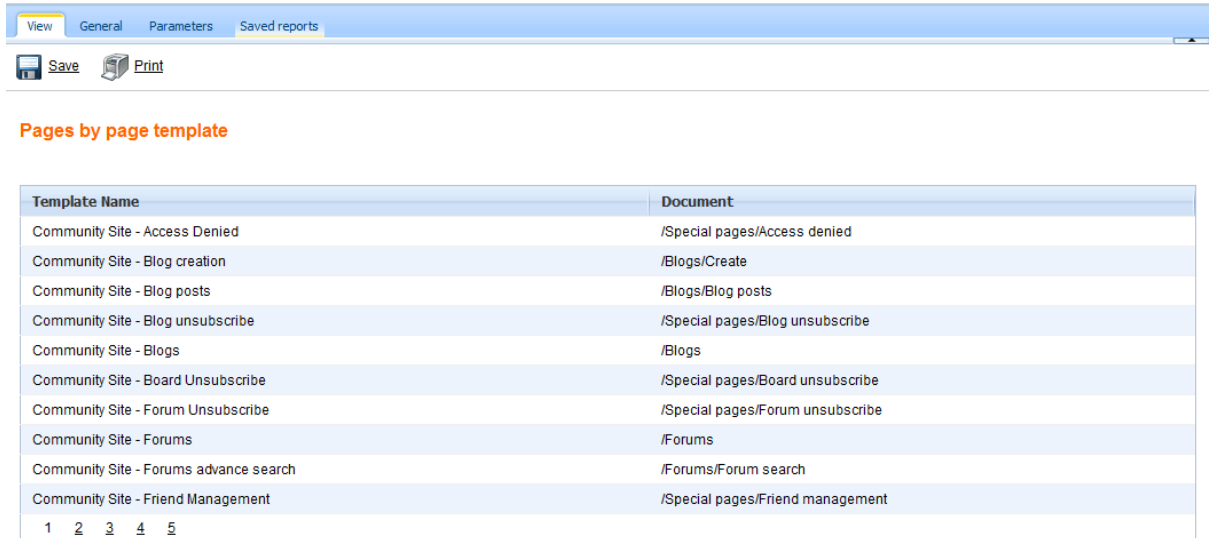
3. Now click **Add** in the **Tables** section on the right. Enter the following values:

- **Display name:** Pages by Page Template
- **Code name:** PagesByPageTemplate
- **Query:**

```
SELECT PageTemplateDisplayName as [Template Name], DocumentNamePath as [Document]
FROM view_CMS_Tree_Joined
LEFT JOIN cms_pagetemplate
ON cms_pagetemplate.pagetemplateid = view_CMS_Tree_Joined.DocumentPageTemplateID
WHERE pagetemplatedisplayname IS NOT NULL AND PageTemplateIsReusable = 1
ORDER BY PageTemplateDisplayName
```

- **Is stored procedure:** no
- **SkinID:** leave empty
- **Enable paging:** enabled
- **Page size:** 10
- **Page mode:** Page numbers

Click **OK**. Place the cursor in the layout editor on a new line under the title, choose the table in the **Tables** section and click **Insert**. A string like `%%control:ReportTable?PagesByPageTemplate.PagesByPageTemplate%%` will be added to the text area. Click **Save** to save the changes and switch to the **View** tab. You will see a report like this:



The screenshot shows a web application interface with a menu bar containing 'View', 'General', 'Parameters', and 'Saved reports'. Below the menu are 'Save' and 'Print' buttons. The main content area is titled 'Pages by page template' and contains a table with two columns: 'Template Name' and 'Document'. The table lists various page templates and their corresponding document paths. At the bottom of the table, there are navigation links: 1, 2, 3, 4, 5.

| Template Name | Document |
|--|----------------------------------|
| Community Site - Access Denied | /Special pages/Access denied |
| Community Site - Blog creation | /Blogs/Create |
| Community Site - Blog posts | /Blogs/Blog posts |
| Community Site - Blog unsubscribe | /Special pages/Blog unsubscribe |
| Community Site - Blogs | /Blogs |
| Community Site - Board Unsubscribe | /Special pages/Board unsubscribe |
| Community Site - Forum Unsubscribe | /Special pages/Forum unsubscribe |
| Community Site - Forums | /Forums |
| Community Site - Forums advance search | /Forums/Forum search |
| Community Site - Friend Management | /Special pages/Friend management |

4. Switch back to the **General** tab. Click **Add** in the **Graphs** section on the right. Enter the following values:

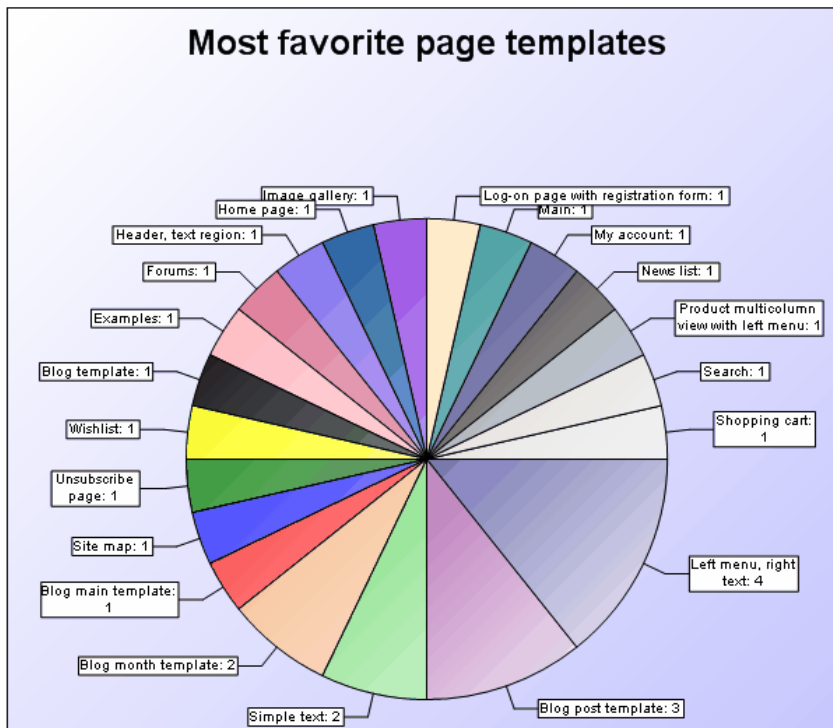
- **Display name:** Most Favorite Page Templates
- **Code name:** MostFavoritePageTemplates
- **Query:**

```
SELECT PageTemplateDisplayName AS [Template Name], count(PageTemplateDisplayName)
AS [Usage]
FROM view_CMS_Tree_Joined
LEFT JOIN cms_pagetemplate
ON cms_pagetemplate.pagetemplateid = view_CMS_Tree_Joined.DocumentPageTemplateID
WHERE pagetemplatedisplayname IS NOT NULL AND PageTemplateIsReusable = 1
GROUP BY PageTemplateDisplayName
ORDER BY count(PageTemplateDisplayName) DESC
```

- **Is stored procedure:** no
- **Graph type:** Pie
- **Title:** Most favorite page templates
- **Width:** 600
- **Height:** 600
- **Legend position:** (No legend)

Click **OK**. Place the cursor in the layout editor on a new line under the table, select the graph in the **Graphs** section and click **Insert**.

Click **Save** to save the changes and switch to the **View** tab. You will see a graph like this in the report:



5. Switch back to the **General** tab. Click **Add** in the **Values** section on the right. Enter the following values:

- **Display name:** Number of pages with page template
- **Code name:** PagesWithTemplate
- **Query:**

```
SELECT count (DocumentID)
FROM view_CMS_Tree_Joined
WHERE documentpagetemplateid IS NOT NULL
```

- **Is stored procedure:** no
- **Formatting string:** Pages with template: {0}

Click **OK**. Place the cursor in the layout editor under the graph, choose the value in the **Values** section and click **Insert**. Click **Save** to save the changes and switch to the **View** tab. You will see a text like this:



Pages with template: 20

Continued in the example section of the [Defining report parameters](#) chapter.

8.31.4 Defining report parameters

Reports may be filtered using parameters. You can define custom parameters on the **Parameters** tab of the **Report properties** dialog.

Context Parameters

In your queries, you can use parameters that provide information about the current context when the report is viewed, such as current user, current site, etc. Here's the list of all available context variables:

- @CMSContextCurrentUserID
- @CMSContextCurrentUserName
- @CMSContextCurrentUserDisplayName
- @CMSContextCurrentSiteID
- @CMSContextCurrentSiteName
- @CMSContextCurrentSiteDisplayName
- @CMSContextCurrentDomain
- @CMSContextCurrentTime
- @CMSContextCurrentURL
- @CMSContextCurrentNodeID
- @CMSContextCurrentCulture
- @CMSContextCurrentDocumentID
- @CMSContextCurrentAliasPath
- @CMSContextCurrentDocumentName
- @CMSContextCurrentDocumentNamePath

For example, if you want to display a list of all expired documents of the current website, you can use a query like this:

```
SELECT DocumentNamePath as [Document path]
FROM View_CMS_Tree_Joined
WHERE documentpublishto < @CMSContextCurrentTime and nodesiteid =
@CMSContextCurrentSiteID
```

Displaying Parameter Values in the Report

If you need to display the parameter values in the report, you can place the following macro expression in the report text:

{%parametername%}

For example:

List of documents expired on or before {%CMSContextCurrentTime%}

displays:

List of documents expired on or before 8/12/2007 12:06:49 PM

You can use this syntax for both custom report parameters and context parameters.

Example:

1. Switch to the **Parameters** tab, click **New attribute** (+) and enter the following values:

- **Attribute name:** UserID
- **Attribute type:** Integer number
- **Attribute default value:** 53
- **Field caption:** Created by user
- **Field type:** User Selector

Click **OK**.

2. Now we need to add this parameter to our queries. For the purposes of this example, we will modify only the table query. Switch to the **General** tab, select the **Pages by page template** table and click edit. Now modify the table SQL query like this:

```
SELECT PageTemplateName as [Template Name], DocumentNamePath as [Document]
FROM view_CMS_Tree_Joined
LEFT JOIN cms_pagetemplate
ON cms_pagetemplate.pagetemplateid = view_CMS_Tree_Joined.DocumentPageTemplateID
WHERE pagetemplatedisplayname IS NOT NULL AND DocumentCreatedByUserID = @UserID
ORDER BY PageTemplateName
```

As you can see we added the parameter to the WHERE condition of the query. All parameters that you define can be used in the query using the @<parametername> expression. Click **OK** and go to the **View** tab. You will see the report with a filter like this:

Created by user:

Pages by page template

| Template Name | Document |
|-----------------------------------|----------------------------------|
| Blog | /Blogs/My blog |
| Blog unsubscribe | /Special pages/Blog unsubscribe |
| Board unsubscribe | /Special pages/Board unsubscribe |
| Event calendar with event details | /Events |
| Forums advance search | /Forums/Forum search |
| Forums with search | /Forums |
| Header and text | /Special pages/Order completed |
| Header and text with left menu | /Services/Network Administration |
| Header and text with left menu | /Services |
| Header and text with left menu | /Services/Web Design |

The table now only displays template names of documents that were created by the user specified in the filter.

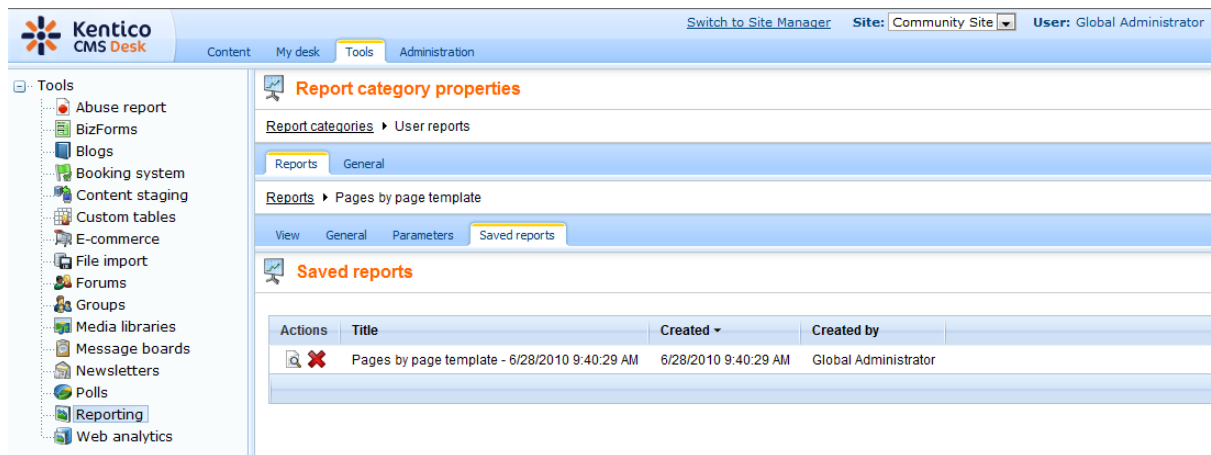
Continued in the example section of the [Saving a report](#) chapter.

8.31.5 Saving a report

When you view some report on the **View** tab of the **Report properties** dialog, you can save it into the report history using the **Save** button. You can view the saved reports on the **Saved reports** tab. When the data changes, the saved reports are not affected.

Example:

Click the **Save** button on the **View** tab. Now switch to the **Saved reports** tab. Here you can see a list of saved reports, it should look something like this:



Concluded in the example section of the [Displaying a report on a web site](#) chapter.

8.31.6 Displaying a report on a web site

If you want to display some report on the website or include it in some custom page in the CMS administration interface, you can use the **Reporting/Report** web part. All you need to configure are the following properties:

- **Report name** - select the required report
- **Display filter** - indicates if a filter should be displayed on the page (if the report has some parameters specified)

Example:

1. To display this report on your website, switch to the **Content** tab of CMS Desk. Select the root of your website and create a new **Page (menu item)** type document. Name it *Reports*, select **Create a blank page**, choose the **Simple** layout and click **Save**.

2. Now add the **Reporting/Report** web part to the page's web part zone and set its properties to the following:

- **Report name** - select *Pages by page template*
- **Display filter** - enabled

3. Now go to **Live site** mode and you should see something similar to the following:

Home Blogs News Media Forums Groups Members Examples Reports

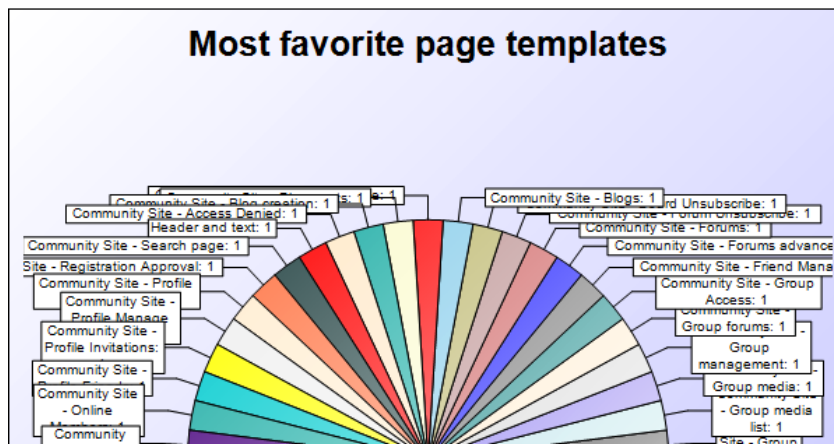
Created by user: Global Administrator (adm) Select Clear

Update

Pages by page template

| Template Name | Document |
|------------------------------------|---|
| Ad-hoc: Add to bookmark service | /Examples/Webparts/Social bookmarking |
| Ad-hoc: Examples | /Examples |
| Ad-hoc: Friends list | /Examples/Webparts/Friends list |
| Ad-hoc: Friends list to approval | /Examples/Webparts/Friends list to approval |
| Ad-hoc: Friends rejected list | /Examples/Webparts/Friends rejected list |
| Ad-hoc: Friends requested list | /Examples/Webparts/Friends requested list |
| Ad-hoc: Friends viewer | /Examples/Webparts/Friends viewer |
| Ad-hoc: Friendship request | /Examples/Webparts/Request friendship |
| Ad-hoc: Group board message viewer | /Examples/Webparts/Group message board viewer |
| Ad-hoc: Group forum list | /Examples/Webparts/Group forum list |

1 2 3 4 5 6 7 8 9




As you can see, the report is displayed just like on the **View** tab of the **Report Properties** dialog and the parameter filter can be used by site visitors.

8.31.7 Security

You can configure access to the Reporting module in **CMS Desk -> Administration -> Permissions**. Choose the permission matrix for **Modules -> Reporting**.

You can assign roles with the following permissions:

- **Modify** - allows users to create, modify and delete reports
- **Read** - allows users to read existing reports
- **Save reports** - allows users to save reports

 **Permissions**


Site: ▼

Permission type: ▼

Permission matrix: ▼

| | Modify | Read | Save reports |
|------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Making reports available on the live site

The **Allow public users to see this report** property, which can be found on the **General** tab when **Editing** () a report, indicates if the report can be displayed on the live site to non-authenticated (public) users. If it's set to false, the report and its graphs will be hidden from public users.

8.31.8 Reporting internals and API

8.31.8.1 Database tables and API classes

The Reporting module uses the following database tables:

- **Reporting_Report** - contains report settings and layout
- **Reporting_ReportCategory** - contains report categories
- **Reporting_ReportGraph** - contains graph definitions
- **Reporting_ReportTable** - contains table definitions
- **Reporting_ReportValue** - contains report definitions
- **Reporting_SavedGraph** - contains graphs saved with saved reports (in binary format)
- **Reporting_SavedReport** - contains saved reports

The Reporting API is provided by the following **CMS.Reporting** namespace classes:

- **ReportCategoryInfo, ReportCategoryInfoProvider** - manage report categories
- **ReportGraphInfo, ReportGraphInfoProvider** - manage graphs
- **ReportInfo, ReportInfoProvider** - manage reports
- **ReportTableInfo, ReportTableInfoProvider** - manage tables
- **ReportValueInfo, ReportValueInfoProvider** - manage values
- **SavedGraphInfo, SavedGraphInfoProvider** - manage saved graphs (for saved reports)
- **SavedReportInfo, SavedReportInfoProvider** - manage saved reports

The following chapters show how you can access reports using the API:

- [Saving current status of the report](#)
- [Getting HTML code of a saved report](#)

8.31.8.2 Saving current status of the report

The following sample code shows you how to execute a report and save its status into a saved report. You will need to create an ASCX user control where you place the user control **CMSReporting\DisplayReport.ascx** with ID set to *displayReportControl*. The code behind will look like this:

[C#]

```
using System.Data;

protected void Page_Load(object sender, EventArgs e)
{
    // Create a new data table with parameters
    DataTable dtp = new DataTable();
    dtp.Columns.Add("ModifiedSince", typeof(DateTime));

    object[] parameters = new object[1];
    parameters[0] = new DateTime(2006, 1, 1);

    dtp.Rows.Add(parameters);

    // Disable loading parameters from basic form
    displayReportControl.LoadFormParameters = false;

    // Choose report code name
    displayReportControl.ReportName = "RecentlyModifiedDocuments";

    // Set custom parameters
    displayReportControl.ReportParameters = dtp.Rows[0];

    // Reload data with new parameters
    displayReportControl.ReloadData(false);

    // SaveReport() returns 0 if some problem occurred or
    // SavedReportID of the successfully saved report
    displayReportControl.SaveReport();
}

protected override void Render(HtmlTextWriter writer)
{
    base.Render(writer);
}
```

8.31.8.3 Getting HTML code of a saved report

The following code sample shows how to read the HTML code of a saved report and display it on a page:

[C#]

```
using CMS.Reporting;

...

// Saved report id
private int mSavedReportId = 10;

// Saved report info object
SavedReportInfo sri = null;

// Get saved report info by id
sri = SavedReportInfoProvider.GetSavedReportInfo(mSavedReportId);

if (sri != null)
{
    // Set saved report HTML to the literal control text
    ltrReportHTML.Text = sri.SavedReportHTML;
}
```

8.32 Syndication (RSS, Atom, XML)

8.32.1 Overview

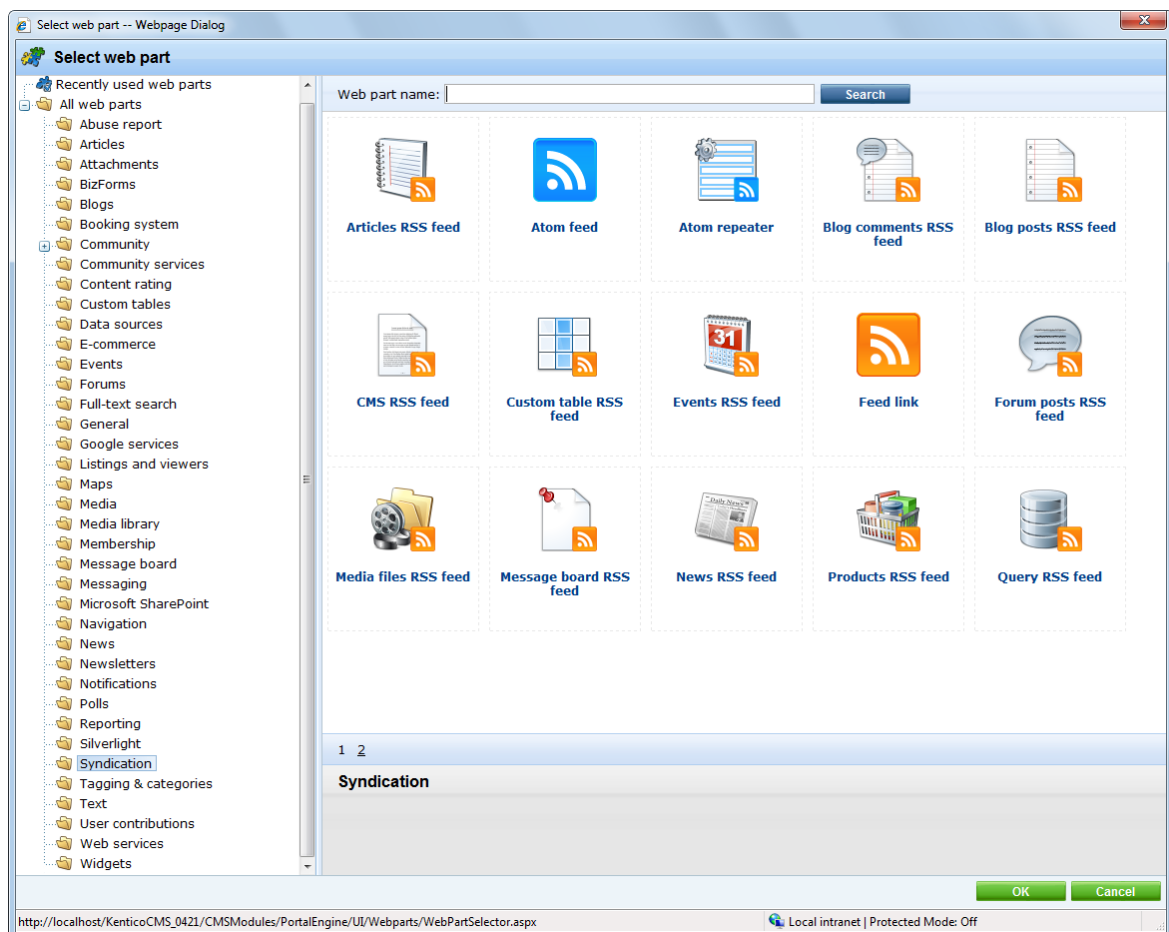
The Syndication module allows you to create [syndication feeds](#) of your site's content. The whole functionality is provided by a set of web parts stored under the **Syndication** web part category. These web parts generate feeds which conform to the [RSS](#), [Atom](#) or general XML format. The name of the feed format generated by each web part is included in the name of the web part.

Detailed overview of the web parts can be found in the [Syndication web parts](#) chapter. We have also prepared three examples of typical usage:

- [Example 1](#): Creating a **document RSS feed** using the *CMS RSS feed* web part.
- [Example 2](#): Creating an **object RSS feed** using the *RSS feed* web part and a *data source*.
- [Example 3](#): Creating a **dedicated page with an RSS feed** using the *RSS repeater* web part and a *data source*.

Live usage examples of these web parts can be found on the sample **Corporate Site**, under the **/Examples/Web-parts/Syndication/** node.

All specific web part properties are explained in [Kentico CMS Web Parts Reference](#) or after clicking the **Documentation** (🔍) link in the top right corner of the *Web part properties* dialog.



Creating RSS feeds manually

Due to backward compatibility with Kentico CMS versions prior to 5.5, it is still possible to create a page with an RSS feed manually. Even though it is not recommended to take this approach, you can learn more about it in [this chapter](#).

8.32.2 Syndication web parts and widgets

Syndication web parts are stored under the **Syndication** category in the web part catalog. There is a large number of them, but most of them are similar and can be grouped into several categories:

From the functional point of view, there are two basic types of syndication web parts - repeaters and feeds:

- **Syndication feeds** show the feed icon with an optional text. The icon and text are clickable and when clicked, a querystring parameter with the feed ID is appended to its URL and the page renders the feed.
- **Syndication repeaters** change the page on which they are placed to a feed. If you place one of the syndication repeaters on a page, it changes the page response type to *application/xml*, transforms retrieved data to the required feed format and uses the transformed data as the content of the feed. This means that the page is no longer a standard HTML page - it becomes a syndication feed.

The web parts can also be divided in terms of what data they are used for. From this perspective, you can divide them as follows:

Basic feed web parts

These are universal web parts which can create a feed of data provided by a connected [data source](#). Without a data source, the web parts are not functional. The data provided by the data source can be of any type, it just needs to be handled properly by the used transformation.

- **XML repeater**
- **RSS repeater**
- **Atom repeater**
- **RSS feed**
- **Atom feed**

Document feed web parts

These web parts are based on the **RSS feed** web part, but have a built-in data source for the **document types** in their names. This means that you don't need a connected data source - all you need is included in a single web part. They are a kind of "all-in-one" solutions for frequently used document types.

- **CMS RSS Feed**
- **Articles RSS Feed**
- **Blog posts RSS Feed**
- **Events RSS Feed**
- **News RSS Feed**

The **CMS RSS Feed** can even be used for **documents of any type**, which makes it a universal web

part for any document feed.

Object feed web parts

Similarly to object feeds described above, object feeds also have a built-in data source, letting you create feeds from **Kentico CMS objects** by adding just a single "all-in-one" web part.

- **Blog comments RSS feed**
- **Board messages RSS feed**
- **Custom tables RSS feed**
- **Media files RSS feed**
- **Products RSS feed**
- **Forum posts RSS feed**

Other syndication web parts

Custom feeds can be created using the following two web parts:

- **Query RSS feed** - generates a feed based on a custom database query and transformation
- **Web service RSS feed** - transforms a dataset provided by a web service into an RSS feed

The last web part does not create any feed, but can be used as a link to a feed:

- **Feed link** - displays the RSS icon with a link leading to a URL set in its web part properties; typically used for links to feeds created by syndication repeaters

Syndication widgets

The default installation of Kentico CMS contains a set of widgets which are derived from the web parts listed above. They provide the same functionality and look, while only a limited set of properties can be configured. The following widgets are available:

- **Articles RSS Feed**
- **Blog comments RSS feed**
- **Blog posts RSS Feed**
- **Events RSS Feed**
- **Forum posts RSS feed**
- **Media files RSS feed**
- **News RSS Feed**
- **Products RSS feed**

Further information

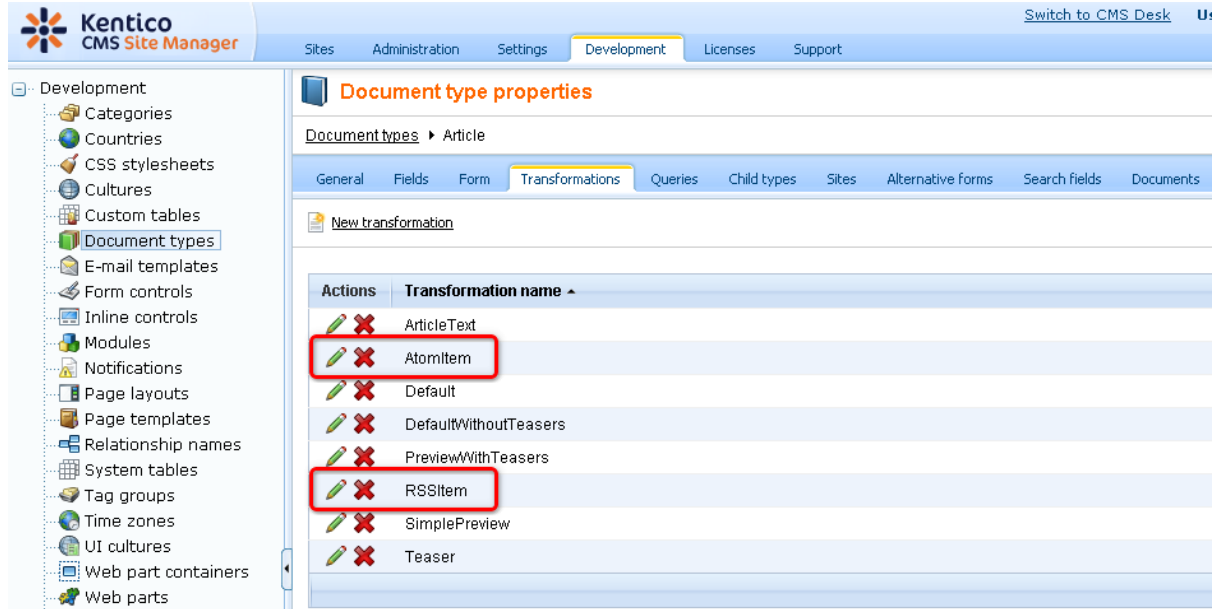
All specific properties of these web parts or widgets are explained in [Kentico CMS Web Parts Reference](#) or after clicking the **Documentation** (🔗) link in the top right corner of the *Web part (widget) properties* dialog.

8.32.3 Transformations

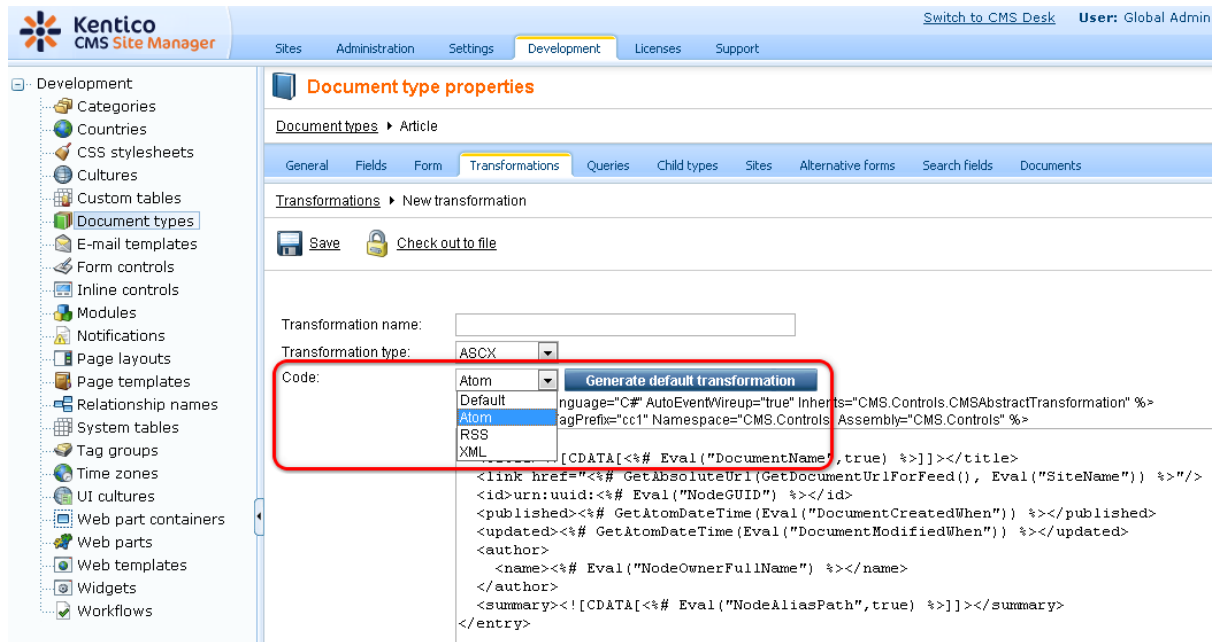
Use of transformations is of the highest importance when creating feeds, as all syndication web parts render the feeds using them. They need to be set in the **Transformation** property of each feed web

part.

All document types in Kentico CMS have the **RSSItem** and **AtomItem** transformations. When you create a new document type, these transformations are created for it automatically.

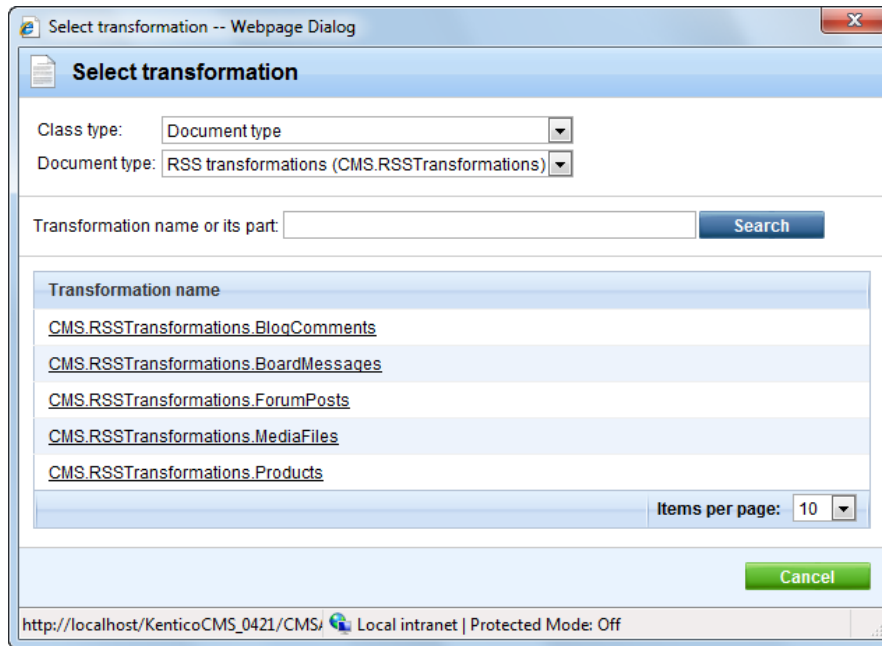


The default RSS, Atom and XML transformations can also be generated when editing or creating transformations of a document type or a custom table. To do this, you only need to select the required format from the **Code** drop-down list and click the **Generate default transformation** button.



Other feed transformations are found in a special document type called **RSS transformations (CMS.RSSTransformations)**. This is a special document type used just to store transformations for **Kentico CMS objects**. Transformations for blog comments, board messages, forum posts, media library files and

products are contained in the document type.



8.32.4 Usage examples

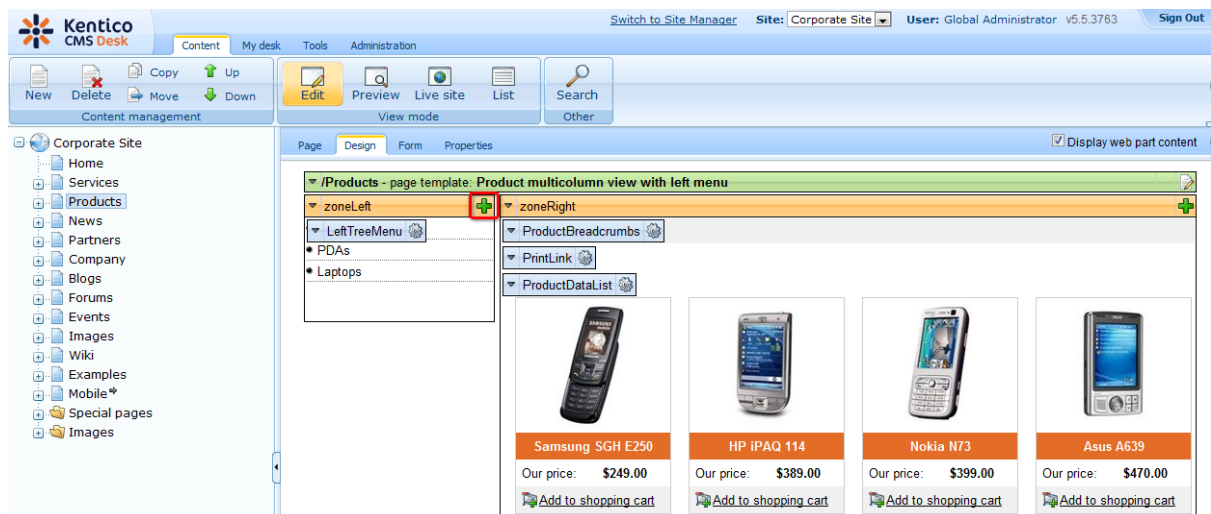
8.32.4.1 CMS RSS feed

The **CMS RSS feed** web part can be used to easily create RSS feeds from documents in the content tree. It has a **built-in Documents data source**, which means that the web part can work separately without any connected data source and that it can be used to create feeds from documents of any type.

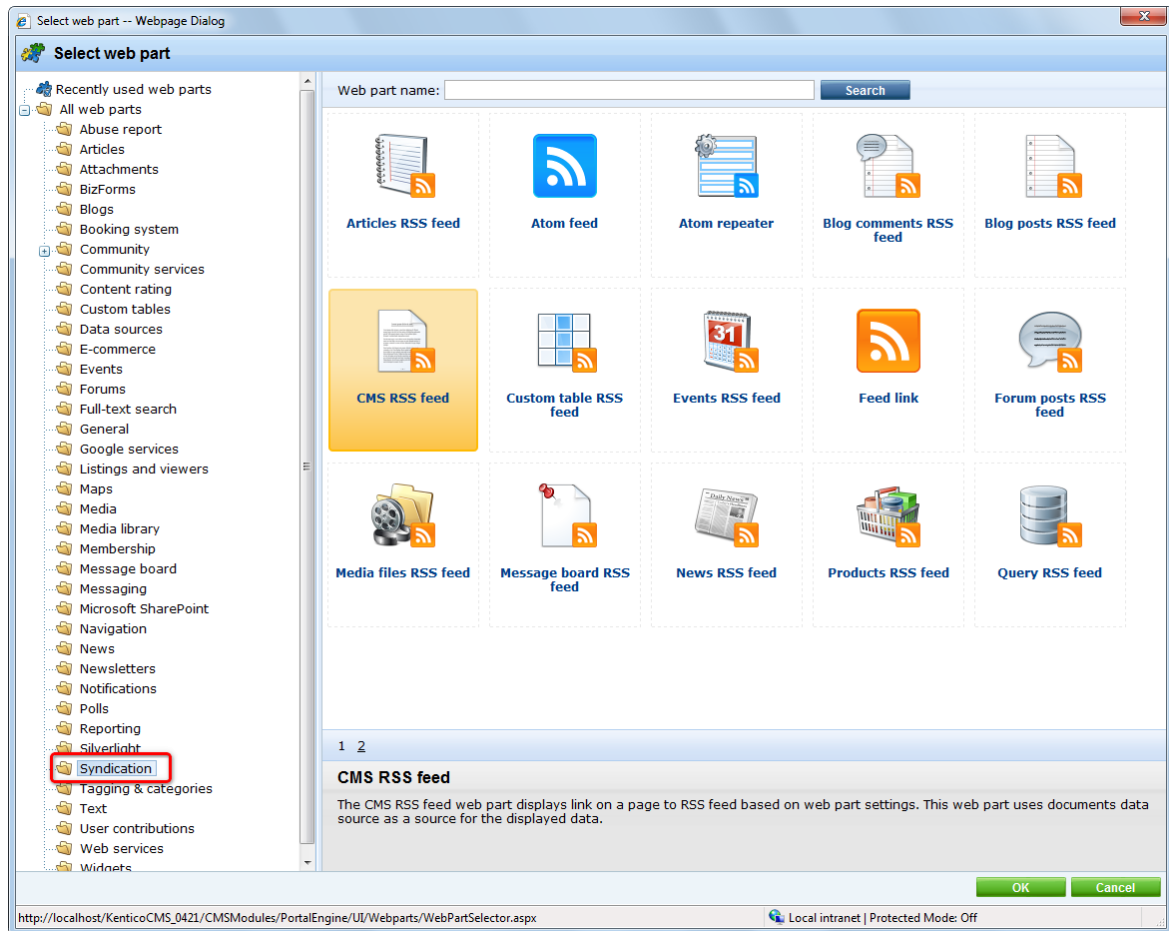
Apart from this universal web part, there are other web parts in the **Syndication** category which are pre-configured for one particular document type. See the listing in the [Syndication web parts and widgets](#) chapter.

In the following example, you will learn how to use this web part to create a feed link on the **/Products** page of the sample **Corporate site**. We will configure it so that it provides an RSS feed with products stored in all three categories under the page. The same procedure can be used on any other page and for documents of any other type, you just need to specify your required path, document type and transformation in the web part properties.

1. Sign in to CMS Desk and select the **/Products** page from the content tree. Switch to the **Design** tab and click the **Add web part (+)** icon of the *zoneLeft* web part zone.



2. In the **Select web part** dialog, select the **Syndication** category. Choose the **CMS RSS feed** web part and click **OK**.





3. The **Web part properties** dialog opens. To achieve the required behavior, use the following configuration:

- **Link text:** *Products RSS feed*
- **Feed name:** *MyProductsFeed*
- **Feed title:** *Corporate Site Products*
- **Feed description:** *This is a sample RSS feed of products on the Corporate Site.*
- **Path:** */Products/%/*
- **Transformation name:** *CMS.RSSTransformations.Products*
- **Document types:** *CMS.CellPhone;CMS.Laptop;CMS.Pda*

Leave default values for the rest of the properties and click **OK**.

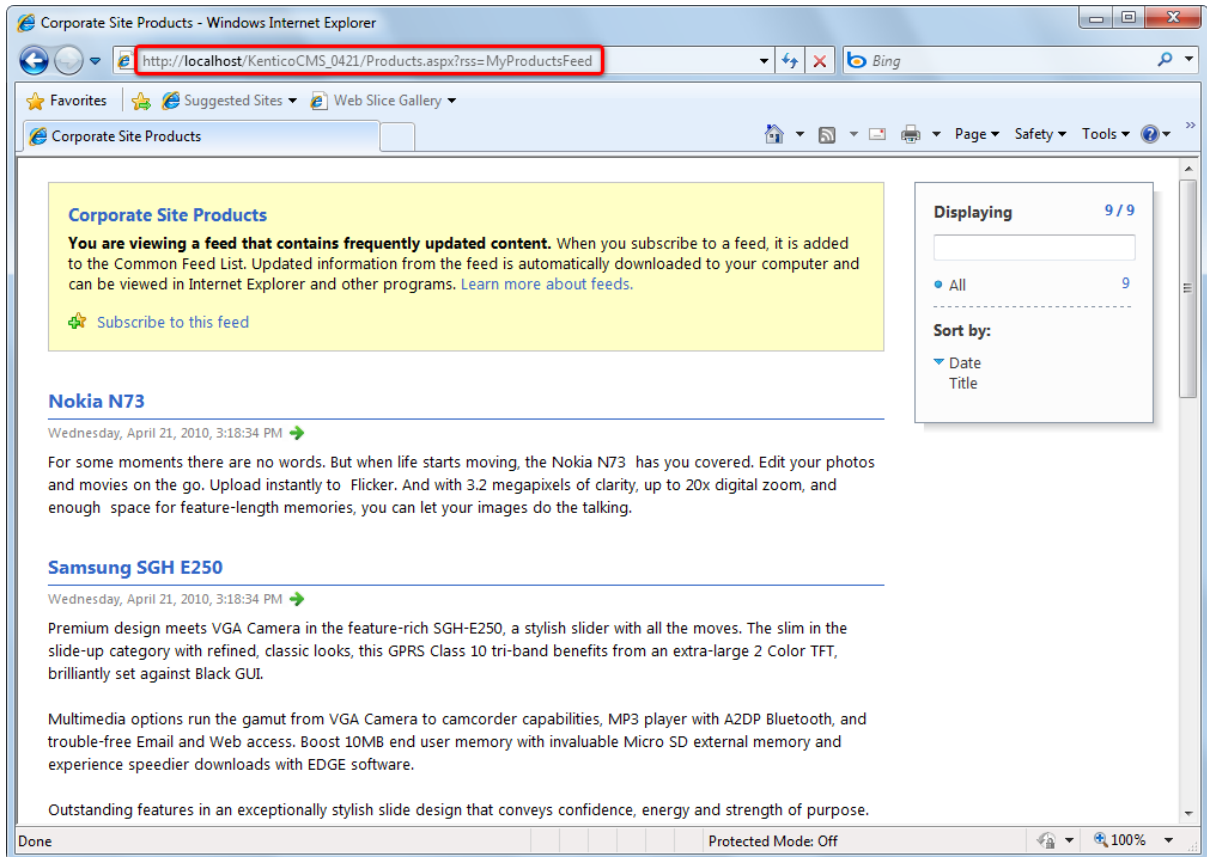
4. Sign out of CMS Desk and browse to the **Products** page. You should see the RSS icon and link as highlighted in the screenshot below.

The screenshot shows a website's navigation menu with 'Products' highlighted. On the left, there are category filters for 'Cell phones', 'PDAs', and 'Laptops'. Below these filters, a link for 'Products RSS feed' is highlighted with a red box. The main content area displays a grid of product listings:

| Products | |
|--|---|
| 
Samsung SGH E250
Our price: \$249.00
Add to shopping cart | 
HP iPAQ 114
Our price: \$389.00
Add to shopping cart |
| 
Nokia N73
Our price: \$399.00
Add to shopping cart | 
Asus A639
Our price: \$470.00
Add to shopping cart |
| 
Acer Aspire 3105WLMi
Our price: \$490.00
Add to shopping cart | 
Asus F3U AP059C
Our price: \$999.00
Add to shopping cart |

At the bottom of the page, there is a footer with links for 'Site map', 'Disclaimer', and 'Mobile version'.

5. Click the icon or link, your browser will detect that you are accessing an RSS feed and display its content. As you can see, the URL of the feed is actually the URL of the page where the web part is placed with the **?rss=MyProductsFeed** querystring appended (this can be modified using the *Feed querystring key* and *Feed name* web part properties). The same URL can be used to access the feed directly both from a browser or a dedicated RSS reader program.



8.32.4.2 RSS feed + data source

By connecting the **RSS feed** web part to a **data source**, you can create an RSS feed of the data provided by the data source. The **Atom feed** web part can be used exactly the same way, but the rendered feed is in the *Atom* format.

In the [previous example](#), we have demonstrated how to use the *CMS RSS Feed* web part to create an RSS feed of **documents** stored in the content tree. The approach that we will explain now can also be used for that purpose, but you will typically use it to create feeds from Kentico CMS **objects** (forum posts, board comments, media files, ...).

In the following example, you will see how to create an RSS feed of forum posts in the site forums on the sample Corporate site. We will achieve this using the **RSS feed** and **Forum posts data source** web parts. The same procedure can be used for any other data, you only need to use a properly configured data source and handle the provided data by a suitable transformation.

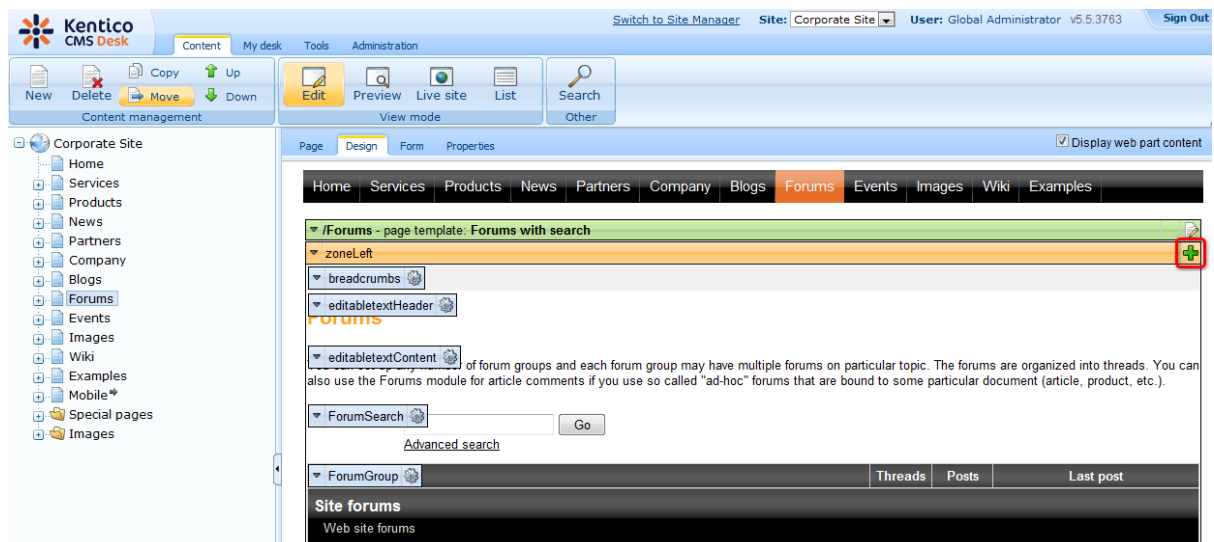


Please note

The result of the following example can also be achievable using a single web part - the **Forum posts RSS feed** web part, which has a built-in *Forum posts data source*. Similarly, there are all-in-one web parts for other frequently used document types and objects (see the listing [here](#)).

The following example uses two separate web parts for educational purposes only.

1. Sign in to CMS Desk and select the **/Forums** page from the content tree. Switch to the **Design** tab and click the **Add web part** (+) icon of the *zoneLeft* web part zone.

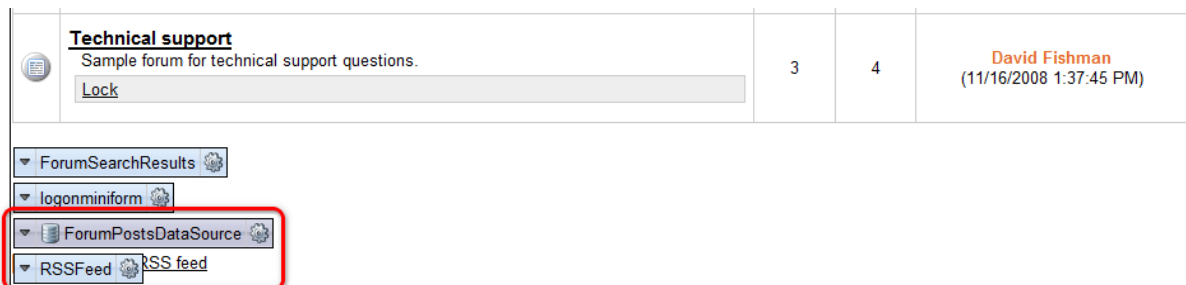


2. Select the **Data sources/Forum posts data source** web part and click **OK**. Leave all its properties at the default values, which will result in the data source providing all forum posts from all forum groups on the site. Click **OK**. The data source will be added to the bottom of *zoneLeft*.

3. Click the **Add web part** (+) icon again and select the **Syndication/RSS feed** web part. Click **OK** and enter the following in the *Web part properties* dialog:

- **Link text:** *Forum posts RSS feed*
- **Feed name:** *MyForumPostsFeed*
- **Feed title:** *Corporate Site Forum Posts*
- **Feed description:** *This is a sample feed of all forum posts on the Corporate Site.*
- **Data source name:** *ForumPostsDataSource*
- **Transformation name:** *CMS.RSSTransformations.ForumPosts*

Leave defaults for the rest of the properties and click **OK**. The two web parts should now be at the bottom of the web part zone and fully configured for the required behavior.



The screenshot shows a web part zone with the following content:

- A forum post titled "Technical support" with the description "Sample forum for technical support questions." and a "Lock" button. It has 3 replies and 4 views, posted by David Fishman on 11/16/2008 at 1:37:45 PM.
- A list of web parts: ForumSearchResults, logonminiform, ForumPostsDataSource, and RSSFeed. The last two, ForumPostsDataSource and RSSFeed, are highlighted with a red box.

4. Sign out of CMS Desk and browse to the **Forums** page. You should see the RSS icon and link as highlighted in the screenshot below.



Home Services Products News Partners Company Blogs **Forums** Events Images Wiki Examples

Forums

Forums


You can set up any number of forum groups and each forum group may have multiple forums on particular topic. The forums are organized into threads. You can also use the Forums module for article comments if you use so called "ad-hoc" forums that are bound to some particular document (article, product, etc.).

Search forums:
[Advanced search](#)

| Forum | Threads | Posts | Last post |
|---|---------|-------|---|
| Site forums | | | |
| Web site forums | | | |
|  Announcements
Product announcements come here. | 2 | 6 | Frank Stevens
(11/16/2008 1:08:41 PM) |
|  Technical support
Sample forum for technical support questions. | 3 | 4 | David Fishman
(11/16/2008 1:37:45 PM) |

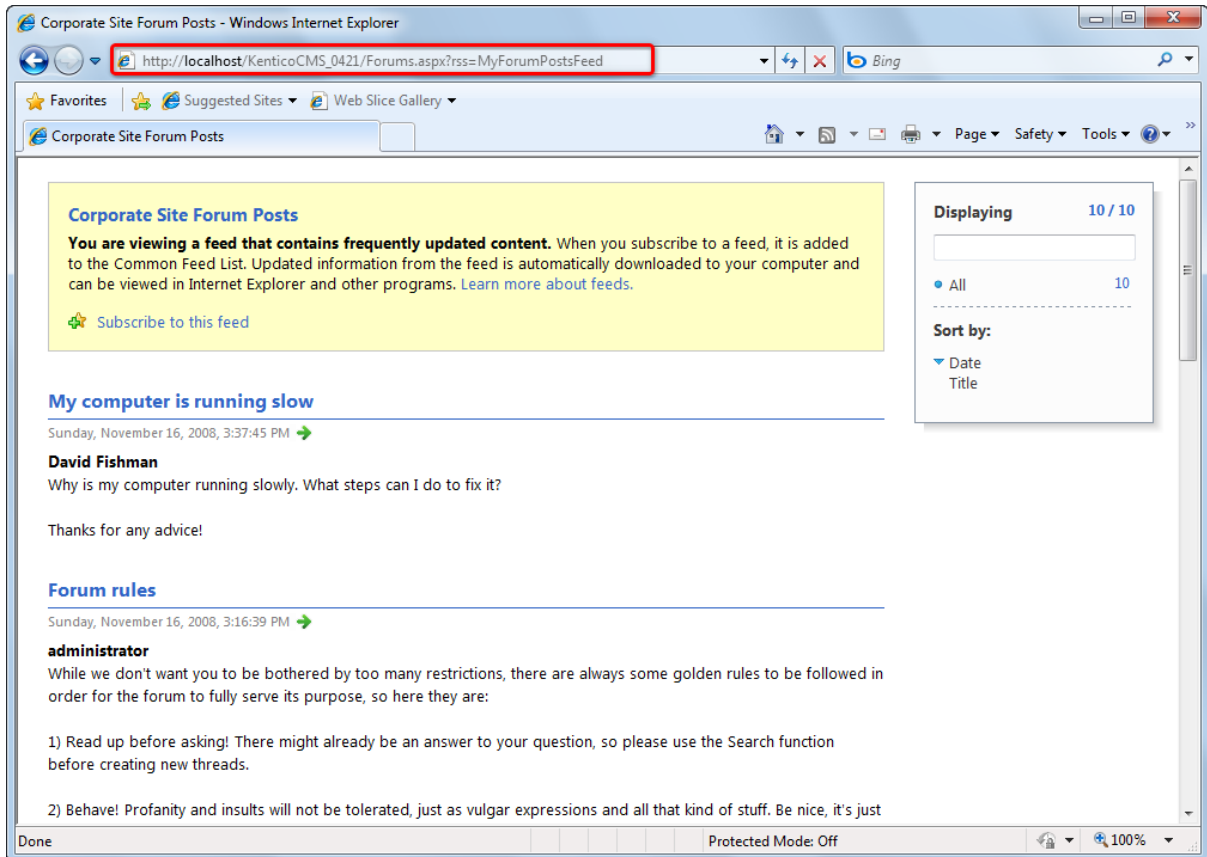
Login

Username

 **Forum posts RSS feed**

[Site map](#) | [Disclaimer](#) | [Mobile version](#)

5. Click the icon or link, your browser will detect that you are accessing an RSS feed and display its content. As you can see, the URL of the feed is actually the URL of the page where the web part is placed with the **?rss=MyForumPostsFeed** querystring appended (this can be modified using the *Feed querystring key* and *Feed name* web part properties). The same URL can be used to access the feed directly both from a browser or a dedicated RSS reader program.



8.32.4.3 RSS repeater + Data source

The **RSS repeater** web part can be used to transform a page into an RSS feed. This means that when a page containing the web part is accessed, its response type is changed to *application/xml* and the content of the feed is rendered. This is useful typically if you want your feed to have a dedicated URL (i. e. not a URL of a page with a querystring parameter). The **Atom repeater** and **XML repeater** web parts can be used exactly the same way, but the rendered feed is in the *Atom* or *XML* format.

In the following example, we will create an RSS feed with forum posts, the same as in the [previous example](#). But this time, we want the feed URL to be *<application path>/Forums/RSS.aspx*. Therefore, we will create a **dedicated page** with this URL which will contain the **RSS repeater** web part and which will be linked from the **/Forums** page.

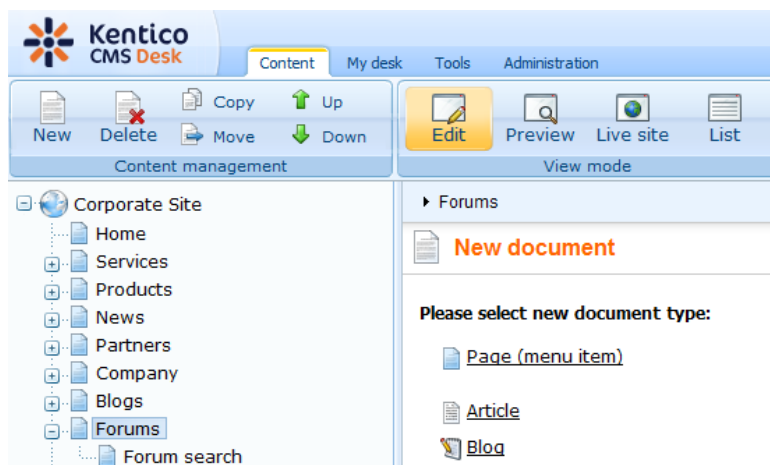


Please note

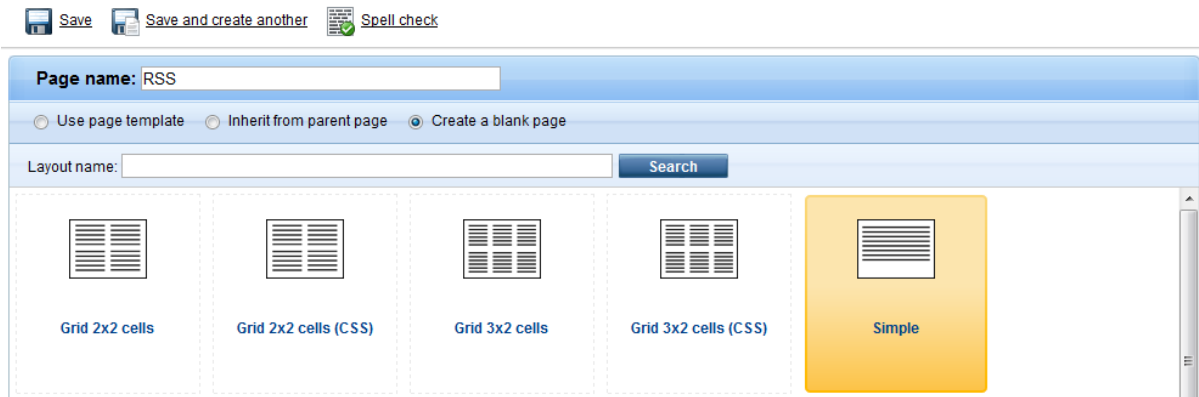
The result of the following example can also be achieved using a single web part - the **Forum posts RSS feed** web part, which has a built-in *Forum posts data source*. Similarly, there are all-in-one web parts for other frequently used document types and objects (see the listing [here](#)).

The following example uses two separate web parts for educational purposes only.

1. Sign in to CMS Desk and select the **Forums** page from the content tree. Click **New** and choose the **Page (menu item)** document type.



2. Choose to **Create a blank page** using the **Simple** layout. Enter *RSS* for **Page name** and click **Save**.

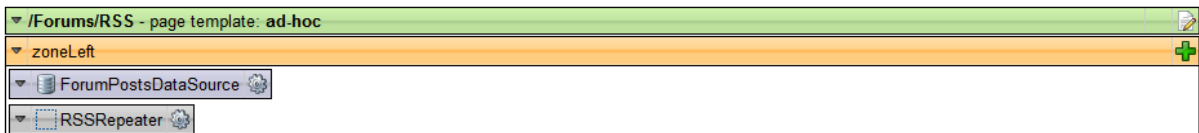


3. The page opens in **Design** mode. Click the **Add web part (+)** icon of the only web part zone on the page. Select the **Data sources/Forum posts data source** web part and click **OK**. Leave all its properties at the default values, which will result in the data source providing all forum posts from all forum groups on the site. Click **OK**.

4. Click the **Add web part (+)** icon again and select the **Syndication/RSS repeater** web part. Click **OK** and enter the following in the *Web part properties* dialog:

- **Feed name:** *MyForumPostsFeed*
- **Feed title:** *Corporate Site Forum Posts*
- **Feed description:** *This is a sample feed of all forum posts on the Corporate Site.*
- **Data source name:** *ForumPostsDataSource*
- **Transformation name:** *CMS.RSSTransformations.ForumPosts*

Leave defaults for the rest of the properties and click **OK**.



5. Now we have the RSS feed created, but without the knowledge of the page's URL, site visitors have no chance to access it. This is exactly when the **Feed link** web part comes in handy. It is a simple web part which displays the RSS icon with a link leading to a URL specified in its properties. We will add it to the */Forums* page.

Select the */Forums* page in the content tree, switch to the **Design** mode and click the **Add web part** (+) icon of the *zoneLeft* web part zone. Select **Syndication/Feed link** and click **OK**. Enter the following properties:

- **Link text:** *Forum posts RSS feed*
- **Feed URL:** *~/Forums/RSS.aspx*
- **Feed name:** *MyForumPostsFeed*

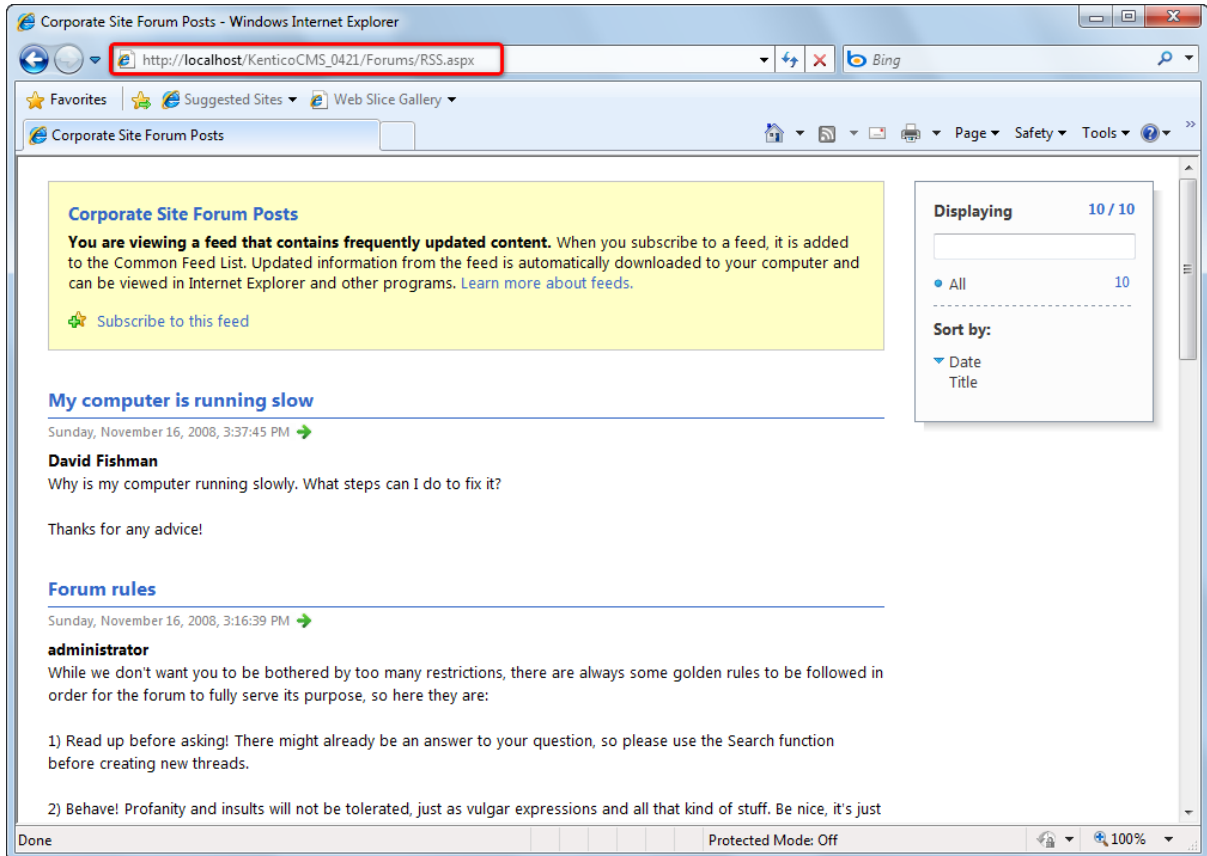
Leave defaults for the rest of the properties and click **OK**.

6. Sign out of CMS Desk and browse to the **Forums** page. You should see the RSS icon and link as highlighted in the screenshot below.

The screenshot shows the Forums page layout. At the top is a navigation menu with items: Home, Services, Products, News, Partners, Company, Blogs, Forums (highlighted), Events, Images, Wiki, Examples. Below the menu is a breadcrumb trail: Forums. The main heading is "Forums". A text block explains forum functionality. Below that is a search bar with a "Go" button and a link to "Advanced search". A table lists forum categories with columns for Forum, Threads, Posts, and Last post. The table contains two rows: "Announcements" and "Technical support". Below the table is a "Login" section with a "Username" input field and a "Log on" button. At the bottom left, a link "Forum posts RSS feed" is highlighted with a red box. At the bottom right, there are links for "Site map", "Disclaimer", and "Mobile version".

| Forum | Threads | Posts | Last post |
|---|---------|-------|---|
| Site forums
Web site forums | | | |
| Announcements
Product announcements come here. | 2 | 6 | Frank Stevens
(11/16/2008 1:08:41 PM) |
| Technical support
Sample forum for technical support questions. | 3 | 4 | David Fishman
(11/16/2008 1:37:45 PM) |

7. Click the icon or link, your browser will detect that you are accessing an RSS feed and display its content. As you can see, the URL of the feed is actually the URL of the page where the web part is placed. The same URL can be used to access the feed directly both from a browser or a dedicated RSS reader program.



8.32.5 Creating RSS feed pages manually (obsolete)

Due to backward compatibility with Kentico CMS versions prior to 5.5, it is also possible to create a dedicated page with an RSS feed. This way of creating RSS feeds is **obsolete** now, as syndication web parts provide a much more convenient way of creating RSS feeds.

The default installation contains a simple **CMSPages\NewsRss.aspx** page which shows how to build your own RSS feed. It works with news items, but you can modify the code so that it displays a different type of documents.

The following code example shows the code of the *NewsRss.aspx* page:

```
<%@ Page Language="C#" AutoEventWireup="true" CodeFile="RSS.aspx.cs"
    Inherits="RSSNews" %>
<%@ Register Assembly="CMS.Controls" Namespace="CMS.Controls"
    TagPrefix="cc1" %><?xml version="1.0" encoding="utf-8" ?>
<rss version="2.0">
  <channel>
    <title>News RSS</title>
    <link><![CDATA[<%=HttpContext.Current.Request.Url.AbsoluteUri.Remove
    (HttpContext.Current.Request.Url.AbsoluteUri.Length - HttpContext.Current.Request.
    Url.PathAndQuery.Length) + HttpContext.Current.Request.ApplicationPath%>]]></link>

    <description>News RSS Feed</description>
    <cc1:cmsrepeater ID="NewsRepeater" runat="server" OrderBy="NewsReleaseDate DESC"
    ClassNames="cms.news"
    TransformationName="cms.news.rssitem" SelectedItemTransformationName="cms.news.
    rssitem"
    Path="/news/%"></cc1:cmsrepeater>
  </channel>
</rss>
```

As you can see, the page contains only RSS elements with dynamic code. The RSS items are rendered using a *CMSRepeater* control with appropriate transformation.

The code behind looks like this:

[C#]

```
protected void Page_Load(object sender, EventArgs e)
{
    Response.ContentType = "text/xml";
}
```

This code changes the output content type to XML.

How to create an RSS feed page for a different document type

If you want to display articles instead of news in your RSS feed, you will need to follow these steps:

1. Create a new ASPX page called `articles_rss.aspx`.
2. Copy and paste all code from the `rss.aspx` file except for the `<%@ Page %>` directive.
3. Change the following properties of the `CMSRepeater` control:
 - **SelectNodesOrderBy**: DocumentModifiedWhen DESC
 - **SelectNodesClassName**: cms.article
 - **TransformationName**: cms.article.rssitem
 - **SelectedItemTransformationName**: cms.article.rssitem
 - **SelectNodesPath**: /%
 - **SelectNodesWhere**: leave empty
4. Add the same line of code as used in the `rss.aspx.cs` code behind file (`Response.ContentType = "text/xml"`) to `articles_rss.aspx.cs`.
5. Create the transformation `cms.article.rssitem` like this in **Site Manager -> Development -> Document Types -> ... edit Article ... -> Transformations**:

```
<item>
  <guid isPermaLink="true"><![CDATA[<%# GetAbsolutePath(GetDocumentUrl()) %>]]
</guid>
  <title><![CDATA[<%# Eval("ArticleTitle") %>]]></title>
  <description><![CDATA[<%# Eval("ArticleText") %>]]></description>
  <pubDate><%# Convert.ToDateTime(Eval("DocumentModifiedWhen")).ToString("r") %
></pubDate>
  <link><![CDATA[<%# GetAbsolutePath(GetDocumentUrl()) %>]]></link>
</item>
```

This code renders the particular items.

8.33 Sharepoint integration

8.33.1 Overview

Kentico CMS allows you to access data stored on a SharePoint (Windows SharePoint Services 3.0 (WSS) or MOSS - Microsoft Office SharePoint Server) server and display them on your site. This can be done using the [SharePoint web parts](#).

What it can do

- Get list and list items data from SharePoint and provide it to Kentico CMS.
- Download documents or images.

What it can't do

- Modify SharePoint data.
- Display Kentico CMS data in SharePoint.

How it works

SharePoint web parts use pre-generated proxy classes of selected SharePoint web services to get data from the server. The following services are used:

- *http://server/_vti_bin/Lists.asmx* - methods for working with lists
- *http://server/_vti_bin/Imaging.asmx* - methods for working with picture libraries
- *http://server/_vti_bin/Copy.asmx* - methods for retrieving file content

The returned data is in CAML (XML) format, which needs to be further processed to display the data in a meaningful way. XSLT or ASCX transformations may be used for this purpose. In case of ASCX, the CAML response must be transformed to ASP Dataset.

8.33.2 Web parts

Web parts for connection to SharePoint are stored in the **Microsoft SharePoint** category in the web part catalog. It is the following four web parts:

- **SharePoint datasource**
- **SharePoint datagrid**
- **SharePoint datalist**
- **SharePoint repeater**

In this text, you can find information about the specific properties of these web parts.

Sharepoint

The following properties can be configured in the **Sharepoint** section. The settings are common for all the web parts listed above.

- **Mode**: determines what the web part will do (what data will be retrieved from the SharePoint server) and therefore which web service should be used
- **SharePoint site URL**: URL of the SharePoint site; based on the "Mode" settings, the full URL of the required web service is determined by this option (it is not configured directly)
- **Username, password**: you can specify username and password for authentication directly in the web part properties, or you can inherit global values from *Site Manager -> Settings -> Microsoft SharePoint*; if you want to use Site Manager settings, leave the fields empty
- **List name**: if you use the "Display list items" or "Display list of pictures" options, you must specify the list from which the items should be loaded; in the other two modes, you can leave it empty; please note: the field is case sensitive

Just these settings should make the **SharePoint datagrid** display data or the **SharePoint datasource** to provide them. The other two webparts still need to have a transformation specified.

The screenshot shows the 'Web part properties (SharePoint datalist)' dialog box in Kentico CMS. The 'Sharepoint' section is expanded, showing the following fields:

- Display to roles: [Empty field] [Add roles] [Clear]
- Sharepoint section:
 - SharePoint site URL*: [http://<Site_URL>]
 - Username: [Empty field]
 - Password: [Empty field]
 - List name: [Customers]
 - Mode*: [Display list items] (dropdown menu is open showing: Display list items, Display site lists, Display picture libraries, Display list of pictures)
- Transformations section:
 - Transformation name: [Empty field] [Select] [Edit]
 - Alternating transformation name: [Empty field] [Select] [Edit]

At the bottom of the dialog, there is a checked 'Refresh content' checkbox and three buttons: 'OK', 'Cancel', and 'Apply'. The status bar at the bottom indicates 'Local intranet | Protected Mode: Off'.

Transformations

The **SharePoint datalist** and **SharePoint repeater** need to have a transformation specified in order to display the retrieved data.

There is a number of pre-defined transformations which you can use almost right-off and of course modify them to your needs. The transformations are stored under the **SharePoint - Transformations** document type (can be edited in **Site Manager -> Development -> Document types**). Their names are self-explaining - they correspond to what they should be used for.

The only thing you need to get them work is to edit (✎) them and **replace the sample server names or field names with the real names** used on the SharePoint server.

Advanced

In the **Advanced** section, you can specify (limit) in more detail what you want to be retrieved. These settings are applied only in the “Get list items” mode.

- **Row limit:** sets the maximum number of retrieved items
- **Query:** filters or sorts returned items; it is similar to WHERE conditions in SQL, but it has totally different syntax based on CAML; for more information on how to construct such queries, search SharePoint documentation or use Google with keywords like “sharepoint query”.
- **View fields:** specifies directly which fields (columns) of SharePoint list should be retrieved

Display

In this section, you can control how the retrieved data will be processed and displayed.

- **Selected item querystring key name:** name of a querystring key by whose presence will the items be selected
- **Selected item field name:** allows you to specify by which field you want the items to be selected; the default approach is to select items by ID - the web part tries to get query parameters with the name specified in the *Selected item querystring key* property and use its value, e.g. `.aspx?id=2` will select item with the value of the ID field equal to 2 if you entered *id* in the property above; note: the original field name is used here – without the `ows_` prefix; the field is case sensitive
- **Selected item field type:** provides information about the type of the ItemID field; for IDs, you should use the “Counter” type; for strings, use the “Text” type; these two should be sufficient for most cases, but you can search SharePoint documentation for other types
- **Use dataset:** switches between usage of ASCX and XSLT transformations; if enabled, retrieved XML is converted to a dataset which serves as data source to a classic ASP repeater; using XSLT, you can convert XML to HTML directly
- **Dataset fields:** if you want to use the dataset, but you don’t need all fields, you can enumerate the fields which should be included in the dataset, separated by semicolons; this property can be particularly useful if you want to use cache

Please note: Properties in the **Display** section are not available for the **SharePoint datagrid** web part.

Debug

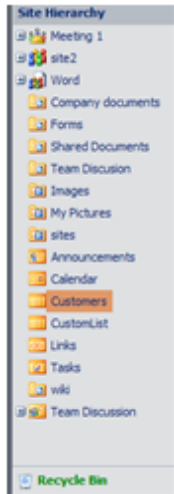
Because it is sometimes hard to tell or remember how SharePoint addresses list fields, we implemented the **Show raw response** function. It displays all retrieved SharePoint data in its raw XML form. You can

look for fields which contain valuable information and can be displayed. Note: if the data is fetched from cache, the response can't be printed.

8.33.3 Usage examples

8.33.3.1 Site hierarchy

In this example, you will see how to display site lists which resemble the site hierarchy panel in the SharePoint site. It is quite simple, in fact, it is just the *Display site lists* mode.



This can be done by adding one of the SharePoint web parts (e.g. Microsoft SharePoint -> SharePoint repeater) and configuring them the following way:

- **SharePoint site URL:** URL of your SharePoint server
- **Mode:** *Display site lists*
- **Username, password:** enter your username and password or leave the fields empty if you have it configured in *Site manager -> Settings -> Microsoft SharePoint*
- **Transformation:** there is a prepared transformation for site hierarchy called **SiteHierarchy** under the **SharePoint – Transformations** document type. For correct behavior, you must just change the name of the SharePoint server.

Leave default values for the rest of the properties and click **OK**. You should see a result similar to the screenshot below - it simply creates a link to each of the lists on the SharePoint server.

[Announcements\(2\)](#)
[Calendar\(3\)](#)
[Company documents\(7\)](#)
[Customers\(51\)](#)
[CustomList\(4\)](#)
[Empty\(0\)](#)
[EmptyList\(0\)](#)
[Forms\(0\)](#)
[Images\(5\)](#)
[Kentico Annual Reports\(4\)](#)
 |< < 1 2 > >|

8.33.3.2 List items

The *Display list items* mode enables you to display items from any list from the SharePoint server.



Let's say that in SharePoint, there is a custom list called *Customers*, storing information about company customers in fields like *Customer name*, *Street*, *City*, *Phone*, etc. Let's say that we want to display data from this list on our Kentico CMS website.

1. This can be done by adding one of the SharePoint web parts (e.g. Microsoft SharePoint -> SharePoint repeater) and configuring them the following way:

- **SharePoint site URL:** URL of your SharePoint server
- **Mode:** *Display list items*
- **Username, password:** enter your username and password or leave the fields empty if you have it configured in *Site manager -> Settings -> Microsoft SharePoint*
- **Transformation:** there is a prepared transformation for item lists called **ListItems** under the **SharePoint – Transformations** document type; for correct behavior, you must just change the name of the SharePoint server
- **Show raw response:** enabled; this is because we will need to inspect the retrieved data and change the transformation to suit our needs

Leave default values for the rest of the properties and click **OK**. You should see a result similar to the screenshot below.

```
(2009-06-26 13:24:54)
(2009-06-26 13:24:54)
(2009-06-26 13:24:54)
(2009-06-26 13:24:54)
(2009-06-26 13:24:54)
```

```
<rs:data ItemCount="49" xmlns:rs="urn:schemas-microsoft-com:rowset">
  <:row ows_Attachments="0" ows_LinkTitle="101" ows_CustomerName="Mr. Walter Reed" ows_Street="150 Hall Road" ows_City="Brooklyn" ows_State="NY" ow
  <:row ows_Attachments="0" ows_LinkTitle="102" ows_CustomerName="Mr. Toby Stein" ows_Street="481 North Phillips Road" ows_City="Brooklyn" ows_Stat
  <:row ows_Attachments="0" ows_LinkTitle="103" ows_CustomerName="Mr. Donald Bench" ows_Street="408 King Street" ows_City="Brooklyn" ows_State="NY"
  <:row ows_Attachments="0" ows_LinkTitle="104" ows_CustomerName="Ms. Joan Hoffman" ows_Street="350 Garfield Avenue" ows_City="Westchester" ows_Sta
  <:row ows_Attachments="0" ows_LinkTitle="105" ows_CustomerName="Ms. Barbara Fasaco" ows_Company="Fasaco Premiums" ows_Street="230 South Phillips
  <:row ows_Attachments="0" ows_LinkTitle="106" ows_CustomerName="Mr. Herb Merritt" ows_Company="Herb's Heaven" ows_Street="190 Willow Street" ows_
  <:row ows_Attachments="0" ows_LinkTitle="107" ows_CustomerName="Ms. Doris Reaume" ows_Company="Green Glory" ows_Street="82 Seneca Street" ows_Cit
```

2. That's not exactly what we want. We would like to see the customers' name and city. We must look into the raw output and search for those fields. We find them there under the `ows_CustomerName` and `ows_Street` attributes.

Now that we know the names of the attributes, we need to edit the transformation code or create a new transformation.

Replace the original **Transformation**:

```
<%# Eval("ows_Title") %> (<%# Eval("ows_Created") %>) <br />
```

With something like this:

```
<%# Eval("ows_CustomerName") %> - <%# Eval("ows_City") %> <br />
```

The output looks better now, it displays the desired values.

```
Ms. Janice Stapleton - Flushing
Mr. Joe Markovicz - Queens
Mr. Paul Jenson - Queens
Mr. Lee Guazzo - Queens
Ms. Kim Hajek - Queens
```

```
<rs:data ItemCount="49" xmlns:rs="urn:schemas-microsoft-com:rowset">
  <:row ows_Attachments="0" ows_LinkTitle="101" ows_CustomerName="Mr.
  <:row ows_Attachments="0" ows_LinkTitle="102" ows_CustomerName="Mr.
  <:row ows_Attachments="0" ows_LinkTitle="103" ows_CustomerName="Mr.
  <:row ows_Attachments="0" ows_LinkTitle="104" ows_CustomerName="Ms.
  <:row ows_Attachments="0" ows_LinkTitle="105" ows_CustomerName="Ms.
```

3. Now we would like to be able to click each item and see more detail about it. We must prepare the **Selected item transformation**. The transformation may look like the following code sample:

```
<strong><%# Eval("ows_CustomerName") %></strong><br/>
<%# Eval("ows_City") %> <br/>
<%# Eval("ows_Street") %> <br/>
<%# Eval("ows_Phone") %> <br/>
```

4. In web part properties, we must enter the field name of the field by which we want to select the selected items. In this case, there is the ID field. In raw response output, it can be seen as `ows_ID`. So enter the following values:

- **Selected item querystring key name:** id
- **Selected item field name:** ID
- **Selected item field type:** Counter

Finally we must alter the original **Transformation** to suit the values we just entered, i.e. to create a link to customer details using the `id` parameter in query string. It can look like this.

```
<a href="<%# CMS.GlobalHelper.UrlHelper.AddParameterToUrl(CMSContext.RawUrl,"id",
(string)Eval("ows_ID")) %>">
<%# Eval("ows_CustomerName") %> - <%# Eval("ows_City") %> </a><br />
```

The final result looks like this - a simple text list of customers with links:

[Mr. Gregory Olsen - Brooklyn](#)
[Ms. Shirley Woodruff - Queens](#)
[Mr. Wayne Bouwman - Queens](#)
[Mr. Ken Hodge - Hampton](#)
[Ms. Pam Leonard - Hampton](#)
[Ms. Michele Yasenak - Boxford](#)

After clicking a customer name, detail of the customer is displayed.

Mr. Wayne Bouwman
Queens
400 Salmon Street
(508) 966-9827

```
<rs:data ItemCount="1" xmlns:rs="urn:schemas-microsoft-com:rowset">
  <rs:row ows_Attachments="0" ows_LinkTitle="123" ows_CustomerName="Mr. Wayne Bouwman" ows_Street="400 Salmon Street"
</rs:data>
```

5. Now let's configure the **Advanced** settings. We will want the maximum number of 10 customers to be displayed and we want to display only customers from *Queens*.

Enter number 10 to the **Row limit** field and use this text as the **Query**:

```
<Query>
<Where><Eq><FieldRef Name="City" /><Value Type="Text">Queens</Value></Eq></Where>
</Query>
```

The Eq tag means equals, field name is City, city equals to value of text type, which is Queens, city equals Queens.

Click OK, you should see the filtered output now as in the following screenshot:

[Ms. Shirley Woodruff - Queens](#)
[Mr. Wayne Bouwman - Queens](#)
[Ms. Betty Shevlin - Queens](#)
[Ms. Deborah Wolfe - Queens](#)
[Ms. Kelly Smith - Queens](#)
[Mr. Paul Griffin - Queens](#)
[Mr. Joe Markovicz - Queens](#)
[Mr. Paul Jenson - Queens](#)
[Mr. Lee Guazzo - Queens](#)
[Ms. Kim Hajek - Queens](#)

```
<rs:data ItemCount="10" xmlns:rs="urn:schemas-microsoftof
  <s:row ows_Attachments="0" ows_LinkTitle="122"
  <s:row ows_Attachments="0" ows_LinkTitle="123"
  .....
```

8.33.3.3 Picture libraries

In this example, we use SharePoint to retrieve only a picture library type lists. For setup, you must just set the following properties:

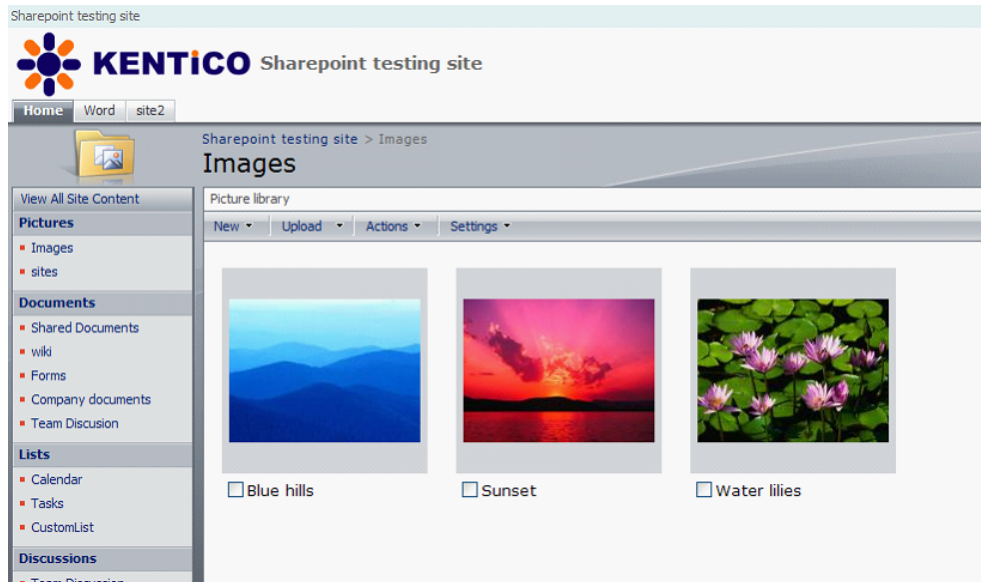
- **SharePoint site URL:** URL of your SharePoint server
- **Mode:** *Display picture libraries*
- **Username, password:** enter your username and password or leave the fields empty if you have it configured in *Site manager -> Settings -> Microsoft SharePoint*
- **Transformation:** there is a prepared transformation for picture libraries called **PictureLibLists** under the **SharePoint – Transformations** document type. For correct behavior, you must just change the name of the SharePoint server.

Leave default values for the rest of the properties and click **OK**. You should see a result similar to the screenshot below - it shows a list of picture libraries with link to SharePoint server.

[Empty](#)
[Images](#)
[My Pictures](#)
[sites](#)

8.33.3.4 List of pictures

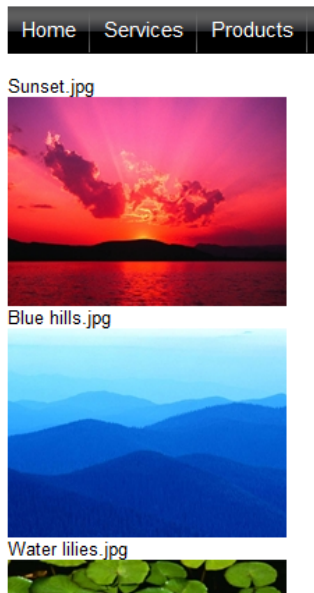
The *Display list of pictures* mode enables you to display pictures from picture libraries on a SharePoint server.



On the SharePoint server, we have a picture library named *Images* and 3 pictures in it. We want to display these pictures in our Kentico CMS site. For setup, you must enter the following properties of the web part (e.g. SharePoint repeater):

- **SharePoint site URL:** URL of your SharePoint server
- **Mode:** *Display picture lists*
- **Username, password:** enter your username and password or leave the fields empty if you have it configured in *Site manager* -> *Settings* -> *Microsoft SharePoint*
- **List name:** *Images*
- **Transformation:** there is a prepared transformation for picture lists called **Pictures** under the **SharePoint – Transformations** document type. For correct behavior, you must just change the name of the SharePoint server.

Leave default values for the rest of the properties and click **OK**. You should see a result similar to the screenshot below.



The transformation code looks like this:

```
<%# SharePointFunctions.SplitSharePointField((string)Eval("ows_FileLeafRef"),1) %>
<br/>

&maxsize=200" /> <br />
```

The images are downloaded through the **GetSharePointFile.aspx** page, same as documents. So in transformation, we create *img* tags with *src* attributes pointing to this page. For ease of use, there is the **GetSharePointFileUrl** function in the **SharePointFunctions** class, which takes two parameters and returns the URL which downloads the file. The first parameter is server name (or site url), the second parameter is the location of the file in SharePoint. The final URL looks like this:

- ~/ CMSModules/Sharepoint/CMSPages/GetSharePointFile.aspx?server=server_name&name=Images/Sunset.jpg

Please note: Credentials from settings are always used for downloading the file when the **GetSharePointFile** page is used.

There is another useful function in the **SharePointFunctions** class called **SplitSharePointField**. SharePoint for some reason creates combined attribute values for some fields. It looks like this - `ows_FileLeafRef="2;#Blue hills.jpg"`. We would often like to use only a part of such value. The **SplitSharePointField** function serves this purpose. The first argument is a combined value and the second one is the index of part we want on output.

8.33.3.5 GetSharepointFile page

The **GetSharePointFile.aspx** page is a special page located under the `~/CMSModules/Sharepoint/CMSPages` directory. The correct URL to access the page looks like the following:

- `~/CMSModules/Sharepoint/CMSPages/GetSharePointFile.aspx?server=server_name&name=Images/Sunset.jpg`

It downloads the file from SharePoint server and sends it further to the user. Credentials configured in **Site Manager -> Settings -> Microsoft SharePoint** are used for authentication to the web service. You are able to control Content-Disposition HTTP header using the *disposition* query parameter.

For images, it supports *maxsize*, *width* and *height* parameters to control the image size. Kentico CMS cache is used for images, you can configure it in **Site Manager -> Settings -> website -> Cache images (minutes)**.

8.33.4 Settings

Default logon credentials used to access the SharePoint server can be configured in **Site Manager -> Settings -> Microsoft SharePoint**. If you configure a **Username** and **Password** here, it will be used by default if you leave the *Username* and *Password* fields **blank** in web part properties of the SharePoint web parts.

If you enable the **Use Windows Authentication** option, the current user's windows domain credentials will be used to access the SharePoint server.

The address of the SharePoint server itself needs to be specified in properties of the SharePoint web parts.

The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings' (selected), 'Development', 'Licenses', and 'Support'. A 'Switch to CMS Desk' link is in the top right. The left sidebar shows a tree view of settings categories, with 'Microsoft SharePoint' selected at the bottom. The main content area is titled 'Microsoft SharePoint' and contains the following settings:

- Save** and **Reset these settings to default** buttons.
- A message: "These settings are global, they can be overridden by the local site settings. Please select the site to see or ch".
- Username**: A text input field containing 'administrator'.
- Password**: A text input field with masked characters (dots).
- Use Windows Authentication**: A checkbox that is currently unchecked.
- Export these settings** link.

8.34 Smart search

8.34.1 Overview

The Smart search module enables index-based search of the content of your website. It is based on [Lucene.Net](#), version 2.1.0, which is a source code, class-per-class, API-per-API and algorithmic port of the Java [Lucene](#) search engine to the C# and .NET platform.

The module uses **indexes** to store information about the content of your site. When a search request is sent to the system by a user, it is the index that gets searched, which results in **significantly better performance** compared to linear SQL query search. For more information on **how the module works**, please refer to the [How it works](#) chapter.

To enable the smart search functionality on your site, you need to perform the following three steps:

1. Enable Smart search indexing in the system. Learn how in the [Enabling Smart search indexing](#) chapter.
2. Create an index. Assign it to a site (and culture) and define content that will be indexed. Learn how in the [Managing indexes -> Creating an index](#) chapter.
3. Use some of the Smart search web parts on your site. Learn more in the [Available web parts](#) chapter.

The module comes with several **web parts**. You can find an overview of these web parts, including explanations of the most important web part properties, in the [Available web parts](#) chapter.

In Kentico CMS versions prior to 4.1, there was only linear SQL search functionality implemented. To keep the system backward compatible, this functionality is still available. It is now referred to as **SQL Search** and you can find further information about it in the [SQL Search overview](#) chapter.

8.34.2 How it works

Information about the content of your website is stored in an **index file**. The index files are located in `~/App_Data/CMSModules/SmartSearch/{Index code name}` within your website's folder.

Documents and forums in Kentico CMS are reflected in the index file as **index documents**. The data structure of the index documents is much more suitable for being searched through, resulting in significantly higher search performance compared to linear SQL search.

The index documents may contain fields that the corresponding Kentico CMS documents contain, based on the settings made on each document type's **Search fields** tab. Depending on the settings, a document within the index file gets created by the **Index writer** when a new document is created in the system. The **Index searcher**, on the other hand, searches through the index file and returns the relevant results from it.

Brief example

Let's take the following model scenario to explain the life cycle of a document in the index file:

1. A new document is created and stored in the database. When the fields to be indexed are defined for the document type, a new indexing task is logged in the database on the document's creation.

2. The Smart search checks the database automatically on a regular basis for presence of indexing tasks.
3. When the Smart search module finds the task, it processes it and the new page gets indexed.
4. Now a user comes to the site and sends a search request via some Smart search web part.
5. The request gets passed to the Smart search module.
6. It modifies the request into a searchable form, searches the index and returns results based on what was found in the index.

8.34.3 Enabling Smart search indexing

To enable Smart search indexing, go to **Site Manager -> Settings -> website**, check the **Enable smart search indexing** check-box and click **Save**.

The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The 'Settings' section is expanded, showing a tree view of settings categories. The 'Web site' category is selected, and its settings are displayed in the main area. The 'Enable smart search indexing' checkbox is checked and highlighted with a red box. Other settings include 'Cache content (minutes)', 'Cache images (minutes)', 'Cache page info (minutes)', 'Combine with default culture', 'Combine files with default culture', 'Default alias path', 'Default culture of the content', 'Page description prefix', 'Page key words prefix', 'Page title format', 'Page title prefix', 'Page not found for non-published documents', 'Page not found URL', 'Exclude document types from SQL search', 'Exclude documents from SQL search', and 'Control element'.

You also need to have the **write permission** assigned to the **~/AppData** folder. Indexes are stored within this folder, so the permission is necessary for the system to work with them. The procedure of granting a folder with the write permission is described in the [Disk permission problems](#) topic.

8.34.4 Managing indexes


8.34.4.1 Creating an index

Information about the content of your site is stored in indexes. You need to have the content of your site indexed in order for it to be searchable using the Smart search module.

There are four types of indexes, click the link to learn about how indexes of the type can be configured:

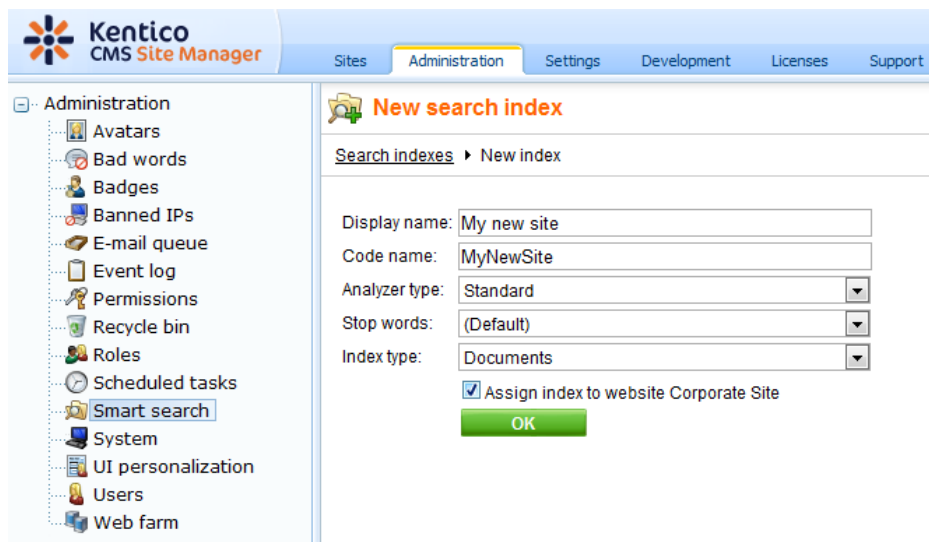
- [Documents index](#) - stores information about the content of documents in your content tree
- [Forums index](#) - stores information about the content of discussion forums on your site
- [Custom table index](#) - stores information about data stored in custom tables
- [User index](#) - stores information about website users

The following example shows the general procedure how an index can be created and what options you have when creating it. The procedure is applicable for both document and forum indexes, while differences between the two are noted in the text.

1. Go to **Site Manager -> Administration -> Smart search** and click the **New index**  link. The **New search index** dialog will be displayed to you. You will be asked to enter the following details:

- **Display name:** name of the index displayed in the administration interface
- **Code name:** name of the index used in website code (the fully qualified file name must be less than 260 characters long, the directory name must be less than 241 characters long)
- **Analyzer type:** type of analyzer that will be used when indexing the content of your site, the following types are available:
 - *Standard* - grammar-based analyzer (stop-words, shortcuts, ...), very efficient for English, but may not produce satisfactory results with other languages
 - *Simple* - divides text at non-letter characters
 - *Stop* - contains a collection of stop-words at which it divides the text
 - *White space* - divides text at whitespaces
 - *Keyword* - tokenizes the entire stream as a single token; this is useful for data like zip codes, ids, and some product names
- **Stop words** - dictionary containing words which will be omitted from indexing (e.g. 'and', 'or', ...) when a *Stop* or *Standard* analyzer is used; the dictionaries are stored in `~\App_Data\CMSModules\SmartSearch_StopWords`
- **Index type:** type of content to be indexed
 - *Documents* - indexes content of documents in the content tree
 - *Forums* - indexes content of discussion forums
 - *Users* - indexes details about system users - fields of the CMS_User system table
 - *Custom tables* - indexes records in custom tables
- **Assign index to site <sitename>** - if checked, the index will be assigned to the site whose name is displayed

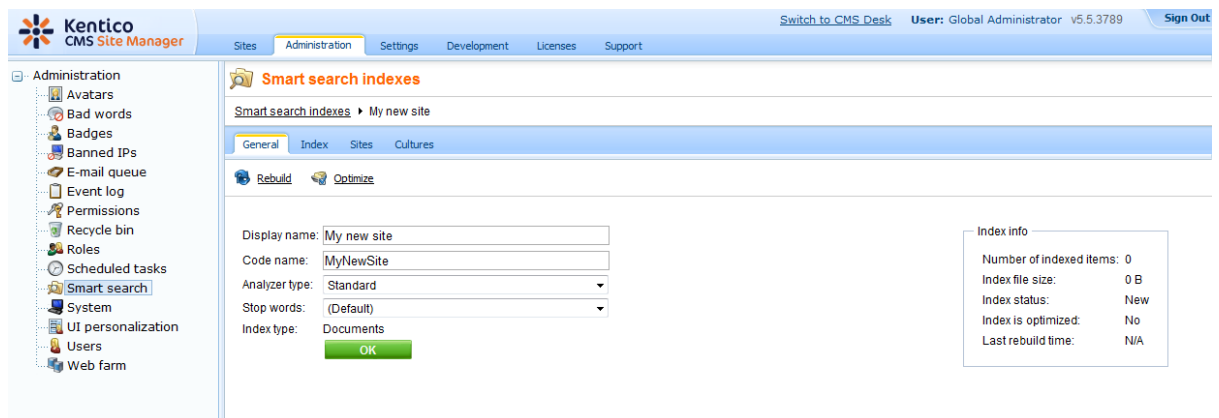
Click **OK**.



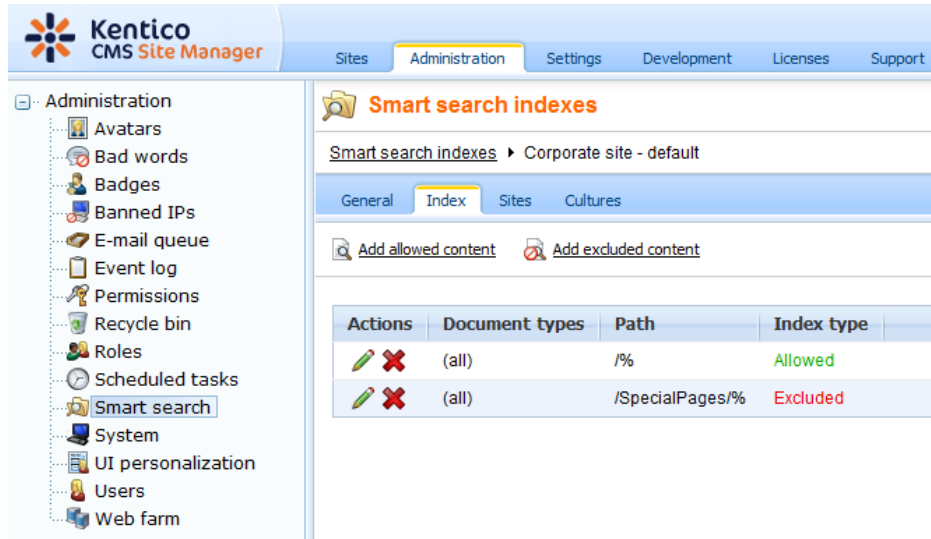
2. You will be redirected to the index's editing interface. The **General** tab, which you will be redirected to, shows the same details that you just entered. Notice the info box on the right, which shows general information about the index.

The following two actions can also be performed on this tab, but it would make no sense to perform them at this stage of creating a new index:

- **Rebuild** (🌐) - deletes the original index and the specified content gets indexed again; the index is automatically optimized after successful rebuild
- **Optimize** (🔧) - de-fragments the index, which results in better search performance, particularly in case of large indexes

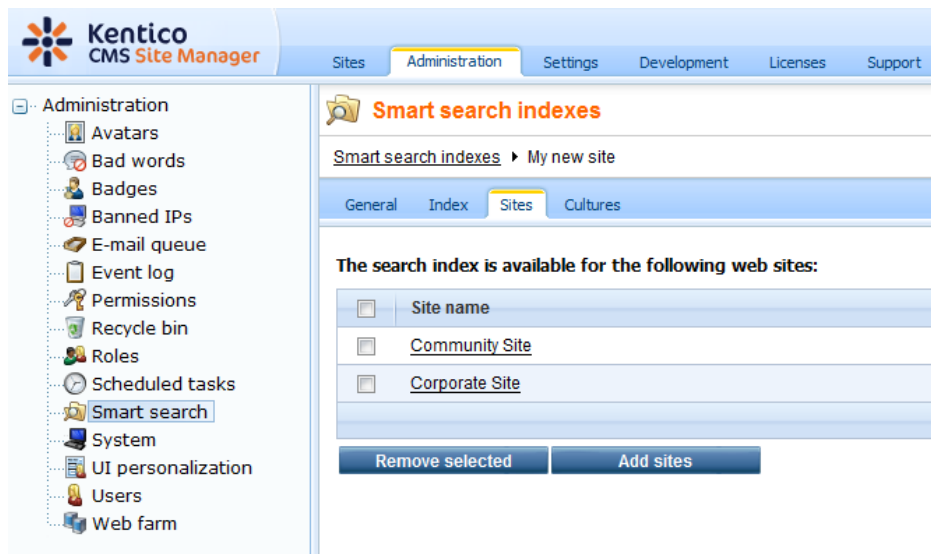


3. Switch to the **Index** tab. This is where you define what content, forums, custom tables or users will be indexed. The content of this tab depends on the type of index that you are creating. Detailed information about defining index content is given in [Defining document index content](#), [Defining forums index content](#), [Defining custom tables index content](#) and [Defining user index content](#).



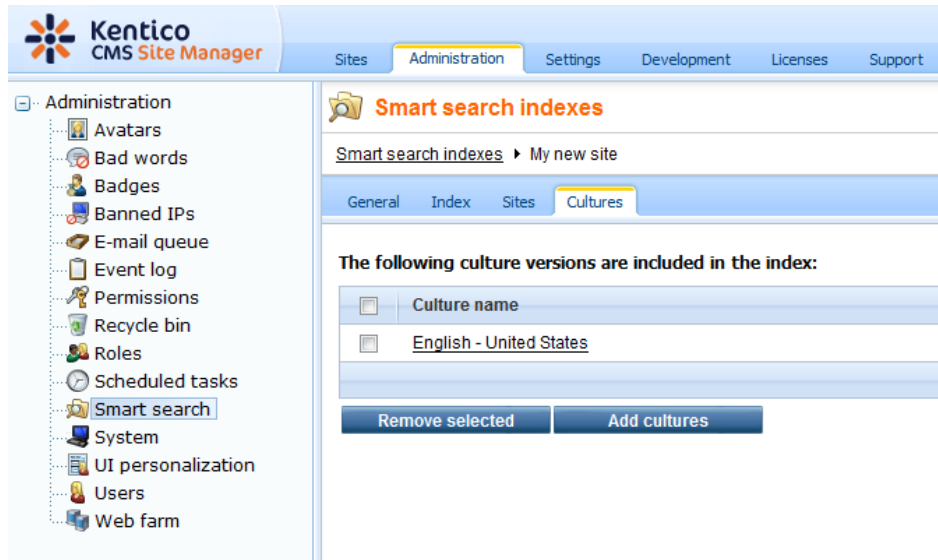
4. Now switch to the **Sites** tab. Make sure that the index is assigned to the appropriate website. You may also want to optionally assign the index to some other site in order to have multi-site search results.

Click **Save**.



5. Switch to the **Cultures** tab (only available for document indexes). This is where you can choose which cultural versions of the site will be indexed by this index. Choose the cultural version(s) that you want to be indexed. If you have a multi-site index, you can select the cultures separately for each site chosen by the **Select site** drop-down.

Click **Save** when you have all the cultures selected.



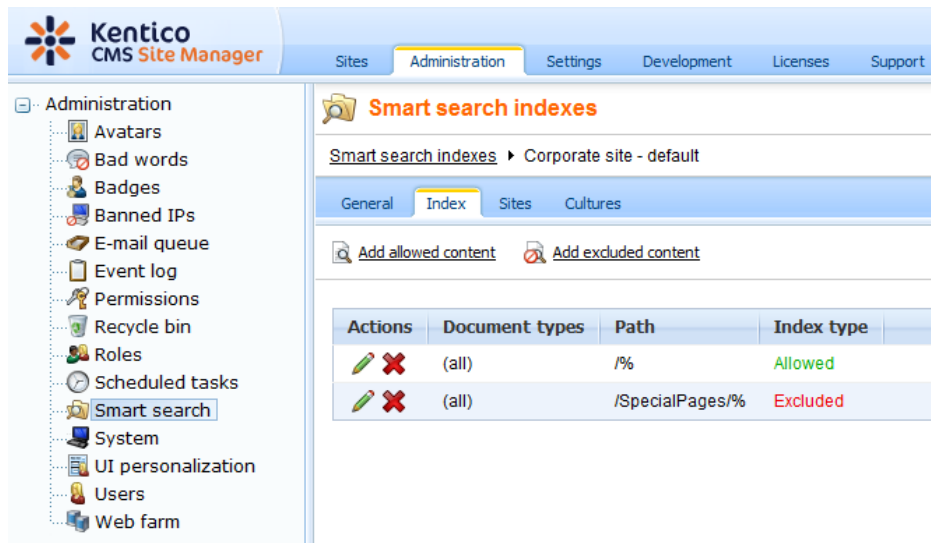
6. Finally, go back to the **General** tab and choose to **Rebuild** (🔄) the index. This needs to be done only for the first time. Any further changes made to the site will be indexed automatically.

8.34.4.2 Defining document index content

On the **Index** tab of a **document index**, you can define which documents on the site will be indexed. This is done by defining allowed and excluded content.

Excluded content is subtracted from the allowed content. So for example if you allow */%* and exclude */Special-pages/%* at the same time, it means that all pages on the site will be indexed, except of all pages found under the */Special-pages* node.

The dialogs for defining new allowed/excluded content can be accessed using the **Add allowed content** (🔍) and **Add excluded content** (🚫) links.



Adding allowed content

In this dialog, you are defining what part of the website will be indexed. You can specify it by choosing **Path** to the indexed documents, **Document types** of the indexed documents or a combination of both. The following options can be specified:

- **Path:** path to the documents that should be indexed
- **Document types:** document types that should be included in indexing
- **Including ad-hoc forums:** if checked, ad-hoc forums attached to documents specified by the properties above (if there are some) will be indexed too
- **Including blog comments:** if checked, blog comments attached to blog posts specified by the properties above (if there are some) will be indexed too
- **Including message boards:** if checked, message boards attached to documents specified by the properties above will be indexed too

Examples:

- **Path:** /%
- **Document types:** empty

In this case, all documents on the site will be indexed.

- **Path:** /Partners
- **Document types:** empty

In this case, only the /Partners page will be indexed, without the pages under it.

- **Path:** empty
- **Document types:** CMS.News

In this case, all documents of the CMS.News document type on the whole site will be indexed. Please note that in this case, empty path field is equal to /%.

- **Path:** /Products/%
- **Document types:** CMS.CellPhone;CMS.Pda

In this case, all documents of the CMS.CellPhone and CMS.Pda document types found under /Products will be indexed.

The screenshot shows the Kentico CMS Site Manager Administration interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The left sidebar lists various administration options, with 'Smart search' highlighted. The main content area is titled 'Smart search indexes' and shows the configuration for 'Corporate site - default'. The 'Index' tab is selected, and the 'Item list' shows 'New allowed item'. The configuration fields are:

- Path:** /% (with a 'Select' button)
- Document types:** (empty field with 'Select' and 'Clear' buttons)
- Including ad-hoc forums:**
- Including blog comments:**
- Including message boards:**

A green 'OK' button is at the bottom of the configuration area. A note below the document types field reads: 'Leave the field empty if you wish to choose all document types.'

New excluded content

In this dialog, you are defining what part of the website will be excluded from indexing.

Excluded content is excluded allowed content. So for example if you allowed */%* and excluded */Special-pages/%* at the same time, it means that all pages on the site will be indexed, except of all pages found under the */Special-pages* node.

The following options can be specified:

- **Path:** path to the documents that should be indexed
- **Document types:** document types that should be included in indexing

Examples:

- **Path:** */Partners*
- **Document types:** empty

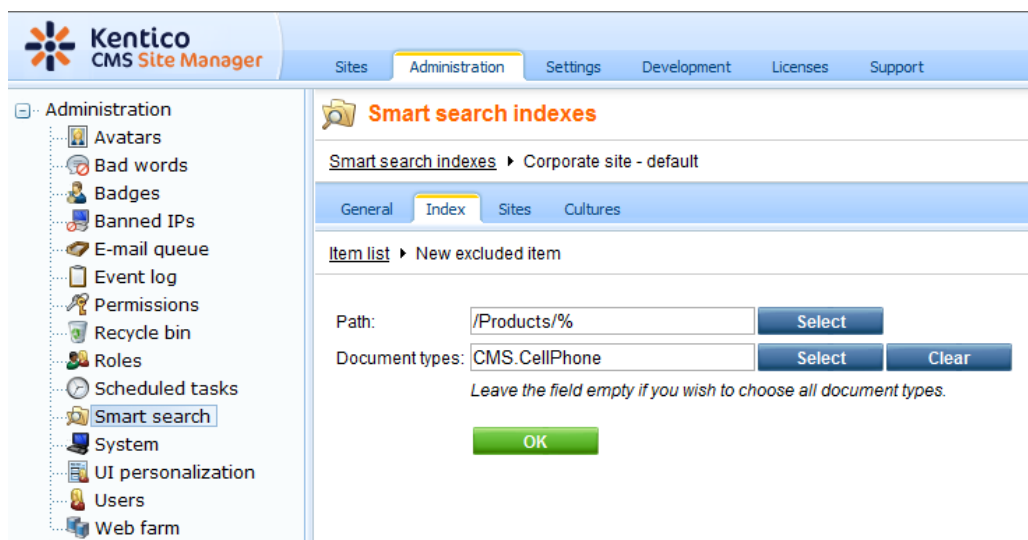
In this case, only the */Partners* page will be excluded from indexing, not the pages under it.

- **Path:** empty
- **Document types:** *CMS.News*

In this case, all documents of the *CMS.News* document type on the whole site will be excluded from indexing. Please note that in this case, empty path field is equal to */%*.

- **Path:** */Products/%*
- **Document types:** *CMS.CellPhone;CMS.Pda*

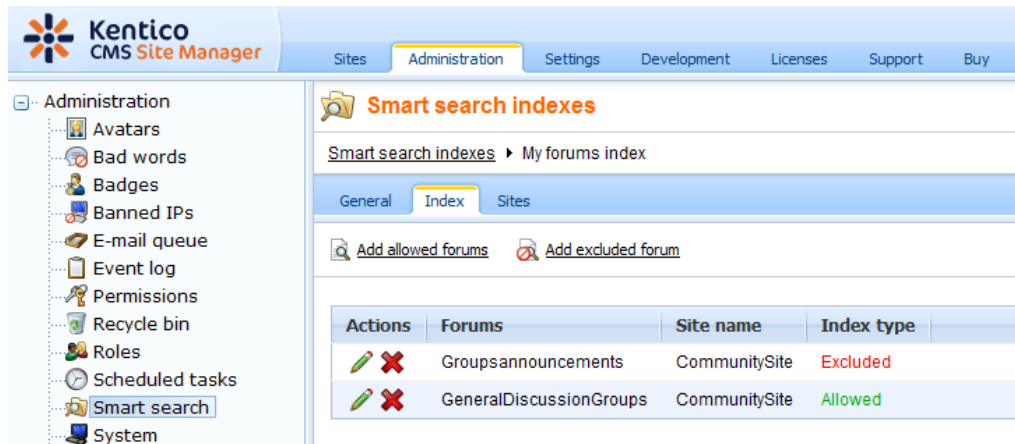
In this case, all documents of the *CMS.CellPhone* and *CMS.Pda* document types found under */Products* will be excluded from indexing.







8.34.4.3 Defining forums index content

On the **Index** tab of a **forum index**, you can define which documents on the site will be indexed. This is done by defining allowed and excluded forums.

The dialogs for defining new allowed/excluded content can be accessed using the **Add allowed forums** (🔍) and **Add excluded forums** (🚫) links.

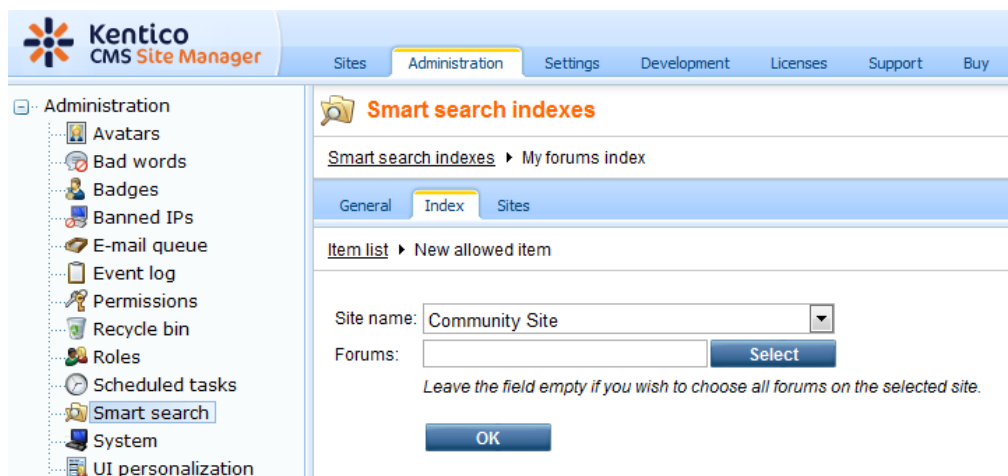


The screenshot shows the 'Smart search indexes' configuration page in Kentico CMS Site Manager. The 'Index' tab is selected, and the 'My forums index' is shown. Below the tabs, there are links for 'Add allowed forums' and 'Add excluded forum'. A table lists the indexed forums:

| Actions | Forums | Site name | Index type |
|---|-------------------------|---------------|------------|
|   | Groupsannouncements | CommunitySite | Excluded |
|   | GeneralDiscussionGroups | CommunitySite | Allowed |

Adding allowed forums

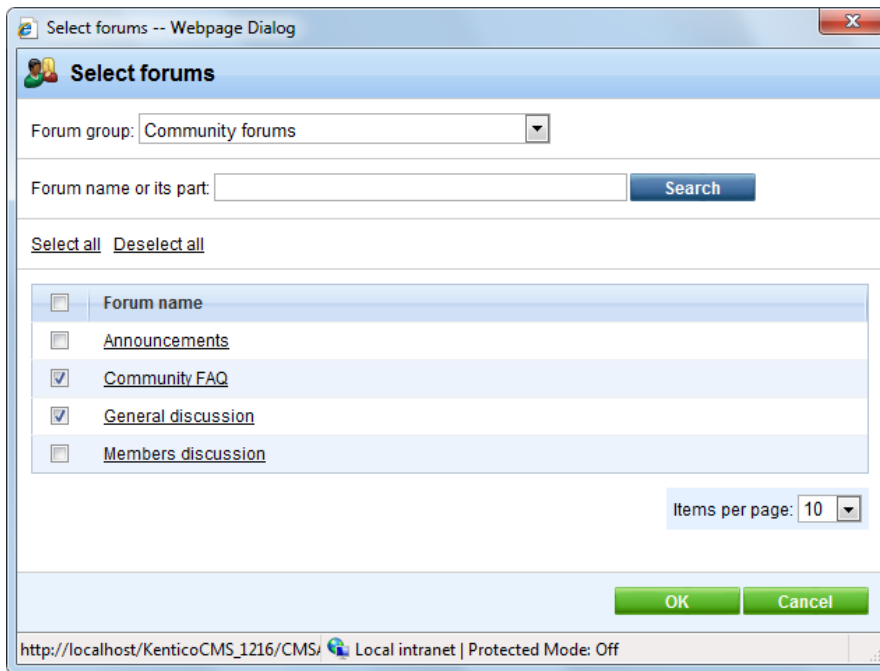
1. Click the **Add allowed forums** (🔍) link.
2. In the following dialog, first use the **Site name** drop-down to choose the site whose forums will be indexed. If you select **(all)**, all forums on all sites in the system will be indexed.



The screenshot shows the 'Smart search indexes' configuration page in Kentico CMS Site Manager. The 'Index' tab is selected, and the 'New allowed item' dialog is displayed. The 'Site name' is set to 'Community Site' and the 'Forums' field is empty. Below the 'Forums' field, there is a 'Select' button and a note: 'Leave the field empty if you wish to choose all forums on the selected site.' An 'OK' button is also visible.

3. If you selected a particular site in the previous step, click the **Select** button next to the **Forums** field. The dialog depicted in the screenshot below will be displayed.

Use the **Forum group** drop-down to select a forum group. Its child forums will be listed below. To include a forum in the index, enable (☑) the appropriate check-boxes. Click **OK** to save the settings.



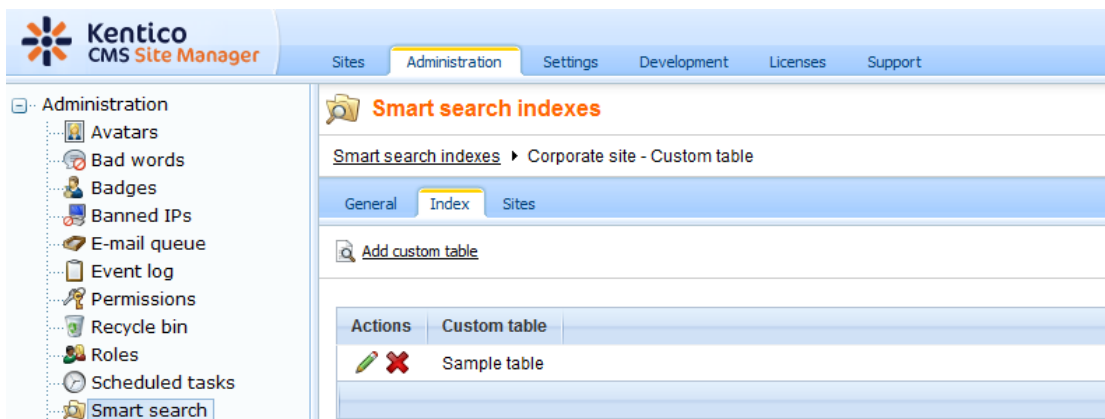
Adding excluded forums

Excluded forums make sense only when you have all forums defined as allowed. By defining a forum as excluded, it will not be indexed and all forums but the excluded one will be indexed.

You can define an excluded forum using the **Add excluded forums** (🚫) link, while the procedure is the same as when adding allowed forums.

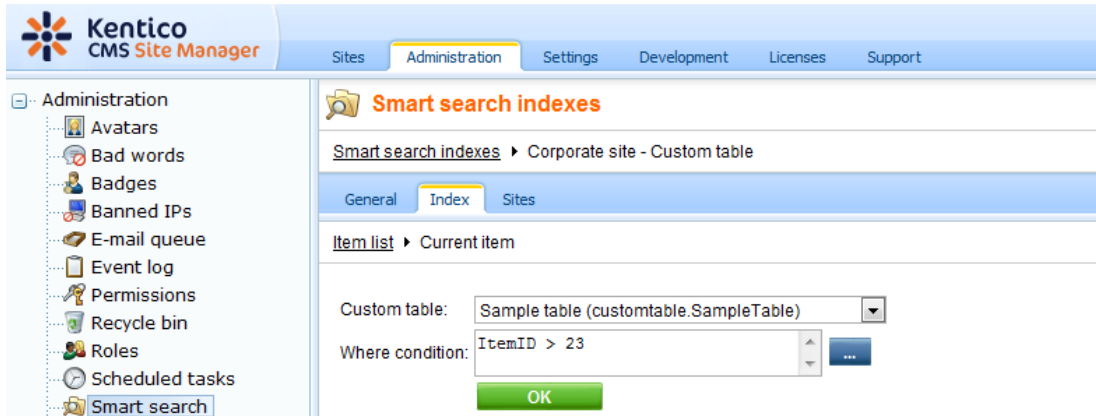
8.34.4.4 Defining custom tables index content

When editing (✎) a custom table index on the **Index** tab in **Site Manager -> Administration -> Smart search**, you can see a list of custom tables indexed by the index. Custom tables can be added to the index using the **Add custom table** (🔍) link. You can also **Edit** (✎) the way listed custom tables are indexed or **Delete** (✖) them from the list.



When adding a new custom table to the index or editing an existing one, you have the following options:

- **Custom table:** custom table to be indexed
- **Where condition:** WHERE part of the SELECT SQL query retrieving data from the table; using this, you can limit which items (rows) in the table will be indexed

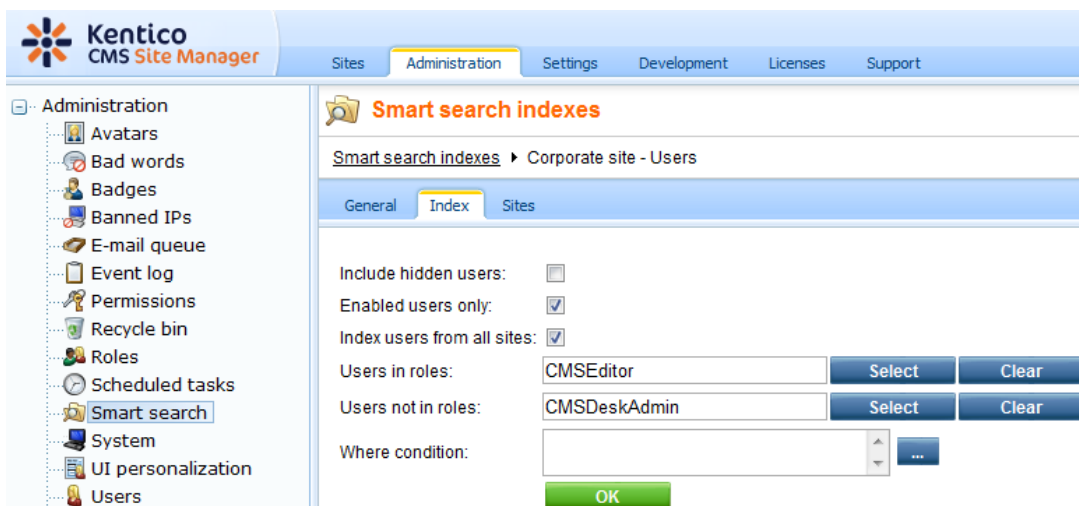


8.34.4.5 Defining user index content

When editing (✎) a user index on the **Index** tab in **Site Manager -> Administration -> Smart search**, you can limit which users will be indexed. The following limitations can be set:

- **Include hidden users:** if enabled, hidden users will be indexed
- **Enabled users only:** if enabled, only enabled users will be indexed
- **Index users from all sites:** if enabled, users from all sites will be indexed; if disabled, only users from the sites assigned on the Sites tab will be indexed
- **Users in roles:** if entered, only users from the entered roles will be indexed
- **Users not in roles:** if entered, only users who are not in the entered roles will be indexed
- **Where condition:** WHERE part of the SELECT query on the `View_CMS_User` view used to retrieve users

Please note: you can define which fields will be indexed in **Site Manager -> Development -> System tables -> edit (✎) the CMS_User system table -> Search fields.**



8.34.5 Settings for particular object types

The following text describes the possible settings for particular object types which can be indexed and subsequently searched.

Document types, Custom tables and Users

Settings for [document types](#), [custom tables](#) and [users](#) are almost identical. You can find them on the **Search fields** tab in the editing interfaces for document types, custom tables and users.

In the top part of the tab, you can specify how the objects will be displayed in search results:

- **Title field** - specifies which field will be used as the title of the result item
- **Content field** - specifies which field will be used for the content extract of the result item
- **Image field** - specifies which field will be used for the image of the result item (not available for users, [Avatar](#) image is used for users by default)
- **Date field** - specifies which field will be used for the date and time displayed with the result item

Lines of the table in the bottom part of the page represent fields defined on the **Fields** tab, while columns define the following:

- **Content** - if checked, content of the field will be indexed and searchable the standard way
- **Searchable** - if checked, content of the field will be searchable in format **<field code name>: <searched phrase>**, which searches only through the fields and not through the other fields
- **Tokenized** - indicates if the content of the field should be processed by the analyzer when indexing; the general rule is to use this for Content fields and not for Searchable fields
- **Custom search name** - relevant for Searchable fields; substitutes field code name in the **<field code name>: <searched phrase>** expression; if entered, the original code name can't be used

Document type properties
 Document types > Page (menu item)

General Fields Form Transformations Queries Child types Sites Alternative forms **Search fields** Documents

Title field:

Content field:

Image field:

Date field:

Set automatically

| Field name | Content | Searchable | Tokenized | Custom search name |
|---------------------|-------------------------------------|-------------------------------------|-------------------------------------|----------------------|
| MenuItemID | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| MenuItemName | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="text"/> |
| MenuItemTeaserImage | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |

OK

E-commerce SKUs

Similar settings are available for **E-commerce SKUs**. The settings can be done in **Site Manager -> Development -> System tables -> Edit (✎) Ecommerce - SKU -> Search fields** tab. In this case, only the following settings are available:

- **Content** - if checked, content of the field will be indexed and searchable the standard way
- **Searchable** - if checked, content of the field will be searchable in format **<field code name>: <searched phrase>**, which searches only through the fields and not through the other fields
- **Tokenized** - indicates if the content of the field should be processed by the analyzer when indexing; the general rule is to use this for Content fields and not for Searchable fields



Important!

It is highly recommended that you do not modify settings of other than your custom fields. In case that you modified the settings for some of the default fields, the functionality of searching through SKUs may get broken.

Kentico CMS Site Manager Switch to CMS Desk User: Global Administrator

Sites Administration Settings **Development** Licenses Support

Development

- Categories
- Countries
- CSS stylesheets
- Cultures
- Custom tables
- Document types
- E-mail templates
- Form controls
- Inline controls
- Modules
- Notifications
- Page layouts
- Page templates
- Relationship names
- System tables**
- Tag groups
- Time zones
- UI cultures
- Web part containers
- Web parts
- Web templates
- Widgets
- Workflows

System table properties

System tables ▶ Ecommerce - SKU

Fields Queries Alternative forms **Search fields**

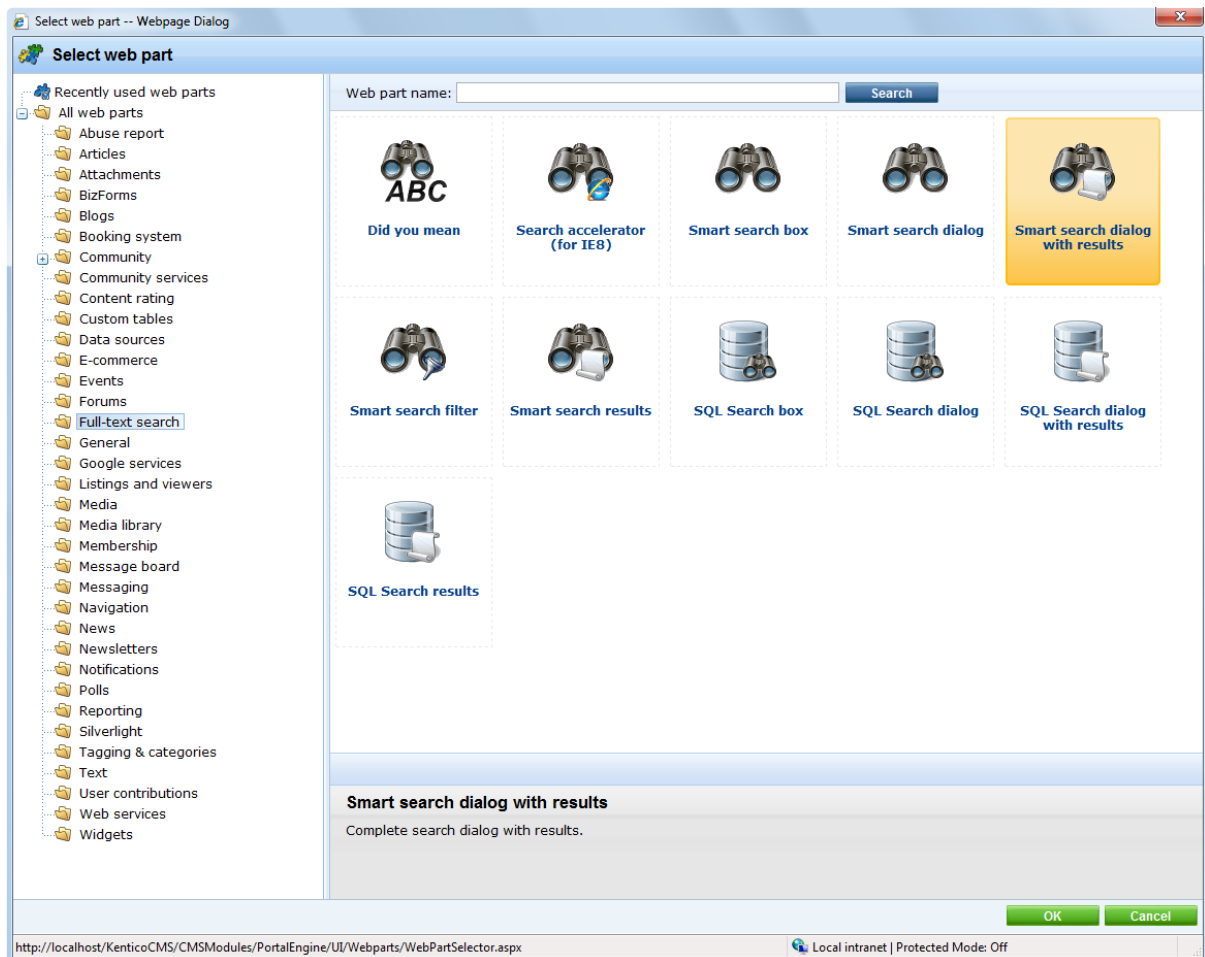
It is highly recommended not to change default field settings. If you remove or change some of mandatory fields, smart search module can stop working.

| Field name | Content | Searchable | Tokenized |
|---------------------|-------------------------------------|-------------------------------------|--------------------------|
| SKUID | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| SKUNumber | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| SKUName | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| SKUDescription | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| SKUPrice | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| SKUEnabled | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| SKUDepartmentID | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| SKUManufacturerID | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| SKUInternalStatusID | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| SKUPublicStatusID | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| SKUSupplierID | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| SKUAvailableInDays | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

8.34.6 Available web parts

The Smart search module comes with the web parts mentioned in the text below. Only the most important web part properties are mentioned here. For a complete list and explanations of web part properties, please refer to [Kentico CMS Web Parts](#) reference or click the **Documentation** link at the top right corner of the web part properties window.

Smart search web parts are located in the **Full-text search** web part category.



The following web parts come with the Smart search module:

Smart search dialog with results

This is the all-in-one web part for both searching and displaying search results.

Search for:
Search mode: ▾

Example conference

Here come the details and additional information of **Example** conference.

<http://localhost/KenticoCMS/Examples/Webparts/Booking-system/Event-registration/Example-conference.aspx> 5/7/2009 2:22:09 PM

Silver partners

Silver partners section This is an **example** of a secured site section available only to Silver partners.

<http://localhost/KenticoCMS/Partners/Silver-partners.aspx> 11/28/2007 10:35:25 AM

Gold partners

Gold partners section This is an **example** of a secured site section available only to Gold partners.

<http://localhost/KenticoCMS/Partners/Gold-partners.aspx> 11/28/2007 10:35:38 AM

Smart search dialog

This web part needs to be placed on a page together with the **Smart search results** web part. The functionality of the two web parts will be identical to Smart search dialog with results, with the difference that these two web parts can be placed at different sections of the page. You can also connect the web part to a Smart search filter.

Search for:
Search mode: ▾

Smart search box

This web part is similar to the Smart search dialog, with the difference that users can not select the Search mode, which is hard-set in its web part properties. It is useful where limited space is available for the web part, e.g. in menus, etc.

Search for:

Smart search results

This web part can be used to display results of a search request sent from a **Smart search box** or **Smart search dialog** web part. It can be placed either on the same or on a different page as one of the two web parts. In case that it is placed on a different page, the page needs to be specified by their **Search results page URL** property.

Example conference

Here come the details and additional information of **Example** conference.

 <http://localhost/KenticoCMS/Examples/Webparts/Booking-system/Event-registration/Example-conference.aspx> 5/7/2009 2:22:09 PM

Silver partners

Silver partners section This is an **example** of a secured site section available only to Silver partners.

 <http://localhost/KenticoCMS/Partners/Silver-partners.aspx> 11/28/2007 10:35:25 AM

Gold partners

Gold partners section This is an **example** of a secured site section available only to Gold partners.

 <http://localhost/KenticoCMS/Partners/Gold-partners.aspx> 11/28/2007 10:35:38 AM

Smart search filter

This web part can be used to enable users to search only documents of a specific type. You can find a detailed description of how this works in [this chapter](#).

Filter product type: Filter

All Cell phones Laptops PDAs

The following properties of **Smart search dialog with results** and **Smart search results** web parts are the most important:

| Property Name | Description |
|----------------------|--|
| Indexes | Determines which index will be searched; multiple indexes can be entered and then searched at the same time. |
| Transformation name | Name of the transformation used to display search results; there are two default transformations: CMS.Root.SmartSearchResults and CMS.Root.SmartSearchResultsWithImages . |
| Search options | Sets the level of condition which can user enter:
None: User can specify only keywords, everything in text box is escaped.
Basic: User can input special characters (such as +,-,...) but cannot filter by document field name (field:value).
Full: All search options can be used.

More information can be found in the Search syntax topic. |
| Search condition | Using this property, you can limit which documents will be searched using the search syntax (e.g. articleid:[(int)25 TO (int)150]). |
| Search results order | Defines sorting of the search results.

You can specify one or more document fields (separated by commas). Search result will be sorted by them.
You can input the ##SCORE## macro which means that results will be sorted |

by score.

Default direction of sorting is ascending. You can change direction to descending by DESC keyword (e.g. articleid DESC).

If you encounter the "field <fieldname> does not appear to be indexed" error when using multiple indexes, try specifying the type of the field in the following syntax: *(date)documentcreatedwhen*

8.34.7 Search syntax

A detailed description of Lucene query parser syntax can be found at http://lucene.apache.org/java/2_1_0/queryparsersyntax.html

Based on the level of allowed syntax specified by the **Search options** property of **Smart search dialog with results** or **Smart search results** web parts, users can enter search queries in formats described below:

- **None** - in this mode, none of the query formats described at the page linked above will be recognized. All text entered by the users will be understood as the phrase they are looking for.
- **Basic** - in this mode, all query formats described at the linked page will be recognized except for fields search.
- **Full** - in this mode, all search options including fields search will be recognized.

Searching numeric fields

When performing fields search, the values specified are understood as string by default. If you know that you are searching in **integer** or **double** fields, you will need to specify the type of the field the following way:

- newsid:(int)22
- skuprice:(double)255.0
- nodeid:[(int)1 TO (int)100]

Searching date and time fields

Due to the same reason, search in **DateTime** fields also requires special syntax in format **<field name>:yyymmddhhmm**. So for example:

- created:200812230101
- created:[200902020101 TO 200906020101]

If you need to specify date and time using a macro, you will need to use the **|(tosearchdatetime)** parameter to convert the returned value to the format suitable for Lucene.

- {%CurrentDateTime|(tosearchdatetime)%}

You can also use the **|(add)** parameter, which adds the specified amount of **minutes** to the value.

- {%CurrentDateTime|(add)-1440|(tosearchdatetime)%}

Field search with Stop and Simple analyzers

Indexes created by Stop and Simple analyzers can not be searched using the standard field search format. This is by design, but you can use a workaround with a range query containing identical range boundaries:

- newsid:[(int)22 TO (int)22]

8.34.8 Using the Smart search filter

The **Smart search filter** web part can be used to enable users limit the range of documents that will be searched, or define how the search results will be sorted. It is designed to be connected to **Smart search dialog** or **Search dialog with results**. You can connect more than one filter to these web parts.

You can see an example of how this works on the sample Corporate Site, on the **Examples -> Web parts -> Full-text search -> Smart search filter** page. You can see three **Smart search filters** connected to a **Smart search dialog**, which is connected to **Smart search results**.

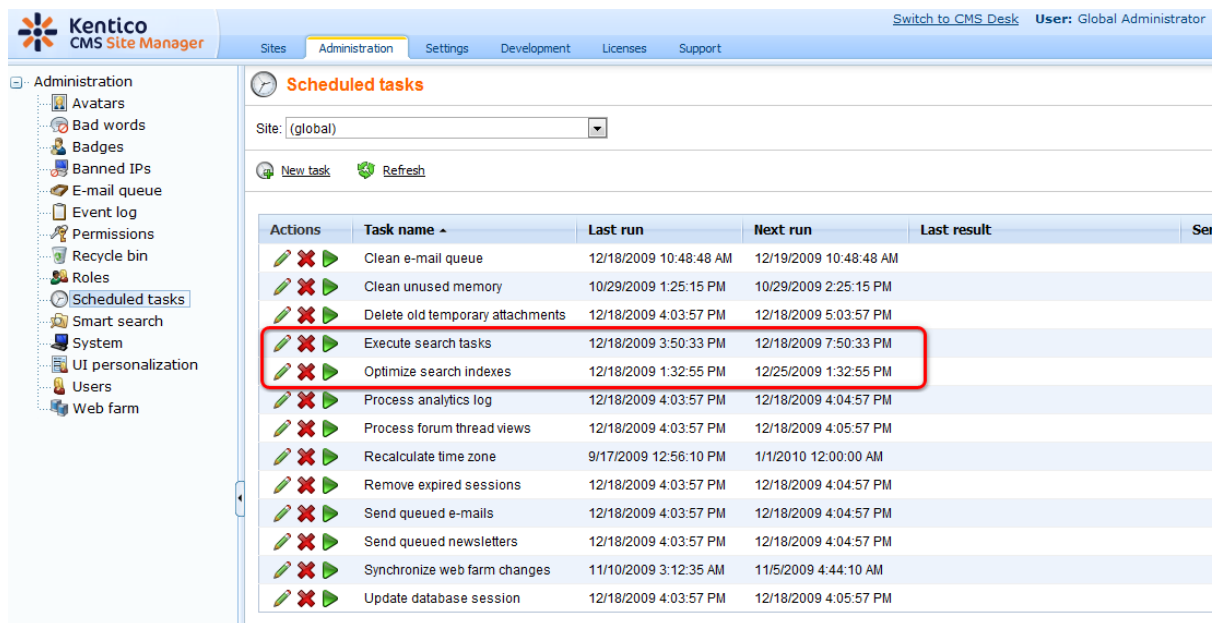
The behaviour of the smart search filter is mainly defined by the properties explained in the table below. You can find descriptions of all the web part's properties in [Kentico CMS Web Parts](#) reference or after clicking the **Documentation** link at the top right corner of the web part properties window.

| Property Name | Description |
|-----------------------|--|
| Filter is conditional | If true, the filter limits the searched documents (where condition). If false, the filter determines the sorting of search results (sort condition). |
| Search webpart ID | ID of the Smart search dialog or Smart search dialog with results web part to which the filter is connected. |
| Values | <p>Using this property, you can specify the possible filter options that can be selected using the filter.</p> <p>You enter one option per line in format: <index field name>;<value of the field>;<displayed text></p> <p><u>Examples:</u></p> <ul style="list-style-type: none"> • ;;All • +classname;cms.cellphone;Cell phones • +_created;[{%CurrentTime (add)-10080 (tosearchdatetime)%} TO {%CurrentTime (tosearchdatetime)%}];Past week • ##SCORE##;;Score • documentcreatedwhen;;Creation date |
| Query name | <p>Name of a query which can be used instead of the <i>Values</i> property to dynamically create the filter options. The query must return three columns, which will be used in the following order: <index field name>,<value of the field>,<displayed text></p> <p>Sample query to load all document types as the filter options: <code>SELECT TOP 1000 '+classname', ClassName, ClassDisplayName FROM CMS_Class WHERE ClassIsDocumentType = 1</code></p> |

8.34.9 Related scheduled tasks

The following two scheduled tasks are related to the Smart search module:

- **Search index optimizer** - performs index optimization (defragmentation resulting in better performance, particularly in case of large indexes); by default once per week
- **Search task executor** - executes indexing tasks (created and executed automatically on content changes) that were not completed successfully on their automatic execution; by default every 4 hours



8.34.10 Searching attachments

Document attachments can be searched too. They are searched using the original SQL search. You need to have your SQL server configured properly as described in [this topic](#) in order for attachments search to be functional.

If you have the SQL server configured, you need to enable attachments search by the following properties of **Smart search dialog with results** or **Smart search results** web part:

| Property Name | Description |
|-----------------------|--|
| Search in attachments | If enabled, document attachments will be searched. |
| WHERE condition | WHERE condition specifying documents whose attachments will be searched. |
| ORDER BY expression | ORDER BY expression ordering documents. The attachments will be displayed according to this order in the search results. |

The results are interlaced with regular search results, which is by design and can not be modified.

8.34.11 Search results in transformations

You can use the following default transformations to display search results by the **Smart search dialog with results** and **Smart search results** web parts:

- **CMS.Root. SmartSearchResults**
- **CMS.Root. SmartSearchResultsWithImages**

Search results are returned in so-called **search dataset**. No matter what the field names in the found documents are, the search dataset always contains the following fields that are mapped to the real documents' fields:

| | |
|----------------|---|
| score | Expresses the relevance of the found document in a numeric value ranging from 0 to 1, while higher values indicate higher relevance. |
| title | This field is mapped to the field specified by the Title field drop-down list on the Search fields tab of the particular document type. |
| content | This field is mapped to the field specified by the Content field drop-down list on the Search fields tab of the particular document type. |
| created | This field is mapped to the field specified by the Date field drop-down list on the Search fields tab of the particular document type. |
| image | This field is mapped to the field specified by the Image field drop-down list on the Search fields tab of the particular document type. |

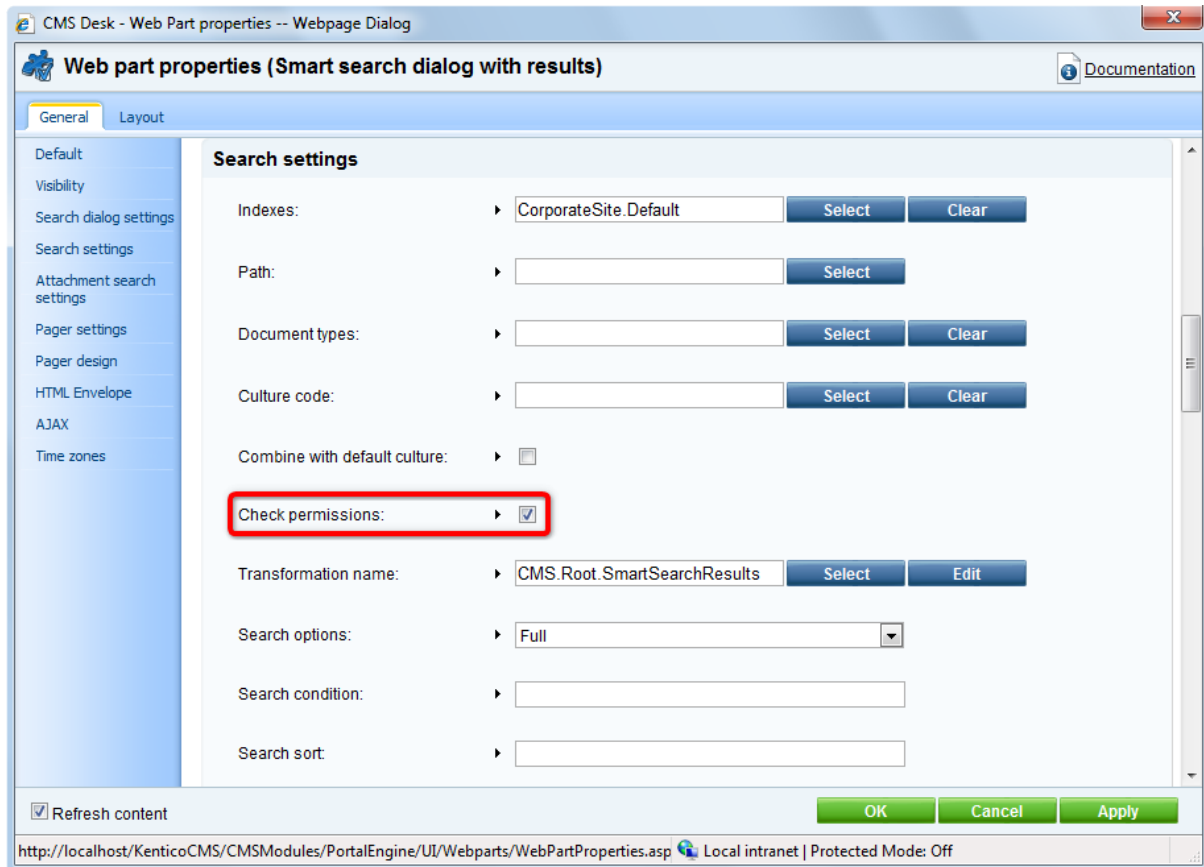
In transformations, you can get the values from the fake dataset by using the **Eval("<field name>")** function: `Eval("score")`, `Eval("title")`, ...

You can also use the following methods in your transformations:

- **SearchResultUrl(bool absolute)** - returns URL to the document; the attribute indicates if the returned URL should be absolute
- **SearchHighlight(string text, string startTag, string endTag)** - wraps the text entered in the first attribute by the tags specified by the other two attribute
- **GetSearchImageUrl(string noImageUrl, int maxSize)** - returns URL of the current search result's image; the first attribute specifies URL returned in no image found, the second one specifies the maximal side size to which the image will be resized
- **GetSearchValue(string columnName)** - returns specified column's value for the current search result

8.34.12 Security

Smart search web parts have the **Check permissions** property. If this option is enabled, pages for which the user does not have permissions will not be displayed to them in the search results.



8.34.13 SQL Search overview

The SQL Search engine is kept in the system for backward compatibility with versions prior to 4.1. It uses standard SQL queries to search for the given expression. It runs a separate query for each document type. You can find the search query for an appropriate document type in **Site Manager -> Development -> Document types -> ... select document type ... -> Queries -> Edit** (✎) the **searchtree** query.

Common fields (such as document name) are searched using the **cms.root.searchdocuments** query.

Uploaded files are searched using the **cms.root.searchattachments** query. If you want to search uploaded files, you need to configure the system as described in chapter [Configuratin of full-text search in files](#). In this case, the files are searched using the Microsoft SQL Server Search Engine.

Web parts and controls

The search dialog can be easily integrated into the website using the web parts in the Full-text search category (SQL search dialog, SQL search box, etc.) or using the CMSSearchDialog and CMSSearchResults server controls (in your ASP.NET code).

Excluding documents from search

You can **exclude document types** by setting the **Exclude document types from search** value in Site Manager -> Settings -> website dialog. You need to enter the code name, such as cms.article. You can enter multiple document types separated with a semicolon (;).

You can **exclude website sections** from search by setting the **Exclude documents from search** in Site Manager -> Settings -> website dialog. You need to enter the alias path of the section that should be excluded. A single document can be excluded using e.g. **/news/news1**, whole website section can be excluded using e.g. **/news/%**. You can enter multiple values separated with a semicolon (;).

Modifying the search result format

If you only need to modify the search results format, you can do that by modifying the transformation **searchresults** in **Site Manager -> Development -> Document Types -> edit Root -> Transformations**.

Development of Custom Search Provider

If you need to integrate a custom search engine or make additional modifications to the search results returned by the standard search engine, you can develop your own search provider. You can find more details in chapter [Custom Search Provider](#).

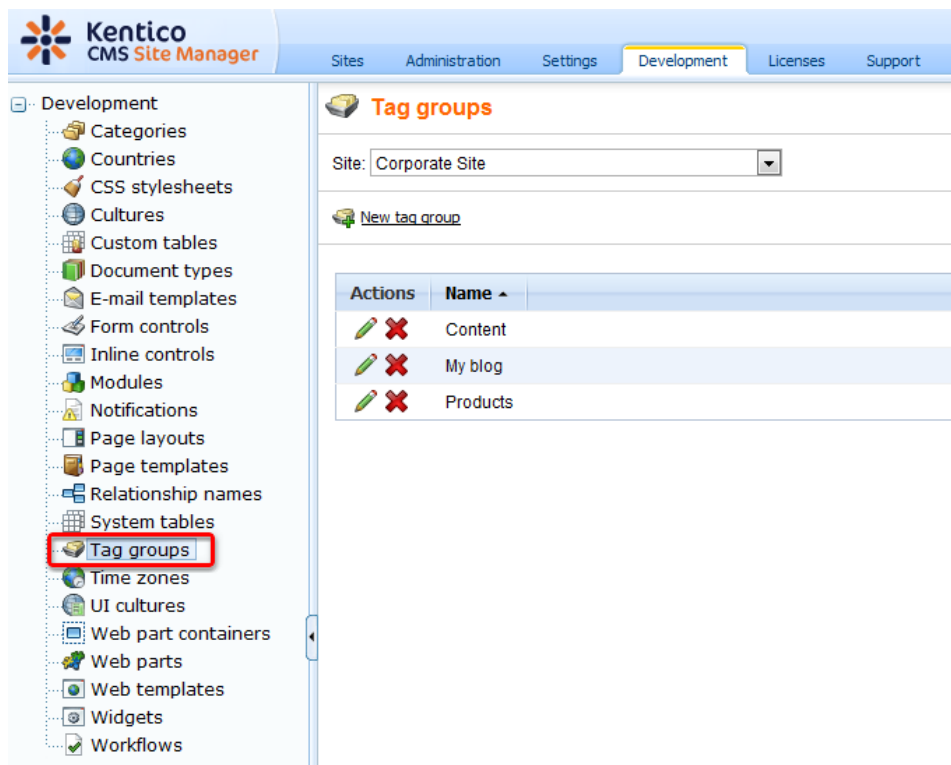
8.35 Tags

8.35.1 Overview

The Tags module allows you to tag documents with key words - **tags** - depending on the content of the document. Tags are organized in **tag groups**. The module comes with the Tag cloud web part that can display all tags within one tag group. The tags are displayed in a form of links by the web part. Clicking a link in the tag cloud redirects you to another page, where a repeater displays a list of all documents tagged with the clicked tag.

8.35.2 Managing tag groups

Tags are divided into tag groups. These are topic-related groups of tags. Each tag group is related to a site, there are no global tag groups. Tag groups can be created and managed in **Site Manager -> Development -> Tag groups**. You can **Edit** (✎) or **Delete** (✖) the listed tag groups in this section.

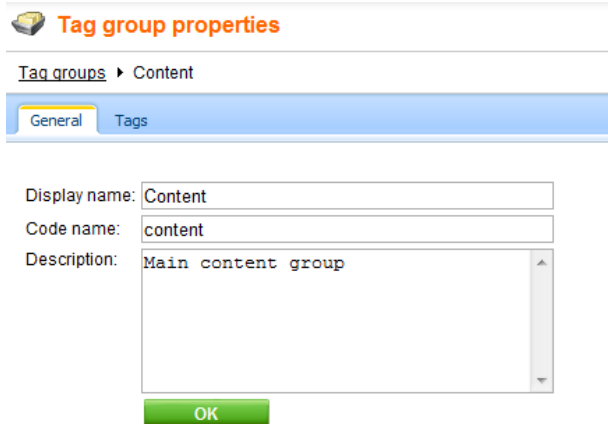


New tag groups can be created by clicking the **New tag group** link. The following properties will have to be entered:

- **Display name** - display name of the tag group
- **Code name** - code name of the tag group
- **Description** - description text of the tag group

After clicking **OK**, the tag group will be created and become visible in the list.

If you choose to **Edit** some of the tag groups, its properties can be changed on the **General** tab.

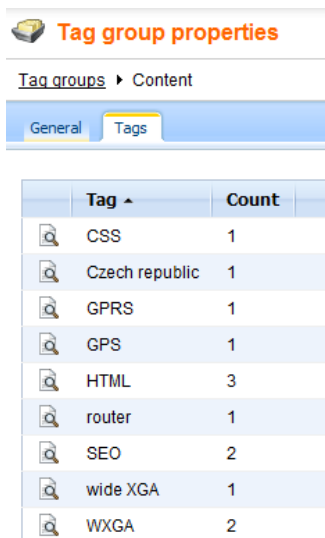


The screenshot shows the 'Tag group properties' dialog box with the 'General' tab selected. The breadcrumb path is 'Tag groups > Content'. The 'General' tab is active, and the 'Tags' tab is also visible. The form contains the following fields:

- Display name: Content
- Code name: content
- Description: Main content group

An 'OK' button is located at the bottom of the dialog.


The **Tags** tab displays a list of all tags in the selected group:



The screenshot shows the 'Tag group properties' dialog box with the 'Tags' tab selected. The breadcrumb path is 'Tag groups > Content'. The 'General' tab is also visible. The 'Tags' tab displays a table of tags and their counts:

| Tag | Count |
|----------------|-------|
| CSS | 1 |
| Czech republic | 1 |
| GPRS | 1 |
| GPS | 1 |
| HTML | 3 |
| router | 1 |
| SEO | 2 |
| wide XGA | 1 |
| WXGA | 2 |

If you click the  icon next to a tag, a list of links to documents tagged with the tag will be displayed.

Tag group properties 

Tag groups ▸ Content

General **Tags**

Tags ▸ HTML







Site:


Document name: LIKE

Document type: LIKE

Show

The tag is used in the following documents:

| | Document name | Document type | Language | Site |
|---|--|---------------|---|----------------|
|  | Cascading Style Sheets (CSS) | Article |  English - United States | Corporate Site |
|  | HyperText Markup Language (HTML) | Article |  English - United States | Corporate Site |
|  | Search Engine Optimization (SEO) | Article |  English - United States | Corporate Site |

Items per page: 25 

8.35.3 Tagging documents

The following example shows how to tag a document:

1. Go to **CMS Desk**, switch to **Edit** mode and select the document that you wish to tag from the content tree.
2. Switch to its **Properties -> Metadata** tab.

Kentico CMS Desk

Switch to Site Manager Site: Corporate Site User: Global

Content My desk Tools Administration

New Delete Move Up Down Edit Preview Live site List Search Other

Content management View mode Other

Corporate Site

- Home
- Services
- Products
- News
- Partners
- Company
- Blogs
- Forums
- Events
- Images
- Wiki
- Examples
- Special pages
- Images

Page Design Form Properties

General URLs Template Metadata Categories Menu Workflow Versions Related docs Linked docs Security Attachments

Save

Page settings

Page title Inherit

Page description: Inherit

Page keywords: (separated by comma) Inherit

Tags

Page tag group: Inherit

Page tags: (separated by comma)
Enter tags separated with comma. Example: dogs, cats

3. Choose a tag group using the **Page tag group** drop-down list. If you check the **Inherit** check-box, tag group will be inherited from the document's parent.

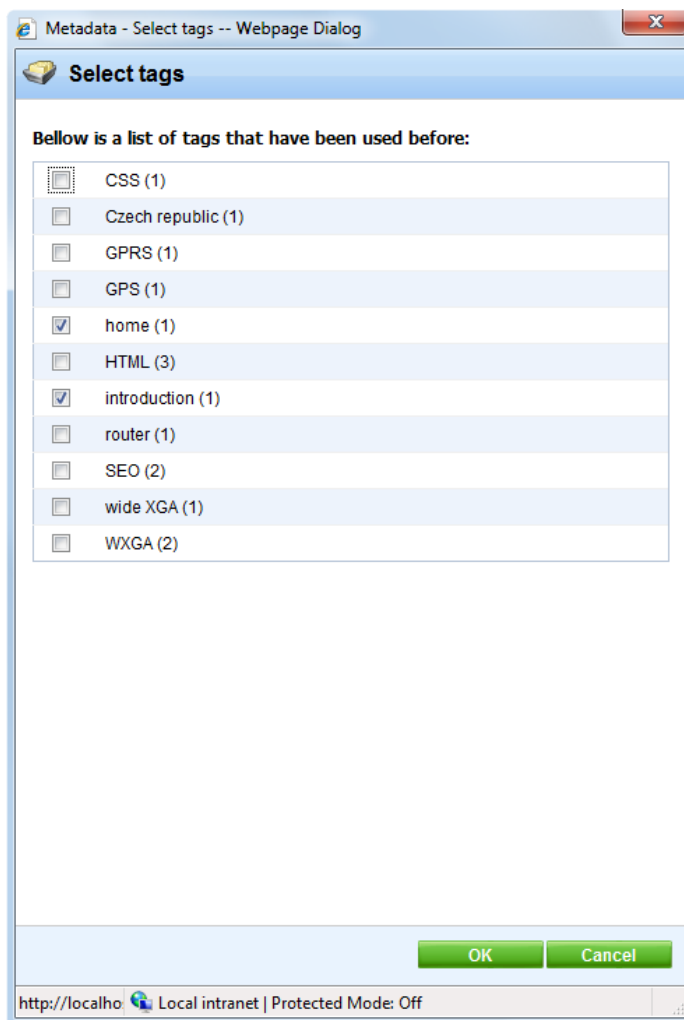


Please note

There needs to be **at least one tag group defined** for you to be able to tag a document. If there are no tag groups created, you will not be able to tag a document as each tag needs to belong to some tag group. You can learn about creating tag groups in the [next chapter](#).

It is also recommended to select a tag group for the root of the content tree so that it could be inherited by the pages located under it.

4. Enter the tags into the **Page tags** field. Tags can be entered either manually or can be selected using the **Select** button. This button displays a list of all tags in the selected tag group. Check the appropriate tags' check-boxes and click **OK**.



5. Click **Save**. The entered tags will be saved and attached to the document.



Tag formats

When entering more than one tag into the **Page tags** field, the tags should be separated with a comma or a blank space. A combination of both in a single entry is also valid. The following examples are all valid entries for adding three tags - *tag1*, *tag2* and *tag3*:

tag1, tag2, tag3

tag1 tag2 tag3

tag1, tag2 tag3

In case that you are entering a tag consisting of more than one word, you should enclose it within quotation marks. Multiple long tags can also be entered and can be also divided by both blank spaces and commas:

"long tag1", tag, "long tag2"

"long tag1" tag "long tag2"

Quotation marks can also be used for tags containing special characters that couldn't be used otherwise:

"tag@1", "tag#2", "long, strange: tag@#"\$

The page tags field has also an insinuation function implemented. This functions offers you tags from the selected tag group while you are writing:

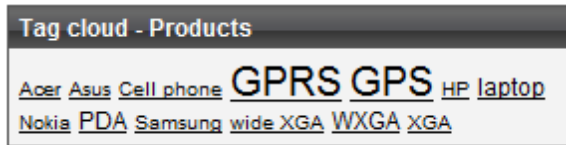
Page tags:

(separated by comma)

| |
|---------------------|
| f |
| France, subway, bus |

8.35.4 Using the Tag cloud web part

The Tag cloud web part is used to display tags that are associated with the current document. Tags are displayed in a form of links. Tags with higher occurrence are displayed in higher font size. If the site visitor clicks some of the links, a list of all documents tagged with the clicked tag will be displayed.



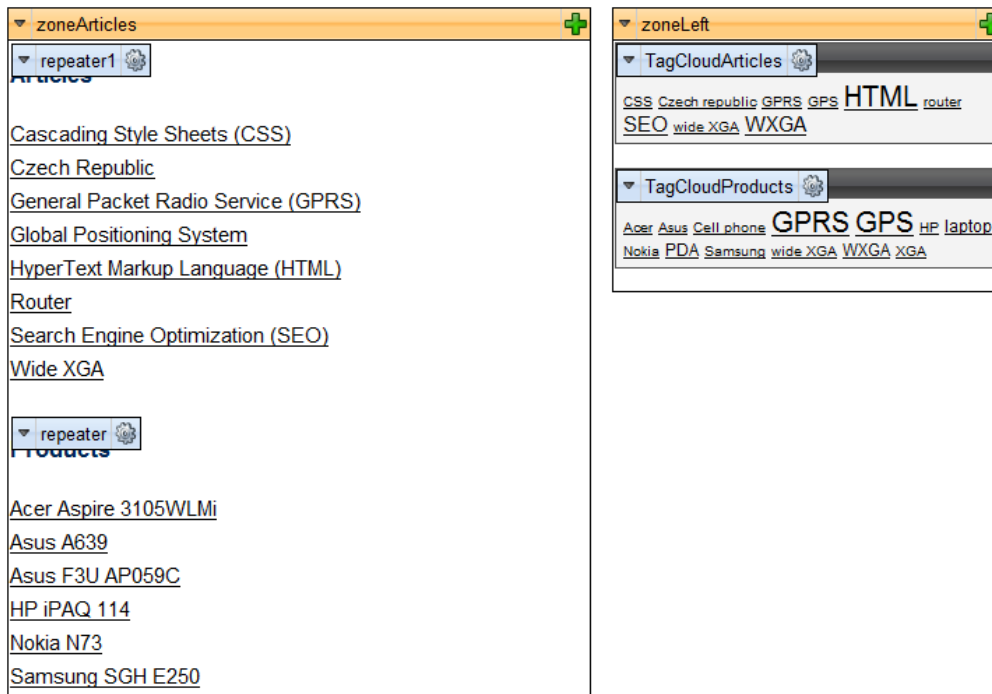
The web part has the following specific properties:

| Tag filter | |
|------------------------------|--|
| Site name | Code name of the website from which you want to display the tags. If you leave the value empty, the content is retrieved from the current website. |
| Tag group name | Name of the tag group from which the tags will be displayed. |
| Select top N tags | Number of tags which will be displayed. Top tags according to the order specified by the <i>ORDER BY expression</i> property will be displayed. |
| ORDER BY expression | ORDER BY part of the SQL query used to retrieve the tags. |
| Tag cloud settings | |
| Document list URL | URL of the page on that the documents list will be displayed after clicking some of the tags (see below for an example). |
| Query string parameter name | Name of the parameter via which the tag ID will be transferred. |
| Tag separator | Separator that will be placed between tags in the tag cloud. |
| Minimal tag font size | Size of tags with the lowest occurrence. |
| Maximal tag font size | Size of tags with the highest occurrence. |
| Document filter | |
| Use document filter | Indicates if the document filter will be used. If true, the web part will display only tags used in the documents specified by the properties below. |
| Path | Path of the documents whose tags will be displayed by the web part. |
| Combine with default culture | Indicates if tags from the default language version of the document should be displayed if the document is not translated to the current language. |
| Culture code | Culture version of the displayed tags. |
| Maximum nesting level | Maximum nesting level. It specifies the number of sub-levels in the content tree of the document specified by the <i>Path</i> property that should be included in the displayed content (i.e. whose tags will be |

| | |
|-----------------------|--|
| | displayed). |
| Select only published | Indicates if only tags from published documents should be displayed. Applied only when 'Site name' or 'Alias path' property is defined. If disabled, all tags from the selected tag group will be displayed. |
| Where condition | WHERE part of the SQL query used to retrieve tags. |

Common usage

The Tag cloud is designed to "work in pair" with some repeater web part. When a tag link is clicked in the tag cloud, a list of all documents tagged with this tag is displayed in the repeater. The repeater can be placed either on the same page as the tag cloud or on some other page so that the site visitor will be redirected. You can see an example of this behavior on the sample Corporate Site under **Examples -> Web parts -> Tagging & Categories -> Tag cloud**.



In order for the two web parts to cooperate correctly, you have to correctly set some of their properties:

Tag cloud:

- The placement of the repeater is defined by the Tag cloud's **Document list URL** property. In case that the repeater is placed on the same page as the tag cloud, the value should be left blank. In case that it is placed on some other page, you should enter the **alias path** of that page.
- ID of the clicked tag is transferred to the repeater in form of a query string parameter. The name of the parameter can be set using the **Query string parameter name** property. The repeater displays the appropriate list of documents based on the value that it gets via this parameter.

Repeater:

- Set the value of the **Path** parameter to the location in the content tree where the documents are stored.
- Set the value of the **Document types** parameter to the document type(s) that is (are) to be displayed.
- Select the transformations that you want to use for the **Transformation** and **Selected items transformation**.

- Finally, use the following code as a value for the repeater's **WHERE condition** parameter. The **tagid** value should be replaced by the name set in the Tag cloud's **Query string parameter name**:

```
{?tagid|(toint)?} = 0 AND '{?tagname?}'='')  
OR (DocumentID IN (SELECT DocumentID FROM CMS_DocumentTag WHERE TagID = {?tagid|  
(toint)?}))  
OR (DocumentID IN (SELECT DocumentID FROM CMS_DocumentTag WHERE TagID IN (SELECT  
TagID FROM CMS_Tag WHERE TagName = '{?tagname?}' AND TagGroupID = {?groupid|  
(toint)?})))
```

The first line ensures displaying of all documents when **no query string parameters** (tagid nor tagname nor taggroupid) are received.

The second line ensures displaying of documents based on the received **tagid** (or differently named parameter) from a **Tag cloud** web part.

The third line ensures displaying of documents based on the received **tagname** and **groupid** from a **blog post's** Filed under section.

Posted by **Abigail Woodwarth** on 6/4/2008 1:43:34 PM

Filed under: [France](#), [hitchhiking](#), [Spain](#), [cuisine](#)

8.36 Time zones

8.36.1 Overview

The Time zones module enables the configuration of time zones for the physical location of the [server](#), for particular [websites](#) and even for particular [users](#). This can be useful if your site has an international audience and you want the date and time displayed on your site to be correct for users from across the world.

Before it can be used, the module must be enabled as described in the [Enabling the module](#) chapter.

To learn how to configure individual time zones in the system, please see the [Managing time zones](#) chapter. Time zones can also be set to adjust their time according to [Daylight saving time](#).

Time zones can also be applied in your code. The [Displaying correct time in your code](#) chapter provides more information and examples.

Time zones are currently supported in:

- **CMS Desk -> Content**
- **CMS Desk -> My desk**
- **CMS Desk -> Tools -> Booking system**
- **Web parts** of the [Blogs](#), [Forums](#), [Message boards](#), [Messaging](#) and [Smart search](#) modules; more information can be found in the [Use in web parts](#) chapter

A typical example of use is displaying the time of forum posts when you have a global community – while the server may be located in New York (GMT -5:00), visitors coming from Paris (GMT +1:00) may see their new posts were added at 8am, while they would expect to see 2pm according to their current time.

Another example is a website of a global company that runs on a server in New York, but contains content for a French office. In this case, French visitors may wonder why the current time displayed by the server is 8am while it's 2pm in Paris. That's when you use the built-in support for multiple time zones.

8.36.2 Enabling the module

To enable the Time zones module, go to **Site Manager -> Settings -> System** and check the **Enable time zones** check-box. Below it, you can find the following two drop-down lists:

- **Server time zone** - time zone of the physical server location
- **Site time zone** - default time zone of the website selected by the **Site** drop-down list in the top-left part of the page; this time zone can also be set globally and inherited by sites that don't have it set differently

The screenshot shows the Kentico CMS Site Manager interface. The top navigation bar includes 'Sites', 'Administration', 'Settings', 'Development', 'Licenses', and 'Support'. The 'Settings' tab is active. On the left, a tree view shows various settings categories, with 'System' highlighted in red. The main content area displays the 'System' settings. A red box highlights the 'Enable time zones' checkbox, which is checked. Below it, two dropdown menus are also highlighted in red: 'Server time zone' is set to '(GMT-06.00) Central America' and 'Site time zone' is set to '(GMT-07.00) Arizona'. Other settings like 'Log size' (1000), 'Default user ID' (53), and 'Scheduler interval' (1) are visible but not highlighted. The 'No-reply e-mail address' is set to 'no-reply@mydomainXY.com'. At the bottom, there is an 'Export these settings' link.

8.36.3 Setting user's time zone

Each user can have their own time zone settings. Where applicable, these time zone settings are used instead of the website's default time zone. A user's time zone can be set in both **CMS Desk** and **Site Manager**, on the **Administration -> Users -> Edit user -> Settings** tab. On the tab, the selection can be done using the **Time zone** drop-down list.


Users

Users | Mass e-mail | On-line users

Users ▸ Abi

General | Password | **Settings** | Sites | Roles | Departments | Notifications | Categories | Friends | Subscriptions | Languages

User nick name:

User picture: 
[Select pre-defined avatar](#)

User signature:

Description:

URL referrer:

Campaign:

Messaging notification e-mail:

Time zone:

Badge:

User activity points:

Live ID:

Activation date:

Activated by user: Global Administrator

Registration info: N/A

Gender: Unknown Male Female

Date of birth:

Waiting for approval:

Show splash screen:

Forum posts: 2
Blog posts: 19
Blog comments: 0
Message board posts: 1

Users can also select their time zone on the live site if you place the **My Account** or **My Profile** web part on one of your pages. If they have access to **CMS Desk**, they can do this in **My Desk -> My profile**

-> **Details.** This is done the same way as above, by using the **Time zone** drop-down list.

My profile

Personal settings
Change password
Notifications

Username:

Full name:

Email:

Display my e-mail to: Nobody (all) Site members Friends


Nickname:

Signature:

--= A B 1 =--

Messaging notification e-mail:

Time zone: (GMT-09.00) Alaska ▼



Avatar:

[Select pre-defined avatar](#)

Gender: Male Female

Date of birth:

8.36.4 Managing time zones

Time zones can be managed in **Site Manager -> Development -> Time zones.**

The screenshot shows the Kentico CMS 5.5 Site Manager interface. The left sidebar contains a 'Development' menu with various options, and 'Time zones' is highlighted. The main content area is titled 'Time zones' and features a 'New time zone' link. Below this is a search filter with the text 'Time zone name: LIKE' and a 'Show' button. The main part of the page is a table listing various time zones.


| Actions | Time zone name | GMT | DST |
|---------|---|------|-----|
| | International Date Line West | -12 | No |
| | Midway Island, Samoa | -11 | No |
| | Hawaii | -10 | No |
| | Alaska | -9 | Yes |
| | Pacific Time (US & Canada) | -8 | Yes |
| | Tijuana, Baja California | -8 | Yes |
| | Arizona | -7 | No |
| | Chihuahua, La Paz, Mazatlan - New | -7 | Yes |
| | Chihuahua, La Paz, Mazatlan - Old | -7 | Yes |
| | Mountain Time (US & Canada) | -7 | Yes |
| | Central America | -6 | No |
| | Central Time (US & Canada) | -6 | Yes |
| | Guadalajara, Mexico City, Monterrey - New | -6 | Yes |
| | Guadalajara, Mexico City, Monterrey - Old | -6 | Yes |
| | Saskatchewan | -6 | No |
| | Bogota, Lima, Quito | -5 | No |
| | Eastern Time (US & Canada) | -5 | Yes |
| | Indiana (East) | -5 | Yes |
| | Caracas | -4.5 | No |
| | Atlantic Time (Canada) | -4 | Yes |
| | Georgetown, La Paz, San Juan | -4 | No |
| | Manaus | -4 | No |
| | Santiago | -4 | Yes |

On this page, you can see a list of defined time zones. All time zones are displayed by default, but you can filter displayed items using the filter above the list. The only possible filtering parameter is the time zone **Display name**. If you type in the searched value and click the **Show** button, only those items that match the entered expression will be displayed in the list.









Time zones in the list can be **Edited** () or **Deleted** (). You can also create new time zones by clicking the () **New time zone** link.

Creating a new time zone

In the following example, you will learn how to create a new time zone:

1. Go to **Site Manager -> Development -> Time zones** and click the  **New time zone** link.
2. Fill in the details that you can see in the following screenshot:

3. Click **OK**. You have just created the time zone. Now if you switch back to the time zones list, you should see the new time zone present among the records.


| Actions | Time zone name | GMT ^ | DST |
|---|------------------------------|-------|-----|
|   | International Date Line West | -12 | No |
|   | Nowhere land | -12 | Yes |
|   | Midway Island, Samoa | -11 | No |
|   | Hawaii | -10 | No |

8.36.5 Daylight saving time

When creating a time zone or modifying some of the existing ones, you may come across the need to specify the daylight saving time (DST). This is a convention of setting clocks so that afternoons have more daylight and mornings have less of it. The amount of time advance and dates of change vary from country to country, however, it is usually a one hour advance at the beginning of spring and the advance is rolled back in autumn.

For more information about DST, please read this Wikipedia article: http://en.wikipedia.org/wiki/Daylight_saving_time

Daylight saving time can be set separately for each of the time zones. It can be set when creating a new time zone or when editing an existing one.

 **Time zone properties**

[Time zones](#) ▶ Nowhere land

Time zone name:

Code name:

GMT difference:

Use daylight saving time:

Daylight saving time starts at: 1/4/2009 2:00:00 AM

Daylight saving time ends at: 1/4/2009 2:00:00 AM

Daylight saving time start rule:

| Month | Condition | Day | Time | Value |
|---------|-----------|--------|---------|-------|
| January | FIRST | Sunday | 1 2 :00 | 1 |

Daylight saving time end rule:

| Month | Condition | Day | Time | Value |
|---------|-----------|--------|---------|-------|
| January | FIRST | Sunday | 1 2 :00 | 0 |

1. The first thing you need to do is to check the **Use daylight saving time** check-box. This enables DST for the time zone.
2. Now when you have DST enabled, you have to set the **DST start rule** and **DST end rule** for the current time zone. First, select the month in which the change will be carried out using the **Month** drop-down list.
3. Here comes the complicated part. You have to specify on which day of the selected month the change will be carried out. This is done by the **Condition** drop-down list and the two **Day** drop-down lists.

The following table explains the meanings of possible options for the **Condition** parameter:

| | |
|-------|--|
| FIRST | Day of the week can be selected. If you select Monday, the time advance will occur on the first Monday of the selected month. |
| LAST | Day of the week can be selected. If you select Monday, the time advance will occur on the last Monday of the selected month. |
| >= | Day of the week and day number can be selected. If you select Monday and 15, the time advance will occur on the first Monday after the 15th day of the selected month. |
| <= | Day of the week and day number can be selected. If you select Monday and 15, the time advance will occur on the last Monday before the 15th day of the selected month. |
| = | Day number can be selected. If you select 15, the time advance will occur on the 15th of the selected month. |

4. Set the time when the change will occur on the specified date using the **Time** fields.

5. The last thing is to set the time difference between the standard time and DST. It should be entered into the **Value** field and represents the **difference from standard time in hours**. Use this value for the **DST start rule** and '0' for the **DST end rule**.

6. Click **OK** to save the settings.

8.36.6 Use in web parts

Web parts of the [Blogs](#), [Forums](#), [Message boards](#), [Messaging](#) and [Smart Search](#) modules have the **Time zones** section in their **web part properties**, where the applied time zone can be set. The section contains the following two properties:

| | |
|-------------------------|---|
| TimeZone type | <ul style="list-style-type: none">• Inherit - inherits the time zone setting from the Page placeholder in which it is displayed (typically the one on the master page)• Server - server time zone settings will be used by the web part• WebSite - website time zone settings will be used by the web part• User - user's time zone settings will be used by the web part• Custom - some other time zone will be used based on the selection done by the Custom time zone property |
| Custom time zone | If you select one of the time zones, it will be used by the web part, regardless of the user's or website's time zone settings. |

In the case of the **Calendar** and **Event calendar** web parts, these web part properties take no effect. Instead, displaying of the correct time zone needs to be ensured in the used transformation, as described in the [Displaying correct time in your code](#) chapter.

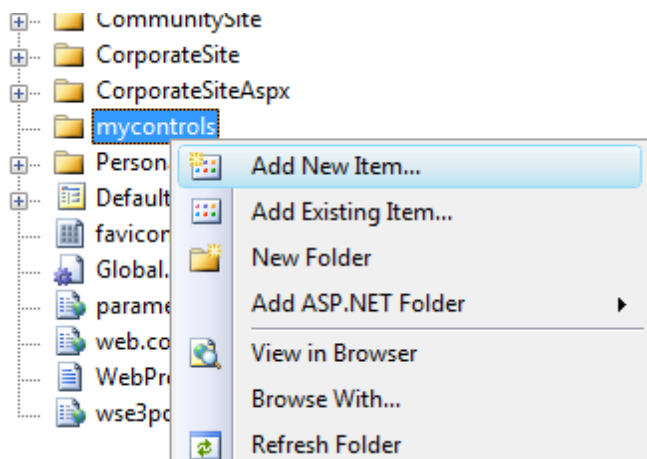
8.36.7 Displaying correct time in your code

The following methods can be used in transformation code to display the correct time according to time zone settings.

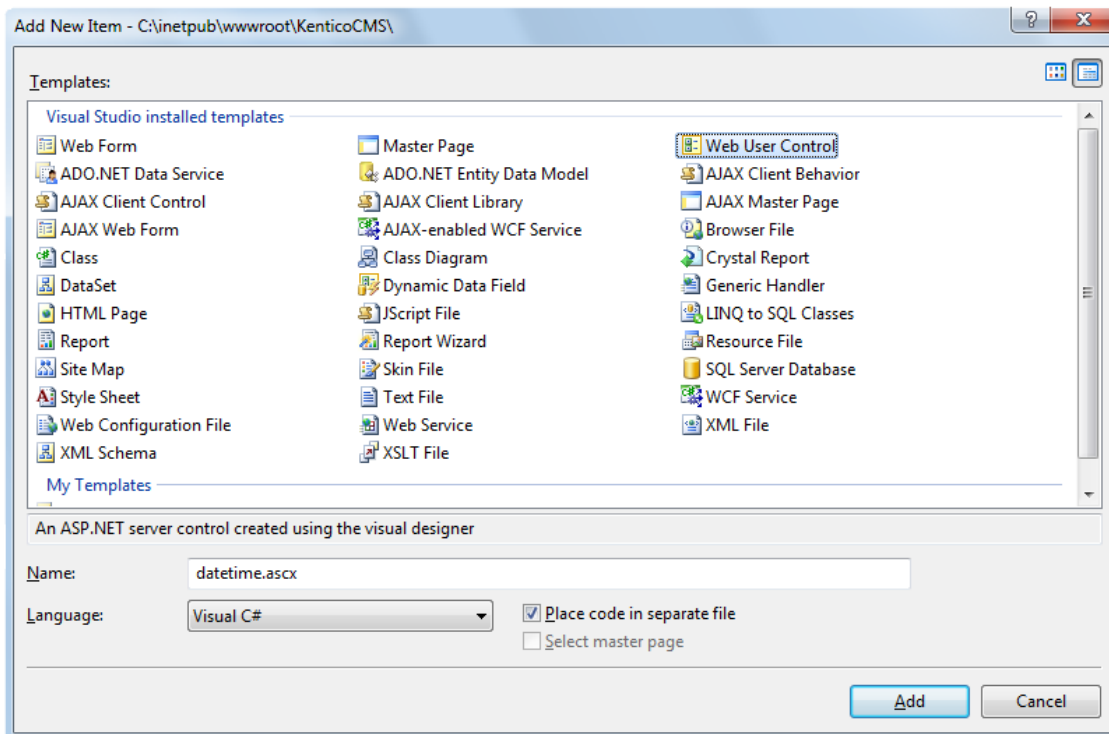
| | |
|--|---|
| <code><%# GetDateTime(DateTime.Now) %></code> | Returns date-time value according to web part time zone settings. |
| <code><%# GetSiteDateTime(DateTime.Now) %></code> | Returns date-time according to site time zone settings. |
| <code><%# GetUserDateTime(DateTime.Now) %></code> | Returns date-time according to the current user's time zone settings. |
| <code><%# GetCustomDateTime(DateTime.Now, "GreenwichMeanTime") %></code> | Returns date-time according to the time zone given in the second parameter. |

In the following example, you will learn how to use the **General -> User control** web part to display the current date and time on your site, which will reflect the time zone settings of the web part.

1. Open the web project in Visual Studio and create a new subfolder in the project folder. Name it *mycontrols*. Right click the folder and click Add new item.



2. Create a new WebUserControl in the mycontrols folder, name it *datetime.ascx*.



3. Edit the user control on the Design tab. Drag and drop a **Label** control onto the form.

4. Add the following code to the *PageLoad* method of the user control:

[C#]

```
Label1.Text = CMS.CMSHelper.CMSContext.ConvertDateTime(DateTime.Now, this).ToString();
```

5. Add the **General -> User control** web part somewhere to some page of your website. Set the following properties of the web part:

- **User control virtual path property:** *~/mycontrols/datetime.ascx*
- **Time zone:** *Custom*
- **Custom time zone:** any time zone of your choice

and click **OK**. If you switch to the live site now, you should see the web part displaying the current date and time in the selected time zone. Now you can also try changing the value of the **Custom time zone** property and verify that the time displayed on the live site changes according to it.

8.37 User contributions (Wiki)

8.37.1 Overview

The **User contributions** module allows you to create content editing interface for site members. It means that chosen website visitors can create, edit and delete content, even if they are not editors and cannot access Kentico CMS Desk.

There are several scenarios where you can use this module, for example:

1. Community news

You can create a list of news and allow community members to add news without going to CMS Desk.

2. Partner directory

Your business partners can manage their profile on your website and the list of their reference project.

3. Business directory

You can create a business directory for some town or industry and let the business owners to manage their own profile.

Implementation

You can use the following web parts to implement user contributions:

- **Contribution list** - this web part allows you to display a list of contributions (documents) and the **New document** button.
- **Edit contribution** - this web part allows you to edit an existing document.

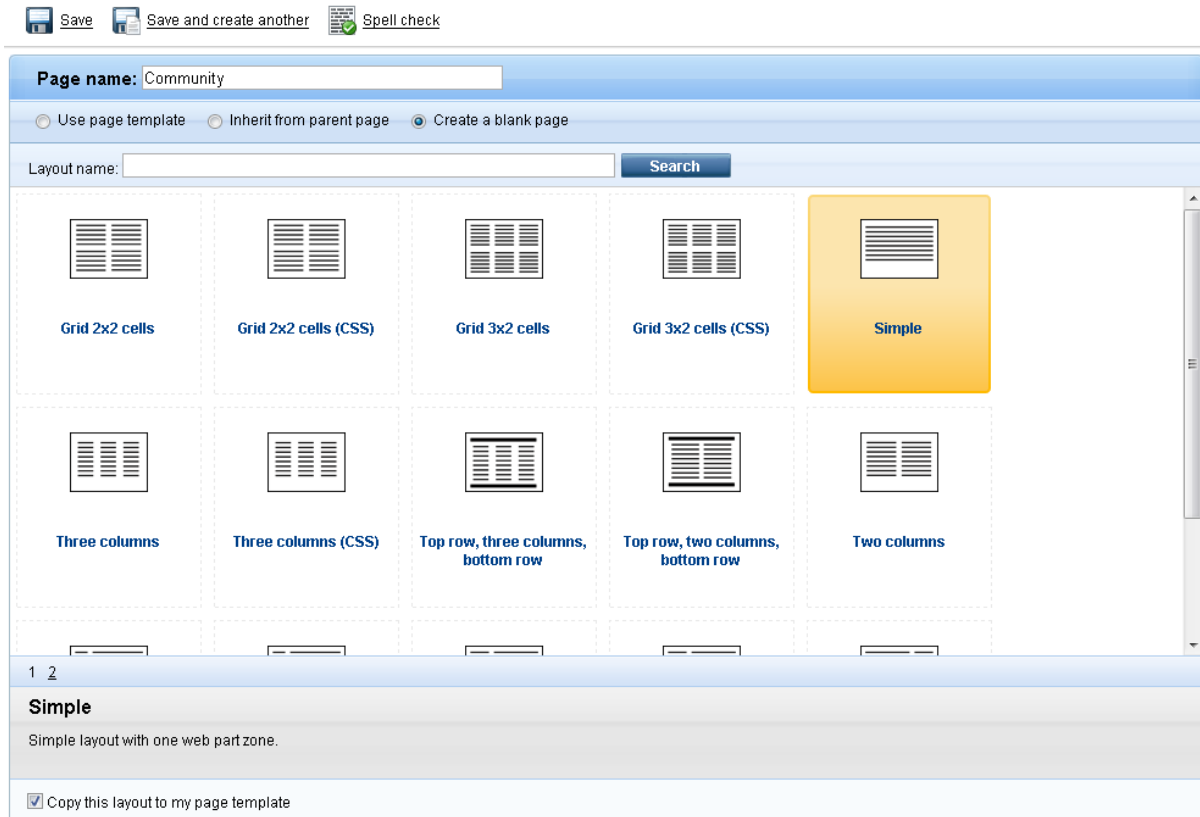
You can find the description of both web parts in [Kentico CMS Web Parts and Controls Reference](#).

8.37.2 Example: Publishing community news

In this example, we will create a new section for publishing of community news. Every registered site member can create new news items and edit/delete their previously posted news. The example assumes you are using the sample Corporate Site.

Creating the community news section

Sign in as administrator to **CMS Desk**, go to the **Content** section and click **Examples** in the content tree. Click **New** and choose to create a new **Page (menu item)**. Enter the name **Community** and choose to create a blank page using the **Simple** layout:



Click **Save**. Switch to the **Design** tab of the newly create page and add the **Listings and Viewers/Repeater** web part. Set the following properties:

- **ID:** repeaterNews
- **Document types:** cms.news
- **Transformation:** CMS.News.preview
- **Selected item transformation:** CMS.News.default

Click **OK**.

Adding the New document button

Add a new web part **User contributions/Contribution list**. It will display the **New document** link. Set the following values:

- **Show for document types:** cms.menuitem
- *this ensures that the web part is displayed only when the list of news is displayed, not on the news detail page.*
- **Display list of documents:** no (unchecked)
- *this ensures that the web part displays only the **New document** link, without displaying the list of*

documents.

- **Allowed new document types:** CMS.News
- *this means that the users will be allowed to create only news items under this section.*
- **Allow editing by users:** Authenticated
- *this means that only authenticated users will be able to edit/delete the document. Authenticated users are those who are signed-in to the website (not to the administration interface).*

Leave the other values as they are by default.

Click **OK**.

Adding the editing support

Add a new web part **User contributions/Edit contribution**. It will display the **Edit/Delete** icons when some news item is chosen.

- **Show for document types:** cms.news
- *this ensures that the web part is displayed only on the news detail page.*
- **Allow editing by users:** Document owner

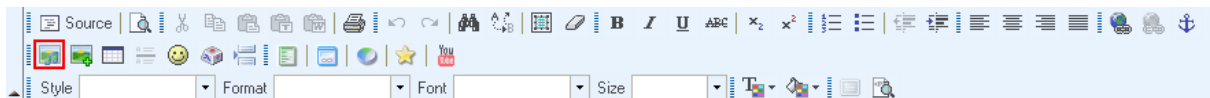
Click **OK**.

Creating a testing user

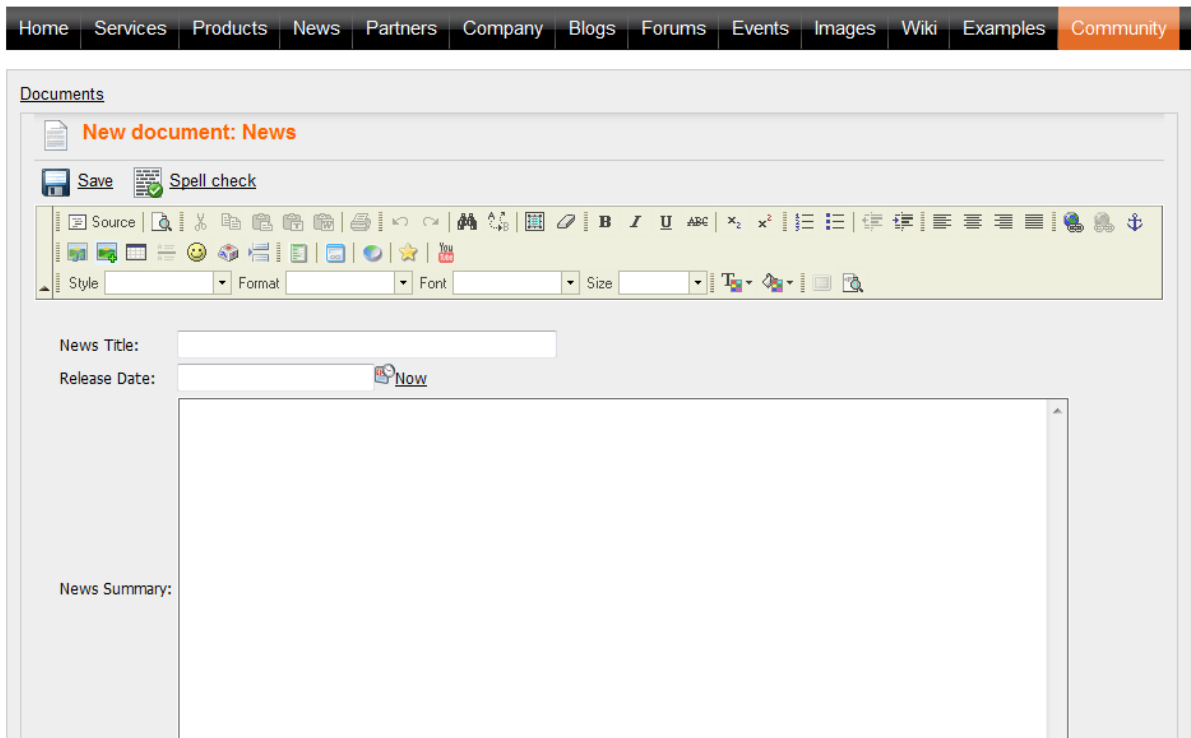
Go to **Administration -> Users** and create a new user with user name **test1**. In the **Is editor** field, choose no (uncheck the box) - this is a common site member without access to Kentico CMS Desk.

Creating your first news item

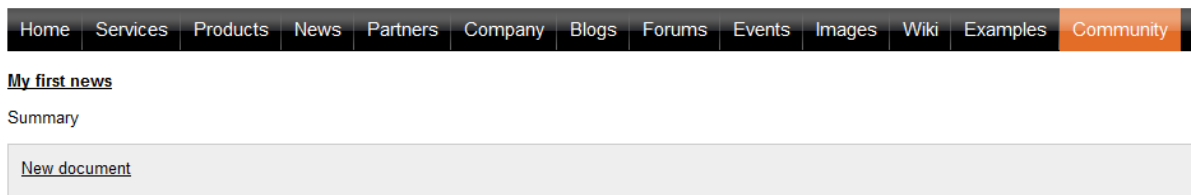
Sign out and go to the **Examples -> Community** section. You will see a blank page since the user contributions are now only enabled for site members. In order to sign in, click the **My account** link at the top and sign in as user **test1**. Then go back to the **Examples -> Community** section. You will see the **New document** link:



You are now displayed with the news editing form:



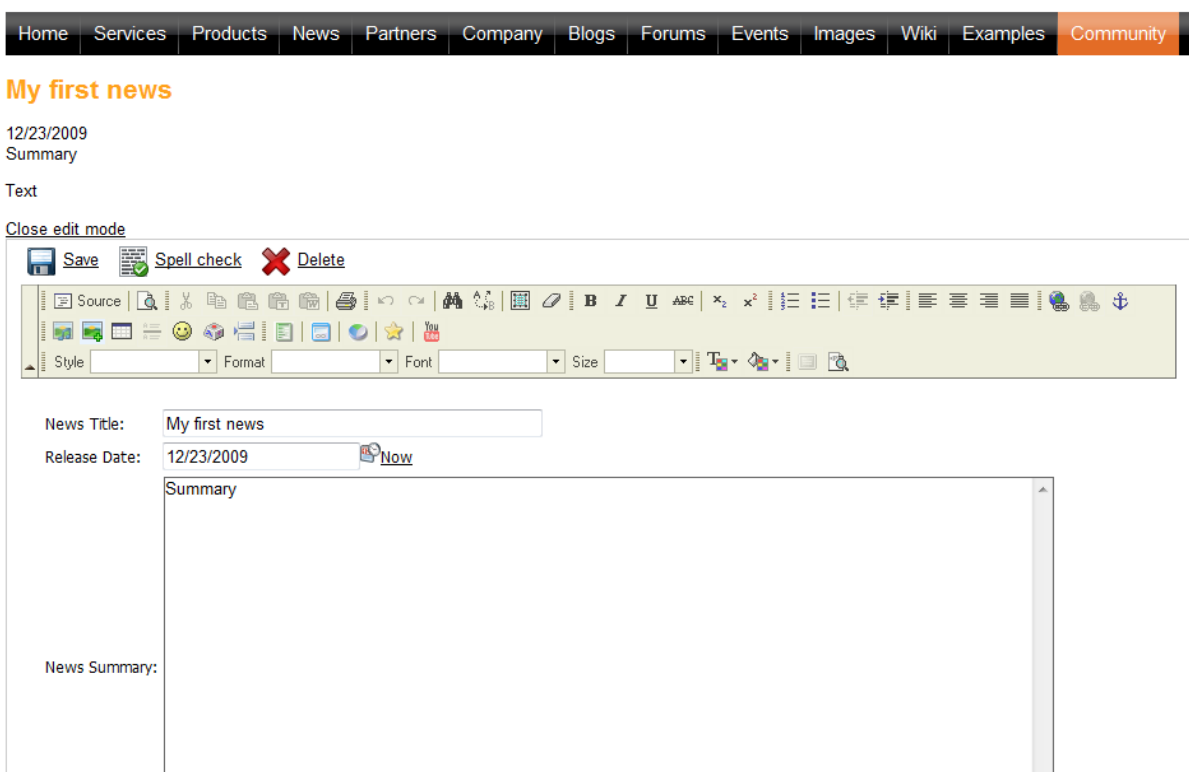
Enter some content and click **Save**. Click the **Documents** link at the top. You will see the **Community** page with your first news item:



Now click the news item to see the details page. You will see the **Edit/Delete** buttons:



Click **Edit** and you will be displayed with editing form where you can edit the content:



Make some modifications and click **Save**. Click **Close edit mode** to see the updated page.

In this example, you have learned how to create a site section where community members can create and edit content without having access to Kentico CMS Desk.

Approval Process

If you need to enforce some approval process for published news, you can simply set up workflow for the given site sections and all news will need to be approved by some site manager. You can find more details on workflow configuration in chapter [Workflow overview](#).

8.37.3 Example: Editing partner profile

In this example, we will create a list of partners where partners can edit their profile on the My profile page after they sign in. This example assumes you're using the Corporate Site sample website.

Creating the partner document type

Before we create the page, we need to create a new document type **Partner**. Sign in as administrator to **CMS Site Manager** and go to **Development -> Document types**.

Click **New document type** and enter the following values:

Step 1: General

- **Document type display name:** Partner
- **Document type code name:** custom.Partner

Step 2: Data type

Choose the option "The document type has custom fields" and set:

- **Table name:** custom_Partner
- **Primary key name:** PartnerID

Step 3: Fields

Create the following fields:

- **Attribute name:** PartnerName
- **Attribute type:** Text
- **Attribute size:** 100
- **Field caption:** Partner name
- **Field type:** TextBox

- **Attribute name:** PartnerProfile
- **Attribute type:** Long Text
- **Field caption:** Partner profile
- **Field type:** HTML area (Formatted Text)

Step 4: Additional Settings

- **Document name source:** PartnerName

Step 5: Parent types

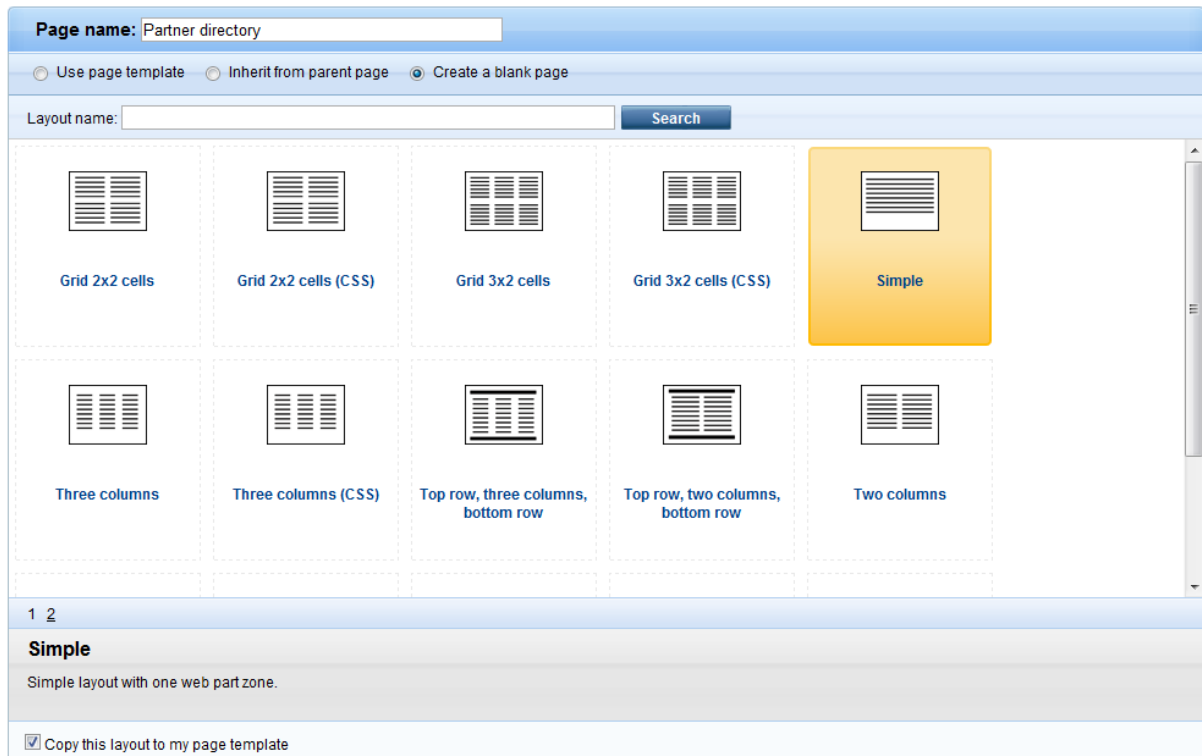
Choose only **Page (menu item)**.

Step 6: Sites

Choose your current website.

Creating the partner list

Go to **CMS Desk -> Content**, click **Examples** and click **New**. Choose to create a new **Page (menu item)** document. Call the page **Partner directory** and choose the **Create a blank page using this layout** option. Choose the **Simple layout** and click **Save**.



Switch to the **Design tab** of the newly created page and add the **Listings and viewers/Repeater** web part. Set the following properties:

- **ID:** repeaterPartners
- **Document types:** custom.partner
- **Transformation:** custom.Partner.Default
- **Selected item transformation:** custom.Partner.Default

Please note: we will use the default transformation generated by the system, you can later modify the transformation so that it meets your design and layout requirements.

Click **OK**. Switch to the **Page** view and you will see an empty page now.

Creating the partner user account

Go to **CMS Desk -> Administration -> Users** and create a new user with user name **AAAWebDesign**. Set the **Is editor** property to no (unchecked).

Creating the partner profile document

Go to **CMS Desk -> Content**, click **/Examples/Partner directory** and click **New**. Choose to create a new **Partner**. Enter the following values:

- **Partner name:** AAA Web Design Inc.
- **Partner profile:** We provide web development services.

Click **Save**. Go to **Properties -> General** and set the **Document alias** to **AAAWebDesign** and click **Save**. We need to use the same alias as the user name since we will be using them to match the users to their user profiles. The alias path of the document will always be **/Examples/Partner-directory/<user name>**.

When you see the page in the **Live site** mode now, you will see a page like this:



Creating the partner profile editing page

Now we will create a page that will be available only for partners and it will allow them to edit their partner profile. Choose the **/Examples** document in the content tree and click **New**. Choose to create a new **Page (menu item)**. Call the page **My profile** and choose the **Create a blank page using this layout** option. Choose the **Simple layout** and click **Save**.

Switch to the **Design tab** of the newly created page and add the **Listings and viewers/Repeater** web part. It will display the current user's partner profile. Set the following properties and click **OK**.

- **ID:** repeaterPartners
- **Path:** /Examples/Partner-directory/{%UserName%}
- this ensures that the page displays the profile that matches the current user. The {%UserName%} macro is resolved as the user name of current site visitor.
- **Document types:** custom.partner
- **Transformation:** custom.Partner.Default
- **Selected item transformation:** custom.Partner.Default
- **Hide if no record found:** no (unchecked)
- **No record found text:** No partner profile was found for your user account.
- **Content before:** <h1>Your Partner Profile</h1>

Add the **User contributions/Edit contribution** web part. Set the following values:

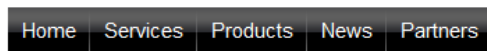
- **Path:** /Examples/Partner-directory/{%UserName%}
- this ensures that the form edits the profile that matches the current user. The {%UserName%} macro is resolved as the user name of current site visitor.

- **Allow delete:** no (unchecked)
- *this option hides the Delete button since we do not want the partners to delete their profile accidentally.*
- **Allow editing by users:** Authenticated
- *we want to allow editing only to authenticated users; at the same time, we do not require the user to be document owner.*

Go to the **Properties** -> **Security** dialog, set the **Requires authentication** value to **Yes** and click OK- we want to allow the access to this page only to authenticated partners so that we know their user name and can display their profile.

Testing the profile editing page

Sign out and go to **Examples** -> **My profile**. You will be displayed with logon form. Sign in as user **AAAWebDesign**. You will see your partner profile with **Edit** button:



Your Partner Profile

Partner name: AAA Web Design Inc.

Partner profile: We provide web development services.



Click **Edit**, modify some values and click **Save**:



Home Services Products News Partners Company Blogs


















Your Partner Profile

Partner name: AAA Web Design Inc.

Partner profile: We provide excellent web development services.

[Close edit mode](#)

 Save  Spell check

Source                 

Style Format Font Size

The changes were saved.

PartnerID: 1

Partner name:

Partner profile:

We provide excellent web development services.

Go to **Examples -> Partner directory** and you will see the updated profile:

Home Services Products News Partners Company

Your Partner Profile

Partner name: AAA Web Design Inc.

Partner profile: We provide excellent web development services.

 [Edit](#)

In this example, you have seen how you can allow users (partners) to edit a single document that matches their user name. It was a little different to the previous example ([Example: Publishing community news](#)), since in this case, we have created the document first and then we mapped it to the user by matching the document alias path and user name. The partner wasn't allowed to create new documents in this example and we didn't use the "document owner" security option.



Tip 1: Simplifying the process of creating a new partner

In cases like this, it's useful if you create a custom module (see [Custom modules](#)) that will contain a custom form for creating new partners. Your code will ensure creating the user, the default partner profile and setting the document alias path and user name to the same value. You will need to use Kentico CMS to create the user account ([Managing users](#)) and the partner profile document ([Create document](#)).

Tip 2: Assigning multiple users to the same partner profile

If the user name/document alias path mapping doesn't fit your needs or if you need to assign multiple users to the same partner profile, you can use another option: Go to **Site Manager -> Development -> System tables -> User** and create a custom text field **PartnerProfileAliasPath**. You will use this custom field in the user profile to specify the partner profile that can be edited by the given user. Then, the **Path** property in the **Edit contribution** web part will be set to value `{%PartnerProfileAliasPath%}`. Please note that you'll find your new custom field on the **Custom Fields** tab, not on the **General** tab as the default attributes.

8.37.4 Security

The user contributions web parts use the following properties to configure the security options:

- **Allow insert/edit/delete** - indicates if the appropriate buttons should be displayed.
- **Allow editing by users** - you can choose between:
 - **All** - any user who comes to the page with user contribution web part can use it to edit documents
 - **Authenticated** - any authenticated user (site member) can edit the documents
 - **Document owners** - only document owner can edit the documents
- **Check permissions** - if you choose this option, the users need to be granted with appropriate permissions to read/modify/create/delete documents using the User contributions web parts. See chapter [Permissions for modules and documents](#) for more details on document permissions.

8.37.5 User contributions and API

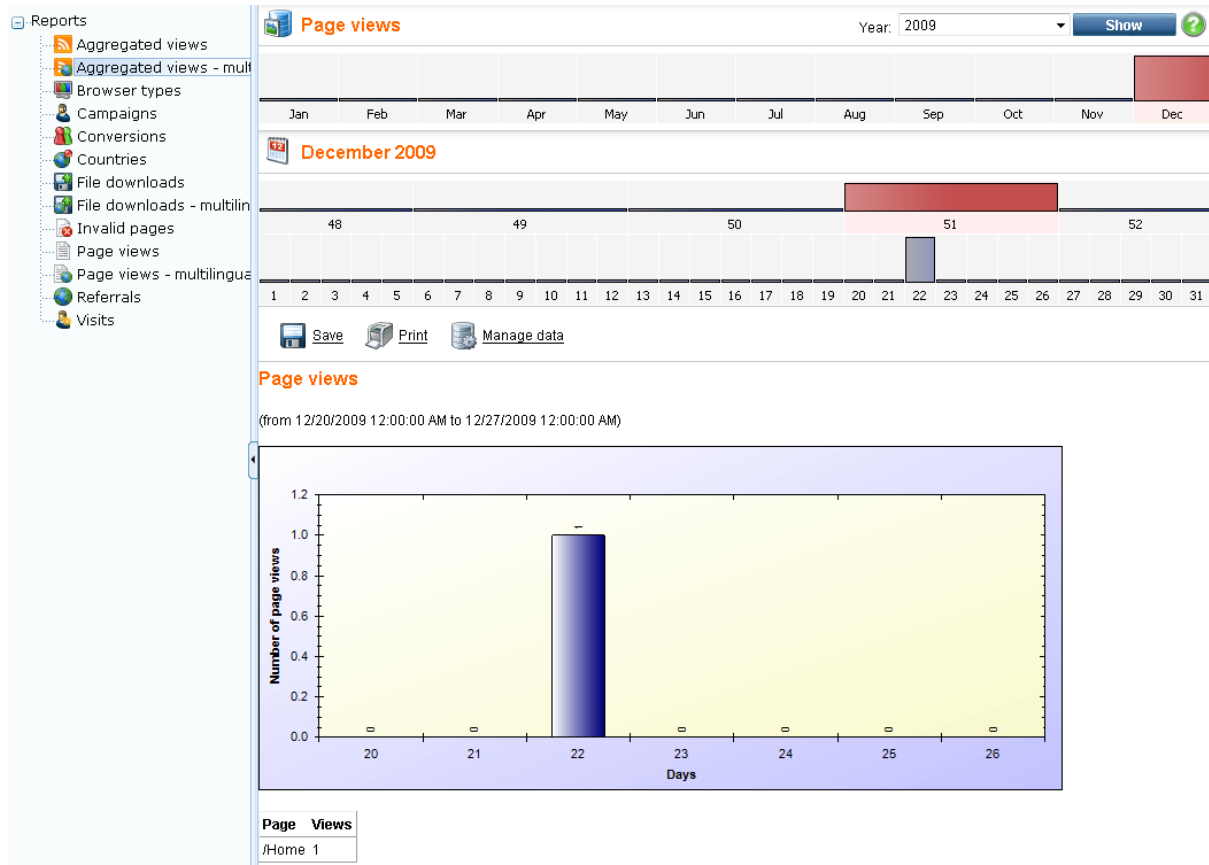
The user contributions rely on standard Kentico CMS content management features. As such, they do not have a special programming interface and you need to use the document management API described in chapter [Content management internals](#).

8.38 Web analytics

8.38.1 Overview

The Web Analytics module allows you to track and analyze website visits, page views, file downloads and other metrics of the website.

You can find the Web Analytics module in **CMS Desk -> Tools -> Web Analytics**, as you can see in the screenshot below. When you select a report on the left, you can see the statistics on the right. You can choose the year, month, week and day. In the main window below, you can see the detailed reports with graphs and tables.



Enabling the Web Analytics Module

The Web Analytics module is disabled by default. You can enable it in **Site Manager -> Settings -> Web Analytics**, by checking the box **Enable Web Analytics**.



Disk Permissions

Please note that the Web Analytics module requires that your web application is granted with Modify permission on the disk, for the ~/app_data folder.

Limitations

The Web Analytics module tracks only content and events related to pages managed by Kentico CMS. It doesn't track other content, such as html files or media files (jpg, gif, etc.) that are not served by the CMS.

Delay in displaying results

All the events are stored in temporary files and need to be processed on regular basis, by a scheduled task. Please note that there can be a delay between the event (such as page view) and its displaying in the reports.

8.38.2 Available reports

The Web Analytics module comes with the following pre-defined reports:

- **Aggregated views** - this report tracks access to pages via links in RSS or Atom feeds created using the Syndication module. All cultural versions of a document are tracked together as one document.
- **Aggregated views - multilingual** - this report tracks access to pages via links in RSS or Atom feeds created using the Syndication module. Each cultural version of a document is tracked separately.
- **Browser types** - this report shows what types of browsers your website visitors use. It recognizes the major and minor version - e.g. FireFox 2.1.
- **Campaigns** - this report helps you track your marketing campaigns - when a visitor comes with particular URL parameter to your website, you can track the visit from particular campaign (typically from e-mail or banner campaigns). See [Tracking marketing campaigns](#) for more details.
- **Conversions** - this report helps you track the conversions on your website. See [Tracking conversions](#) for more details.
- **Countries** - this report shows the countries the visitors come from. The countries are recognized by IP address which may not be a 100% reliable method in all cases, but the overall statistics should provide correct results for a high number of visits.
- **File downloads** - this report summarizes the number of files downloaded by the website visitors and the most downloaded files. Please note that it tracks only the files managed by the CMS and served using the Kentico CMS scripts (GetFile.aspx). All cultural versions of a file are tracked together as one file.
- **File downloads - multilingual** - this report summarizes the number of files downloaded by the website visitors and the most downloaded files. Please note that it tracks only the files managed by the CMS and served using the Kentico CMS scripts (GetFile.aspx). Each cultural version of a file is

tracked separately.

- **Invalid pages** - this report summarizes the number of ASPX pages that were not found on the website and the most often requested invalid URLs.
- **Page views** - this report summarizes the number of displayed pages (served by Kentico CMS) and the most often requested pages. All cultural versions of the page are tracked together as one page.
- **Page views - multilingual** - this report summarizes the number of displayed pages (served by Kentico CMS) and the most often requested pages. Each cultural version of a page is tracked separately.
- **Referrals** - this report summarizes the number of visits coming from external websites and the websites from which the visitors come to your website most often.
- **Visits** - this report summarizes the number of visits of your website and the number of new versus returning visitors. The tracking is ensured by a cookie.

8.38.3 Tracking marketing campaigns

In many cases, tracking referring website URLs may not be possible or reliable way of tracking your on-line marketing campaigns. Then, you may want to use the campaign tracking support in Kentico CMS Web Analytics module.

How it works

You need to include a special parameter to the link in your campaign that will allow you to identify the campaign name. If your current link that you use for banner advertisement looks like this:

```
http://www.mywebsite.com
```

Your new URL with campaign tracking will look like this:

```
http://www.mywebsite.com/?campaign=banner1
```

As you can see, we have added a parameter **campaign** with name of the campaign (banner1).

How to configure campaign tracking

All you need to do is to specify the campaign tracking URL parameter name in **Site Manager -> Settings -> Web analytics**. Choose your website and set the value of the **Campaign tracking URL parameter** key to: **campaign**

Then, modify the links to your website so that they contain the paramter campaign like these:

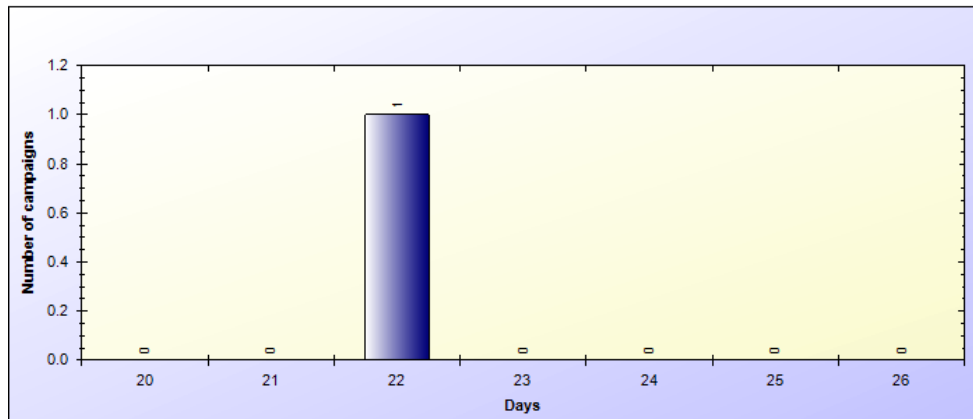
```
http://www.mywebsite.com/?campaign=banner1  
http://www.mywebsite.com/?campaign=newsletterJune  
http://www.mywebsite.com/?campaign=pressrelease
```

How to evaluate campaigns

Go to the **CMS Desk -> Tools -> Web Analytics** module and choose the **Campaigns** report. You will see how many hits you received from your campaigns in the chosen time period:

Campaigns

(from 12/20/2009 12:00:00 AM to 12/27/2009 12:00:00 AM)



| Campaign | Views |
|----------|-------|
| banner1 | 1 |

8.38.4 Tracking conversions

The conversion tracking allows you to track the behavior of visitors on your website and adjust the website for better results.

Tracking conversions in registration form, newsletter subscription and shopping cart

Kentico CMS comes with built-in support for tracking conversions in the following situations:

User registration

When the user registers, you can track it as a conversion by setting the value **Track conversion name** of the **Registration form** web part to some custom name - e.g. "registration".

Newsletter subscription

When the user registers, you can track it as a conversion by setting the value **Track conversion name** of the **Newsletter subscription** web part to some custom name - e.g. "subscription".

Purchase in the shopping cart

When the user registers or makes a purchase, you can track it as a conversion by setting the value **Registration conversion name** or **Order conversion name** of the **Shopping cart** web part to some custom name - e.g. "cart_registration" or "cart_order".

Tracking conversions and their campaign or referring websites

If you wish to track the conversion together with campaign name or referring URL, you need to use the conversion name in the following format (for example):

```
order_{%campaign%}  
or  
order_{%urlreferrer%}  
or  
order_{%campaign%}_{%urlreferrer%}
```

Tracking conversions using your custom code

Using your custom code, you can track a conversion when a visitor makes some action on your website, such as registration, sign up, etc. Then, you can see what changes made to the website helped you increase your conversion rate.

To track a conversion, you need to add a piece of code to your page, web part or to some global event handler:

[C#]

```
string siteName = CMS.CMSHelper.CMSContext.Current.SiteName;  
if (CMS.WebAnalytics.AnalyticsHelper.AnalyticsEnabled(siteName)  
    && !CMS.WebAnalytics.AnalyticsHelper.IsIPExcluded(siteName, HttpContext.Current.  
    Request.UserHostAddress))  
{  
    // log conversion, the conversion name is "order"  
    CMS.WebAnalytics.HitLogProvider.LogHit("conversion", siteName, null, "order",  
    0);  
}
```

Then, the conversion is tracked and you can see the statistics in the **Conversions** report.

You may want to use the following properties of the current user that provide information on the website and/or campaign from which the user came:

[C#]

```
using CMS.CMSHelper;  
  
// the following values provide the information from user's cookie  
CMSContext.CurrentUser.URLReferrer //website URL from which the visitor came  
CMSContext.CurrentUser.Campaign //campaign from which the visitor came  
  
// after the user registers, the information is available in the following  
// database-stored values:  
CMSContext.CurrentUser.UserURLReferrer //website URL from which the visitor first  
// came  
CMSContext.CurrentUser.UserCampaign //campaign from which the visitor first came
```

8.38.5 Configuration options

You can configure several options of the **Web Analytics** module in **Site Manager -> Settings -> Web Analytics** dialog:

| | |
|-----------------------------------|--|
| Enable web analytics | If true, web analytics module logs the events. |
| Exclude search engines | Indicates if search engine robots should be excluded from tracking. |
| Excluded URLs | URLs of your websites that will not be tracked. All underlying pages will not be tracked either. You can specify multiple URLs (or site sections) separated with a semicolon (;). |
| Excluded file extensions | Types of files managed by Kentico CMS that will not be tracked and shown in the File downloads report. You can use several extensions separated with a semicolon (;) (e.g. '.jpg;.gif')
Please note: it's necessary to include the dot in the extension name. |
| Excluded IP addresses | Client IP addresses whose access will not be tracked by the analytics module separated with a semicolon (;). You can use it to exclude your own IP address so that your visits do not influence the results. Please note that you can use * in IP addresses as a wildcard character that stands for any digit. |
| Remember visitors by IP (minutes) | If the entered value is higher than 0, the visitors' IP addresses are used for smarter visits logging. IP addresses are stored in memory for the specified amount of time. |
| Track browser types | Enables browser types tracking. |
| Track campaigns | Enables campaigns tracking. |
| Campaign tracking URL parameter | URL parameter name to identify the campaign. |
| Track conversions | Enables conversions tracking. |
| Track countries | Enables countries tracking. |
| Track file downloads | Enables file downloads tracking. |
| Track invalid pages | Enables invalid pages tracking. |
| Track page views | Enables page views tracking. |
| Track referrals | Enables referrals tracking. |
| Track visits | Enables visits tracking. |
| Track registered users | Enables registered users tracking. |


Please note: These options are applied at the moment when the event occurs. Later change will modify only future events.

8.38.6 Security

You can configure the access to the Reporting module in **CMS Desk -> Administration -> Permissions**. Choose the permission matrix for **Modules -> Web Analytics**.

The following permissions can be given to the listed roles:

- **Manage data** - allows members of the role to manage Web Analytics data (use the Manage data button)
- **Read** - allows members of the role to read Web Analytics reports
- **Save reports** - allows members of the role to save Web Analytics reports; the saved reports can be viewed in the **Reporting** module

 **Permissions**

Site:

Permission type:

Permission matrix:

| | Manage data | Read | Save reports |
|------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Basic users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Community Administrators | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Designers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Desk Administrators | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| CMS Editors | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CMS Readers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Everyone | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Gold Partners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Live ID users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Not authenticated users | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Silver Partners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

8.38.7 How it works

When an event (page view, file download, etc.) occurs, it's saved in the file in folder `~/app_data/CMSAnalytics`. The format of the file is:

`<event type code name>_<date>_<time>.log`

Every minute, a new file is created. A scheduled task reads the closed files every minute (or other scheduled interval) and imports the data into the database. This data is then displayed using the reports defined in the Reporting module.

The name of the scheduled task is **Analytics log processing** and you can control its status and settings in **Site Manager -> Administration -> Scheduled tasks**.

8.38.8 Creating custom reports

This example describes in detail how to log custom events and how to display result statistics. A button click event will be logged for this purpose.

Logging the event

To log custom events for web analytics use the following code from CMS.Analytics namespace: `HitLogProvider.LogHit(string codeName, string siteName, string culture, string objectName, int objectId[, int count]);`

- `codeName` – statistics code name, it is also used in report's code names
- `siteName` – site name
- `culture` – culture code
- `objectName` / `objectId` – it is possible to specify the log either by name or by ID
- `count` – it is weight of the log, default value is 1

Example of logging of the button click event follows:

[C#]

```
using CMS.WebAnalytics;
using CMS.CMSHelper;

protected void Button1_Click(object sender, EventArgs e)
{
    if (AnalyticsHelper.AnalyticsEnabled(CMSContext.CurrentSiteName))
    {
        HitLogProvider.LogHit("buttonclicked", CMSContext.CurrentSiteName, null,
            CMSContext.CurrentUser.UserName, 0);
    }
}
```

Statistics code name is "buttonclicked" and the logged value is user name of the current user who clicked the button. Now logs will be created and stored in DB after clicking the button. Before you can see your statistics in CMSDesk -> Tools -> Web Analytics the reports have to be done in CMSDesk -> Tools -> Reporting. Next step is creation of reports which display statistics in graph or table form.

Creating reports

Go to CMSDesk -> Tools -> Reporting and edit Web Analytics category. There are some reports already in the list. These reports belong to default statistics like page views, visits, campaigns, etc. Each statistics has four reports: daily, weekly, monthly and yearly report.

Code names of the reports have to be in specific form:

- <statisticscodename>.yearreport
- <statisticscodename>.monthreport
- <statisticscodename>.dayreport
- <statisticscodename>.hourreport

In our example <statisticscodename> is buttonclicked, as defined above.

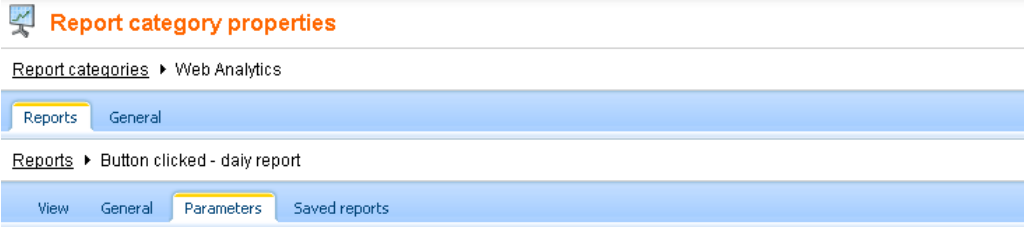
Now we will create daily report for the new statistics.

[Reports](#) ▶ New report

| | |
|--|---|
| Report display name: | <input type="text" value="Button clicked - daiy report"/> |
| Report code name: | <input type="text" value="buttonclicked.dayreport"/> |
| Allow public users to see this report: | <input checked="" type="checkbox"/> |
| <input type="button" value="OK"/> | |

Go to Parameters section and create three essential parameters which are used in queries:

- FromDate – Date and Time attribute type
- ToDate - Date and Time attribute type
- CodeName – Text attribute type, statistics code name as attribute default value



Parameters for the report filtering form (to parametrize the report queries):

| Database | |
|--|--------------------------|
| Attribute name: | CodeName |
| Attribute type: | Text |
| Attribute size: | 20 |
| Allow empty value: | <input type="checkbox"/> |
| Attribute default value: | buttonclicked |
| <input type="checkbox"/> Display attribute in the editing form | |
| Field | |
| Field caption: | |
| Field type: | Label |

OK

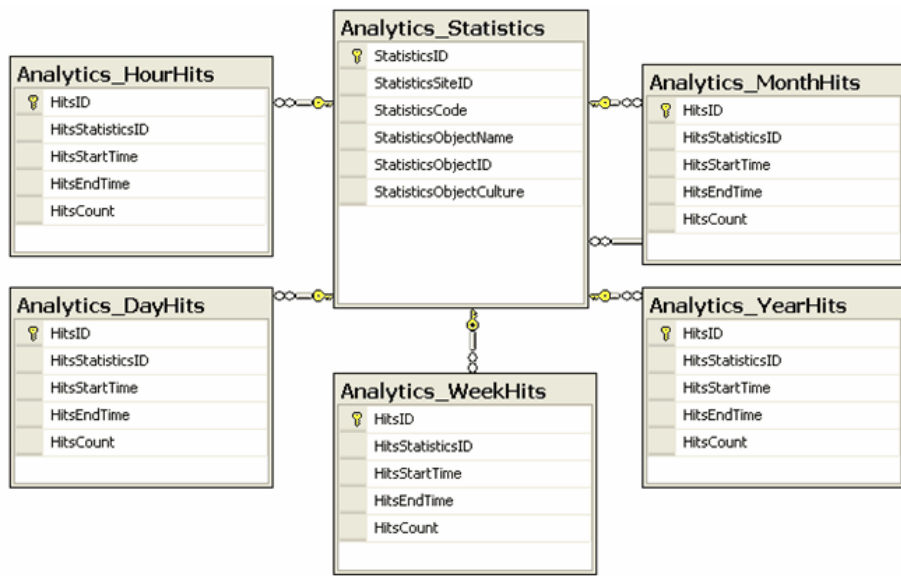
Disable the Display attribute in the editing form for all parameters.

Go to General section and click Add button near Tables to create report table:

| | |
|----------------------|---|
| Display name: | <input type="text" value="table"/> |
| Code name: | <input type="text" value="TableDayButtonClicked"/> |
| Query: | <pre>SELECT StatisticsObjectName as 'User', SUM(HitsCount) as 'Hits' FROM Analytics_Statistics, Analytics_DayHits WHERE (StatisticsSiteID = @CMSContextCurrentSiteID) AND (StatisticsCode = @CodeName) AND (StatisticsID = HitsStatisticsID) AND (HitsStartTime >= @FromDate) AND (HitsEndTime <= @ToDate) GROUP BY StatisticsObjectName ORDER BY SUM(HitsCount) DESC</pre> |
| Is stored procedure: | <input type="checkbox"/> |
| Skin ID: | <input type="text"/> |

There are six important DB tables used in web analytics module.

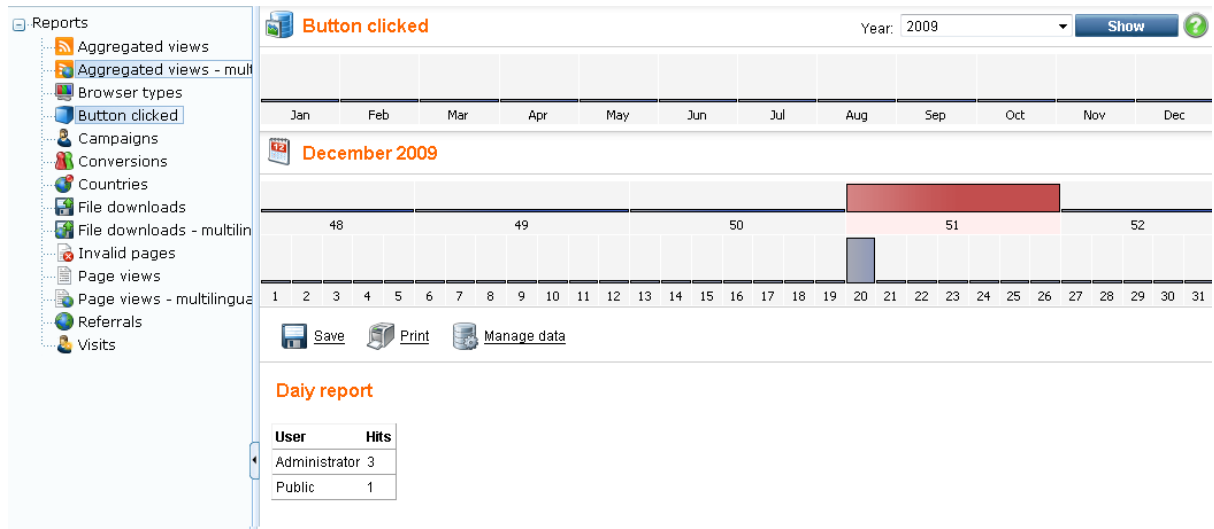
Table `Analytics_Statistics` contains general information about statistics, other five tables store statistics hit records for specific time period – `Analytics_HourHits`, `Analytics_DayHits`, `Analytics_WeekHits`, `Analytics_MonthHits` and `Analytics_YearHits`. As the report is daily report table `Analytics_DayHits` is used beside `Analytics_Statistics` table. See the diagram below to understand DB structure of web analytics:



Now click OK and use Insert button near Tables to insert macro to the layout of the report. Click OK and daily report is ready now.

2. Other reports are similar, the only difference is in queries where you should use proper tables, like `Analytics_YearHits` in yearly report, `Analytics_MonthHits` in monthly report, etc.
3. Last thing you should do is to insert string into resources which is used in statistics list in CMSDesk -> Tools -> Web Analytics, form of the resource key have to be this – `analytics_codename`. `<codename>`, e.g. `analytics_codename.buttonclicked` for this example. You may also add specific icon for new statistics, icons are stored in `~\App_Themes\<used theme>\Images\CMSModules\WebAnalytics\Icons\`, name should be in form `<codename>.gif`, if there are any `'` in codename, replace them with `'_'`.

And finally the result:



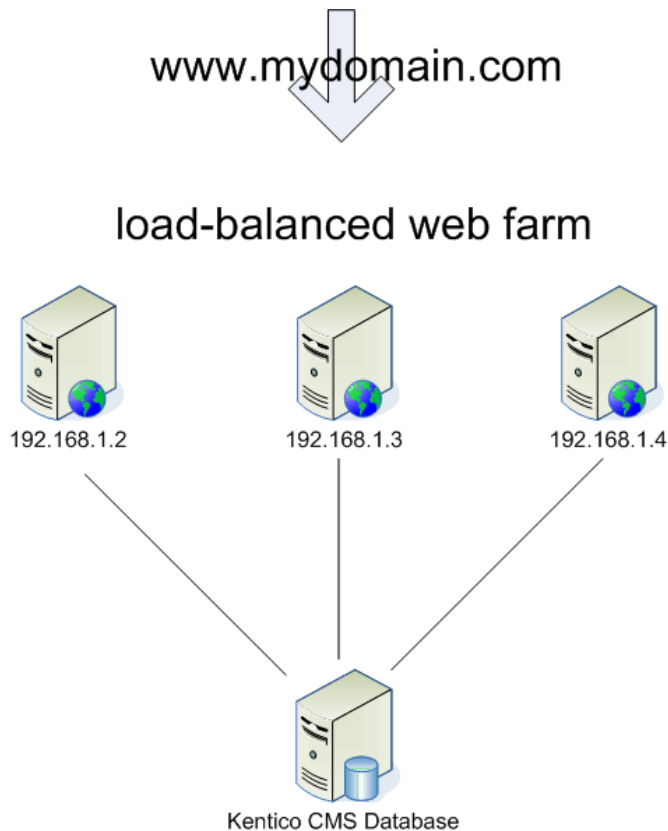
8.39 Web farm synchronization

8.39.1 Overview

Native web farm support in Kentico CMS provides the following features:

- It synchronizes the changes made to the site settings on one of the servers to all the other servers.
- It synchronizes the files uploaded to the site to all other servers. This is used only if you store the uploaded files on the disk or on both disk and in the database.

The following image shows the structure of the web farm and how the synchronization works:



If you change some settings or upload a file using server `192.168.1.2`, the other servers do not know about that in a standard scenario. However, if you're using the **Web farm synchronization** module, the module automatically creates a new synchronization task in the database and notifies the other servers once per request so that they process their synchronization task.

To learn how to add web farm servers into the system and configure them, please see the [Defining web farm servers](#) chapter.



Using Kentico CMS on a web farm without the Web farm synchronization module

You can use Kentico CMS on a web farm even if you do not use the web farm synchronization module, especially if you do not store uploaded files in the file system. Then, the only limitation is that if you change the settings or page content on one of the servers, the other servers may keep using the old version of the settings in their memory/cache until the web application is restarted or cache content expires.

Please note: The web farm support **doesn't replace any load-balancing or web farm management tools.**

8.39.2 Defining web farm servers

You need to enter the **internal** URLs of all your servers into the system so that the web farm synchronization module knows which servers should be synchronized.

Go to **Site Manager -> Administration -> Web farm** and click () **New server**, enter the values:

- **Server display name:** some descriptive name displayed to the users
- **Server code name:** code name of the server that will be used in server configuration file
- **Server root URL:** the URL of the root of the website, such as `http://192.168.1.2/KenticoCMS`

Click **OK** to save and repeat the process for every server in your web farm.

The screenshot shows the Kentico CMS Site Manager interface. The left sidebar contains a navigation menu with 'Web farm' selected. The main content area is titled 'Web farm' and has two tabs: 'Servers' and 'Tasks'. Under the 'Servers' tab, there is a '+ New web farm server' button. Below this, the 'Web farm servers' section shows a 'New server' entry with the following configuration:

- Server display name: Server 1
- Server code name: server1
- Server root URL: http://192.168.1.2/KenticoCMS
- Server enabled:

An 'OK' button is located at the bottom of the form.

Now you need to update the `web.config` file on each server and add the following keys into the `/configuration/appSettings` section:

```
<add key="CMSWebFarmServerName" value="server1" />
<add key="CMSWebFarmEnabled" value="true" />
```

where `server1` is the appropriate server code name of the given server. Every server must contain only one such key with its own name.

Additional low-level settings of web farm synchronization can be done by adding the keys listed in the [Web farm synchronization settings](#) section of Appendix C - Web.config parameters into the `/configuration/appSettings` section of your `web.config` file.

If the synchronization doesn't work as expected, you can check the failed synchronization tasks on the **Tasks** tab. The processed tasks are automatically removed from the list, the failed tasks are displayed with error message.



License keys

Please be sure to enter an appropriate license key for the internal URL of the server.

E.g. if the web farm servers are used for domain name *example.com* and you access them internally through URLs like *http://192.168.1.2*, *http://192.168.1.3*, etc., you need to enter separate license keys for *example.com*, *192.168.1.2* and *192.168.1.3* in Site Manager -> Licenses dialog (you need to do that on one server only and restart the other instances using Site Manager -> Administration -> System -> Restart application).

Part

IX

API programming and Kentico CMS internals

9 API programming and Kentico CMS internals

9.1 Overview

Kentico CMS allows you to script any action that you normally make through the user interface, such as:

- content management (select/create/update/delete documents)
- workflow management
- security (create users, roles, set permissions, etc.)
- and many others

This allows you to create customized features and add them to the user interface or write procedures for integration with external systems.

9.2 CMSContext class

`CMS.CMSHelper.CMSContext` class provides useful methods that allow you to access information about the current page, user, etc. All methods are static, which means you can access them directly like `CMS.CMSHelper.CMSContext.CurrentAliasPath`, without instantiating the `CMSContext` class.

| | |
|------------------|--|
| CurrentAliasPath | Alias path of the currently required document. |
| CurrentDocument | Currently processed document. This object contains all document data including the product data. Please note that retrieving this property is time consuming because it may need to access the database to get the data. You can use the property <code>CurrentPageInfo</code> to get basic document data without additional operations required. It is cached when Content caching is enabled. |
| CurrentPageInfo | Currently processed page info. This property provides only basic document fields, such as <code>NodeID</code> , <code>NodeName</code> , <code>AliasPath</code> , <code>ClassName</code> , etc. It is cached if Page info caching is enabled. |
| CurrentSite | Provides information on the current site. |
| CurrentSiteName | Provides code name of the current site. |
| CurrentUser | Provides information on the current user and their preferences. Beside the standard <code>UserInfo</code> properties, it also provides the following ones: <p>MenuItemViewMode – the view mode used for page (menu item) documents (<code>cms.menuitem</code> type).</p> <p>PreferredUICultureInfo – read-only property returning the current user's preferred UI culture (as <code>CultureInfo</code> object).</p> <p>PreferredCultureCode – gets/sets user's preferred content culture. You can use this property to change the culture of the displayed content.</p> <p>PreferredUICultureCode – gets/sets user's preferred UI culture. It's used mainly by Kentico CMS webparts, controls and in the administration interface.</p> <p>IsAuthorizedPerResource – returns true if the current user is authorized with given permission for given module (resource).</p> |

| | |
|--------------------|--|
| | <p>IsAuthorizedPerClassName – returns true if the current user is authorized with given permission for the given document type (class name). It checks the global document permissions.</p> <p>IsAuthorizedPerTreeNode – returns true if the current user is authorized with given permission for given document (node).</p> <p>IsPublic – returns true if the current user is the Public user account used for anonymous visitors.</p> |
| ViewMode | The view mode in which the documents are displayed (edit, design, form, live site, preview). |
| ResolveCurrentPath | <p>Returns current path or its part according to the provided formatting string. You can use it to get only the first N levels of the path – e.g.:</p> <p><code>/{0}/{1}</code>
 applied on
 <code>"/products/computers/ibm"</code>
 results in:
 <code>"/products/computers"</code></p> |

9.3 TreeHelper class

CMS.CMSHelper.TreeHelper class provides useful methods that allow you to access documents. All methods are static, which means you can access them directly like `CMS.CMSHelper.TreeHelper.SelectNodes`.

| | |
|----------------------|--|
| SelectSingleNode | Returns single node (document) specified by given NodeID or path. |
| SelectSingleDocument | Return single node (document) specified by given DocumentID (culture-specific document version). |
| SelectNodes | Returns a DataSet object containing nodes (documents) of given path. |

9.4 Managing documents

9.4.1 Content management internals

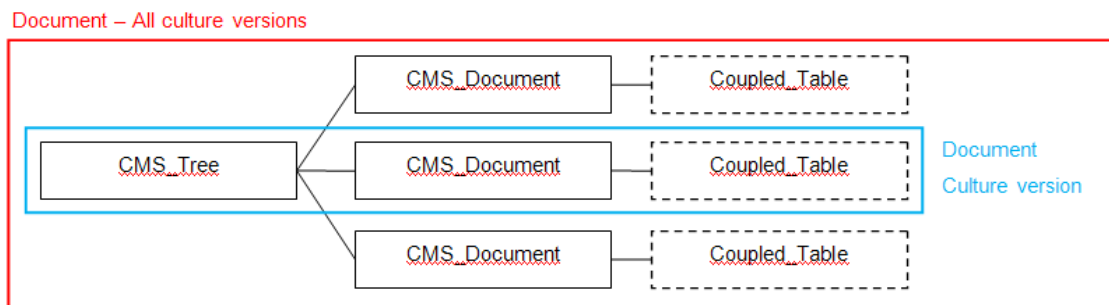
This chapter describes the structure of the content stored in the Kentico CMS repository and how they can be accessed.

Database structure of the documents

Document data is stored in several joined tables that are used for the tree structure, multilingual support and custom document fields. The document record consists of the following tables:

- **CMS_Tree** – a table with basic document data shared between different language versions of same document. This table determines the tree structure of the website document content. Table contains **one record for all culture versions** of the document. The table does not contain any versioned data.
- **CMS_Document** – a table with document data of specified language version of the document. Table contains **several records** for every document, each one representing one language version of the document. Some of the document columns are versioned columns.
- **Coupled table** – a table that contains document-type specific fields defined by the developer. For example the News document type has a Content_News coupled table that contains NewsTitle, NewsSummary, NewsText and other fields specific for news. Coupled table primary key is referenced by the value of **DocumentForeignKeyValue** column and the table is determined by type of the document. Container document types, such as folder, do not have any coupled table. All columns from coupled tables are versioned. Each culture version of the coupled document contains one record in the coupled table.

The following figure shows how the tables are connected:



See **Kentico CMS Database Reference** or the database structure for details on the table columns.

TreeNode Class

The **CMS.TreeEngine.TreeNode** class encapsulates the tables described above. You can work with the document values using the **TreeNode** class properties (if available) or using the **SetValue** and **GetValue** methods with column name from either **CMS_Tree**, **CMS_Document** or coupled table. There are following methods to make the changes to the database:

- **Insert** – Inserts complete document record to the database, creates new record in **CMS_Tree**, **CMS_Document** and coupled table. Use this method for first culture version of the document.

- **InsertAsNewCultureVersion** – Inserts a new language version of the document. Creates new record in CMS_Document and coupled table bound to the existing CMS_Tree record. Use for the new language versions of the same document if some language version of the document already exists.
- **Update** – Updates the document record (all three tables) in the database
- **Delete** – deletes the document record from the database. It deletes the CMS_Document and coupled table record. If the document is the last culture version of the document, it deletes also the CMS_Tree record.

The next chapters contain code examples of working with documents.

See also: [Managing attachments](#), [Versioning internals](#), [Workflow internals](#)

9.4.2 Select document(s)

Select single node by NodeID

[C#]

```
using CMS.SiteProvider;

// Tree node
CMS.TreeEngine.TreeNode node = null;
// Tree provider
UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
CMS.TreeEngine.TreeProvider tree = new CMS.TreeEngine.TreeProvider(ui);

// Get Single node specified by it`s ID
node = tree.SelectSingleNode(nodeId);

// Get node name
string result = "The node name is: " + node.NodeName;
```

Reading document properties

Once you retrieve the TreeNode instance representing a document, you can use the GetValue method to retrieve the document properties:

[C#]

```
// Get NewsTitle value of the News document
string newsTitle = (string) node.GetValue("NewsTitle");
```

Reading/setting editable region content

Once you retrieve the TreeNode instance representing a document, you can use the DocumentContent

property to retrieve or set the document properties:

[C#]

```
// Get mainText region content of the node representing a page
string mainText = (string) node.DocumentContent["mainText"];

// Set mainText region content of the node representing a page (for portal engine
pages)
node.DocumentContent.EditableWebParts["mainText"] = "my text";

// Set mainText region content of the node representing a page (for ASPX page
templates)
node.DocumentContent.EditableRegions["mainText"] = "my text";
```

Please note: if you need to retrieve these values for the currently displayed page, you can use the `CMSContext.CurrentPageInfo.EditableItems` property.

Select single node by AliasPath

[C#]

```
using CMS.SiteProvider;

// Tree node
CMS.TreeEngine.TreeNode node = null;
// Tree provider
UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
CMS.TreeEngine.TreeProvider tree = new CMS.TreeEngine.TreeProvider(ui);

// Get Single node specified by it`s site name, aliaspath And culture code
node = tree.SelectSingleNode("CorporateSite", "/Products/Notebooks/FS-V2030", "en-
us");

string result = "The node name is: " + node.NodeName;
```

Select single document by DocumentID

Please note: the difference between DocumentID and NodeID is that DocumentID is specific for particular language version of the document.

[C#]

```
using CMS.SiteProvider;

// Tree node
CMS.TreeEngine.TreeNode node = null;
// Tree provider
UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
```



```
CMS.TreeEngine.TreeProvider tree = new CMS.TreeEngine.TreeProvider(ui);

// Get single document node specified by its ID
node = tree.SelectSingleDocument(documentId);

string result = "The name of the document (node) is: " + node.DocumentName;
```

Select multiple documents

[C#]

```
using CMS.SiteProvider;

DataSet ds = null;

// create a TreeProvider instance
UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
CMS.TreeEngine.TreeProvider tree = new CMS.TreeEngine.TreeProvider(ui);

// get dataset of tree nodes specified by alias path and class names (separated by
// semicolon),
// the second parameter says whether to return default culture documents if the
// required
// document language version is not available
ds = tree.SelectNodes("CorporateSite", "/Products/%", "en-us", True, "cms.menuitem;
cms.products");

// do something with dataset ...
```

9.4.3 Create document

Creating a new document

[C#]

```
string newsName = "My first news";
// create tree provider instance
CMS.TreeEngine.TreeProvider provider = new CMS.TreeEngine.TreeProvider(CMS.
CMSHelper.CMSContext.CurrentUser);

// get parent node for new document
CMS.TreeEngine.TreeNode parent = provider.SelectSingleNode(CMS.CMSHelper.
CMSContext.CurrentSiteName, "/News", "en-us");

// create a new tree node
CMS.TreeEngine.TreeNode node = new TreeNode("cms.news", provider);

if (parent != null)
{
    // set document properties
```

```
node.NodeName = newsName;
node.NodeAlias = newsName;
node.SetValue("DocumentCulture", "en-us");
node.SetValue("NewsTitle", newsName);
node.SetValue("NewsSummary", "Some summary.");
node.SetValue("NewsText", "Some text.");
node.SetValue("NewsReleaseDate", DateTime.Now);
// create New document
node.Insert(parent.NodeID);
}
```

9.4.4 Update document

Update an existing document

[C#]

```
// tree provider
CMS.TreeEngine.TreeProvider provider = new CMS.TreeEngine.TreeProvider(CMS.
CMSHelper.CMSContext.CurrentUser);
// get document with specified site, alias path and culture
CMS.TreeEngine.TreeNode node = provider.SelectSingleNode(CMS.CMSHelper.CMSContext.
CurrentSiteName, "/News/MyFirstNews", "en-us");

if (node != null)
{
    // change some values
    node.SetValue("NewsSummary", "Some changed summary.");
    node.SetValue("NewsText", "Some changed text.");
    // Update the document
    node.Update();
}
```

9.4.5 Delete document

Deleting a document

[C#]

```
// Tree provider
CMS.TreeEngine.TreeProvider provider = new CMS.TreeEngine.TreeProvider(CMS.
CMSHelper.CMSContext.CurrentUser);

// Get document with specified site, aliaspath and culture
CMS.TreeEngine.TreeNode node = provider.SelectSingleNode(CMS.CMSHelper.CMSContext.
CurrentSiteName, "/News/MyFirstNews", "en-us");

if (node != null)
{
    // Delete the document
    node.Delete();
}
```

9.4.6 Copy document

Copying a document

[C#]

```
// Tree provider
CMS.TreeEngine.TreeProvider provider = new CMS.TreeEngine.TreeProvider(CMS.
CMSHelper.CMSContext.CurrentUser);
// Get document (node) which will be copied
CMS.TreeEngine.TreeNode node = provider.SelectSingleNode(CMS.CMSHelper.CMSContext.
CurrentSiteName, "/Products/PDAs/ItemA", "en-us");
// Get target node under which the document will be copied
CMS.TreeEngine.TreeNode target = provider.SelectSingleNode(CMS.CMSHelper.
CMSContext.CurrentSiteName, "/Products/Notebooks", "en-us");

if ((target != null) && (node != null))
{
    // copy the document under the specified target,
    // the third parameter says that document's child nodes (if any) will not be
    copied
    provider.CopyNode(node, target.NodeID, false);
}
```

9.4.7 Move document

Moving a document

[C#]

```
// Tree provider
CMS.TreeEngine.TreeProvider provider = new CMS.TreeEngine.TreeProvider(CMS.
CMSHelper.CMSContext.CurrentUser);

// Get document (node) which will be moved
CMS.TreeEngine.TreeNode node = provider.SelectSingleNode(CMS.CMSHelper.CMSContext.
CurrentSiteName, "/Products/PDAs/ItemA", "en-us");

// Get target node under which the document will be moved
CMS.TreeEngine.TreeNode target = provider.SelectSingleNode(CMS.CMSHelper.
CMSContext.CurrentSiteName, "/Products/Notebooks", "en-us");

if ((target != null) && (node != null))
{
    // Move the document under the specified target
    provider.MoveNode(node, target.NodeID);
}
```

9.4.8 Using transactions when managing documents

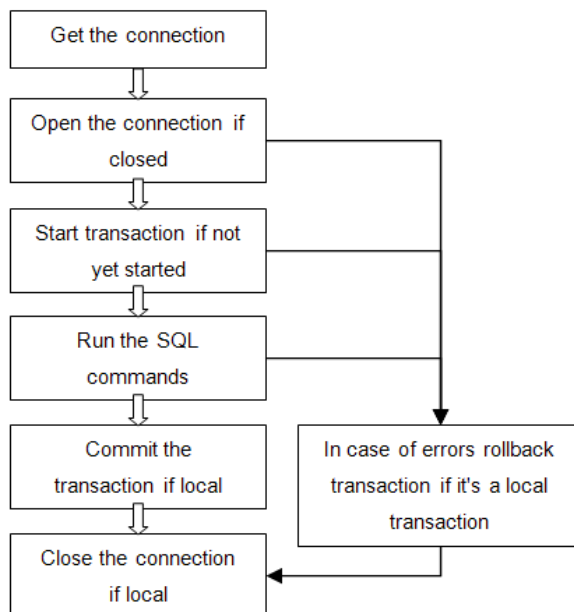
This chapter explains how to work with transactions in Kentico CMS API. Transactions are usually used to ensure database consistency.

Native transactions

Kentico CMS uses SQL transactions to ensure the system database consistency when performing complex operations consisting of multiple steps. In such cases the whole operation forms a single block of SQL commands that can be rolled back when an error occurs or committed if the complete operation was successful. Transaction handling is provided by **CMS.DataEngine** library, in the **GeneralConnection** class.

Please note that you should always use single connection for every operation within the open transaction to avoid deadlocks.

The transactions flow in Kentico CMS looks like this:



Please note: Always pass the existing connection as a method parameter if you call the method that uses DB access within transaction.

Example

Please use following example as a template in all the methods that work with transactions:

[C#]

```
using CMS.DataEngine;
using CMS.TreeEngine;
using CMS.FileManager;
using CMS.WorkflowEngine;

/// <summary>
/// Sample method
/// </summary>
/// <param name="conn">Data connection to use</param>

public void DoSomethingInTransaction(GeneralConnection conn)
{
    // Process within transaction
    using (var tr = new CMSTransactionScope(conn))
    {
        // --- HERE YOU CAN USE YOUR DATABASE ACCESS CODE LIKE: ----
        DataSet ds = conn.ExecuteQuery("cms.user.selectall", null, null, null);

        // --- IF YOU NEED TO USE TREEPROVIDER, ALWAYS INSTANTIATE IT WITH EXISTING
        CONNECTION
        TreeProvider tree = new TreeProvider(null, conn);

        // --- ALWAYS USE METHOD OVERRIDES THAT USE CONNECTION (TREEPROVIDER)
        PARAMETER ---
        AttachmentInfo ai = DocumentHelper.GetAttachment(Guid.NewGuid(), 1, tree);

        // Commit transaction
        tr.Commit();
    }
}
```

You may also work with **TreeProvider** class instead of connection object. In that case, use its **Connection** property the same way like the **GeneralConnection** in this example and use the same connection object in all operations inside the transaction.

9.4.9 Create linked document

[C#]

```
using CMS.SettingsProvider;
using CMS.CMSHelper;
using CMS.DataEngine;
using CMS.GlobalHelper;
using CMS.TreeEngine;
using CMS.SiteProvider;

...

        // Prepare the TreeProvider
        // it must be initialized with user information when editing document
structure
        UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
        TreeProvider tree = new TreeProvider(ui);

        // Get the document (current culture)
        CMS.TreeEngine.TreeNode node = tree.SelectSingleNode(CMSContext.
CurrentSiteName, "/TestingNews", CMSContext.CurrentUser.PreferredCultureCode,
false, null, false);
        if (node != null)
        {
            // Update the data
            node.SetValue("NodeAlias", "TestingNewsLink");

            // Insert new culture version of the document in the same site
section
            node.InsertAsLink(node.NodeParentID);

            this.lblInfo.Text = "New link '" + node.NodeAliasPath + "' to the
document '/TestingNews' has been created.";
        }
    }
```

9.4.10 Delete linked document

[C#]

```
using CMS.SettingsProvider;
using CMS.CMSHelper;
using CMS.DataEngine;
using CMS.GlobalHelper;
using CMS.TreeEngine;
using CMS.SiteProvider;
using CMS.WorkflowEngine;

...

// Prepare the TreeProvider
// it must be initialized with user information when editing document
structure
    UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
    TreeProvider tree = new TreeProvider(ui);

    // Get the linked document by alias path (any culture)
    CMS.TreeEngine.TreeNode node = tree.SelectSingleNode(CMSContext.
CurrentSiteName, "/TestingNewsLink", TreeProvider.ALL_CULTURES, false, null, false
);
    if (node != null)
    {
        // Always delete the document with DocumentHelper
        // it handles all the dependencies
        DocumentHelper.DeleteDocument(node, tree, true, true);

        this.lblInfo.Text = "Link '" + node.NodeAliasPath + "' has been
deleted.";
    }
}
```

9.5 Managing attachments and files (cms.file)

9.5.1 Managing attachments

The documents may contain a custom field of type "file". The field itself does not contain attachment data. Only **AttachmentGUID** (unique identifier) value is stored in the document field referencing the record within separate table.

The attachments are stored in the table **CMS_Attachment** which contains the attachment metadata (file name, size, type, etc.) and optionally the attachment binary data (depending on [where the files are stored](#)). Attachment file may also be stored in the filesystem if the system is configured for storing files in the database. You can work with the attachments using the **AttachmentManager** class methods.

Here are some examples how to work with attachments:

Adding a new attachment to a document

To add a new attachment to a document, you need to save the attachment and store its GUID (unique identifier) to the document field.

[C#]

```
using CMS.SiteProvider;
using CMS.TreeEngine;
using CMS.CMSHelper;
using CMS.FileManager;

// Always work with some user when editing documents
UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
TreeProvider tree = new TreeProvider(ui);

// First, get the document
CMS.TreeEngine.TreeNode node =
tree.SelectSingleNode(CMSContext.CurrentSite.SiteName, "/Files/home", "en-us");
if ( node != null )
{
    // Create the attachment manager
    AttachmentManager am = new AttachmentManager(tree.Connection);

    // Create the attachment
    Guid attachmentGuid = Guid.NewGuid();
    AttachmentInfo ai =
        new AttachmentInfo("c:\\home.gif", node.DocumentID, attachmentGuid, tree.
Connection);
    am.SetAttachmentInfo(ai);

    // Set the attachment reference
    node.SetValue("FileAttachment", attachmentGuid);
    node.Update();
}
```

Removing an attachment from a document

To remove an existing attachment from a document, you need to delete the attachment and remove the document field reference to it. You should always remove the old attachment if you insert a new one.

[C#]

```
using CMS.GlobalHelper;
using CMS.FileManager;
using CMS.CMSHelper;

// ... this code continues from the previous example

// Get current attachment GUID
Guid existingGuid = ValidationHelper.GetGuid(node.GetValue("FileAttachment"), Guid
.Empty);
```

```
if (existingGuid != Guid.Empty)
{
    // Get the attachment
    AttachmentInfo existingAttachment =
        am.GetAttachmentInfo(existingGuid, CMSContext.CurrentSite.SiteName);
    if ( existingAttachment != null )
    {
        // Delete the attachment
        am.DeleteAttachmentInfo(existingAttachment.AttachmentID);
    }

    // Clear the attachment reference from the document field
    node.SetValue("FileAttachment", null); ;
    node.Update();
}
```

Please note: if you use workflow and versioning, see [Versioning internals](#) and the related chapters for more details how to work with attachments in the versioned documents.

9.5.2 Managing files (cms.file)

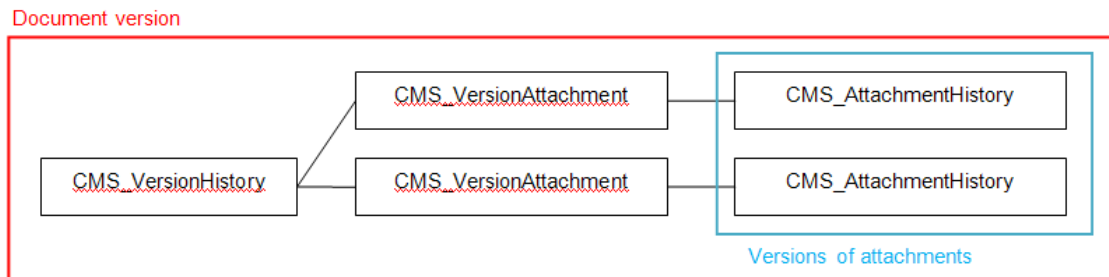
The File document type (cms.file) is actually just another document type and you can modify it using the same methods that you use for other document types. The actual file (uploaded image, Word document or other file type) is stored as an attachment in field **FileAttachment**.

9.6 Managing documents with workflow

9.6.1 Versioning internals

For versioned documents (with workflow assigned), only the published data is stored in the tables described in chapter [Content management internals](#). Document versions and its history are stored in separate tables:

- **CMS_VersionHistory** – Table containing the document versions. Each version of the document is represented by one record that contains the complete document data in XML.
- **CMS_AttachmentHistory** – Table containing the attachment version records. Each attachment version is bound to one or more document versions. Every record contains binary data of the attachment.
- **CMS_VersionAttachment** – Table containing the bindings of the attachment versions to the document versions.



When the document is **published**, version history record is taken and the document data are saved to the regular database structure (CMS_Tree, CMS_Document, coupled table) and current attachments are replaced by the attachment versions corresponding to the published document version.

Working with the versioned documents

Since the **TreeNode** methods can work only with the published records, there is an interface provided to work with the versioned documents. This interface is provided by classes **DocumentHelper**, **WorkflowManager** and **VersionManager** in the **CMS.WorkflowEngine** library. You should always use **DocumentHelper** for the document operations if not sure whether the document is versioned or not, the DocumentHelper methods will choose the proper actions for you. Basic methods to work with documents are:

- **InsertDocument** – Inserts a new document; versioned equivalent to **TreeNode.Insert** method.
- **InsertNewCultureVersion** – Inserts a new culture version of the document; versioned equivalent to **TreeNode.InsertAsNewCultureVersion** method.
- **UpdateDocument** – Updates a document; versioned equivalent of the **TreeNode.Update** method. If the document is versioned, it updates the latest (checked out) version of the document.
- **DeleteDocument** – Deletes a document. Versioned equivalent to the **TreeNode.Delete** which also deletes the depending records from the version history and attachment tables. You should always use this method to delete a document which is (was) versioned or contains any attachment fields.
- **GetDocument(s)** – Gets the latest version of the document(s) from the version history record(s). Equivalent to **TreeProvider.SelectSingleNode** and **TreeProvider.SelectNodes**.

9.6.2 Workflow internals

The workflow process is managed by the methods of the **WorkflowManager** class. Document uses workflow if there is a workflow scope defined for the document type and document location (SiteManager → Development → Workflow). If the document is in the middle of the workflow process and the workflow has been removed from the given group of documents, the current workflow must be finished (document must be published) in order to disable the workflow for the document.

There are three default workflow steps that are always used in the workflow process:

- **Edit** – A new version of the document is edited.

- **Published** – Document version was approved to be published and is either published or waiting to be published (if it's a scheduled document).
- **Archived** – Document is archived, it is no longer published but it's stored for archive purposes.

You add **your own workflow steps** between the **Edit** and **Published** steps.

Here are some examples on how to use the workflow API:

Getting the document

You always need to get the proper document version first in order to keep the document data consistent if working with the versioned data. You can use both published and latest document version of the document for the basic workflow operations since it affects only the not-versioned data.

[C#]

```
using CMS.SiteProvider;
using CMS.TreeEngine;
using CMS.CMSHelper;
using CMS.WorkflowEngine;

// Always work with some user when editing documents
UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
TreeProvider tree = new TreeProvider(ui);

// First, get the document
CMS.TreeEngine.TreeNode node =
tree.SelectSingleNode(CMSContext.CurrentSite.SiteName, "/News/Your-first-news",
"en-us");
```

Getting the document workflow information

You can use the **WorkflowManager.GetNodeWorkflow** method to get the workflow information for the document node.

[C#]

```
using CMS.WorkflowEngine;

// Create the workflow manager instance
WorkflowManager wm = new WorkflowManager(tree);
WorkflowInfo wi = wm.GetNodeWorkflow(node);
if (wi != null)
{
    // Document is using workflow
}
else
{
    // Not using workflow
}
```

You can also use the **WorkflowManager.GetNodeWorkflowScope** method to check whether there is some workflow scope defined for the given document.

Getting current workflow step

The current workflow step ID is stored in the document field **DocumentWorkflowStepID**. Please note: if the workflow is defined and step ID is missing, the document is in the "edit" step.

[C#]

```
using CMS.WorkflowEngine;

if (wi != null)
{
    // Document is using workflow, get current step information
    WorkflowStepInfo si = wm.GetStepInfo(node);
    if (si != null)
    {
        // Use the workflow step information
    }
}
```

Changing the workflow step

You should always follow the workflow definition and use the built-in methods only to move between the workflow steps to ensure the system consistency. Workflow process moves one step at a time, you can move through several steps by calling the methods several times. You should not attempt to move before the "edit" step and after the "archived" step. Use **WorkflowManager.MoveToNextStep** (the "approve" action) and **WorkflowManager.MoveToPreviousStep** (the "reject" action).

[C#]

```
if (si != null)
{
    // Use the workflow step information to approve the document until it is
    published
    while (si.StepName.ToLower() != "published")
    {
        si = wm.MoveToNextStep(node, "");
        if (si == null)
        {
            break;
        }
    }
}
```

Or

[C#]

```
if (si != null)
{
    // Use the workflow step information to reject the document until it is in the
    edit step
    while (si.StepName.ToLower() != "edit")
    {
        si = wm.MoveToPreviousStep(node, "");
        if (si == null)
        {
            break;
        }
    }
}
```

To move the document to the **Archived** step, use **WorkflowManager.ArchiveDocument** method.

9.6.3 Updating a versioned document

This example shows how to update a versioned document (document with workflow). Workflow and the versioning are very closely connected, there should be always a new document version created if you edit a document that is under workflow.

The basic version management operations are provided by the class `DocumentHelper` in the methods mentioned in the previous chapter (`InsertDocument`, ...). In order to manage the document versions, use `VersionManager` class methods.

Here are some examples how to work with versioned documents:

Getting the document

You always need to work with the latest document version, use `DocumentHelper.GetDocument` instead of just simple `TreeProvider.SelectSingleNode`.

[C#]

```
using CMS.SiteProvider;
using CMS.TreeEngine;
using CMS.CMSHelper;
using CMS.WorkflowEngine;

// Always work with some user when editing documents
UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
TreeProvider tree = new TreeProvider(ui);

// First, get the base document
CMS.TreeEngine.TreeNode node =
tree.SelectSingleNode(CMSContext.CurrentSite.SiteName, "/News/Your-first-news",
"en-us");
if ( node != null )
{
    // Get latest version of the document
    node = DocumentHelper.GetDocument(node, tree);
}
```

Checking out the document

If you edit the document, you should check it out to create a new document version and lock the document to avoid editing by someone else. Use `VersionManager.CheckOut` method to check out the document.

[C#]

```
using CMS.WorkflowEngine;

// Check out the document
VersionManager vm = new VersionManager(tree);
vm.CheckOut(node);
```


Updating current document version

Use `DocumentHelper.UpdateDocument` method to update current document version.

[C#]

```
using CMS.WorkflowEngine;

// Update the document
node.SetValue("DocumentName", "New name");
DocumentHelper.UpdateDocument(node, tree);
```

Check in the document

After you edit the document, you should check it in to allow other users to edit it or allow the workflow process to continue. Use `VersionManager.CheckIn` to do so.

[C#]

```
// Check in the document
vm.CheckIn(node, null, null);
```

9.6.4 Managing workflow schema

The following code samples show how to create a new schema Testing workflow with following steps:

Edit -> **Article Approval (custom step)** -> Publish -> Archive

It also creates a workflow scope that applies this workflow to all articles in the /TestingWorkflow section.

Creating a new workflow schema

[C#]

```
using CMS.SettingsProvider;
using CMS.CMSHelper;
using CMS.DataEngine;
using CMS.GlobalHelper;
using CMS.TreeEngine;
using CMS.SiteProvider;
using CMS.WorkflowEngine;

...

    // Prepare the data
    WorkflowInfo wi = new WorkflowInfo();
    wi.WorkflowDisplayName = "Testing workflow";
    wi.WorkflowName = "TestingWorkflow";

    // Insert the workflow
    WorkflowInfoProvider.SetWorkflowInfo(wi);

    // Create default steps (required for proper operation)
    WorkflowInfoProvider.CreateDefaultWorkflowSteps(wi.WorkflowID);
```

Creating a workflow step

[C#]

```
using CMS.SettingsProvider;
using CMS.CMSHelper;
using CMS.DataEngine;
using CMS.GlobalHelper;
using CMS.TreeEngine;
using CMS.SiteProvider;
using CMS.WorkflowEngine;

...

        // Get the workflow
        WorkflowInfo wi = WorkflowInfoProvider.GetWorkflowInfo(
"TestingWorkflow");
        if (wi != null)
        {
            // Init new step
            WorkflowStepInfo wsi = new WorkflowStepInfo();
            wsi.StepDisplayName = "Article approval";
            wsi.StepName = "ArticleApproval";

            // Get published step info for the proper position
            WorkflowStepInfo psi = WorkflowInfoProvider.GetPublishedStep(wi.
WorkflowID);
            if (psi != null)
            {
                // New step has the previous published step order
                wsi.StepOrder = psi.StepOrder;

                // Move the published step down
                psi.StepOrder += 1;
                WorkflowInfoProvider.SetWorkflowStepInfo(psi);

                // Move the archived step down
                WorkflowStepInfo asi = WorkflowInfoProvider.GetArchivedStep
(wi.WorkflowID);
                if (asi != null)
                {
                    asi.StepOrder += 1;
                    WorkflowInfoProvider.SetWorkflowStepInfo(asi);
                }
            }

            // Insert the step to the database
            wsi.StepWorkflowID = wi.WorkflowID;
            WorkflowInfoProvider.SetWorkflowStepInfo(wsi);
        }
    }
```

Defining a workflow scope

[C#]

```
using CMS.SettingsProvider;
using CMS.CMSHelper;
using CMS.DataEngine;
using CMS.GlobalHelper;
using CMS.TreeEngine;
using CMS.SiteProvider;
using CMS.WorkflowEngine;

...

// Get the workflow
WorkflowInfo wi = WorkflowInfoProvider.GetWorkflowInfo(
"TestingWorkflow");
if (wi != null)
{
    // Init new workflow scope
    WorkflowScopeInfo wsi = new WorkflowScopeInfo();
    wsi.ScopeStartingPath = "/TestingWorkflow";

    // Assign the document type article
    DataClassInfo ci = DataClassInfoProvider.GetDataClass("CMS.
Article");
    if ( ci != null )
    {
        wsi.ScopeClassID = ci.ClassID;
    }

    wsi.ScopeSiteID = CMSContext.CurrentSite.SiteID;
    wsi.ScopeWorkflowID = wi.WorkflowID;

    // Save the scope to the database
    WorkflowInfoProvider.SetWorkflowScopeInfo(wsi);
}
```

Deleting a workflow

[C#]

```
using CMS.SettingsProvider;
using CMS.CMSHelper;
using CMS.DataEngine;
using CMS.GlobalHelper;
using CMS.TreeEngine;
using CMS.SiteProvider;
using CMS.WorkflowEngine;

...

// Get the workflow
WorkflowInfo wi = WorkflowInfoProvider.GetWorkflowInfo(
"TestingWorkflow");
```

```
// Delete the workflow
WorkflowInfoProvider.DeleteWorkflowInfo(wi.WorkflowID);
```

9.6.5 A complete example

The following samples show you how to create, approve, publish, reject, archive and delete a document. It uses the sample workflow created in chapter [Managing workflow schema](#):

Edit -> **Article Approval (custom step)** -> Publish -> Archive

Creating a new document

[C#]

```
using CMS.SettingsProvider;
using CMS.CMSHelper;
using CMS.DataEngine;
using CMS.GlobalHelper;
using CMS.TreeEngine;
using CMS.SiteProvider;
using CMS.WorkflowEngine;

...

// Prepare the TreeProvider (it must be initialized with user
information
// when editing content)
UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
TreeProvider tree = new TreeProvider(ui);

// Get the parent document
CMS.TreeEngine.TreeNode parentNode = tree.SelectSingleNode(CMSContext.
CurrentSiteName, "/", TreeProvider.ALL_CULTURES, true, null, false);
if (parentNode != null)
{
    // Create new document
    CMS.TreeEngine.TreeNode node = new CMS.TreeEngine.TreeNode("CMS.
Article", tree);
    node.DocumentName = "TestingWorkflow";
    node.DocumentCulture = CMSContext.CurrentUser.
PreferredCultureCode;

    // Set document fields
    node.SetValue("ArticleName", "Testing workflow");
    node.SetValue("ArticleTeaserText", "Testing article for workflow"
);
    node.SetValue("ArticleText", "Testing article for workflow text");

    // Although article contains the attachment field, the attachment
can be added only // after the document has been created (see
below)

    // Insert the document - DocumentHelper should be used when using
```

```
workflow
    DocumentHelper.InsertDocument(node, parentNode.NodeID, tree);

    // Insert the attachment (image) to the document
    if (FileUpload.PostedFile != null)
    {
        DocumentHelper.AddAttachment(node, "ArticleTeaserImage",
FileUpload.PostedFile,
        tree);

        // Update the document
        DocumentHelper.UpdateDocument(node, tree);
    }
}
```

Editing a document

[C#]

```
using CMS.SettingsProvider;
using CMS.CMSHelper;
using CMS.DataEngine;
using CMS.GlobalHelper;
using CMS.TreeEngine;
using CMS.SiteProvider;
using CMS.WorkflowEngine;

...

        // Prepare the TreeProvider (it must be initialized with user
information when editing
        // document structure)
        UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
        TreeProvider tree = new TreeProvider(ui);

        // Get the document (current culture)
        CMS.TreeEngine.TreeNode node = tree.SelectSingleNode(CMSContext.
CurrentSiteName,
        "/TestingWorkflow", CMSContext.CurrentUser.PreferredCultureCode,
false, null, false);
        if (node != null)
        {
            // Get the latest version of the document (always use
DocumentHelper when using
            // workflow)
            node = DocumentHelper.GetDocument(node, tree);

            // Check out the document
            VersionManager vm = new VersionManager(tree);
            vm.CheckOut(node);

            // Update the document fields the regular way
            node.SetValue("ArticleName", "Edited testing workflow");
            node.SetValue("ArticleTeaserText", "Edited testing article for
workflow");
            node.SetValue("ArticleText", "Edited testing article for workflow
text");

            // Update the attachment if present
            if (FileUpload.PostedFile != null)
            {
                // Add the attachment
                DocumentHelper.AddAttachment(node, "ArticleTeaserImage",
FileUpload.PostedFile,
                tree);
            }

            // Update the document
            DocumentHelper.UpdateDocument(node, tree);

            // Check in the document
            vm.CheckIn(node, null, null);
        }
    }
}
```

```
}
```


Approving the document

[C#]

```
using CMS.SettingsProvider;
using CMS.CMSHelper;
using CMS.DataEngine;
using CMS.GlobalHelper;
using CMS.TreeEngine;
using CMS.SiteProvider;
using CMS.WorkflowEngine;

...

        // Prepare the TreeProvider (it must be initialized with user
information when editing
        // document structure)
        UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
        TreeProvider tree = new TreeProvider(ui);

        // Get the document (current culture)
        CMS.TreeEngine.TreeNode node = tree.SelectSingleNode(CMSContext.
CurrentSiteName,
        "/TestingWorkflow", CMSContext.CurrentUser.PreferredCultureCode,
false, null, false);
        if (node != null)
        {
            // Get the latest version of the document (always get the document
with DocumentHelper
            // when using workflow)
            node = DocumentHelper.GetDocument(node, tree);

            // Move the document to the next step (approve)
            WorkflowManager wm = new WorkflowManager(tree);
            wm.MoveToNextStep(node, "");
        }
    }
```

Rejecting the document

[C#]

```
using CMS.SettingsProvider;
using CMS.CMSHelper;
using CMS.DataEngine;
using CMS.GlobalHelper;
using CMS.TreeEngine;
using CMS.SiteProvider;
using CMS.WorkflowEngine;

...

        // Prepare the TreeProvider (it must be initialized with user
information when editing
        // document structure)
        UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
        TreeProvider tree = new TreeProvider(ui);

        // Get the document (current culture)
        CMS.TreeEngine.TreeNode node = tree.SelectSingleNode(CMSContext.
CurrentSiteName,
        "/TestingWorkflow", CMSContext.CurrentUser.PreferredCultureCode,
false, null, false);
        if (node != null)
        {
            // Get the latest version of the document (always get the document
with DocumentHelper
            // when using workflow)
            node = DocumentHelper.GetDocument(node, tree);

            // Move the document to the next step (approve)
            WorkflowManager wm = new WorkflowManager(tree);
            wm.MoveToPreviousStep(node, "");
        }
    }
```

Publish the document

[C#]

```
using CMS.SettingsProvider;
using CMS.CMSHelper;
using CMS.DataEngine;
using CMS.GlobalHelper;
using CMS.TreeEngine;
using CMS.SiteProvider;
using CMS.WorkflowEngine;

...

        // Prepare the TreeProvider (it must be initialized with user
information when editing
        // document structure)
        UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
        TreeProvider tree = new TreeProvider(ui);

        // Get the document (current culture)
        CMS.TreeEngine.TreeNode node = tree.SelectSingleNode(CMSContext.
CurrentSiteName,
        "/TestingWorkflow", CMSContext.CurrentUser.PreferredCultureCode,
false, null, false);
        if (node != null)
        {
            // Get the latest version of the document (always get the document
with DocumentHelper
            // when using workflow)
            node = DocumentHelper.GetDocument(node, tree);

            // Move the document to the next step (approve)
            WorkflowManager wm = new WorkflowManager(tree);

            // Approve until the step is publish
            WorkflowStepInfo currentStep = wm.GetStepInfo(node);
            while ((currentStep != null) && (currentStep.StepName.ToLower() !
= "published"))
            {
                currentStep = wm.MoveToNextStep(node, "");
            }
        }
    }
```

Archive the document

[C#]

```
using CMS.SettingsProvider;
using CMS.CMSHelper;
using CMS.DataEngine;
using CMS.GlobalHelper;
using CMS.TreeEngine;
using CMS.SiteProvider;
using CMS.WorkflowEngine;

...

        // Prepare the TreeProvider (it must be initialized with user
information when editing
        // document structure)
        UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
        TreeProvider tree = new TreeProvider(ui);

        // Get the document (current culture)
        CMS.TreeEngine.TreeNode node = tree.SelectSingleNode(CMSContext.
CurrentSiteName,
        "/TestingWorkflow", CMSContext.CurrentUser.PreferredCultureCode,
false, null, false);
        if (node != null)
        {
            // Get the latest version of the document (always get the document
with DocumentHelper
            // when using workflow)
            node = DocumentHelper.GetDocument(node, tree);

            // Archive the document
            WorkflowManager wm = new WorkflowManager(tree);
            wm.ArchiveDocument(node, "");
        }
    }
```

Delete (destroy) the document

[C#]

```
using CMS.SettingsProvider;
using CMS.CMSHelper;
using CMS.DataEngine;
using CMS.GlobalHelper;
using CMS.TreeEngine;
using CMS.SiteProvider;
using CMS.WorkflowEngine;

...

        // Prepare the TreeProvider (it must be initialized with user
information when editing
        // document structure)
        UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
        TreeProvider tree = new TreeProvider(ui);

        // Get the document (current culture)
        CMS.TreeEngine.TreeNode node = tree.SelectSingleNode(CMSContext.
CurrentSiteName,
        "/TestingWorkflow", CMSContext.CurrentUser.PreferredCultureCode,
false, null, false);

        if (node != null)
        {
            // Always delete the document with DocumentHelper, it handles all
the dependencies
            DocumentHelper.DeleteDocument(node, tree, true, true);
        }
    }
```

9.7 Security management

9.7.1 Security Internals Overview

The security information is stored in the following tables:

- CMS_User - user information. If you need to import users from an existing database, you can import them directly into this table, there are no special dependencies.
- CMS_Role - roles
- CMS_UserRole - assigns users to roles
- CMS_UserSite - assigns users to sites
- CMS_Resource - contains modules
- CMS_ResourceSite - assigns modules to sites
- CMS_Permission - permissions (permission names, such as "read", "modify", etc.) used for modules (CMS_Resource) and document types (CMS_Class)
- CMS_RolePermission - assigns permissions to user roles
- CMS_Class - contains definitions of data classes and document types

Most of these settings can be managed by the classes available in the CMS.SiteProvider namespace. The following chapters contain API examples of some common actions.

9.7.2 Managing users

Creating a new user

[C#]

```
using CMS.SiteProvider;

// Create UserInfo
UserInfo user = new UserInfo();

// Set some properties
user.UserName = "Alice";
user.FirstName = "Alice";
user.LastName = "Cooper";
user.FullName = "Alice Cooper";
user.Email = "alice.cooper@domain.com";
user.IsEditor = true;
user.PreferredCultureCode = "en-us";

// Create new user
CMS.SiteProvider.UserInfoProvider.SetUserInfo(user);
```

Selecting and updating a user

[C#]

```
using CMS.SiteProvider;

// Get UserInfo of the specified name
UserInfo user = CMS.SiteProvider.UserInfoProvider.GetUserInfo("Alice");

if (user != null)
{
    // Change some values
    user.Enabled = false;

    // Update the UserInfo
    CMS.SiteProvider.UserInfoProvider.SetUserInfo(user);
}
```

Deleting a user

[C#]

```
CMS.SiteProvider.UserInfoProvider.DeleteUser("Alice");
```

Getting the list of sites the user belongs to

[C#]

```
using CMS.SiteProvider;

// Get UserInfo of the specified name
UserInfo user = CMS.SiteProvider.UserInfoProvider.GetUserInfo("Alice");

if (user != null)
{
    // Get table with user's sites
    DataTable table = CMS.SiteProvider.UserInfoProvider.GetUserSites(user.UserID);

    if (table != null)
    {
        // Process table ...
    }
}
```

Adding user to a site

[C#]

```
// Use UserName and SiteName to add user to site
CMS.SiteProvider.UserInfoProvider.AddUserToSite("Alice", CMS.CMSHelper.CMSContext.
CurrentSite.SiteName);
```

Removing user from a site

[C#]

```
// User UserName and SiteName to remove user from site
CMS.SiteProvider.UserInfoProvider.RemoveUserFromSite("Alice", CMS.CMSHelper.
CMSContext.CurrentSite.SiteName);
```

9.7.3 Setting user password

[C#]

```
using CMS.SiteProvider;

...

UserInfoProvider.SetPassword("testinguser", "newpassword");
```

9.7.4 Managing roles

Creating a new role

[C#]

```
using CMS.SiteProvider;

// Create new RoleInfo
RoleInfo role = new RoleInfo();

// Set RoleInfo properties except RoleID
role.RoleName = "DocumentEditor";
role.DisplayName = "Document editor";
role.Description = "some description...";
role.SiteID = CMS.CMSHelper.CMSContext.CurrentSiteID;

// check if the role name is unique in the given site
if (!CMS.SiteProvider.RoleInfoProvider.RoleExists(role.RoleName, CMS.CMSHelper.CMSContext.CurrentSiteName))
{
    // Insert new RoleInfo for current site
    CMS.SiteProvider.RoleInfoProvider.SetRoleInfo(role);
}
else
{
    // Role with the same name already exists in specified site
}
```

Selecting and updating a role

[C#]

```
using CMS.SiteProvider;

// Get role of specified name from current site
RoleInfo role = CMS.SiteProvider.RoleInfoProvider.GetRoleInfo("ArticleEditor",
CMS.CMSHelper.CMSContext.CurrentSiteName);

if (role != null)
{
    // Make some changes
    role.Description = "Changed description.";
    // Update the role
    CMS.SiteProvider.RoleInfoProvider.SetRoleInfo(role);
}
```


Deleting a role

[C#]

```
// Delete the role
CMS.SiteProvider.RoleInfoProvider.DeleteRole("ArticleEditor", CMS.CMSHelper.
CMSContext.CurrentSiteName);
```

9.7.5 Managing user roles

Getting users who belong to the given role

[C#]

```
using CMS.SiteProvider;

// Get role of specified name from current site
RoleInfo role = CMS.SiteProvider.RoleInfoProvider.GetRoleInfo("ArticleEditor",
CMS.CMSHelper.CMSContext.CurrentSiteName);

if (role != null)
{
    // Get datatable of the role members
    DataTable users = CMS.SiteProvider.RoleInfoProvider.GetRoleUsers(role.RoleID);

    if (users != null)
    {
        // the table now contains the users that belong to the given role ...
    }
}
```

Get user's roles

[C#]

```
using CMS.SiteProvider;

// Get UserInfo of the specified name
UserInfo user = CMS.SiteProvider.UserInfoProvider.GetUserInfo("Alice");

if (user != null)
{
    // Get table with all user roles
    DataTable table = CMS.SiteProvider.UserInfoProvider.GetUserRoles(user.UserID);

    if (table != null)
    {
        // the table now contains the roles the user is member of...
    }
}
```

Adding user to role

[C#]

```
// Use UserName, RoleName and SiteName to add user to role
CMS.SiteProvider.UserInfoProvider.AddUserToRole("Alice", "DocumentEditor", CMS.
CMSHelper.CMSContext.CurrentSiteName);
```

Removing user from role

[C#]

```
// Use UserName, RoleName and SiteName to remove user from role
CMS.SiteProvider.UserInfoProvider.RemoveUserFromRole("Alice", "DocumentEditor",
CMS.CMSHelper.CMSContext.CurrentSiteName);
```

Checking if user is member of a given role

See [Checking user permissions](#) for more details.

9.7.6 Authenticating user

Checking user name and password

[C#]

```
using CMS.SiteProvider;

// UserInfo
UserInfo user = null;

user = CMS.SiteProvider.UserInfoProvider.AuthenticateUser("Alice", "*****", CMS.
CMSHelper.CMSContext.CurrentSiteName);

if (user != null)
{
    // Authentication was successful
}
```

9.7.7 Checking user permissions

Getting current user's name

[C#]

```
string currentUserName = CMS.CMSHelper.CMSContext.CurrentUser.UserName;
```

Checking if user is authenticated

[C#]

```
bool isAuthenticated = HttpContext.Current.User.Identity.IsAuthenticated;
```

Checking if user is member of a role

[C#]

```
if (CMS.CMSHelper.CMSContext.CurrentUser.IsInRole("CMSEditor", CMS.CMSHelper.CMSContext.CurrentSiteName))
{
    //the current user is member of the CMSEditor role
}
```

Checking if user is granted with given permission for a document

[C#]

```
if (CMS.CMSHelper.CMSContext.CurrentUser.IsAuthorizedPerTreeNode(nodeId, CMS.TreeEngine.NodePermissionsEnum.Read) == CMS.TreeEngine.AuthorizationResultEnum.Allowed)
{
    // the current user is authorized to read the document
}
```

Checking if user is granted with given permission for a module (resource)

[C#]

```
if (CMS.CMSHelper.CMSContext.CurrentUser.IsAuthorizedPerResource("CMS.Forums",
"Modify"))
{
    // the current user is granted with permission "Modify" in the "CMS.Forums"
    module in the current website
}
```

Checking if user is granted with given permission for a document type or custom table (class name)

[C#]

```
if (CMS.CMSHelper.CMSContext.CurrentUser.IsAuthorizedPerClassName("CMS.File",
"Delete"))
{
    // the current user is granted with permission "Delete" for all documents of
    type "CMS.File" in the current website
}
```

9.8 Site management, import and export

9.8.1 Creating a new web site

The following example shows how you can create a new website based on the Blank website template:

[C#]

```
using CMS.SettingsProvider;
using CMS.CMSHelper;
using CMS.GlobalHelper;
using CMS.SiteProvider;
using CMS.CMSImportExport;

// Site name
string siteName = "testAPISite";

try
{
    // Create site import settings
    SiteImportSettings settings = new SiteImportSettings();

    //Initialize the settings
    settings.SiteName = siteName;
    settings.SiteDisplayName = "Test API site";
    settings.SiteDescription = "Site for testing the API examples";
    settings.SiteDomain = "127.0.0.254";

    // Get 'Blank site' web template
    WebTemplateInfo template = WebTemplateInfoProvider.
GetWebTemplateInfoByCodeName("BlankSite");

    // Template exists
    if (template != null)
    {
        // Set source file path
        string templatePath = template.WebTemplateFileName;
        settings.SourceFilePath = Server.MapPath(templatePath.TrimEnd('\
\') + "\\");

        // Load default selection to preselect the objects
        settings.LoadDefaultSelection();

        // Create new site using 'Blank' template
        ImportProvider.ImportObjectsData(settings);

        // Run site
        SiteInfoProvider.RunSite(siteName);

        this.lblInfo.Text = string.Format("New site with code name '{0}'
has been created.", siteName);
        return;
    }
}
```

```
        else
        {
            this.lblInfo.Text = string.Format("Failed to create new site
'{0}'.<br />Web template 'Blank site' doesn't exist.", siteName);
            this.lblInfo.CssClass = "ErrorLabel";
        }
    }
    catch (RunningSiteException)
    {
        this.lblInfo.Text = string.Format("Failed to run site '{0}'.",
siteName);
        this.lblInfo.CssClass = "ErrorLabel";
    }
    catch (Exception ex)
    {
        this.lblInfo.Text = string.Format("Failed to create new site '{0}'.<br
/>Original exception: " + ex.Message, siteName);
        this.lblInfo.CssClass = "ErrorLabel";
    }
}
```

9.8.2 Import and export of the web site

You can export and import a website using Kentico CMS API, using the `CMS.CMSImportExport.ImportProvider/ExportProvider` classes. You can use the following methods:

- `public static void ImportSite(string siteName, string siteDisplayName, string siteDomain, string fullSourcePath, string websitePath)`
 - `siteName` - code name of the newly created website
 - `siteDisplayName` - display name of the newly created website
 - `siteDomain` - domain name of the newly created website
 - `fullSourcePath` - physical disk path of the package with exported site
 - `websitePath` - physical disk path of the website root
- `public static void ExportSite(string siteName, string fullExportFilePath, string websitePath, bool template)`
 - `siteName` - code name of the website to be exported
 - `fullExportFilePath` - physical disk path of the export package
 - `websitePath` - physical disk path of the website root
 - `template` - if false, a .zip file containing the site will be created under `fullExportFilePath` (should be the full path including the .zip file name). Otherwise, the whole site will be exported to the same location (should be the full path without any file name in this case).

9.8.3 Update web site properties

The following example shows you how to modify website properties in your code:

[C#]

```
using CMS.CMSHelper;
using CMS.SiteProvider;
using CMS.WorkflowEngine;

...

// Get current site name (you can use code name of the required site
instead)
string siteName = CMSContext.CurrentSiteName;

// Check if the site name is available
if (siteName != null)
{
    try
    {
        // Stop the site because we will change the domain of the site
        SiteInfoProvider.StopSite(siteName);

        // Get site info
        SiteInfo si = SiteInfoProvider.GetSiteInfo(siteName);

        if (si != null)
        {
            si.DisplayName = "New display name";
            si.Description = "New description";

            // Change domain of the site
            si.DomainName = "mynewdomain.com";

            // Set new domain alias with default content language set to
en-US
            SiteInfoProvider.AddDomainAlias(siteName, "newdomainalias",
"en-US");

            // Save the changes
            SiteInfoProvider.SetSiteInfo(si);
        }

        // Run the site
        SiteInfoProvider.RunSite(siteName);

        lblInfo.Text = string.Format("Site '{0}' has been edited.",
siteName);
    }
    catch (RunningSiteException ex)
    {
        lblError.Text = "Site cannot be started.<br />Original exception:
" + ex.Message;
    }
    catch (Exception ex)
    {

```



```
        lblError.Text = "Error when modifying site properties.<br />  
>Original exception: " + ex.Message;  
    }  
}
```

9.8.4 Delete web site

The following example shows how you can delete an existing website:

[C#]

```
using CMS.SiteProvider;
using CMS.CMSHelper;
using CMS.WorkflowEngine;

...

    // Code name of the site
    string siteName = "mysitecodename";

    // Delete records in CMS_Tree and CMS_Document
    DocumentHelper.DeleteSiteTree(siteName, null);

    // Delete other dependencies and the site
    SiteInfoProvider.DeleteSite(siteName);

    lblInfo.Text = string.Format("Site '{0}' has been deleted.",
siteName);
```

9.9 Custom Providers

9.9.1 Custom Providers Overview

Kentico CMS allows you to develop the following custom providers and use them instead of the standard ones:

- [Custom Data Provider](#)
- [Custom Search Provider](#)
- [Custom E-mail Provider](#)
- [Custom E-commerce Provider](#) (the link leads to dedicated chapter in *Kentico CMS E-commerce guide*)

You can also use [global event handlers](#) to customize the system behavior, such as document modifications, authentication process, etc.

9.9.2 Custom Data Provider

The Custom Data Provider can be used to implement your own database connector.

Please note: The Custom Data Provider is NOT intended for accessing a non-Microsoft SQL Server database engines. It's only intended for minor modifications of the way the queries are executed against the Microsoft SQL Server.

1. Open the web project in Visual Studio.
2. Copy the **CustomDataProvider** project from *<installation directory>/CodeSamples* to your Solution directory.

3. Add the project **CustomDataProvider** to the solution.
4. Add the reference to the new project to the website project.
5. Add the reference to the **IDataConnectionLibrary**, **SettingsProvider**, **DirectoryUtilities** and **GlobalHelper** libraries located in the website project to the CustomDataProvider project.
6. Build the solution.

7. Add the following key to the AppSettings section of your **web.config** file:

```
<add key="CMSDataProviderAssembly" value="CMS.CustomDataProvider" />
```

8. Run the website, it should use the **CustomDataProvider** library now.

9. If everything works fine, you can modify the code of the Custom Data Provider as needed.

9.9.3 Custom E-mail Provider

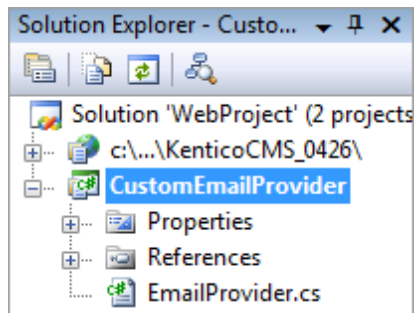
The custom e-mail provider allows you to use third-party e-mail components for sending e-mails or add custom actions when an e-mail is sent (e.g. logging the sent e-mails to some file for auditing purposes). All e-mails sent by Kentico CMS and its modules will use your custom e-mail provider.

Example

In this example, we will create a custom e-mail provider that will log every e-mail into a file.

1. Copy the **CustomEmailProvider** project from Kentico CMS installation (typically *C:\Program Files\KenticoCMS\<version>\CodeSamples\CustomEmailProvider*) to some development folder (not under the web project).

2. Open the **CMS** web project using the **WebProject.sln** file. Click **File -> Add -> Existing Project** and select the **CustomEmailProvider.csproj** file in the folder where you copied the **CustomEmailProvider** project. Your Solution Explorer window will look like this:

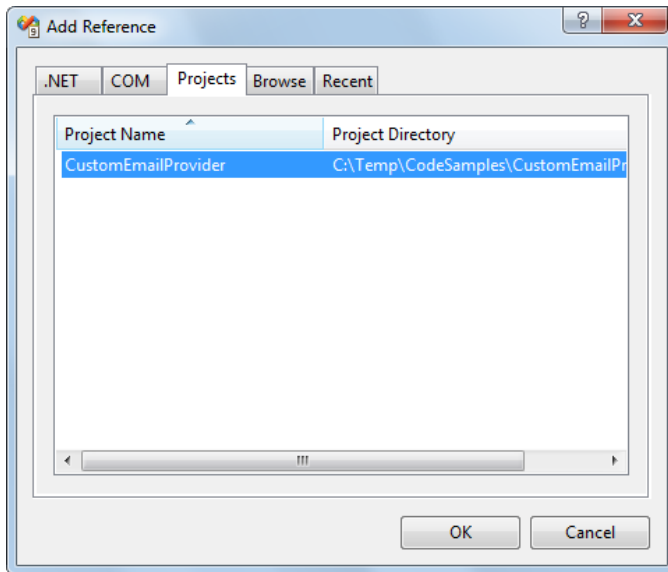


3. Unfold the **References** section of the **CustomEmailProvider** project and delete invalid references.

4. Right-click the **CustomEmailProvider** project and choose **Add Reference**. Choose the **Browse** tab and locate the **bin** folder of your CMS web project on the disk. Choose to add a reference to the following libraries:

- CMS.EmailProvider.dll
- CMS.IEmailEngine.dll
- CMS.SettingsProvider.dll

5. Unfold the **bin** folder in the **CMS web project**. Right-click the **bin** folder and choose **Add Reference**. Choose the **Projects** tab and click **OK** to add the **CustomEmailProvider** project reference:



6. Now you can modify the **CustomEmailProvider** library and place your code to the **SendEmail** method. Enter the following code into the **EmailProvider.SendEmail** method:

[C#]

```
// send the e-mail using the standard e-mail provider
CMS.EmailProvider.EmailProvider standardEmailProvider = new CMS.EmailProvider.
EmailProvider();
standardEmailProvider.SendEmail(siteName, message);

// log e-mail in the log file
System.IO.StreamWriter sw;
sw = System.IO.File.AppendText("C:\\_test\\EmailLogFile.txt"); // use a custom
valid path
sw.WriteLine(DateTime.Now.ToString() + " : " + message.Subject);
sw.Close();
```

7. Set the following value in your web.config file:

```
<add key="CMSEmailProviderAssembly" value="CMS.CustomEmailProvider" />
```

8. Click **Build -> Rebuild solution**. Go to the site and subscribe to a newsletter or use some other e-mail-related feature. When the e-mail is sent, it's logged in the file **EmailLogFile.txt** located in the path you specified in your code.

9.9.4 Custom Search Provider

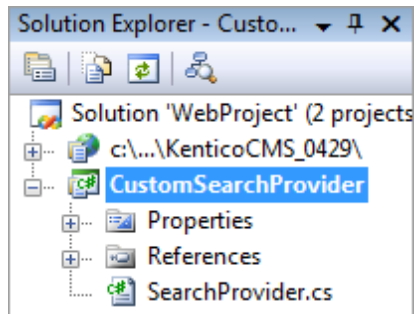
Kentico CMS allows you to write your own search provider that can use some third-party search engine. You can also write a custom search provider when you need to modify or filter search results returned by

the standard search engine.

The following example explains how you can modify the standard search results so that they display the document path in the results in format "> **News > News 1**" instead of `"/News/News 1"`.

Tip: This is an example. If you only need do modify the search results format, you can do that by modifying the transformation `searchresults` in **Site Manager -> Development -> Document Types -> edit Root -> Transformations**.

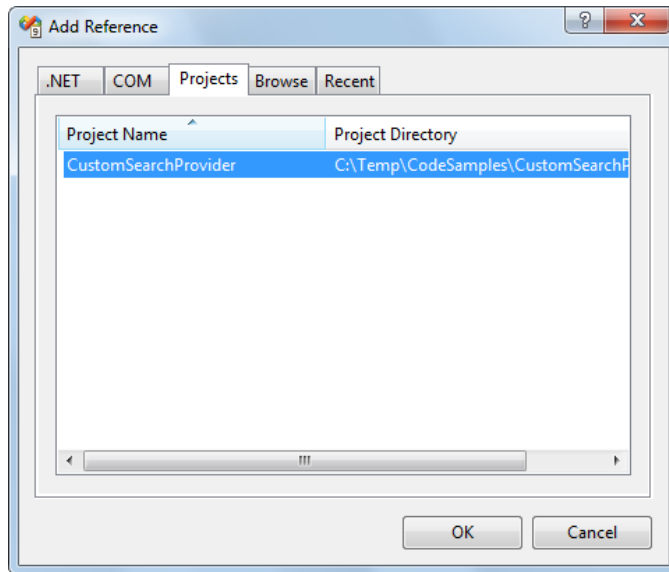
1. Copy the **CustomSearchProvider** project from Kentico CMS installation (typically `C:\Program Files\KenticoCMS\<version>\CodeSamples\CustomSearchProvider`) to some development folder (not under the web project).
2. Open the **CMS** web project using the **WebProject.sln** file. Click **File -> Add -> Existing Project** and select the **CustomSearchProvider.csproj** file in the folder where you copied the **CustomSearchProvider** project. Your Solution Explorer window will look like this:



3. Unfold the **References** section of the **CustomSearchProvider** project and delete invalid references.
4. Right-click the **CustomSearchProvider** project and choose **Add Reference**. Choose the **Browse** tab and locate the **bin** folder of your CMS web project on the disk. Choose to add a reference to the following libraries:

- CMS.ISearchEngine.dll
- CMS.SearchProviderSQL.dll
- CMS.DataEngine.dll
- CMS.IDataConnectionLibrary.dll

5. Unfold the **bin** folder in the **CMS web project**. Right-click the **bin** folder and choose **Add Reference**. Choose the **Projects** tab and click **OK** to add the **CustomSearchProvider** project reference:



6. Now you can modify the **CustomSearchProvider** library and place your code to the Search method. Enter the following code into the SearchProvider.Search method instead of the sample code:

[C#]

```
CMS.SearchProviderSQL.SearchProvider standardSearchProvider = new CMS.
SearchProviderSQL.SearchProvider();
DataSet ds = standardSearchProvider.Search(siteName, searchNodePath, cultureCode,
searchExpression,
        searchMode, searchChildNodes, classNames,
filterResultsByReadPermission, searchOnlyPublished,
        whereCondition, orderBy, combineWithDefaultCulture);

if (ds.Tables.Count > 0)
{
    foreach (DataRow dr in ds.Tables[0].Rows)
    {
        dr["DocumentNamePath"] = ((string) dr["DocumentNamePath"]).Replace("/", "&gt; ");
    }
}
return ds;
```

7. Set the following value in your web.config file:

```
<add key="CMSSearchProviderAssembly" value="CMS.CustomSearchProvider" />
```

8. Click **Build -> Rebuild solution**. Go to the live site and try to search for some text. You will see the search results in the following format:

Search

Search for:
Search mode:

[My blog](#)

Path: > Blogs > My blog

[Nokia 6120](#)

Path: > Blogs > My blog > August 2007 > Nokia 6120

[News](#)

Path: > News

[Newsletters](#)

Path: > Examples > Webparts > Newsletters

[Newsletter archive](#)

Path: > Examples > Webparts > Newsletters > Newsletter archive

[Newsletter subscription](#)

Path: > Examples > Webparts > Newsletters > Newsletter subscription

[Your first news](#)

Path: > News > Your first news

[Your second news](#)

Path: > News > Your second news

9.10 Data layer

9.10.1 Overview

Kentico CMS has its own data layer components that ensure unified access to the database. Each entity, such as "user", "site", "document", has its own "data class". The data class represents the data structure of the entity (using the XML schema) and SQL queries for INSERT, UPDATE, SELECT and DELETE operations. The data layer is currently working only with Microsoft SQL Server, but it's designed for use with other data engines in future.

How it Works

When you need to create a new user record, you create a new instance of `DataClass` type and specify its class name as "cms.user", which is a code name of this entity. The system automatically creates a new `DataRow` based on the user entity XML Schema. Then you set the values of its attributes, such as `UserName` or `FullName` and call the `Insert` method. The system uses pre-defined INSERT query to insert the values into the appropriate table that is also stored in the definition of the cms.user entity.

Related Namespaces

- CMS.DataEngine
- CMS.DataProviderSQL
- CMS.IDataConnectionLibrary
- CMS.SettingsProvider

Related Tables

- CMS_Class
- CMS_Query

9.10.2 Code examples

The following examples show how you can use the CMS.DataEngine library for low-level data manipulation.



Only for illustration

The code is used only for illustration. It's recommended that you use the **CMS.SiteProvider.UserInfoProvider** class for manipulation of the user data.

Creating a new user

[C#]

```
using CMS.DataEngine;
...

DataClass userObj = new DataClass("cms.user");
userObj.SetValue("username", "johns");
userObj.SetValue("fullname", "John Smith");
userObj.Insert();
```

Selecting and updating an existing user

[C#]

```
using CMS.DataEngine;
...

DataClass userObj = new DataClass("cms.user", 10);
string userName = (string) userObj.GetValue("username");
userObj.SetValue("fullname", "John Smith Jr.");
userObj.Update();
```

Deleting a user

[C#]

```
using CMS.DataEngine;
...
DataClass userObj = new DataClass("cms.user", 10);
if (! userObj.IsEmpty())
{
    userObj.Delete();
}
```

Running a custom query

You can run a custom query if you first create it either manually in the CMS_Query table or through the administration interface (if it's supported for the chosen entity).

[C#]

```
using CMS.DataEngine;
...
GeneralConnection cn = ConnectionHelper.GetConnection();
DataSet ds = null;
object[,] parameters = new object[1, 3];

parameters[0, 0] = "@UserName";
parameters[0, 1] = "johns";

ds = cn.ExecuteQuery("cms.user.selectbyname", parameters);
```

9.10.3 Pre- and post-processing queries

You can pre-process database queries and post-process query results using the **OnBeforeExecuteQuery** and **OnAfterExecuteQuery** events in the **SqlHelperClass**.

Pre-processing queries

The **OnBeforeExecuteQuery** event is executed before any query is executed. Using it, you can influence the behavior of the query and its code on the fly.

The code below is the delegate definition for the event:

```
/// <summary>
/// Query execution event handler
/// </summary>
/// <param name="query">Executed query</param>
/// <param name="conn">Connection</param>
public delegate void BeforeExecuteQueryEventHandler(QueryParameters query,
IDataConnection conn);
```

And this code example shows how you can use the event. You need to register the event in the **AfterApplicationStart** method in `~/App_Code/Global/CMS/CMSApplication.cs`. This particular example replaces 'CMS_User' with 'View_CMS_User' in case that the processed query is `cms.user.selectall`.

```
///
/// Fires after the application start event
///
public static void AfterApplicationStart(object sender, EventArgs e)
{
    // Add your custom actions
    CMS.SettingsProvider.SqlHelperClass.OnBeforeExecuteQuery += new CMS.
SettingsProvider.SqlHelperClass.BeforeExecuteQueryEventHandler
(BeforeExecuteQuery);
```

```
}

static void BeforeExecuteQuery(CMS.SettingsProvider.QueryParameters query, CMS.
IDataConnectionLibrary.IDataConnection conn)
{
    if (query.Name != null)
    {
        switch (query.Name.ToLower())
        {
            case "cms.user.selectall":
                query.Text = query.Text.Replace("CMS_User", "View_CMS_User");
                break;
        }
    }
}
```

Post-processing queries

The **OnAfterExecuteQuery** event is raised after any query is executed and you can use it to modify the result of the query. It can handle only a *DataSet*, thereby only calls using the *ExecuteQuery* method can be post-processed this way.

The code below is the delegate definition for this event:

```
/// <summary>
/// Query execution event handler
/// </summary>
/// <param name="query">Executed query</param>
/// <param name="conn">Connection</param>
public delegate void BeforeExecuteQueryEventHandler(QueryParameters query,
IDataConnection conn);
```

And this code example shows how you can use the event. You need to register the event in the **AfterApplicationStart** method in `~/App_Code/Global/CMS/CMSApplication.cs`. This particular example basically gives dynamically generated full name instead of the one that is set in the user settings. This will not be reflected in the UI as you are only processing the result of the query, so please take this just as an example of how you can use the event.

```
///
/// Fires after the application start event
///
public static void AfterApplicationStart(object sender, EventArgs e)
{
    // Add your custom actions
    CMS.SettingsProvider.SqlHelperClass.OnAfterExecuteQuery += new CMS.
SettingsProvider.SqlHelperClass.AfterExecuteQueryEventHandler(AfterExecuteQuery);
}

static void AfterExecuteQuery(CMS.SettingsProvider.QueryParameters query, CMS.
IDataConnectionLibrary.IDataConnection conn, ref DataSet result)
{
    if (query.Name != null)
```

```
{
    switch (query.Name.ToLower())
    {
        case "cms.user.selectall":
            if (result != null)
            {
                DataTable dt = result.Tables[0];
                foreach (DataRow dr in dt.Rows)
                {
                    dr["FullName"] = dr["FirstName"] + " " + dr["MiddleName"]
+ " " + dr["LastName"];
                }
            }
            break;
    }
}
```

9.11 Global events and their handling

9.11.1 Event handling overview

Global events allow you to execute custom events when some CMS event occurs. For example: if a document is created in the CMS system, you can handle this event, get information on the new document and send its content by e-mail or use third-party component to generate a PDF version of the document.

Events that can be handled

- [Data updates](#) - insert/update/delete actions for all data items
- [Exceptions](#)
- [Security events](#) - authentication and authorization
- [Document events](#) - TreeNode insert/update/delete operations
- [Workflow events](#) - document approval/rejection/publishing/archiving operations

Similar topics: [Writing custom search engine provider](#)



Enabling custom event handling

If you want to use custom event handlers, make sure your web project's web.config file contains the following value:

```
<add key="CMSUseCustomHandlers" value="true" />
```



Default event handler library

The default custom event handler library is **CMS.CustomEventHandler**. Its name can be changed by means of a parameter in the *AppSettings* node of your project's *web.config* file.

If the following line is inserted in the *AppSettings* node, the library name will be changed to *CMS.CustomEventHandlerVB* :

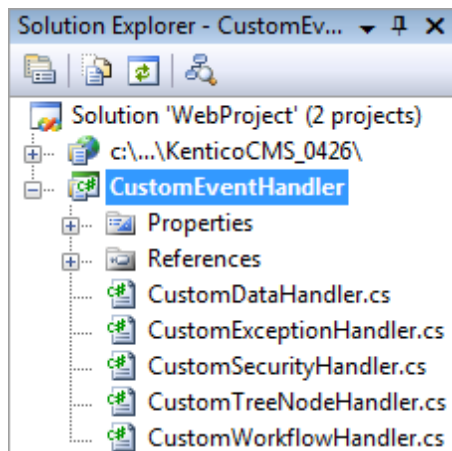
```
<add key="CMSCustomHandlersAssembly" value="CMS.
CustomEventHandlerVB" />
```

If you wanted to use this library in the following series of examples (which would require you to write the code in VB instead of C#), you would need to add the following references in step 6 of the example below:

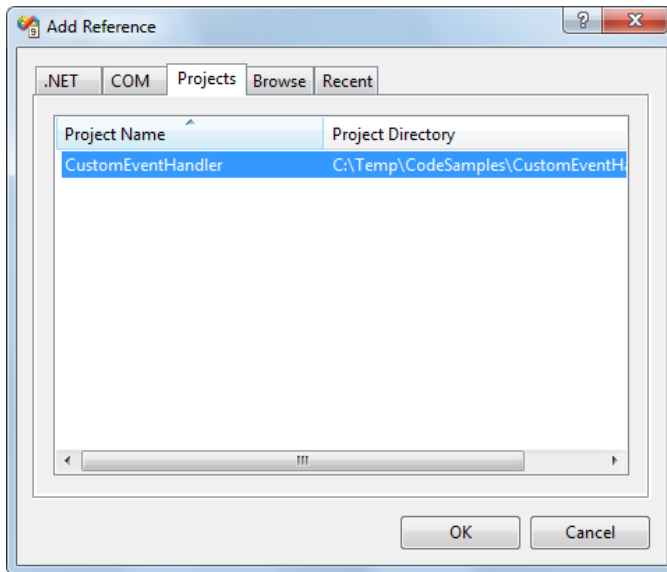
- CMS.CMSHelper.dll
- CMS.GlobalEventHelper.dll
- CMS.GlobalHelper.dll
- CMS.SiteProvider.dll
- CMS.TreeEngine.dll

How to write your own event handler

1. Copy the **CustomEventHandler** project from Kentico CMS installation (typically C:\ProgramFiles\KenticoCMS\\CodeSamples\CustomEventHandler) to some development folder (not under the web project)).
2. Open the **CMS** web project using the **WebProject.sln** file. Click **File -> Add -> Existing Project** and select the **CustomEventHandler.csproj** file in the folder where you copied the **CustomEventHandler** project. Your Solution Explorer window will look like this:



3. Remove the invalid link to file **CMS.pfx**. Unfold the **References** section of the **CustomEventHandler** project and delete references to libraries **CMSHelper** and **SiteProvider**.
4. Now you need to update the references. Unfold the **bin** folder in the CMS web project and delete the standard CMS.CustomEventHandler.dll library.
5. Right-click the **bin** folder and choose **Add Reference**. Choose the **Projects** tab and click **OK** to add the **CustomEventHandler** project reference:



6. Now right-click the **CustomEventHandler** project and choose **Add Reference**. Choose the **Browse** tab and locate the **bin** folder of your CMS web project on the disk. Choose to add a reference to the following libraries:

- CMS.GlobalEventHelper.dll
- CMS.TreeEngine.dll
- CMS.GlobalHelper.dll
- CMS.SiteProvider.dll
- CMS.CMSHelper.dll
- CMS.SettingsProvider.dll
- CMS.DataEngine.dll

Please note that you can also navigate to **bin** folder on the **Browse** tab and paste the following string into the **Add Reference** dialog to add all the libraries.

```
"CMS.GlobalEventHelper.dll" "CMS.TreeEngine.dll" "CMS.GlobalHelper.dll" "CMS.SiteProvider.dll" "CMS.CMSHelper.dll" "CMS.EmailEngine.dll" "CMS.DataEngine.dll" "CMS.WorkflowEngine.dll"
```

7. Click **Build -> Rebuild solution**.

Now you can modify the **CustomEventHandler** library source code and add your own code to handle appropriate actions. The places where you should place the code are marked with upper-case comments.

You can find more details on particular events in the following chapters.

9.11.2 Data handler (CustomDataHandler class)

This handler allows you to add custom actions to the following events:

- OnBeforeUpdate
- OnAfterUpdate
- OnBeforeInsert
- OnAfterInsert
- OnBeforeDelete
- OnAfterDelete

The events are applied to all data items that are stored to the database. It includes documents, user information or any other settings. They receive the data object of type **DataClass** that can be modified. In case of delete handlers, the class name and ID is provided.



Handling document events

For handling document events, please use the CustomTreeNodeHandler class instead of the CustomDataHandler class. Every document uses up to 3 tables, which leads to three separate events in the CustomDataHandler class.

Example

The following example shows how to handle the OnAfterUpdate event and send the password to the user whenever their profile is updated:

1. Open the **CustomDataHandler** class and put the following code at the beginning of the file. It adds the reference to the namespaces we will use to handle the event:

[C#]

```
using CMS.DataEngine;  
using CMS.GlobalHelper;  
using CMS.EmailEngine;
```


2. Put the following code inside the **OnAfterUpdate** method.

[C#]

```
// type the data object as DataClass
DataClass dataItem = (DataClass)dataObj;

// we want to handle only updates of user objects
if (dataItem.ClassName.ToLower() == "cms.user")
{
    // we will use the CMS.EmailProvider to send e-mails
    EmailMessage email = new EmailMessage();
    email.From = "admin@domain.com";
    // get the user's e-mail address
    email.Recipients = ValidationHelper.GetString(dataItem.GetValue("Email"),
"admin@domain.com");
    email.Subject = "Your password";
    // get the user's password
    email.Body = "Your password is:" + ValidationHelper.GetString(dataItem.GetValue(
"UserPassword"), "");
    EmailSender.SendEmail(email);
}
```

Please note: getting user's password in the example above is only possible when passwords are stored in Plain text format; the setting is located in Site Manager -> Settings -> Security.

3. Set the From and Recipients e-mail addresses to you e-mail address.

4. If you don't have reference to CMS.EmailEngine in your CustomEventHandler, add it there.

5. Compile and run the project. Edit some user profile that uses your e-mail address. You should receive the e-mail message with your password.

9.11.3 Exception handler (CustomExceptionHandler class)

This class processes all **exceptions** that occur in the web application. You can use it to handle all exceptions and run custom actions, such as sending e-mail to administrator or logging the exception to you helpdesk or monitoring system.

The class has only one method: **OnException(Exception e)**

Example

The following example shows how to handle the OnException event and send the password to the administrator whenever an error occurs:

1. Open the **CustomExceptionHandler** class and put the following code at the beginning of the file. It adds the reference to the namespaces we will use to handle the event:

[C#]

```
using CMS.EmailEngine;
```

2. Put the following code inside the **OnException** method.

[C#]

```
// we will use the CMS.EmailProvider to send e-mails
EmailMessage email = new EmailMessage();
email.From = "admin@domain.com";
email.Recipients = "admin@domain.com";
email.Subject = "Exception";
email.Body = e.Message + "<br />" + e.StackTrace + "<br />" + e.Source;
EmailSender.SendEmail(email);
```

3. Set the From and Recipients e-mail addresses to you e-mail address.

4. Compile and run the project. Now, when some exception occurs or is raised by your code, the e-mail with exception details are sent.

9.11.4 Security handler (CustomSecurityHandler class)

The security handler allows you to integrate external user databases and modify the authentication and authorization process.

It handles the following events:

- OnAuthentication - the user tries to sign in with user name and password
- OnClassNameAuthorization - checking user's permissions for particular document type
- OnResourceAuthorization - checking user's permissions for particular module
- OnTreeNodeAuthorization - checking user's permissions for particular document
- OnFilterDataSetByPermissions - filtering a DataSet with documents based on permissions or custom personalization rules

Example

In the following example, you will learn how to integrate an external user authentication using the custom security handler. For simplicity, it doesn't use any particular database. Instead, it only checks if the current user name and password are equal to some constants.

In real-world scenario, you will need to replace this condition with lookup of the user name with given password in your external database.

Put the following code inside the OnAuthentication method:

[C#]

```
using CMS.SiteProvider;
using CMS.CMSHelper;

// Check if the user was authenticated by the system
if (userInfo != null)
{
    return userInfo;
}

// Sample external user credentials
UserInfo usr = null;

// Not authenticated, authenticate from the external source
if ((username.ToLower() == "externaluser") && (password == "pass"))
{
    // Create base user record if user found
    usr = new UserInfo();
    usr.IsExternal = true;
    usr.UserName = "externaluser";
    usr.FullName = "external user";
    usr.Enabled = true;

    // Init user sites and roles if requested
    Hashtable rolesTable = new Hashtable();
    string siteName = CMSContext.CurrentSite.SiteName;
    // Assign user to the current site
    usr.SitesRoles[siteName.ToLower()] = rolesTable;
    // Add new role "external role" and assign it to the user
    rolesTable["external role"] = 0;
}

// Return the user info
return usr;
```

9.11.5 TreeNode handler (CustomTreeNodeHandler class)

The CustomTreeNodeHandler class allows you to execute custom actions when a document (TreeNode) is created, updated or deleted. It's useful if you need to synchronize changes to external systems, generate off-line version of the document in PDF, etc.

It handles the following events:

- OnBeforeInsert
- OnAfterInsert
- OnBeforeUpdate
- OnAfterUpdate
- OnBeforeDelete
- OnAfterDelete
- OnBeforeMove
- OnAfterMove
- OnBeforeCopy
- OnAfterCopy

- OnBeforeInsertNewCultureVersion
- OnAfterInsertNewCultureVersion

Example

The following example shows how to handle the OnAfterInsert event and send the newly added news item by e-mail:

1. Open the **CustomTreeNodeHandler** class and put the following code at the beginning of the file. It adds the reference to the namespaces we will use to handle the event:

[C#]

```
using CMS.TreeEngine;  
using CMS.GlobalHelper;  
using CMS.EmailEngine;
```

2. Put the following code inside the **OnAfterInsert** method.

[C#]

```
// type the document as TreeNode  
TreeNode newsDoc = (TreeNode)treeNodeObj;  
  
// handle the event only for news items  
if (newsDoc.NodeClassName.ToLower() == "cms.news")  
{  
    // get content of the inserted news item and send it by e-mail  
    EmailMessage email = new EmailMessage();  
    email.From = "admin@domain.com";  
    email.Recipients = "admin@domain.com";  
    email.Subject = ValidationHelper.GetString(newsDoc.GetValue("NewsTitle"), "");  
    email.Body = ValidationHelper.GetString(newsDoc.GetValue("NewsSummary"), "");  
    EmailSender.SendEmail(email);  
}
```

3. Set the From and Recipients e-mail addresses to your e-mail address.
4. Compile and run the project. Create a new document of type News. You should receive the e-mail message with its text.



How to avoid neverending loops

If you need to call `TreeNode.Update` in the event handler (e.g. in the `OnAfterUpdate` event), you need to set **TreeProvider.UseCustomHandlers** property to false before calling the Update method.

9.11.6 Workflow handler

The workflow handler allows you to handle the following events:

- OnBeforeCheckOut - before document is checked out
- OnAfterCheckOut - after document is checked out
- OnBeforeCheckIn - before document is checked in
- OnAfterCheckIn - after document is checked in
- OnBeforeApprove - before document is approved
- OnAfterApprove - after document is approved
- OnBeforeReject - before document is rejected
- OnAfterReject - after document is rejected
- OnBeforePublish - before document is published
- OnAfterPublish - after document is published

When the document is published, the order of the events is following:

1. OnBeforeApprove
2. OnBeforePublish
3. OnAfterPublish
4. OnAfterApprove

Example

The following example shows how to send an e-mail with news document content when it's published:

1. Open the **CustomWorkflowHandler** class and put the following code at the beginning of the file. It adds the reference to the namespaces we will use to handle the event:

[C#]

```
using CMS.TreeEngine;
using CMS.GlobalHelper;
using CMS.EmailEngine;
using CMS.WorkflowEngine;
```

2. Put the following code inside the **OnAfterPublish** method:

[C#]

```
// type the document as TreeNode
TreeNode newsDoc = (TreeNode)treeNodeObj;

// handle the event only for news items
if (newsDoc.NodeClassName.ToLower() == "cms.news")
{
    // get content of the inserted news item and send it by e-mail
    EmailMessage email = new EmailMessage();
    email.From = "admin@domain.com";
    email.Recipients = "admin@domain.com";
    email.Subject = ValidationHelper.GetString(newsDoc.GetValue("NewsTitle"), "");
    email.Body = ValidationHelper.GetString(newsDoc.GetValue("NewsSummary"), "");
}
```

```
EmailSender.SendEmail(email);  
}
```

3. Set the From and Recipients e-mail addresses to you e-mail address.
4. Compile and run the project.
5. Configure your project so that it uses workflow for news items and create and publish a news item. You should receive the content of the news item by e-mail.

Getting the workflow step name

If you need to get the name of the workflow step (for example in the `OnAfterApprove` event), you need to use code like this:

[C#]

```
CMS.WorkflowEngine.WorkflowStepInfo previousStep = (CMS.WorkflowEngine.  
WorkflowStepInfo) previousStepObj;  
string stepCodeName = previousStep.StepName;
```

9.12 Customizing system objects with custom data or objects

In the example below, you will learn how to extend system objects with your own fields or data.

This extending is possible thanks to the **IRelatedData** interface and the **RelatedData** (object) property. If an object implements the **IRelatedData** interface, you can use its **RelatedData** (object) property to connect just any object to it. The connected object is then shipped as a part of the system object.

On the top of it, you can also make the related object behave as a native part of the system object and retrieve its properties as if it were properties of the system object. If the connected object implements the **IDataContainer** interface, it gets automatically connected to the system object's **GetValue** and **SetValue** methods.

Example

Let's presume that you want to customize the **SiteInfo** object with two additional properties and one method:

- **SiteOwner** - String, just the name of the site owner
- **SiteValidUntil** - DateTime until which the site is valid
- **bool IsValid()** - Returns true if the site is valid at the current time

1. First, you will need to create a custom class in the solution, containing the properties and the method as you can see in the code example below:

SiteRegistration.cs

[C#]

```
using System;  
using CMS.SettingsProvider;  
  
/// <summary>  
/// Summary description for SiteRegistration  
/// </summary>  
public class SiteRegistration : IDataContainer  
{  
    #region "Variables"
```

```
private string mSiteOwner = null;
private DateTime mSiteValidUntil = DateTime.MinValue;

#endregion

#region "Properties"

/// <summary>
/// Gets or sets the site owner
/// </summary>
public string SiteOwner
{
    get
    {
        return mSiteOwner;
    }
    set
    {
        mSiteOwner = value;
    }
}

/// <summary>
/// Gets or sets the date until which the site is valid
/// </summary>
public DateTime SiteValidUntil
{
    get
    {
        return mSiteValidUntil;
    }
    set
    {
        mSiteValidUntil = value;
    }
}

#endregion

#region "IDataContainer members"

/// <summary>
/// Gets the column names
/// </summary>
public string[] ColumnNames
{
    get
    {
        return new string[] { "SiteOwner", "SiteValidUntil" };
    }
}

/// <summary>
```



```
/// Returns true
/// </summary>
/// <param name="columnName"></param>
public bool ContainsColumn(string columnName)
{
    switch (columnName.ToLower())
    {
        case "siteowner":
        case "sitevaliduntil":
            return true;

        default:
            return false;
    }
}

/// <summary>
/// Gets the object value
/// </summary>
/// <param name="columnName">Column name</param>
public object GetValue(string columnName)
{
    switch (columnName.ToLower())
    {
        case "siteowner":
            return mSiteOwner;

        case "sitevaliduntil":
            return mSiteValidUntil;

        default:
            return null;
    }
}

/// <summary>
/// Sets the field value
/// </summary>
/// <param name="columnName">Column name</param>
/// <param name="value">New value</param>
public bool SetValue(string columnName, object value)
{
    switch (columnName.ToLower())
    {
        case "siteowner":
            mSiteOwner = (string)value;
            return true;

        case "sitevaliduntil":
            mSiteValidUntil = (DateTime)value;
            return true;

        default:
            return false;
    }
}
```

```
    }

    /// <summary>
    /// Tries to get the value from the object
    /// </summary>
    /// <param name="columnName">Column name</param>
    /// <param name="value">Returns the value</param>
    public bool TryGetValue(string columnName, out object value)
    {
        switch (columnName.ToLower())
        {
            case "siteowner":
                value = mSiteOwner;
                return true;

            case "sitevaliduntil":
                value = mSiteValidUntil;
                return true;

            default:
                value = null;
                return false;
        }
    }

#endregion

#region "Methods"

    /// <summary>
    /// Returns true if the site is valid
    /// </summary>
    public bool IsValid()
    {
        return this.SiteValidUntil > DateTime.Now;
    }

#endregion
}
```

2. Now that you have the class ready, you will want to bind it to the SiteInfo object. The binding will be dynamic, which means that the data will be loaded when it is requested. We will use the **OnLoadRelatedData** event which you can use for specific object types, including our SiteInfo objects. The event is part of the type information object referenced from the object info class.

What you need to do is to create the event and register it in the **AfterApplicationStart** event, both in the `~/App_Code/Global/CMS/CMSApplication.cs` class as you can see below:

[C#]

```
///
/// Fires after the application start event
```

```
///
public static void AfterApplicationStart(object sender, EventArgs e)
{
    // Add your custom actions
    CMS.SiteProvider.SiteInfo.TYPEINFO.OnLoadRelatedData += new CMS.
SettingsProvider.TypeInfo.ObjectLoadRelatedDataEventHandler
(SiteInfo_OnLoadRelatedData);
}

static object SiteInfo_OnLoadRelatedData(CMS.SettingsProvider.IInfoObject infoObj)
{
    // Get the related data from your external storage (make sure it implements
IDataContainer. Here are just some data created on-the-fly.
    SiteRegistration sr = new SiteRegistration();
    sr.SiteOwner = "Martin Hejtmanek";
    sr.SiteValidUntil = DateTime.Now.AddDays(1);

    return sr;
}
```

3. Now try to paste the following code to the layout of some page on your site. Notice the bold parts of the code. As you can see, data stored in the custom properties are retrieved using the `GetValue` method as if they were a native part of the `SiteInfo` object.

[C#]

```
<asp:Label runat="server" id="lblSiteInfo" />
<script runat="server">
    protected void Page_PreRender(object sender, EventArgs e)
    {
        CMS.SiteProvider.SiteInfo currentSite = CMSContext.CurrentSite;

        this.lblSiteInfo.Text = String.Format("Site '{0}' is valid until {1} and owned
by {2}.", currentSite.DisplayName, currentSite.GetValue("SiteValidUntil"),
currentSite.GetValue("SiteOwner"));
    }
</script>
```

As a result, you should see the following text on the page:

Site 'Corporate Site' is valid until 9/15/2009 1:09:50 PM and owned by Martin Hejtmanek.

4. It is also possible to get the values of the custom properties using macros. Try adding the **Text -> Static text** web part to your page and paste the following text to its **Text** property. The same text as in the previous example should be displayed on the live site.

```
Site '{%CMSContext.CurrentSite.SiteDisplayName%}' valid until {%CMSContext.CurrentSite.SiteValidUntil%} and owned by {%CMSContext.CurrentSite.SiteOwner%}
```

9.13 Customizing the administration interface and web application events

This chapter describes how to customize the administration interface and website functionality in the way which is safe for future system updates and compatible with the import/export functionality.

Please note that a certain level of user interface customization can be achieved using [UI personalization](#).

System events (Groups)

There are several groups of system events that can be handled by your custom code. There are predefined custom methods that allow you to influence default page cycle of the system pages/controls and customize the administration interface. These classes are located in ~/App_Code/Global/CMS folder.

There are following system events that can be customized:

- CMSApplication.cs – Global application events (Start, End, ...)
- CMSSession.cs – Session events (Start, End, ...)
- CMSRequest.cs – Request events (Start, End, ...)
- CMSPageEvents.cs – Page events (Init, Load, ...)
- CMSUserControlEvents – User control events (Init, Load, ...)

These events are fired on standard Application (Session, Request, Page, Control) cycle and provide you with the methods that are fired before and after each of these events.

CMSCustom.cs – Common custom events. Special events that are raised from the system. Binding of these events is initialized within the Init method of this class.

Available methods to customize

CMSApplication.cs

- BeforeApplicationStart - Fires before the application start event
- AfterApplicationStart - Fires after the application start event
- BeforeApplicationEnd - Fires before the application end event
- AfterApplicationEnd - Fires after the application end event
- BeforeApplicationError - Fires before the application error event
- AfterApplicationError - Fires after the application error event

CMSSession.cs

- BeforeSessionStart - Fires before the session start event
- AfterSessionStart - Fires after the session start event
- BeforeSessionEnd - Fires before the session end event
- AfterSessionEnd - Fires after the session end event

CMSRequest.cs

- BeforeBeginRequest – Fires before the request start event
- AfterBeginRequest – Fires after the request start event
- BeforeEndRequest – Fires before the request end event
- AfterEndRequest – Fires after the request end event
- BeforeAcquireRequestState – Fires before the acquire request state event
- AfterAcquireRequestState – Fires after the acquire request state event
- BeforeAuthorizeRequest – Fires before the request authorization event
- AfterAuthorizeRequest – Fires after the request authorization event
- BeforeAuthenticateRequest – Fires before the request authentication event
- AfterAuthenticateRequest – Fires after the request authentication event

CMSPageEvents.cs

- BeforePagePreInit – Fires before page PreInit event
- AfterPagePreInit – Fires after page PreInit event
- BeforePageInit – Fires before page Init event
- AfterPageInit – Fires after page Init event
- BeforePageLoad – Fires before page Load event
- AfterPageLoad – Fires after page Load event
- BeforePagePreRender – Fires before page PreRender event
- AfterPagePreRender – Fires after page PreRender event
- BeforePageRender – Fires before page Render event
- AfterPageRender - Fires after page Render event

CMSUserControlEvents.cs

- BeforeUserControlInit – Fires before UserControl Init event
- AfterUserControlInit – Fires after UserControl Init event
- BeforeUserControlLoad – Fires before UserControl Load event
- AfterUserControlLoad – Fires after UserControl Load event
- BeforeUserControlPreRender – Fires before UserControl PreRender event
- AfterUserControlPreRender – Fires after UserControl PreRender event
- BeforeUserControlRender – Fires before UserControl Render event
- AfterUserControlRender - Fires after UserControl Render event

Examples

Following examples just briefly show how to customize the solution with your own functionality. If you need to customize certain page of the interface, you should see the code of the page so the customization matches the page structure.

Using the Page event to add tab (CMSPageEvents.cs) – This custom code will add a new tab to the main page of the E-commerce module:

[C#]

```
using CMS.UIControls;
using CMS.Controls;

/// <summary>
/// Fires before page Load
/// </summary>
/// <returns>Returns true if default action should be performed</returns>
public static bool BeforePageLoad(object sender, EventArgs e)
{
    // Add your custom actions
    CMSPage page = (CMSPage)sender;
    switch (page.RelativePath.ToLower())
    {
        case "/cmsdesk/tools/ecommerce/header.aspx":
            BasicTabControl tabControl = (BasicTabControl)page["TabControl"];
            // Add tabs
            string[,] tabs = BasicTabControl.GetTabsArray(1);

            tabs[0, 0] = "Google";
            tabs[0, 2] = "http://www.google.com";

            tabControl.AddTabs(tabs);

            break;
    }

    // Return true to allow the default Page_Load event
    return true;
}
```

Using the Custom event to resolve custom macro (CMSCustom.cs) – This custom code will handle the macro {#CurrentTime#} in all the modules that support custom macros.

[C#]

```
/// <summary>
/// Custom macro handler
/// </summary>
/// <param name="sender">Sender (active macro resolver)</param>
/// <param name="expression">Expression to resolve</param>
/// <param name="match">Returns true if the macro matches (was resolved)</param>
public static string ResolveCustomMacro(MacroResolver sender, string expression,
out bool match)
{
    match = false;
    string result = expression;

    // Add your custom macro evaluation
    switch (expression.ToLower())
    {
        case "currenttime":
            match = true;
            result = DateTime.Now.ToString();
            break;
    }

    return result;
}
```

9.14 Using API and CMS Controls outside CMS project

You can use Kentico CMS API and Kentico CMS Controls also outside the standard CMS website project. This chapter explains how you can configure your ASP.NET application so that it can use Kentico CMS API and Kentico CMS Controls.

Start Visual Studio and create a new ASP.NET application or open your existing ASP.NET web project.

Kentico CMS Initialization

Please note: you may need to initialize the application to be able to use all the features of Kentico CMS API. To do that, call the method **CMSContext.Init()** before any other calls to the API. You can do that at the time your project starts or anytime later, the method handles all necessary initializations of the environment.

Configuring the web.config file

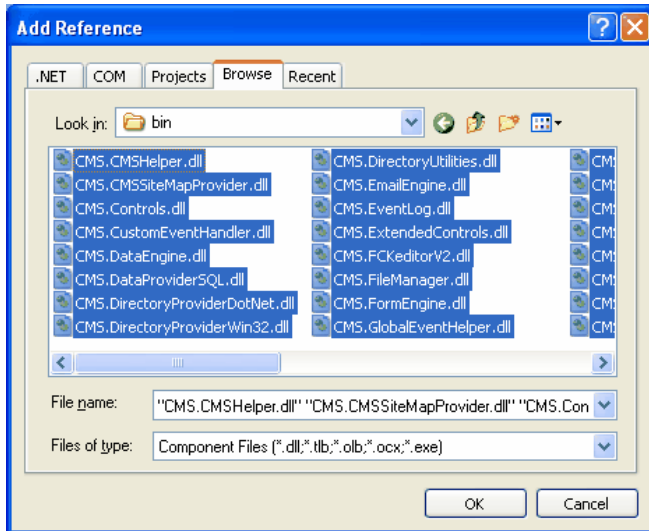
Add the connection string for the Kentico CMS database with name CMSConnectionString into the configuration/connectionStrings section of the web.config. The section will look like this:

```
<configuration>
  <connectionStrings>
    <add name="CMSConnectionString" connectionString="Persist Security
      Info=False;database=KenticoCMS;server=myserver;user id=sa;
      password=myspassword;Current
      Language=English;Connection Timeout=120;" />
  </connectionStrings>
</configuration>
```

It's recommended that you copy the exact connection string line from the web.config file of the CMS web project.

Adding a reference to Kentico CMS API libraries

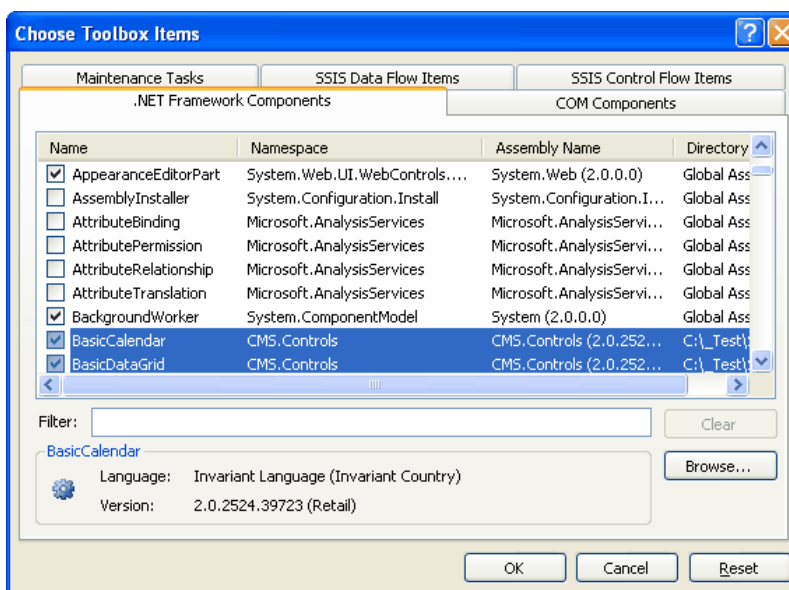
Now we will add a reference to Kentico CMS libraries. Right-click your web project in the **Solution Explorer** and choose **Add reference...** Choose the **Browse** tab and locate the CMS web project's bin folder. Choose all libraries and click OK:



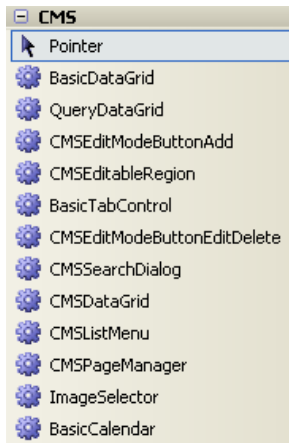
Adding Kentico CMS Controls to your toolbox

Now we will add Kentico CMS Controls to your toolbox so that you can easily drag-and-drop the controls on the web forms. Right-click the toolbox and choose **Add tab**. Use the name **CMS** and press Enter.

Right-click the new tab and click **Choose Items...** Click **Browse...** and locate the **CMS.Controls.dll** library in the **bin** folder of your application. Click **Open** and click **OK** on the **Choose Toolbox Items** dialog.



The controls are added to your tab:



Configuring your project for transformations (virtual path provider)

The transformations used by Kentico CMS Controls are retrieved using a virtual path provider. You need to add the following line to the `Application_Start` method in the `app_code\global.asax.cs/vb` file:

[C#]

```
CMS.VirtualPathHelper.VirtualPathHelper.RegisterVirtualPathProvider();
```

[VB.NET]

```
CMS.VirtualPathHelper.VirtualPathHelper.RegisterVirtualPathProvider()
```

If you cannot use the virtual path provider (e.g. in the medium trust environment), you may need to save the virtual objects to disk using the **Site Manager -> Administration -> System -> Deployment -> Save all virtual objects to disk** button and copy the folder `~/CMSTransformations` to the root of your own web project.

Using Kentico CMS Controls to display content from Kentico CMS database

Now that we have configured the web project for Kentico CMS, we will create a testing page that will display news items from Kentico CMS.

Create a new web form (ASPX page) in your custom project using Visual Studio. Drag and drop the CMSRepeater control on your page and set the following properties:

- ClassNames: cms.news
- CultureCode: en-us (or other language version)
- SiteName: CorporateSite (or other site code name)
- TransformationName: cms.news.preview
- SelectedItemTransformationName: cms.news.default

Run the project and navigate to the newly created page. You should see a page like this:

[Your first news](#) (11/5/2006)
Here comes your news summary.
[Your second news](#) (11/6/2006)
Here comes your news summary.

However, the links may not work at this moment since they are using the Kentico CMS web friendly URLs by default. So we need to modify the transformation cms.news.preview so that it points the user to same page, but with URL parameter **aliasPath** that will contain the page aliasPath. You can alternatively use your own URL parameters and set the Path property appropriately.

Go to **Kentico CMS Site Manager -> Development -> Document types -> edit News -> Transformations -> edit preview**. Change the following line of the transformation code:

```
<b><a href="<%# GetDocumentUrl() %>">
```

Like this:

```
<b><a href="?aliasPath=<%# Eval("NodeAliasPath") %>">
```

Save the changes. Since the transformations are cached, you need to restart (rebuild) your custom web application now so that the change is applied to your website.

Now you need to add a short code to the page code behind:

[C#]

```
protected void Page_PreInit(object sender, EventArgs e)
{
    if (Request.QueryString["aliaspath"] != null)
    {
        CMSRepeater1.Path = Request.QueryString["aliaspath"];
    }
    else
    {
        CMSRepeater1.Path = "/%";
    }
}
```

[VB.NET]

```
Protected Sub Page_PreInit(ByVal sender As Object, ByVal e As System.EventArgs)
Handles Me.PreInit
    If Not Request.QueryString("aliaspath") Is Nothing Then
        CMSRepeater1.Path = Request.QueryString("aliaspath")
    Else
        CMSRepeater1.Path = "/%"
    End If
End Sub
```



Setting CMS control properties

Kentico CMS Controls load the content at early stage of the page life cycle. It means that if you want to set the properties programmatically, you need to set them in the Page_PreInit event.

If you need to set them for some reason later in the page life cycle, you need to call the `CMSRepeater1.ReloadData(true)` method so that the data is reloaded and the

changes are applied.

Using Kentico CMS API to retrieve content from Kentico CMS database

Kentico CMS API can be used to script any action in Kentico CMS, including content retrieval and modification. The following example explains how you can retrieve documents from Kentico CMS database as a DataSet and display them using standard ASP.NET repeater control (instead of using the CMSRepeater control).

Add a new web form (ASPX page) to your web project. Drag and drop the Repeater control on the web form. Switch to the **Source** mode of the page and add the following item template code inside the <asp:Repeater> control element:

[C#]

```
<ItemTemplate>
  <b><a href="?aliasPath=<%# Eval("NodeAliasPath") %>">
  <%# Eval("NewsTitle") %></a></b> (<%# ( (DateTime) Eval("NewsReleaseDate")).
ToString("d") %>)<br />
  <i><%# Eval("NewsSummary") %></i>
<br />
</ItemTemplate>
```

[VB.NET]

```
<ItemTemplate>
  <b><a href="?aliasPath=<%# Eval("NodeAliasPath") %>">
  <%# Eval("NewsTitle") %></a></b> (<%# ( (DateTime) Eval("NewsReleaseDate")).
ToString("d") %>)<br />
  <i><%# Eval("NewsSummary") %></i>
<br />
</ItemTemplate>
```

Switch to the code behind and add the following code to the beginning of the page:

[C#]

```
using CMS.TreeEngine;
using System.Data;
```

[VB.NET]

```
Imports CMS.TreeEngine
Imports System.Data
```

Add the following code inside the Page_Load method of the page:

[C#]

```
TreeProvider tp = new TreeProvider();
DataSet ds = tp.SelectNodes("CorporateSite", "/news/%", "en-us", true, "cms.news",
" NewsReleaseDate <= GetDate() ", " NewsReleaseDate DESC ", -1, true);
Repeater1.DataSource = ds;
Repeater1.DataBind();
```

[VB.NET]

```
Dim tp As New TreeProvider
Dim ds As DataSet = tp.SelectNodes("CorporateSite", "/news/%", "en-us", True,
"cms.news", " NewsReleaseDate <= GetDate() ", " NewsReleaseDate DESC ", -1, True)
Repeater1.DataSource = ds
Repeater1.DataBind()
```

**Please note**

The code above works fine for just retrieving documents; if you want to perform some other operations with the documents (edit, delete, ...), you should initialize the tree provider with UserInfo, as shown below:

[C#]

```
UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
TreeProvider tp = new TreeProvider(ui);
```

Run the website and navigate to your new page. You should see a page like this:

[Your second news](#) (11/6/2006)

Here comes your news summary.

[Your first news](#) (11/5/2006)

Here comes your news summary.

As you can see, you can use Kentico CMS API to retrieve content as a DataSet and display it with your custom .NET code.

9.15 Customizing providers from the App_Code folder

Custom providers (e.g. scheduled tasks) can be defined in *App_Code*, without the need to be compiled into an assembly. This can be achieved by defining a new class implementing the **ITask** interface in **App_Code/Global/CMS/CMSCustom.cs** and handle it in the **GetCustomClass** method.

You can find an example of a very simple *MyTask* class in *CMSCustom.cs*. The code of the task is displayed below.

[C#]

```
/// <summary>
/// Gets the custom class object based on the given class name. This handler is
/// called when the assembly name is App_Code
/// </summary>
/// <param name="className">Class name</param>
public static object GetCustomClass(string className)
{
    // Provide your custom classes
    switch (className)
    {
        // Define the class MyTask implementing ITask and you can provide your
        // scheduled tasks out of App_Code
        case "Custom.MyTask":
            return new MyTask();
    }

    return null;
}

/// <summary>
/// Sample task class
/// </summary>
public class MyTask : ITask
{
    /// <summary>
    /// Executes the task
    /// </summary>
    /// <param name="ti">Task info</param>
    public string Execute(TaskInfo ti)
    {
        EventLogProvider ev = new EventLogProvider();
        ev.LogEvent("I", DateTime.Now, "MyTask", "Execute", null, "This task was
        executed from '~/App_Code/Global/CMS/CMSCustom.cs'.");

        return null;
    }
}
```

To register the task in Kentico CMS, you need to create a new task in **Site Manager -> Administration -> Scheduled tasks**.

To ensure the required functionality, *App_Code* must be entered into the **Task assembly name** field and the class name handled in the *GetCustomClass* method needs to be entered into the **Task class name** field. With this task created, the code in the *MyTask* class is executed repeatedly after the set interval.

Kentico CMS Site Manager

Sites Administration Settings Development Licenses Support

Administration

- Avatars
- Bad words
- Badges
- Banned IPs
- E-mail queue
- Event log
- Permissions
- Recycle bin
- Roles
- Scheduled tasks
- Smart search
- System
- UI personalization
- Users
- Web farm

New task

Scheduled tasks ▶ New task

Task display name:

Task name:

Task assembly name:

Task class name:

Period:

Start time:

Every: Minute

Between: : and :

Task interval:

Days:

- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- Sunday

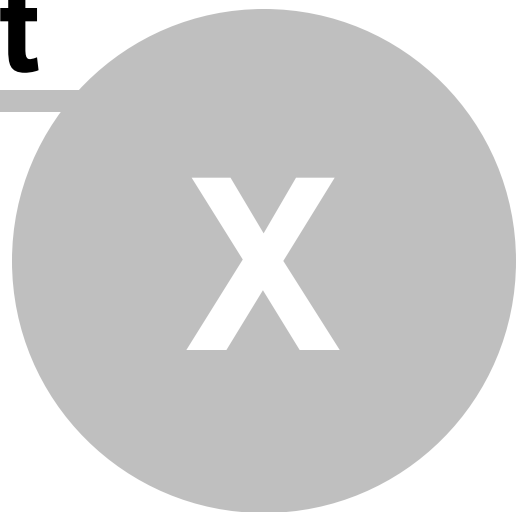
Task data:

Task enabled:

Delete task after last run:

Server name:

Part



Appendix A - Macro expressions

10 Appendix A - Macro expressions

This appendix describes macros that can be used within the Kentico CMS system. Macros are strings that are automatically resolved into their value equivalents and they represent a powerful option that often eliminates writing custom .NET code.

Types of macros

The macro type is determined by the character at the beginning and end of the macro. Macros look like:

```
{<type><expression><parameters><type>}
```

Where **type character** can be one of:

- \$ - Localization macro
- % - Context (data) macro
- ? - QueryString macro
- @ - Cookie macro
- # - Custom macro

Macros of the same type can be nested using the "index parentheses" syntax, e.g. `{{(1)%FullName/ (default){(2)%Username%(2)}%(1)}`.

Coverage of macros

The following table shows where the macros can be used:

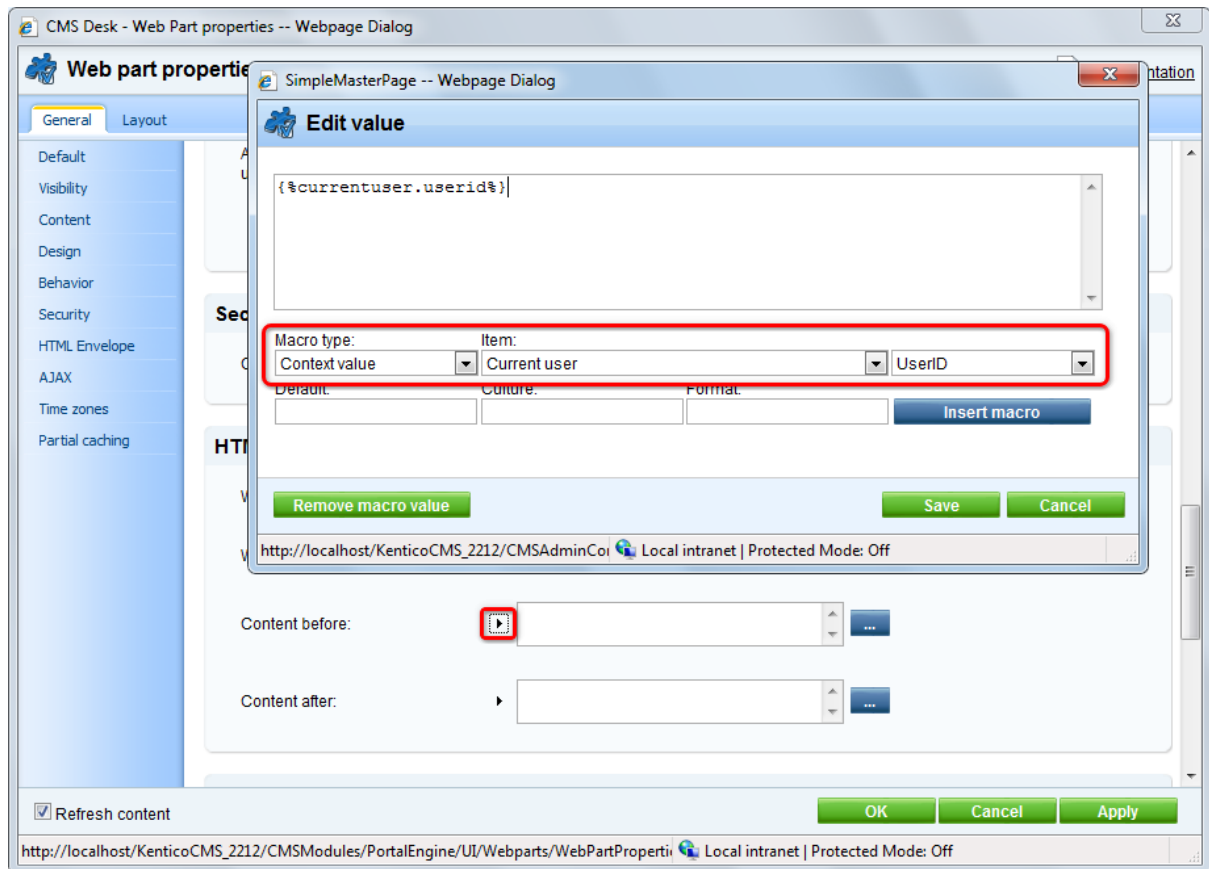
| | Localization | Context | Query | Cookie | Custom | Path |
|---------------------|------------------|---------|-------|--------|--------|------|
| Web part properties | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Web part containers | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Page layouts | Supported by API | | | | | |
| Document metadata | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Editable regions | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ |
| Newsletters | ✓ | ✓ | ✗ | ✓ | ✓ | ✓ |
| Reporting | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Forums | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Polls | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| E-Commerce | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ |
| BizForms | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Transformations | Supported by API | | | | | |

| | |
|-----------|------------------|
| .NET code | Supported by API |
|-----------|------------------|

Entering macros



Macros can either be entered manually, or you can use the macro selector dialog, which facilitates entering of macro expressions and offers a complete range of macros to be entered.

In web part properties, it can be accessed by clicking the little black arrow icon next to fields in web part properties, as you can see in the screenshot below. The expression can be selected by the highlighted drop-down lists, inserted into the field above using the **Insert** button and finally added to the property using the **Save** button.




The same drop-downs are also available when creating or editing:

- **E-mail templates**
- **Newsletter issues**
- **Newsletter templates**
- **E-commerce invoice templates**

 **E-mail template properties** 

E-mail templates ▶ E-commerce - Order notification to administrator

 Save

Display name:*

Code name:*

From:

Cc:

Bcc:

Subject:

HTML version:

```
<html><head></head><body>
<table cellpadding="5" cellspacing="0" border="1" bordercolor="black" width="600">
  <tbody>
    <tr>
      <td style="text-align: left; vertical-align: bottom; height="50" colspan="2">
        <table height="100%" width="100%">
          <tbody>
            <tr>
              <td style="text-align: left; vertical-align: bottom;"><span style="font-size: 18pt;">New order</span></td>
              <td style="text-align: center; vertical-align: middle;"><span style="font-family: Garamond,Times,serif; font-size: 24pt; font-style: italic;">Company logo</span></td>
            </tr>
          </tbody>
        </table>
      </td>
    </tr>
  </tbody>
</table>
```

Macro type: Item: Application path:

Localization macros

There are two types of localization macros:

Basic – In format “{string.key\$}” uses the ResHelper.GetString(“string.key”) and replaces the macro with the resource string.

Example: “The weather is {General.OK\$}” will be resolved as “The weather is OK”

In-place localization – String and its localized equivalents are stored within the macro specification. The macro is in format “{%=Default string|cs-cz=Czech string|de-de=German string\$}”. It uses localized string in case it is available or default (the first string) if not.

Example:

“The weather is {%=OK|cs-cz=dobre|de-de=gut\$}” will be resolved into:

“The weather is dobre” in Czech culture

“The weather is gut” in German culture

“The weather is OK” in any other culture

These macros are usually used on multilingual websites to help localize the system strings.

Context (data) macros

This type of macros evaluates the data of current context. The format of the macro is “{%ColumnName %}” and the value is replaced with the appropriate data from the context.

You can use all the column names from current site data, current user data and current document data.

Example: “Welcome {%FullName%}” will be resolved as “Welcome Global administrator” when administrator is logged in.

These macros can be used for example to parametrize the web parts parameters with current document or user values.

There are also data macros with selectors to precisely identify the source of the data, these macros look like:

“{%CurrentDocument.DocumentName%}” and can be used for accurate determination of the data source. Availability of the selectors depends on the context where the macros are evaluated.

QueryString macros

These macros evaluate the query parameters information. The macro is in format “{?queryStringkey?}” and it is replaced by the query parameter value.

Example: “Current node ID: {?nodeid?}” will be resolved as “Current node ID: 10” with URL like “default.aspx?nodeid=10”

These macros can be used for example to dynamically parametrize the controls by the querystring parameters.

Cookie macros

These macros evaluate the cookie values. The macro is in format “{@CookieName@}” and it is replaced by the cookie value.

Example: “Current style: {@StyleCookie@}” will be resolved as “Current style: Red” if StyleCookie value is set to “Red”

These macros can be used for example to parametrize the web parts with client-based persistent values like styles or user options.

Custom macros

These macros can be used to define your own macro. The macro is in format “{#Expression#}” and when the macro is needed to be resolved, it will call the method **ResolveCustomMacro** located in the class `~/App_Code/Global/CMS/CMSCustom.cs`

Example: “Current time: {#CurrentTime#}” will be resolved to “Current time: 1/1/2008 10:30” with following custom macro handler:

```
/// <summary>
/// Custom macro handler
/// </summary>
/// <param name="sender">Sender (active macro resolver)</param>
/// <param name="expression">Expression to resolve</param>
/// <param name="match">Returns true if the macro matches (was resolved)</param>
public static string ResolveCustomMacro(MacroResolver sender, string expression,
```

```
out bool match)
{
    match = false;
    string result = expression;

    // Add your custom macro evaluation
    switch (expression.ToLower())
    {
        case "currenttime":
            match = true;
            result = DateTime.Now.ToString();
            break;
    }

    return result;
}
```

Control macros

These macros can be used to resolve parts of the text to the inline controls. The macro is in format “`{^BizFormControl^}`” and can (usually must) contain parameters for the control in a standard way of parametrized macros, such as “`{^BizFormControl|(FormName)ContactForm^}`”. It will be resolved to inline control which will get those parameters to initialize itself.

Path macros

These macros can be used to resolve current document Alias path the same way like in the Path property of the controls. Macro is replaced by the resolved path.

Example: WhereCondition: “NodeAliasPath LIKE `{&../%&}`” The macro will be resolved as parent document path and will result in selecting all the siblings of current document and their child documents.

This macro is intended mostly for including the document structure context into the controls WHERE condition, but can be used for many more purposes.

Macro parameters

From version 4.0 there is possibility to create macros with parameters to get better or specific functionality, especially for the data (context) macros. Each parameter of the macro is separated with the “|” character located after the macro expression. You can use multiple macro parameters.

Examples: `{%SKUPrice|(culture)en-us%}`, `{%SKUPrice|(culture)en-us|(format){0:f1}%}`

The “|” character can be escaped using the “\|” sequence, e.g. `{%SKUPrice|(default)N\|A%}` will display “N|A”, i.e. the “|A” sequence will not be interpreted as a new parameter.

Currently available parameters are:

- Culture – “|(culture)<code>” - Saying that the specified culture should be used for the e.g. `{%SKUPrice|(culture)en-us%}` writes the product price in an English culture formatting

- Format – “|(format)<format>” – Saying how the value should be formatted
e.g. `{%SKUPPrice|(format){0:f1}%}` writes the product price with precision for one decimal place
- Default value “|(default)<value>” or “|<value>” saying what should be returned when the value is not found.
e.g. `{%SKUPPrice|N/A}%}` writes product price or N/A if the document is not a product
- Encode – “|(encode)<true/false>” – Processes the result with `HTMLHelper.HtmlEncode`
e.g. `{%DocumentName|(encode>true)%}` or `{%DocumentName|(encode)%}` writes the HTML encoded document name, such as **Black & white**. The default encoding settings can be enabled, in that case, the settings may be `|(encode>false)` to disable it.
- URLEncode – “|(urlencode)<true/false>” – Processes the result with `HttpUtility.UrlEncode`
e.g. `{%DocumentName|(urlencode>true)%}` or `{%DocumentName|(urlencode)%}` writes the URL encoded document name, such as **All%20items**. The default encoding settings can be enabled, in that case, the settings may be `|(urlencode>false)` to disable it
- ToLower – “|(tolower)<true>” – Converts the result to lowercase
e.g. `{%DocumentName|(tolower>true)%}` or `{%DocumentName|(tolower)%}` writes **black & white**.
- ToUpper – “|(toupper)<true>” – Converts the result to uppercase
e.g. `{%DocumentName|(toupper>true)%}` or `{%DocumentName|(toupper)%}` writes **BLACK & WHITE**.
- ToInt – “|(toint)<default value>” – Converts the result to integer, if not successful, uses the default value.
e.g. `{?tagid|(toint)0?}` writes the valid **tagid** from querystring or **0** if not valid
- ToBool – “|(tobool)<default value>” – Conversion to **Boolean**, uses the (truevalue), (falsevalue) settings as a result, see below.
e.g. `{?onlyvalid|(tobool>true?)}` writes false if **onlyvalid** querystring parameter is false, else returns true.
- ToGuid – “|(toguid)<default value>” – Conversion to **GUID**
e.g. `{?userid|(toguid)?}` converts the userid query parameter to Guid or Guid.Empty
- ToDouble – “|(todouble)<default value>” – Conversion to **Double**, uses the (culture) settings
e.g. `{?price|(todouble)10.2?}` converts the price query parameter to double or 10.2
- ToDateTime – “|(todatetime)<default value>” – Conversion to **DateTime**, uses the (culture) settings
e.g. `{?targettime|(todatetime)?}` converts the targettime query parameter to date time or DateTime.
MinValue
- ResolveBBCode – “|(resolvebbcode)<true/false>” – Resolves the BB code in the result of the macro
e.g. `{%MessageText|(resolvebbcode>true)%}` or `{%MessageText|(resolvebbcode)%}` writes the resolved BB code such as conversion of `[url]...` to `<a href="..."`
- Equals – “|(equals)<value>” – Returns “true” if the resolved value matches the given value, else returns “false”. Uses the (truevalue), (falsevalue) settings for the output.
e.g. `{%UserName|(equals)administrator%}` writes true if the user is administrator
- NotEquals – “|(notequals)<value>” - Returns “false” if the resolved value matches the given value, else returns “true”. Uses the (truevalue), (falsevalue) settings for the output.
e.g. `{%UserName|(notequals)administrator%}` – Writes false if the user is administrator

- TrueValue – “(truevalue)<value>” – Output settings for the positive output of the comparison
e.g. `{%UserName(equals)administrator(truevalue)Yes(falsevalue)No%}` writes Yes if the user is administrator
- FalseValue - “(falsevalue)<value>” – Output settings for the negative output of the comparison
e.g. `{%UserName(equals)administrator(truevalue)Yes(falsevalue)No%}` writes No if the user is not administrator

API methods for evaluating macros

There is an easy way to resolve the macros in the .NET code. To resolve all the macros (recommended), use static method:

```
string CMS.CMSHelper.CMSContext.CurrentResolver.ResolveMacros(string inputText)
```

To resolve just the localization macros use static method:

```
string CMS.GlobalHelper.ResHelper.LocalizeString(string inputText)
```

Part

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Appendix B - Path expressions

11 Appendix B - Path expressions

Many web parts and controls use a **Path** property that allows you to specify which documents should be displayed. This is the **AliasPath** property of the document. You can use either an exact path or you can use special characters for specifying multiple selection or relative paths:

Leaving the Path value empty

In many cases, **you can leave the Path value empty**. In this case, the Path value is set to the alias path of the currently displayed document.

In case of list controls/webparts, such as CMSRepeater/Document repeater or CMSDataGrid/Document datalist, the path is set to <current alias path>/% if the current document is not of the same type as the required document in the ClassNames (document types) property. Otherwise, the path is set to the current alias path which leads to automatic selection of the current document.

Using wildcard characters % and _

You can use **% as a wildcard character for any number of characters**, which allows you to select all documents under specified site section.

Examples:

/ - only root
/% - all documents

/products - only the Products document.
/products/% - all documents under the Products document.

You can also use **_ as a wildcard character for a single character**.

Examples:

/product_ - selects documents /productA, /product1, etc.

Using formatting string to get parts of the path

You can also use special expressions that **extract parts of the current path**, such as this.

Examples:

{0}/{1}/% - all documents under the second level of the current path
{0}/{1}/details - document Details under the second level of the current path

Using relative paths

You can use relative paths expressions to specify **sub-documents or parent documents**:

Examples:

- ./product - document product under the current path
- ../product - document product under the parent document of the current path
- . - current path
- .. - parent document of the current path
- ./% - all documents under the current path
- ../% - all documents under the parent document of the current path

Part



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Appendix C - Web.config parameters

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The system settings include appSettings keys and other settings, such as a connection string placed in appropriate sections of the web.config file. AppSettings keys are stored in section **/configuration/appSettings**.

The following setting categories are available:

- [General settings](#)
- [Assembly settings](#)
- [Forbidden character settings in user and role names](#)
- [Content staging settings](#)
- [WYSIWYG editor settings](#)
- [E-commerce settings](#)
- [Event log settings](#)
- [File export settings](#)
- [Item listing settings](#)
- [Query string parameter name settings](#)
- [Transaction isolation settings](#)
- [Scheduler settings](#)
- [Security settings](#)
- [UI culture settings](#)
- [Web farm synchronization settings](#)

General settings

| Key | Description | Sample Value |
|---------------------------|---|---|
| CMSProgrammingLanguage | Indicates the programming language used in transformations and in custom code added to web parts.

The default value is C#. | <pre><add key=" CMSProgrammingLanguage" value="C#" /></pre> <p>or</p> <pre><add key=" CMSProgrammingLanguage" value="VB" /></pre> |
| CMSTrialKey | Contains a temporary trial license key. You can remove this value after installation. | |
| CMSUseCustomHandlers | Indicates if custom handlers should be executed to process system events. See the Global events and their handling chapter for more details. The default value is false. | <pre><add key=" CMSUseCustomHandlers" value="true" /></pre> |
| CMSUseVirtualPathProvider | Indicates if the virtual path provider should be used (true by default). Before you switch off the virtual path provider, please read the Pre-compilation (Publish function) chapter. | <pre><add key=" CMSUseVirtualPathProvide r" value="false" /></pre> |
| CMSShowWebPartCodeTab | Indicates if the Code tab is displayed in | <pre><add key="</pre> |

| | | |
|--------------------------------|---|---|
| | <p>web part properties dialog in CMS Desk.</p> <p>This parameter can be used for backward compatibility purposes. Otherwise, using the Code tab is now obsolete.</p> | <pre>CMSShowWebPartCodeTab" value="true" /></pre> |
| CMSShowWebPartBindingTab | <p>Indicates if the Binding tab is displayed in web part properties dialog in CMS Desk.</p> <p>This parameter can be used for backward compatibility purposes. Otherwise, using the Binding tab is now obsolete.</p> | <pre><add key=" CMSShowWebPartBindingTab " value="true" /></pre> |
| CMSFullClientCache | <p>Indicates if full client cache is enabled. If enabled, CSS styles and images will be cached in the client's browser. It is not recommended to use this option in non-live-site mode, as changes made to the pages would not be displayed due to the caching.</p> | <pre><add key=" CMSFullClientCache" value="true" /></pre> |
| CMSRenderGeneratorName | <p>Indicates if the 'generator' meta tag stating that the page was generated by Kentico CMS is generated in the header of each page.</p> <p>The default value is "false".</p> | <pre><add key=" CMSRenderGeneratorName" value="true" /></pre> |
| CMSClearFieldEditor | <p>Determines field editor behavior when creating new fields. If true, new fields will have empty values of attributes. If false, new fields will have pre-defined values, the same as the previously selected field.</p> | <pre><add key=" CMSClearFieldEditor" value="true" /></pre> |
| CMSShowTemplateASPXTab | <p>Indicates if ASPX code tab is displayed when editing a page template. Using this tab, ASPX code of a page template created using the Portal engine can be exported.</p> | <pre><add key=" CMSShowTemplateASPXTab" value="true" /></pre> |
| CMSDatabaseCulture | <p>Specifies the default culture of the system's database.</p> | <pre><add key=" CMSDatabaseCulture" value="en-us" /></pre> |
| CMSDisposeConnectionAfterClose | <p>If true, database connection is automatically disposed (allocated resources released) when a database connection is closed.</p> | <pre><add key=" CMSDisposeConnectionAfterClose" value="true" /></pre> |
| CMSUseSessionCookies | <p>Indicates if session cookies are used or not.</p> | <pre><add key=" CMSUseSessionCookies" value="true" /></pre> |
| CMSImportWindowsRoles | <p>When Windows authentication is used and this key set to true, roles available in the Active Directory will be imported into the system.</p> | <pre><add key=" CMSImportWindowsRoles" value="true" /></pre> |
| CMSFileScriptTimeout | <p>The maximum number of seconds a script can run before the server terminates it.</p> | <pre><add key=" CMSFileScriptTimeout" value="7200" /></pre> |

| | | |
|--|--|---|
| CMSUseExtensionOnPostBack | When using friendly URL extensions, postback doesn't work in some cases. If you enable this setting, .aspx extension is attached to the URL in the form tag, which prevents the postback problems. | <code><add key="CMSUseExtensionOnPostBack" value="true"/></code> |
| CMSUseSQLResourceManager | If true, SQL Resource manager is used to retrieve strings used in the user interface. | <code><add key="CMSUseSQLResourceManager" value="true"/></code> |
| CMSAllowCheckIOPermissions | If true, write permissions on the site folder are checked when necessary and produce an error message when they are insufficient. | <code><add key="CMSAllowCheckIOPermissions" value="true"/></code> |
| CMSEmailTransferEncoding | Specifies the type of encoding used for e-mails sent from the CMS. | <code><add key="CMSEmailTransferEncoding" value="TransferEncoding.Unknown(-1)"/></code> |
| CMSWorkflowSendEmailToModerator | If true, workflow notification e-mails will be sent to the user who is performing the current workflow step along with other users involved in the workflow. | <code><add key="CMSWorkflowSendEmailToModerator" value="true"/></code> |
| CMSControlElement | If present in the web.config, the tag entered in the value will be used instead of the SPAN tag when generating pages. | <code><add key="CMSControlElement" value="div"/></code> |
| CMSUseParsedSelfClose | Indicates if parsed self closing tags operations (faster) are used instead of standard self close filter. | <code><add key="CMSUseParsedSelfClose" value="true"/></code> |
| CMSGetFileEndRequest | If true, ApplicationInstance.CompleteRequest() is used instead of Response.End() in the CompleteRequest method. | <code><add key="CMSGetFileEndRequest" value="true"/></code> |
| CMSDefaultUserID | Specifies default user ID. | <code><add key="CMSDefaultUserID" value="53"/></code> |
| ImportFilesDiskPath | Specifies path to attachments that should be attached to documents imported via the SQL Import windows application. | <code><add key="ImportFilesDiskPath" value="C:\Temp"/></code> |
| CMSDeleteTemporaryAttachmentsOlderThan | Specifies how old attachments should be deleted by the 'Delete old temporary attachments' scheduled task. The value is entered in hours. Attachments older than the entered value will be deleted when the scheduled task is executed. | <code><add key="CMSDeleteTemporaryAttachmentsOlderThan" value="12"/></code> |
| CMSAllowGZip | Enables Gzip compression of output HTML code. | <code><add key="CMSAllowGZip" value="true" /></code> |
| CMSDisableAdministrationInterface | Disables the administration interface. The 'Access denied' screen is displayed on each attempt to access CMS Desk or Site Manager. | <code><add key="CMSDisableAdministrationInterface" value="true"/></code> |

| | | |
|------------------------------------|---|--|
| CMSMaxNodeAliasLength | Maximal length of a document's node alias. The default value is 50 characters and larger names are trimmed. This key can be used to increase the length - useful for long node aliases. If you use the key, you also need to set the size of the 'NodeAlias' column in the 'CMS_Tree' database table to the same value. However, the maximal length of 'Node alias path' is 450 characters, so documents deep in the tree will have the 'Node alias path' trimmed anyway. | <pre><add key=" CMSMaxNodeAliasLength" value="120" /></pre> |
| CMSMaxNodeNameLength | Maximal length of a document's node name. The default value is 100 characters and larger names are trimmed. This key can be used to increase the length - useful for long node names. If you use the key, you also need to set the size of the 'NodeName' column in the 'CMS_Tree' database table to the same value. | <pre><add key=" CMSMaxNodeNameLength" value="150" /></pre> |
| CMSWebAnalyticsSlidingIPExpiration | This key is used when the <i>Site Manager -> Settings -> Web Analytics -> Remember visitors by IP (minutes)</i> key has a value higher than 0.
If enabled (default), users who are active on the site but have disabled cookies are not logged as new visitors after the set time. If disabled, even an active user with disabled cookies is logged as a new site visitor after the set time. | <pre><add key=" CMSWebAnalyticsSlidingIP Expiration" value="false " /></pre> |
| CMSAuthenticationType | This key changes the value returned by the <i>IsFormsAuthentication</i> and <i>IsWindowsAuthentication</i> methods in <i>CMS.GlobalHelper.RequestHelper</i> . The following values are available:

<ul style="list-style-type: none"> • default: current behavior • forms: <i>IsFormsAuthentication</i> always returns <i>true</i>, <i>IsWindowsAuthentication</i> always returns <i>false</i> • windows: <i>IsFormsAuthentication</i> always returns <i>false</i>, <i>IsWindowsAuthentication</i> always returns <i>true</i> • both: <i>IsFormsAuthentication</i> always returns <i>true</i>, <i>IsWindowsAuthentication</i> always returns <i>true</i>
You will typically use this if you are using a custom authentication provider whose authentication type is a non- | <pre><add key=" CMSAuthenticationType" value="windows" /></pre> |

| | | |
|--|--|--|
| | standard one (e.g. Federated authentication) to make Kentico CMS handle it as if it was windows or forms authentication. | |
|--|--|--|

Special settings for Assemblies

You can use the following keys to specify which assemblies are used:

| Key | Description | Sample Value |
|------------------------------------|--|--|
| CMSTDirectoryProviderAssembly | Name of the assembly that should be used for operations in the file system. You can choose from the following options: <ul style="list-style-type: none"> CMS.DirectoryProviderDotNet - this is a managed code library that uses System.IO methods for disk operations. It is useful for environment that allows only managed code. This is the default value. CMS.DirectoryProviderWin32 - this is an unmanaged code library that uses Win32 API for disk operations. It is useful for environment that requires Win32 API calls. | <pre><add key=" CMSTDirectoryProviderAssembly" value="CMS. DirectoryProviderDotNet" /></pre> <p>or</p> <pre><add key=" CMSTDirectoryProviderAssembly" value="CMS. DirectoryProviderWin32" /></pre> |
| CMSSearchProviderAssembly | Name of the assembly that is used for full-text search. The default assembly is CMS.SearchProviderSQL. | <pre><add key=" CMSSearchProviderAssembly" value="CMS. SearchProviderSQL" /></pre> |
| CMSTDataProviderAssembly | Specifies custom data provider assembly used as the database connector for the CMS. See this topic for more details. | <pre><add key=" CMSTDataProviderAssembly" value="CMS. CustomDataProvider" /></pre> |
| CMSEmailProviderAssembly | Specifies custom email provider assembly. Read this topic for more information. | <pre><add key=" CMSEmailProviderAssembly" value="CMS. CustomEmailProvider" /></pre> |
| CMSCustomHandlersAssembly | Specifies custom event handler assembly. Read this topic for more information. | <pre><add key=" CMSCustomHandlersAssembly" value="CMS. CustomEventHandler" /></pre> |
| CMSVirtualPathProviderAssembly | Specifies the Custom virtual path provider assembly. See this topic for more details. | <pre><add key=" CMSVirtualPathProviderAssembly" value="CMS. CustomVirtualPathProvider" /></pre> |
| CMSCustomEcommerceProviderAssembly | Specifies the custom e-commerce provider assembly. See this topic for more details. | <pre><add key=" CMSCustomEcommerceProviderAssembly" value="CMS.</pre> |

```
CustomECommerceProvider"
/>
```

Special settings for forbidden characters in user and role names

You can use the following keys to configure forbidden characters in user and role names:

| Key | Description | Sample Value |
|---|--|--|
| CMSEnsureSafeUserNames | Indicates if forbidden characters in user names imported from AD should be replaced. The default value is true. If turned off by setting the value to false, you may experience problems when editing users imported with forbidden characters. Therefore, it is NOT RECOMMENDED to turn it off. | <pre><add key=" CMSEnsureSafeUserNames" value="false" /></pre> |
| CMSEnsureSafeRoleNames | Indicates if forbidden characters in role names imported from AD should be replaced. The default value is true. If turned off by setting the value to false, you may experience problems when editing roles imported with forbidden characters. Therefore, it is NOT RECOMMENDED to turn it off. | <pre><add key=" CMSEnsureSafeRoleNames" value="false" /></pre> |
| CMSForbiddenUserNameCharactersReplacement | Sets the character by which forbidden characters in user names imported from AD should be replaced. If not set, value from Site Manager -> Settings -> URLs -> Forbidden characters replacement is used. | <pre><add key=" CMSForbiddenUserNameCharactersReplacement" value ="-" /></pre> |
| CMSForbiddenRoleNameCharactersReplacement | Sets the character by which forbidden characters in role names imported from AD should be replaced. If not set, value from Site Manager -> Settings -> URLs -> Forbidden characters replacement is used. | <pre><add key=" CMSForbiddenRoleNameCharactersReplacement" value ="-" /></pre> |

Special settings for Content staging

You can use the following keys to achieve specific behavior of the [Content staging](#) module:

| Key | Description | Sample Value |
|---------------------------------|--|--|
| CMSStagingAcceptAllCertificates | Causes all certificates will be accepted when performing content staging tasks through SSL (X.509). If false, only certificates generated by a certification authority will be accepted. | <pre><add key=" CMSStagingAcceptAllCertificates" value="true" /></pre> |
| CMSStagingUseTreeCustomHandlers | Ensures that events will be raised in CustomTreeNodeHandler when | <pre><add key=" CMSStagingUseTreeCustomH</pre> |

| | | |
|---------------------------------------|---|---|
| | performing content staging synchronization.
The CMSUseCustomHandlers key needs to be enabled too for this to work. | <code>andlers" value="true" /></code> |
| CMSMediaFileMaxStagingSize | Sets the maximal file size of synchronized media files in kiloBytes. Files in media libraries that are larger than the entered value will not be synchronized using the Content staging module. | <code><add key="CMSMediaFileMaxStagingSize" value="1024" /></code> |
| CMSStagingTreatServerNamesAsInstances | Global metadata changes such as changes to document types, custom tables and system tables produce staging tasks for all staging servers of all sites. In such case, it is recommended to synchronize such changes to all servers of all sites at the same time to prevent overwriting of such metadata and losing the data by synchronizing the older tasks later.
You can use this key to make sure that once the global task is synchronized, it is deleted from all other servers with the same name to prevent such possibility. The default value is false since staging can use multiple target instances targeted with the same names. | <code><add key="CMSStagingTreatServerNamesAsInstances" value="true" /></code> |

Special settings for the WYSIWYG editor

You can use the following keys to configure the [WYSIWYG editor](#):

| Key | Description | Sample Value |
|----------------------------------|---|--|
| CMSWYSIWYGFixXHTML | Indicates if the WYSIWYG editor should automatically try to fix XHTML incompatibilities in the code it generates.

Supported values are "true" and "false".
The default value is true. | <code><add key="CMSWYSIWYGFixXHTML" value="true" /></code> |
| CMSUseIFrameForHTMLEditorToolbar | Indicates if the WYSIWYG editor shared toolbar should be displayed in an iFrame to avoid issues with design in the editing mode. The default value is false. | <code><add key="CMSUseIFrameForHTMLEditorToolbar" value="true" /></code> |
| CMSLoadHTMLEditorByIFrame | If true, the WYSIWYG editor is loaded in an iFrame. | <code><add key="CMSLoadHTMLEditorByIFrame" value="true"/></code> |
| CMSUseFrameForHTMLEditorToolbar | Indicates if HTML frame is used for the WYSIWYG editor toolbar. | <code><add key="CMSUseFrameForHTMLEditorToolbar" value="true"/></code> |
| FCKeditor:BasePath | Specifies the location of FCK (WYSIWYG) editor. By default, it is located in ~\CMSAdminControls\FCKeditor. | <code><add key="FCKeditor:BasePath" value="/FCKeditor/" /></code> |

| | | |
|--|---|--|
| FCKEditor:UserFilesPath | Specifies path to user files. | <code><add key="FCKEditor:UserFilesPath" value="/UserFiles/" /></code> |
| FCKEditor:PersonalizeToolbarOnLiveSite | Indicates if the FCK toolbar can be personalized on the live site. See this topic for more details.

Supported values are "true" and "false". The default value is false. | <code><add key="FCKEditor:PersonalizeToolbarOnLiveSite" value="true" /></code> |

Special settings for E-commerce

You can use the following keys when you need to achieve specific behavior of the [E-commerce](#) module:

| Key | Description | Sample Value |
|---------------------------------|---|--|
| CMSShoppingCartExpirationPeriod | Number of days after which E-commerce shopping cart content is deleted from the database. It's used for deleting unused shopping carts of anonymous users that are stored in the database with ID stored in the browser cookie. | <code><add key="CMSShoppingCartExpirationPeriod" value="60" /></code> |
| CMSUseCurrentSKUData | Indicates if the E-commerce module should use the price from the existing order items or from the current SKU data when re-calculating the order. | <code><add key="CMSUseCurrentSKUData" value="true" /></code> |
| CMSEnableOrderItemEditing | If true, order item parameters, such as order item name and order item unit price, can be modified when editing an existing order. | <code><add key="CMSEnableOrderItemEditing" value="true" /></code> |
| CMSUseMetaFileForProductImage | Indicates if meta files should be used for product images in E-commerce. | <code><add key="CMSUseMetaFileForProductImage" value="true" /></code> |
| CMSUseCustomEcommerceProviders | Specifies whether to use custom E-commerce provider handlers. See this topic for more details. | <code><add key="CMSUseCustomEcommerceProviders" value="true" /></code> |

Special settings for Event logging

You can use the following keys when you need to achieve specific behavior of the Event log:

| Key | Description | Sample Value |
|-------------------|---|---|
| CMSLogEvents | Indicates if logging events in the Event log is enabled. | <code><add key="CMSLogEvents" value="true" /></code> |
| CMSLogMetadata | Indicates if logging of metadata events in the Event log is enabled. | <code><add key="CMSLogMetadata" value="true" /></code> |
| CMSLogKeepPercent | Coefficient for Event log deletion, keeps the specified percentage of log items alive and deletes the log by batch when the set | <code><add key="CMSLogKeepPercent" value="10" /></code> |

| | | |
|----------------------------|--|--|
| | percentage is exceeded. | |
| CMSLogEventsToFile | If true, events are also logged into the ~\App_data\logevents.log file. | <code><add key="CMSLogEventsToFile" value="true" /></code> |
| CMSLogFieldChanges | If true, details about particular object changes are logged with the changes in Event log. | <code><add key="CMSLogFieldChanges" value="true" /></code> |
| CMSLogDocumentFieldChanges | If true, details about particular document changes are logged with the changes in Event log. | <code><add key="CMSLogDocumentFieldChanges" value="true" /></code> |

Special settings for file exporting

You can use the following keys when you want to configure [file exporting](#):

| Key | Description | Sample Value |
|--------------------------|--|--|
| CMSExportExcludedFolders | Specifies which folders will be filtered from being included in Files folder of the export package. More info here . | <code><add key="CMSExportExcludedFolders" value="test*;cms*" /></code> |
| CMSExportExcludedFiles | Specifies which files will be filtered from being included in the Files folder of the export package. More info here . | <code><add key="CMSExportExcludedFiles" value="test*;cms*" /></code> |

Special settings for item listing

You can use the following keys when you want to configure item listing:

| Key | Description | Sample Value |
|------------------------------|--|--|
| CMSDefaultListingFilterLimit | Required number of items listed in a listing across the whole UI for a filter to be displayed. If the number of listed items is lower than this value, the filter is not displayed. If it is larger, the filter is displayed. The default value is 25. | <code><add key="CMSDefaultListingFilterLimit" value="40" /></code> |
| CMSDefaultListingPageSize | Initial page size (the <i>Items per page</i> setting) of listings across the whole UI. The default value is 25. | <code><add key="CMSDefaultListingPageSize" value="50" /></code> |
| ShowFirstLastButtons | If enabled, the first and last page buttons are included in pagers of listings with large numbers of items in the UI. If disabled, the control is hidden in the listings.
If both this and the <i>ShowDirectPageControl</i> keys are disabled, only <i>TopN</i> items are loaded, while <i>TopN = PageSize * (currentPageIndex + CurrentPagesGroupSize)</i> . | <code><add key="ShowFirstLastButtons" value="false" /></code> |

| | | |
|-----------------------|--|---|
| ShowDirectPageControl | If enabled, direct page control is included in pagers of listings with large numbers of items in the UI. If disabled, the control is hidden in the listings. If both this and the <i>ShowFirstLastButtons</i> keys are disabled, only <i>TopN</i> items are loaded, while $TopN = PageSize * (currentPageIndex + CurrentPagesGroupSize)$. | <pre><add key=" ShowDirectPageControl" value="false" /></pre> |
|-----------------------|--|---|

Special settings for query string parameter names

You can use the following keys to change certain query string parameter names:

| Key | Description | Sample Value |
|---------------------------|--|--|
| CMSLanguageParameterName | Changes the name of the 'lang' query string parameter so that you get <i>Home?sprache=de-de</i> instead of <i>Home?lang=de-de</i> . | <pre><add key=" CMSLanguageParameterName" value="sprache" /></pre> |
| CMSAliasPathParameterName | Changes the name of the 'aliaspath' query string parameter so that you get <i>products.aspx?ap=/products/myproduct</i> instead of <i>products.aspx?aliaspath=/products/myproduct</i> . | <pre><add key=" CMSAliasPathParameterName" value="ap" /></pre> |

Special settings for transaction isolation

You will use the following settings only in special cases when you encounter problems with deadlocks when updating a document:

| Key | Description | Sample Value |
|---|---|--|
| CMSTransactionIsolationLevel | Isolation level for explicit transactions. | <pre><add key=" CMSTransactionIsolationLevel" value="ReadCommitted" /></pre> |
| CMSDefaultIsolationLevel | Isolation level for all queries, even without transactions. It's used only if the value is not <i>ReadCommitted</i> . The settings below modify the behavior for <i>ReadUncommitted</i> . | <pre><add key=" CMSDefaultIsolationLevel" value="ReadUncommitted" /></pre> |
| CMSUseDefaultIsolationLevelOnlyWithOpenTransactions | If true, the default isolation level is used only when some transaction is already running. | <pre><add key=" CMSUseDefaultIsolationLevelOnlyWithOpenTransactions" value="true" /></pre> |
| CMSAllowSimultaneousTransactions | If false, there can be only one transaction running at the same time. | <pre><add key=" CMSAllowSimultaneousTransactions" value="true" /></pre> |

| | | |
|------------------------------|--|---|
| CMSMaxTransactionWaitTimeout | Indicates how many seconds a transaction should wait for completion of another running transaction if simultaneous transactions are not allowed. | <code><add key="CMSMaxTransactionWaitTimeout" value="1" /></code> |
|------------------------------|--|---|

Special settings for the scheduler

By adding the following keys to your web.config, you can configure the [Scheduler](#):

| Key | Description | Sample Value |
|-----------------------------------|--|---|
| CMSUseAutomaticScheduler | Indicates if automatic scheduling should be used. The default value is false.

Automatic scheduler periodically requests the cmspages/scheduler.aspx page which ensures that scheduled tasks are processed automatically.

If it's turned off (false - by default), the tasks are processed at the end of page request. If it's true, the cmspages/scheduler.aspx page is requested periodically. | <code><add key="CMSUseAutomaticScheduler" value="false" /></code> |
| CMSRunSchedulerWithinRequest | If true (the default value), the scheduler is executed within the standard EndRequest of a page. If false, the scheduler is executed via the cmspages/scheduler.aspx page. | <code><add key="CMSRunSchedulerWithinRequest" value="false" /></code> |
| CMSSchedulerURL | URL of the physical location of the scheduler.aspx page.
The default value is <code>~/cmspages/scheduler.aspx</code> | <code><add key="CMSSchedulerURL" value="https://domain/cmspages/scheduler.aspx" /></code> |
| CMSSchedulerAcceptAllCertificates | If true, all security certificates (including not valid ones) will be accepted when accessing the scheduler.aspx page via a secured protocol. | <code><add key="CMSSchedulerAcceptAllCertificates" value="true" /></code> |
| CMSSchedulerUserName | User name under which scheduler.aspx should be accessed (e.g. when using windows authentication). | <code><add key="CMSSchedulerUserName" value="office/myname" /></code> |
| CMSSchedulerPassword | Password for the user name under which scheduler.aspx should be accessed. | <code><add key="CMSSchedulerPassword" value="mypassword123" /></code> |

Special settings for Security

By adding the following keys to your web.config, you can configure certain [Security](#) options:

| Key | Description | Sample Value |
|-----|-------------|--------------|
|-----|-------------|--------------|

| | | |
|--------------------------|--|--|
| CMSCheckParameters | Indicates if parameters checking is allowed. Read this topic for more details. | <code><add key="CMSCheckParameters" value="true" /></code> |
| CMSReportCheckParameters | If true, an exception reporting the parameters is thrown when the parameters do not match. Read this topic for more details. | <code><add key="CMSReportCheckParameters" value="true" /></code> |

Special settings for User interface cultures

By adding the following keys to your web.config, you can configure [UI cultures](#):

| Key | Description | Sample Value |
|-----------------------------------|--|--|
| CMSDefaultSpellCheckerCulture | Specifies the default culture of the built-in spell-checker. This culture is used when the dictionary for the currently selected content culture is not found. | <code><add key="CMSDefaultSpellCheckerCulture" value="en-US" /></code> |
| CMSShowLogonCultureSelector | Indicates if the user interface logon page should display a drop-down list with available user interface languages. | <code><add key="CMSShowLogonCultureSelector" value="false" /></code> |
| CMSDefaultUICulture | Specifies the default UI culture. If you use this key, you also need to rename the <code>~\CMSResources\CMS.resx</code> file to <code>CMS.en-us.resx</code> and the <code>CMS.en-nz.resx</code> file to <code>CMS.resx</code> . This is needed because the <code>CMS.resx</code> file is used when the <i>(default)</i> option is selected in users' <i>Preferred user interface culture</i> . | <code><add key="CMSDefaultUICulture" value="en-nz" /></code> |
| CMSUseSQLResourceManagerAsPrimary | Changes the priority of used localization resource strings to: <ol style="list-style-type: none"> 1. custom.resx 2. cms.resx 3. database (Site Manager -> Development -> UI Cultures) | <code><add key="CMSUseSQLResourceManagerAsPrimary" value="false" /></code> |
| UICulture | Specifies the default user interface culture. En-us is the default one, which can be overridden by adding this key. | <code><add key="UICulture" value="en-us" /></code> |

Special settings for file synchronization on web farms

By adding the following keys to your web.config, you can enable or disable [web farm synchronization](#) of certain kind of files stored in the file system:

| Key | Description | Sample Value |
|----------------------|--|---|
| CMSWebFarmEnabled | Indicates if Web farms are enabled (true) or not (false). See this topic for more details. | <code><add key="CMSWebFarmEnabled" value="true" /></code> |
| CMSWebFarmServerName | Code name of the web farm server. This | <code><add key="</code> |

| | | |
|---------------------------------------|---|--|
| | value is used for native web farm synchronization support. | <code>CMSWebFarmServerName "</code>
<code>value="server1" /></code> |
| CMSWebFarmSynchronizeFiles | General key determining if files should be synchronized (true) or not (false). This key enables synchronization of: <ul style="list-style-type: none"> • Attachments • Meta files • Media files • BizForm files • Avatars • Forum attachments | <code><add key="</code>
<code>CMSWebFarmSynchronizeFiles" value="true" /></code> |
| CMSWebFarmSynchronizeAttachments | Enables/disables synchronization of attachments. | <code><add key="</code>
<code>CMSWebFarmSynchronizeAttachments" value="true" /></code> |
| CMSWebFarmSynchronizeMetaFiles | Enables/disables synchronization of meta files. | <code><add key="</code>
<code>CMSWebFarmSynchronizeMetaFiles" value="true" /></code> |
| CMSWebFarmSynchronizeMediaFiles | Enables/disables synchronization of media files. | <code><add key="</code>
<code>CMSWebFarmSynchronizeMediaFiles" value="true" /></code> |
| CMSWebFarmSynchronizeBizFormFiles | Enables/disables synchronization of BizForm files. | <code><add key="</code>
<code>CMSWebFarmSynchronizeBizFormFiles" value="true" /></code> |
| CMSWebFarmSynchronizeAvatars | Enables/disables synchronization of Avatars. | <code><add key="</code>
<code>CMSWebFarmSynchronizeAvatars" value="true" /></code> |
| CMSWebFarmSynchronizeForumAttachments | Enables/disables synchronization of forum attachments. | <code><add key="</code>
<code>CMSWebFarmSynchronizeForumAttachments" value="true" /></code> |
| CMSWebFarmSynchronizeDeleteFiles | Enables/disables synchronization of deleted files. | <code><add key="</code>
<code>CMSWebFarmSynchronizeDeleteFiles" value="true" /></code> |
| CMSWebFarmMaxFileSize | If CMSWebFarmSynchronizeFiles is enabled, you can limit the maximal size of synchronized files using this key. The value is entered in kiloBytes and files larger than this value will not be synchronized. | <code><add key="</code>
<code>CMSWebFarmMaxFileSize" value="1024" /></code> |
| CMSWebFarmUpdateWithinRequest | If true, web farm servers are updated with changes made on the other servers once per request. If false, web farm servers will be updated based on the Synchronize web farm changes scheduled task - recommended for high-traffic sites. | <code><add key="</code>
<code>CMSWebFarmUpdateWithinRequest" value="false" /></code> |

Connection string

The database used by Kentico CMS engine is specified by the connection string `CMSCConnectionString` in the `/configuration/connectionStrings` section. Here's an example of such connection string:

```
<add name="CMSCConnectionString" connectionString="Persist Security Info=False;
database=CMS;server=myserver;user id=sa;password=mypassword123;Current
Language=English;Connection Timeout=120;" />
```

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