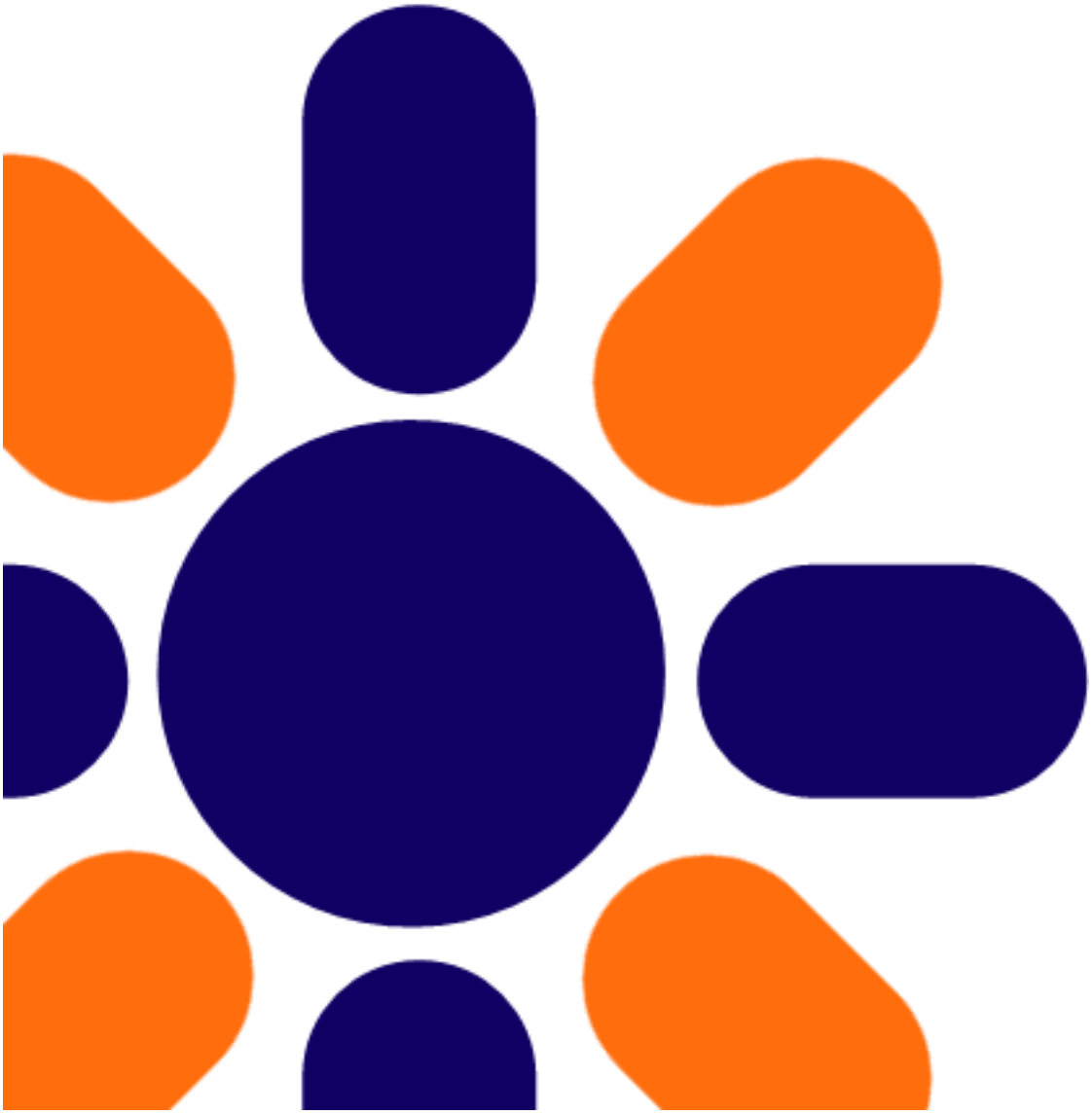
Kentico CMS 5.0 Developer's Guide



© 2009 Kentico Software

Table of Contents

Introduction 18

Introduction ... 18
Where do I get help? ... 20
Version history ... 20

Kentico CMS Overview 58

Should I use Kentico CMS? ... 58
How does it really work? ... 61
Where is the content stored? ... 63
How do I edit content? ... 65
How do I develop a web site? ... 67

Installation and deployment 70

Installation overview ... 70
System requirements ... 71
Setup (KenticoCMS.exe) ... 73
Web Installer ... 74
Database setup ... 83
New site wizard ... 91
Deployment to the live server ... 102
Installation on shared hosting server ... 103
Installation in medium-trust environment ... 104
System backup and recovery ... 105
Uninstallation ... 105
SMTP server configuration ... 105
Additional configuration tasks ... 108
- Overview ... 108
- Configuration of custom URL extensions (.html or other) ... 108
- Configuration for Medium Trust environment ... 111
- Creating a virtual directory ... 114
- Configuring Application Pools ... 119
- Setting up html extension for IIS7 ... 121
- Configuration of extension-less URLs ... 122
- Windows 7 and Windows Server 2008 R2 ... 128

Configuration of full-text search in files ... 134
- Configuration of full-text search in files ... 134
- Configuration on MSSQL 2000 ... 135
- Configuration on MSSQL 2005 and 2008 ... 140
- Configuration using SQL on MSSQL 2005 Express Edition ... 142

© 2009 Kentico Software

Searching PDF files ... 142
Troubleshooting installation issues ... 143
Troubleshooting overview ... 143
SQL Server connection problems ... 143
Disk permissions problems ... 150
ASP.NET not working on Windows Server 2003 ... 163

Visual Studio Integration 165
Opening the project ... 165
Adding Kentico CMS Controls to the Toolbox ... 167
Debugging ... 169
Pre-compilation (Publish function) ... 171
Visual Source Safe and Team Development ... 174
Opening VS2005 project in VS2008 ... 175

Managing sites and settings 177
Site Management Overview ... 177
Managing sites ... 178
Starting and stopping sites ... 179
Creating a new site ... 179
Export and Import ... 180
Export and Import Overview ... 180
Exporting a site ... 181
Exporting objects ... 187
Exporting single objects ... 192
Importing a site or objects ... 194
Folder structure and import/export ... 201
Excluding files and folders from export ... 202
Import/export troubleshooting ... 203
Configuration on W2008/IIS7 ... 203
Deleting sites ... 204
Creating web templates ... 206
License management ... 207
Managing site settings ... 208
Configuring multiple web sites ... 209
Multiple web sites on a single domain (in subfolders) ... 221
Configuring nested web sites ... 222
API Examples ... 225

Content management 227
Overview ... 227
Organizing pages, files and documents ... 228
Document types ... 231
Editing content ... 231

© 2009 Kentico Software

Creating a new page ... **231**
Creating a new structured document ... **235**
Previewing documents ... **237**
Creating a linked document ... **238**
Document properties ... **240**
Overview ... **240**
General ... **241**
URLs ... **241**
Template ... **243**
Metadata ... **243**
Categories ... **245**
Menu ... **246**
Workflow ... **248**
Versions ... **248**
Related docs ... **248**
Linked docs ... **250**
Security ... **250**
Attachments ... **252**
Languages ... **253**
File Management ... **254**
File management overview ... **254**
Document Attachments ... **255**
Overview ... 255
Example: Unsorted attachments ... 257
Example: Grouped attachments ... 260
Available web parts ... 266
Available inline controls ... 268
Handling attachments in transformations ... 269
Using the File field ... 275
Temporary attachments handling ... 277
Attachment names ... 278
Settings ... 278
Handling images ... **279**
Image editor ... 279
Resizing images on upload ... 281
Using the Media selection control ... **282**
Where the files are stored ... **285**
Files-related settings ... **286**
WYSIWYG editor ... **288**
Overview ... **288**
Insert image or media ... **290**
Overview ... 290
File sources ... 291
View modes ... 296
Inserting images ... 299
Inserting flash ... 302
Inserting audio/video ... 305
Inserting image or media from Web ... 307
Quickly insert image ... **308**
Insert link ... **310**
Overview ... 310
Link properties ... 311
Links to content within the CMS ... 312

© 2009 Kentico Software

Links to Web ... 315
Links to anchors ... 316
Mailto links ... 317
Insert YouTube video ... 318
Editing inserted items ... 320
Copy & Paste from Microsoft Word ... 323
Defining custom toolbars ... 325
Defining styles ... 327
Dialogs configuration ... 329
Dialogs security ... 332
Content scheduling ... 335
Using the built-in spell-checker ... 336
Accessing content using .NET code (API) ... 337
Permissions and security ... 337
FAQ ... 338

Workflow and versioning 340

Workflow overview ... 340
Defining a workflow ... 341
Using workflow ... 344
E-mail notification in workflow process ... 347
Versioning and rollback ... 348
Content locking ... 349
Managing workflow using .NET code (API) ... 350

Security, permissions and personalization 352

Security model ... 352
User management ... 353
Role management ... 357
Authentication ... 358
Configuring Windows authentication (Active Directory) ... 360
Configuring mixed mode authentication ... 365
Integrating authentication with external systems ... 366
Single sign-on ... 367
Permissions for modules and documents ... 368
Secured web site areas ... 372
Displaying personalized content ... 375
SSL (HTTPS) support ... 380
Managing security using .NET code (API) ... 381
Configuration of allowed request parameters ... 381
Cross site scripting (XSS) ... 382

Web development overview 385

© 2009 Kentico Software

The role of web developer ... 385
What is a page template ... 386
Portal templates versus ASPX templates ... 386

Development with Portal engine 390

Portal engine overview ... 390
Creating a new page template ... 392
Re-using an ad-hoc page template ... 397
Page layouts ... 400
The master page concept ... 403
Editing the master page ... 405
Visual inheritance ... 406
Content tree and page templates ... 411
Managing page template catalog ... 414
Cloning and modifying a page template ... 415
Using and configuring web parts ... 417
Web part binding (obsolete) ... 419
Adding custom code to web parts (obsolete) ... 426
Common web part properties ... 429
Path and macro expressions in web part properties ... 435
Adding custom code to the portal page template ... 435
Displaying data from external database or Web Service ... 438

Development with ASPX page templates 443

How it works ... 443
Creating a new ASPX page template ... 445
Creating ASPX master pages ... 451
Adding custom code to the ASPX page template ... 454
Combining ASPX templates and portal engine templates ... 455
Integration with your existing ASP.NET application ... 457
Displaying data from external database ... 459

CSS stylesheets and design 462

CSS Overview ... 462
App themes ... 464
Printer friendly CSS styles ... 465
Print page ... 466

Document types and transformations 476

Document type overview ... 476
Defining a new document type ... 477

© 2009 Kentico Software

Writing transformations ... 485
Adding custom functions to transformations ... 489
Context menus in transformations ... 491

Form controls 495

Form controls overview ... 495
Developing form controls ... 497

Inline controls 506

Inline controls overview ... 506
How to develop inline controls ... 506

Web part development 512

Web part overview ... 512
Developing web parts ... 514
Modifying web part behavior ... 521
Customizing web part layout ... 521
Setting web part properties dynamically in your code ... 523
Modifying the code of standard web parts ... 524
Web part inheritance ... 525
AJAX support ... 527
Web part containers ... 529
Containers overview ... 529
Creating web part containers ... 530
Data source web parts ... 531
Using DataSource web parts ... 531
Problems with XMLDataSource ... 536
Developing DataSource web parts ... 537

Developing custom modules 543

Custom modules ... 543

Multilingual and international support 549

Configuring multiple languages ... 549
Default language selection ... 553
Languages and URLs ... 553
International and RTL support ... 554
Localization Expressions ... 558
Translation management ... 558
Overview ... 558
Culture-dependent workflow scopes ... 558
Translation status overview ... 560
Language-bound editors ... 562

© 2009 Kentico Software

Caching and performance 564

Performance overview ... 564
Caching options ... 565

Membership and User registration 570

Available registration web parts ... 570
Registration form web part ... 570
Creating a custom registration form ... 570
Registration approval and double opt-in ... 575
Shared user accounts ... 579
Custom fields visibility ... 581
How it works ... 581
Enabling visibility controls ... 583
Use in custom form layouts ... 586
Configuring the web parts ... 587
Windows Live ID ... 588
Overview ... 588
Registering your application ... 589
Settings ... 590
Available web parts ... 591
Badges ... 593
Badges ... 593
Defining badges ... 593
Assigning badges to users ... 594
Activity points ... 595
Available form controls ... 595

Microsoft Silverlight 597

Introduction ... 597
Adding Silverlight application to your site ... 598
IIS configuration ... 599

API programming and Kentico CMS internals 602

API Overview ... 602
CMSContext class ... 602
TreeHelper class ... 603
Managing documents ... 604
Content management internals ... 604
Select document(s) ... 605
Create document ... 607
Update document ... 609
Delete document ... 609
Copy document ... 610
Move document ... 610
Using transactions when managing documents ... 610
Create linked document ... 613

© 2009 Kentico Software

Delete linked document ... 615
Managing attachments and files (cms.file) ... 615
Managing attachments ... 615
Managing files (cms.file) ... 617
Managing documents with workflow ... 617
Versioning internals ... 617
Workflow internals ... 618
Updating a versioned document ... 621
Managing workflow schema ... 624
A complete example ... 627
Security management ... 635
Security Internals Overview ... 635
Managing users ... 636
Setting user password ... 637
Managing roles ... 638
Managing user roles ... 640
Authenticating user ... 642
Checking user permissions ... 642
Site management, import and export ... 645
Creating a new web site ... 645
Import and export of the web site ... 646
Update web site properties ... 647
Delete web site ... 649
Custom Providers ... 649
Custom Providers Overview ... 649
Custom Data Provider ... 649
Custom E-mail Provider ... 651
Custom Search Provider ... 653
Data layer ... 656
Overview ... 656
Code examples ... 657
Pre- and post-processing queries ... 659
Global events and their handling ... 661
Event handling overview ... 661
Data handler (CustomDataHandler class) ... 664
Exception handler (CustomExceptionHandler class) ... 665
Security handler (CustomSecurityHandler class) ... 667
TreeNode handler (CustomTreeNodeHandler class) ... 668
Workflow handler ... 671
Customizing system objects with custom data or objects ... 673
Customizing the administration interface and web application events ... 678
Using API and CMS Controls outside CMS project ... 682

Import Utilities 692
Import overview ... 692
SQL import ... 692
How to use the SQL import utility ... 692

© 2009 Kentico Software

Page processing and URLs 704

Overview ... 704
URL rewriting ... 704
Multiple document aliases ... 705
URL format and configuration ... 708
Wildcard URLs ... 709
Linking pages and files ... 711
GetFile.aspx parameters ... 712
Output filters ... 712
URLs related settings ... 713
Google Sitemap ... 714

System tables and custom fields 717

System tables ... 717
Custom document data ... 717

Site settings and web.config parameters 719

Settings overview ... 719
Web.config parameters ... 720

E-mail templates 730

E-mail templates ... 730

Scheduler 733

Scheduler overview ... 733
Scheduling a custom code ... 734

Rebranding 738

How to rebrand Kentico CMS with your name and design ... 738
Changing a logo in the header ... 738
Removing the log-on bar ... 743
Changing logo of CMS Desk and CMS Site manager ... 746
Renaming resource strings ... 747

Debugging & Optimalization 749

SQL queries debugging ... 749
System error notifications ... 752

Modules 754

Abuse report ... 754
Abuse report module overview ... 754
Abuse reports management ... 754
Using the Abuse report and In-line abuse report web parts ... 755

© 2009 Kentico Software

Using the In-line abuse report web part in transformations ... 756
Security ... 759
Alternative forms ... 761
Alternative forms module overview ... 761
Creating an alternative form ... 761
Joining two classes into one form ... 765
Automatically used alternative forms ... 766
Avatars ... 766
Overview ... 766
Changing user avatars ... 766
Changing group avatars ... 770
Managing avatars ... 772
Settings ... 775
Bad words ... 775
Bad words module overview ... 775
Enabling the module ... 775
Defining a bad word ... 777
Possible actions ... 780
Security ... 781
Banned IPs ... 782
Banned IPs module overview ... 782
Banning an IP address ... 782
Security ... 785
BizForms ... 786
BizForms module overview ... 786
Creating a new form ... 786
Displaying form on the web site ... 789
Sending e-mails ... 790
Defining custom form layout ... 792
Managing data ... 793
Security ... 793
BizForms API and internals ... 795
Adding custom actions to a BizForm form ... 799
Blogs ... 799
Blogs overview ... 799
Adding a blog to your site ... 801
Adding posts to your blog ... 804
Moderating comments ... 806
Blog layout and design ... 808
On-site management via User contributions ... 809
Settings ... 812
Security ... 813
Managing blogs using Kentico CMS API ... 814
Trackbacks ... 817
Trackbacks overview ... 817
Enabling trackbacks ... 820
Blog comments notifications ... 822
Who can be notified ... 822
User subscriptions ... 823
E-mail templates ... 826
Booking system ... 828
Booking system overview ... 828

© 2009 Kentico Software

Publishing the events ... 828
Managing attendees ... 830
Security ... 831
Categories ... 832
Categories module overview ... 832
Creating a new category ... 832
Adding a document to a category ... 837
Using the Category list web part ... 838
Content rating ... 840
Overview ... 840
How to enable content rating on the web site ... 840
Other involved web parts ... 843
Displaying ratings in transformations ... 843
Content staging ... 844
Overview ... 844
Content staging configuration ... 845
Synchronizing the content ... 847
Using X.509 authentication ... 849
Using API to synchronize documents ... 852
Configuration of automatic synchronization ... 853
Security ... 854
Custom tables ... 855
Custom tables module overview ... 855
Managing custom tables ... 855
Adding items into custom tables ... 860
Available web parts ... 863
Transformations for custom tables ... 863
Security ... 866
API examples ... 868
E-commerce ... 871
Overview ... 871
E-mail queue ... 872
Overview ... 872
Administrating the e-mail queue ... 872
Sending mass e-mails ... 874
Settings ... 877
Event calendar ... 878
Event calendar module overview ... 878
Using the web part ... 878
Design and Styles ... 880
File import ... 881
File import ... 881
Security ... 883
Forums ... 884
Forums module overview ... 884
Creating a new forum ... 885
Managing forum posts ... 887
Subscriptions ... 888
Forum moderation ... 890
Publishing pre-defined forum on the web ... 892
Adding ad-hoc forum to the web ... 893

© 2009 Kentico Software

Customizing forum design ... 894
Forum post attachments ... 894
BBCode support ... 897
Forum favorites ... 898
Friendly URLs ... 899
Security ... 900
Settings ... 902
Friends ... 903
Overview ... 903
Friends management ... 903
Available e-mail templates ... 906
Available web parts ... 907
Examples of use ... 910
Settings ... 911
Security ... 912
GeoMapping ... 913
GeoMapping overview ... 913
Example: Displaying offices on the map ... 913
Groups ... 918
Overview ... 918
Groups management ... 918
Editing a group ... 919
Enabling users to create groups ... 925
How site users create a new group ... 927
Security ... 928
Settings ... 930
Image gallery ... 931
Overview ... 931
Available web parts ... 931
Available page templates ... 937
Importing images ... 938
Transformations ... 938
Design and styles ... 941
Media libraries ... 942
Overview ... 942
Creating media libraries ... 942
Uploading files into media libraries ... 943
Displaying Media gallery content on your site ... 949
Support in WYSIWYG editor ... 951
Available web parts ... 951
Supported file types ... 951
Defining custom media types ... 953
Configuring maximal uploaded file size ... 956
Secured vs. Non-secured libraries ... 958
Defining custom media libraries folder ... 965
Names of files and previews ... 966
Site restarts ... 967
Settings ... 968
Security ... 969
Messaging ... 972
Messaging module overview ... 972
Adding the messaging functionality ... 972

© 2009 Kentico Software

Security ... **974**
Design and Styles ... **974**
Settings ... **977**
Messaging API and Internals ... **977**
Database tables and API classes ... 977
Creating a new message ... 978
Deleting all messages ... 978
Adding a user to contact list ... 979
Removing a user form ignore list ... 979
Message boards ... **980**
Overview ... **980**
Using the Message board web part ... **981**
Administrating message boards ... **983**
Editing message boards ... **985**
Setting Board base URL ... **989**
Settings ... **990**
Security ... **990**
Message board notifications ... **993**
Who can be notified ... 993
User subscriptions ... 993
E-mail templates ... 996
Newsletters ... **998**
Newsletter module overview ... **998**
Creating a static newsletter ... **999**
Creating a dynamic newsletter ... **1004**
Integrating newsletters into the site ... **1009**
Newsletter templates ... **1009**
Troubleshooting ... **1011**
Subscriber import and export ... **1012**
Subscriber management ... **1013**
Security ... **1015**
Notifications ... **1016**
Overview ... **1016**
Creating a notification message template ... **1016**
Subscribing users to content changes notifications ... **1019**
Managing users' notifications ... **1023**
Custom notification gateway ... **1024**
Overview ... 1024
Custom notification gateway form ... 1025
Custom notification gateway class ... 1028
Registering a custom gateway ... 1031
Using the gateway on your site ... 1033
Settings ... **1034**
Security ... **1034**
On-line users ... **1035**
Overview ... **1035**
Enabling the module ... **1035**
On-line users tab ... **1036**
On-line users web part ... **1039**
API ... **1040**
Polls ... **1041**
Overview ... **1041**

© 2009 Kentico Software

Managing Polls ... **1041**
Publishing Polls ... **1042**
Multilingual support ... **1043**
Security ... **1044**
Design and styles ... **1045**
Polls API and Internals ... **1046**
Database tables and API classes ... 1046
Creating a new poll ... 1046
Updating an existing poll ... 1047
Add a new answer ... 1047
Change the number of votes ... 1048
Add authorized roles ... 1049
Deleting a Poll ... 1049
Deleting a Poll Answer ... 1051
Reporting ... **1052**
Overview ... **1052**
Managing report categories ... **1052**
Creating a new report ... **1053**
Defining report parameters ... **1060**
Saving report ... **1062**
Displaying report on a web site ... **1062**
Security ... **1063**
Reporting internals and API ... **1064**
Database tables and API classes ... 1064
Saving current status of the report ... 1065
Getting HTML code of a saved report ... 1066
RSS feeds ... **1067**
Setting up a RSS Feed ... **1067**
Smart search ... **1069**
Overview ... **1069**
How it works ... **1069**
Enabling Smart search indexing ... **1070**
Creating an index ... **1070**
Defining index content ... **1074**
Document-level search settings ... **1078**
Available web parts ... **1080**
Search syntax ... **1083**
Using the Smart search filter ... **1085**
Related scheduled tasks ... **1086**
Searching attachments ... **1086**
Search results in transformations ... **1087**
Security ... **1088**
SQL Search overview ... **1088**
Tags ... **1090**
Tags module overview ... **1090**
Tagging documents ... **1090**
Managing tag groups ... **1093**
Using the Tag cloud web part ... **1095**
Time zones ... **1098**
Overview ... **1098**
Enabling the module ... **1098**
Managing time zones ... **1099**

© 2009 Kentico Software

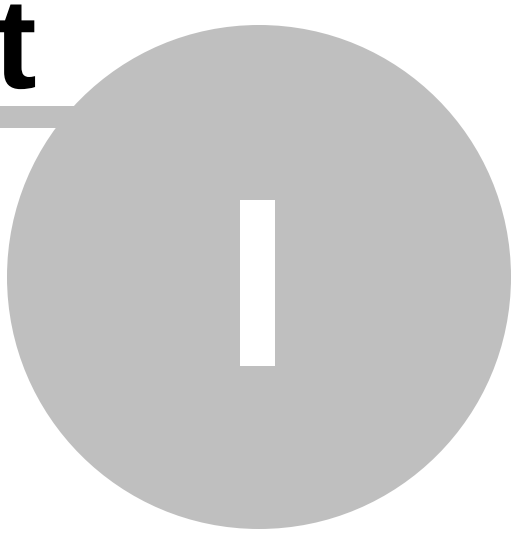
Daylight saving time ... 1100
Use in web parts ... 1102
Setting user's time zone ... 1103
Displaying correct time in your code ... 1104
User contributions (Wiki) ... 1106
User contributions overview ... 1106
Example: Publishing community news ... 1106
Example: Editing partner profile ... 1111
Security ... 1116
User contributions and API ... 1116
Web analytics ... 1117
Web Analytics Overview ... 1117
Available reports ... 1118
Tracking marketing campaigns ... 1119
Tracking conversions ... 1120
Configuration options ... 1123
Security ... 1124
How it works ... 1124
Creating custom reports ... 1125
Web farm synchronization ... 1131
Web farm support overview ... 1131
Defining web farm servers ... 1132

Appendix A - Macro expressions 1135

Appendix B - Path expressions 1144

© 2009 Kentico Software

Part



Introduction

1 Introduction

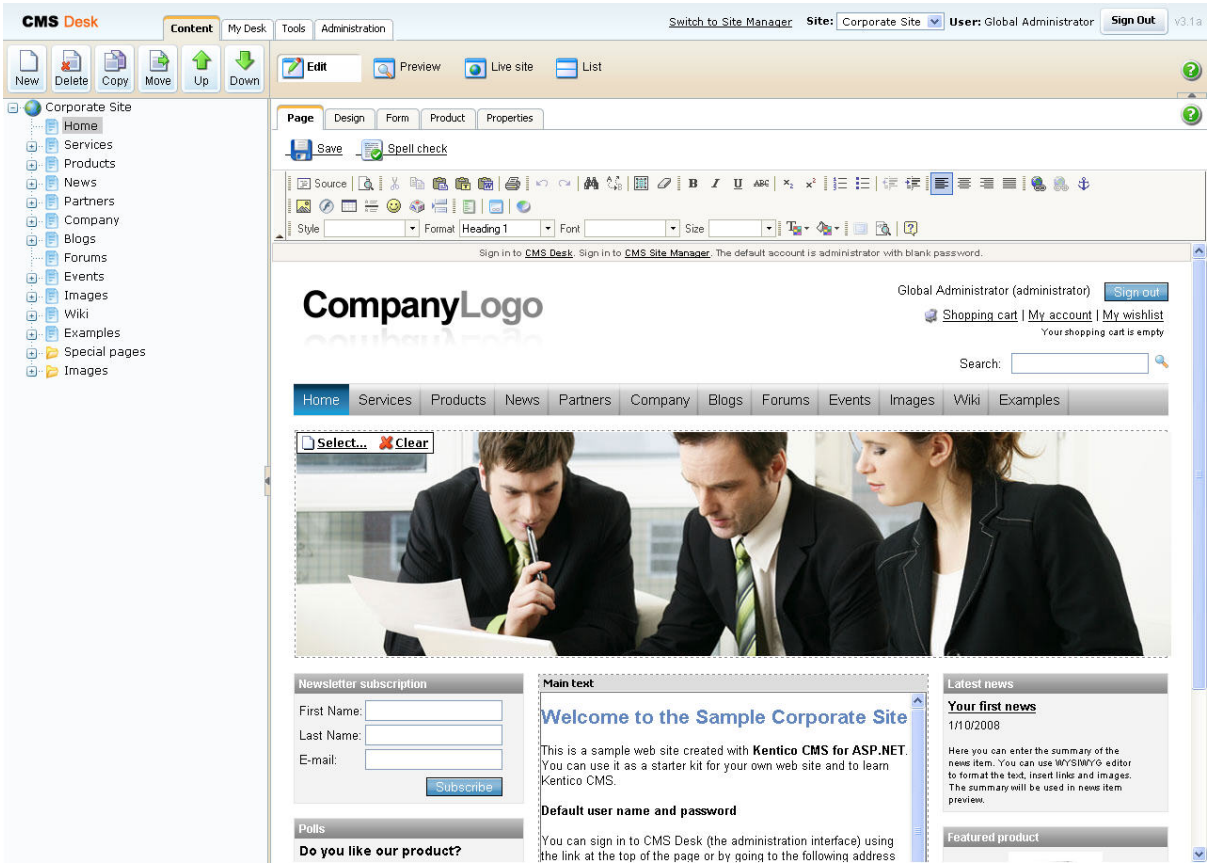
1.1 Introduction



Thank you for using Kentico CMS, the content management system for ASP.NET developers. Kentico CMS 0.0.0 empowers developers in creation of dynamic web sites. 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 web site.
- 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

© 2009 Kentico Software



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

© 2009 Kentico Software

1.2 Where do I get help?

If you need help, please visit www.kentico.com/support.aspx and www.kentico.com/DevNet.aspx where you can find:

- Support forums
- Knowledge base
- Technical articles

1.3 Version history

August 17, 2009 - Version 4.1

New:

- New concepts of document attachments
  - Multiple files can be attached to any document
  - Groups of attachments with attachment list fields
- Improved usability of the WYSIWYG editor
  - Easier insertion of images, links, video and flash.
  - New dialogs
- New smart search engine
  - Full-text search based on Lucene .NET
- Improved support for translation to other languages.
- Architecture: Related object can now be attached to CMS objects, shipped with them and provide them with values (in case that the object is IDataContainer).
- Avatars: GIF support (without conversion to JPEG).
- CMS Desk: Automatic document extensions (the "Use custom URL extensions" setting)
- Forums: Forum breadcrumbs web part.
- General: Google site map converted to a server control.
- General: Possibility of disabling administration UI using a key in web.config.
- General: Possibility of customizing alias path and language parameters using keys in web.config.
- General: Preserving postback data when login dialog is shown (after the login timeout).
- General: Support for web page compression (GZip) using a key in web.config.
- General: New OnBeforeExecuteQuery and OnAfterExecuteQuery handlers.
- General: Web slices and Search accelerator.
- Import/Export: Possibility to disable export/import of tasks on a global level.
- Import/Export: Excluding of specified folders and files (using web.config keys).
- Media Library: Images in a media library can be edited using a built-in Image Editor.
- Media Library: User can define custom root folder of the media library.
- Performance: New partial caching options.
- Performance: Improved full page caching.
- Performance: Further performance optimizations.
- URL Rewriting: Support for product URLs in the ~/getproduct/<skuguid>/<safe skuname>.<extension> format.

Bug fixes:

- ASPX Templates: First load of the page could cause issues with loading of the transformations.
- Banned IPs: The LogonMiniForm web part allowed banned users to login.
- BizForms: Images could not be inserted in Custom Form Layout using the WYSIWYG editor and

© 2009 Kentico Software

other minor issues fixed.

- BizForms: When a BizForm was inserted as inline control in editable text, some controls on that form might have lost their view state after postback in specific cases.
- Categories: The Multiple Category Selector form control did not work properly in Form Engine when paging was displayed.
- Content staging: Number of existing items in a BizForm was set to zero after synchronization.
- Content staging: Changes of transformations or queries were not logged.
- Content staging: Fixed synchronization of object counts.
- Content staging: Complete synchronization caused assigning of all cultures to a site.
- Controls: Localized controls displayed text in default culture (en-us).
- Controls: Word wrap option wasn't applied; Expand sub-tree wasn't applied if root node was hidden.
- Controls: Tree view - root text property was not applied
- Controls: Tree view - Expand and Collapse tooltip didn't encode HTML.
- Cultures: When there was no translation for the current culture, resource string name was displayed instead of translation in the default culture.
- CMS Desk: Minor issues with RTL languages and design in various browsers.
- CMS Desk: User in CMS Editor role (without global admin permissions) could not delete documents using the List mode, the action caused an exception.
- CMS Site Manager: Site manager trimmed "www" from domain names, which could cause problems with the scheduler in case that IIS was not configured for the domain without "www".
- General: GetFile.aspx page didn't work properly with the document cache, which was causing slower file processing.
- General: GetFile pages could cause 100% CPU usage when file downloading was paused and resumed.
- General: Parameters for custom macros (for example {#mymacro|(encode)false#}) weren't applied automatically.
- General: When location path parameter in web.config was used, saving editable text content might not have worked.
- General: Problem with creating and editing document types when DB owner was not "dbo".
- General: "Save virtual files to disk" action saved also xslt transformations, which were then not used.
- General: OutputFilter didn't ignore tags in comments.
- General: AdHoc templates were not deleted with their documents.
- General: When context macro like {%DocumentName|(tolower)%} was used in the web part container title property, all text within the container title was converted to lower case.
- General: Image selectors - missing Upload file link for non-global administrator users.
- General: Incorrect SQL queries behind GetObjectHitsInfo(…) and GetObjectHitCount(…) methods under HitsInfoProvider class.
- General: Editable image web part used a live site dialog for image selection instead of the CMS Desk dialog.
- General: Redirect URL – it was unable to redirect to a site starting with "www" and different port instead of the default 80.
- General: Use update panel option in web part zone didn't work correctly and always raised regular postback instead of partial postback.
- General: Documents – New cultural version of a document could overwrite other cultural versions in specific cases.
- Groups: Users were able to join a group with the "Only approved members can join except for invited members" setting even without approval.
- Groups: Other minor issues with group controls.
- Documentation: Minor fixes in the documentation.
- Ecommerce: Product filter did not filter properly by Public status.
- Ecommerce: Payment notifications were sent only in default culture when PayPal gateway was used.
- Ecommerce: Function used in transformations to display Total price applied the exchange rate twice.
- Ecommerce: Manufactures and some other tabs always used default CMS Providers to load the data.

© 2009 Kentico Software

- Ecommerce: Macro resource strings Macros in names of statuses were not resolved in CMSDesk --> Extra --> Ecommerce --> Configuration (e.g. Public status, Order status). It displays only resource strings instead of correct names.
- Ecommerce: Shopping cart item custom data was not stored into the database (CartItemCustomData column in COM_ShoppingCartSKU table).
- File import: UNC paths were not supported.
- Form engine: Macros in fields which were not displayed in the editing form were not resolved.
- Forums: Editing a post on live site (by administrator or moderator) did not work properly when the forum was locked.
- Forums: Forum link disappeared if role based security was enabled for the “Access to forum” permission.
- Forums: View tab in CMSDesk UI caused an exception when a forum was closed.
- Friends: User was unable to reject friendship through the user context menu.
- Import/Export: Error in import process when importing existing users into the database.
- Import/Export: License key list caused an exception.
- Import/Export: Resources and licenses export error query - Ambiguous column name 'StringKey' or 'LicenseDomain'.
- Linked document: Issue with permissions and linked documents was fixed.
- Newsletters: Data from newsletter subscriber’s additional columns (added via System tables) were not resolved in newsletter issues.
- Newsletters: Only authenticated users could view Archived issues even if "Everyone" or "Not authenticated users" role setting was set.
- Newsletters: Links with special protocols (meeting protocols, etc.) were modified to start with "http://<domain>/CMSPages/" in newsletter issues.
- Newsletters: Wrong permissions for pages from CMSPages in CMSModules/web.config
- Notifications: The {%documentlink%} macro was not resolved properly.
- Notifications: Content subscriptions did not work properly for documents under workflow (more than one notification was sent).
- Media Library: Insert media dialog in WYSIWYG - when dimensions of the inserted image were set to be greater than original, an exception was thrown on the live site.
- Media Library: Unable to delete site when media library was bound to some role.
- Media Library: Editing UI and web parts did not behave correctly when files contained special characters (@, #, $, etc.)
- Media Library: More than one _thumbnail directory was generated in specific cases.
- Messaging: When user wanted to send a private message on a live site, she was unable to type the letter ‘t’ in the message body and subject in Firefox browser.
- Messaging: Minor issues in contact list fixed.
- Message boards: Minor issues in UI fixed.
- Object staging: Task list was not reloaded correctly when changing staging server in dropdown list.
- Object staging: System queries were deleted on target server on system table synchronization.
- On-line users: If “Store online users in database” setting is enabled and some users are kicked, only these kicked users are shown in the list (Site Manager -> Administration -> Users -> Online users tab).
- Portal engine: Page title did not resolve document data macros correctly
- Portal engine: When Windows authentication is used only for CMSDesk, Design mode does not work properly in IE7.
- Portal engine: Use of update panel option for zone did not work properly is specific cases.
- Security: Using CustomSecurityHandler for custom user authorization thrown an exception is specific cases.
- Security: Passwords were stored in plain text instead of SHA1.
- Security: ViewStateUserKey was used with full page caching, which caused error on postback from another session.
- Security: "Restore inheritance to parent document permissions" caused exception when NodeACLID

© 2009 Kentico Software

column was set to NULL for current document.
- Security: Document type permissions – settings: Administration -> Permissions -> Permission type: Document Types was not applied.
- Time zones: Exception were thrown when editing some time zone if UI culture was other than English.
- Trackbacks: Disabling trackbacks might not work in specific cases.
- Trackbacks: Minor fixes in trackbacking of versioned documents.
- URL Wildcards: Wildcard rule in document URL path was applied to all available sites.
- URL Wildcards: Suffix "-1" was added when existing URL path was created but it was not added to DocumentWildcardRule.
- User contributions: Dropdown fields are retaining their values when switched from one document to another.
- Web parts: Content slider - minor fixes.
- Web parts: Current User web part did not reflect ShowUserName and ShowUserFullName.
- Web parts: Paging in some Viewer web parts was not implemented.
- Web parts: Group registration did not apply its "Hide form after registration" setting.
- Web parts: Tag Cloud web part threw an exception when TOP N property was used.
- Web parts: Several minor issues in other web parts fixed.
- Web parts: Custom Registration web part leaved FullName field blank when FirstName and LastName fields were not used.
- Web parts: Single forum web part did not apply custom layouts.
- Web Analytics: Exception might have been thrown when many hits came from the same IP at a time.
- Web Analytics: Other minor issues fixed.
- Web farms: If web farm support was enabled, deletion of user invoked endless creation of web farm tasks.
- Workflow: When CMS.Blog and CMS.BlogPost document types were removed from the system, publishing documents caused an exception.
- Workflow: If document was rejected in a workflow step, user who approved the document to this step didn't receive a notification email with information that the document had been rejected.
- Workflow: Editing image attachment of the document under workflow using Image Editor did not cause check in of the file and did create new version of the file.
- Workflow: Copying document under workflow with attachment without any existing version caused an exception.
- Workflow: Minor issues with multilingual sites under workflow in specific cases.
- Workflow: If a user tried to create a new culture version of a document without any document version under workflow, an error occurred if document contained any attachment field.

January 16, 2009 - Version 4.0

New:

- New module: Categories
  - enables additional categorization/taxonomy of documents
- New module: Tags
  - enables tagging any documents (not only blog posts) with tags and displays a tag cloud
- New module: Alternative forms
  - enables creating multiple versions of editing form in BizForms, document types and custom tables
  - allows you to define custom forms, such as user registration form
- New module: Custom tables
  - enables creating custom tables in case you need to store some data or web content outside of the CMS content repository
  - it's useful if you need to work with large number of records in a single table
- New module: Banned IPs
  - allows administrators to limit access from chosen IP addresses

© 2009 Kentico Software

- New module: Bad words
  - allows administrators to forbid nasty words and replace them, report them or disable given user action, such as forum post or blog comment
- New module: Avatar gallery
  - allows administrators to create pre-defined avatars (user images) and let users choose their avatar or upload a new one
- New module: Time zones
  - allows you to display time and date calculated for the given web site or user
  - it's useful for global communities so that users can see e.g. forum post time based on their time zone
- New module: On-line users
  - allows you to display users who are currently on-line and kick them if they do not follow the site rules
- New module: Message boards
  - allows you to create message boards and comments for documents
  - the module supports moderation, subscriptions, rating and other features
- New module: Notifications
  - enables subscribing to content changes
  - provides a general notification framework that can be used not only for e-mail, but also for any custom notification gateway, such as instant messengers
- New module: Friends
  - allows site members to maintain relationships with other site members and share personal information with them
- New module: Report abuse
  - allows site visitors to report offending content, such as forum posts, blog comments and others
- New module: Groups
  - allows you to create social networking sites with user communities (groups)
  - allows inviting users to join the group
  - allows users to create group-specific content and applications, such as wiki-like pages, forums, message boards, media libraries and polls
- New module: Media library
  - enables easy management of media files, such as images, videos or music
  - the files can be accessed directly without any script and they are not stored in the database, so you can work also with large files
- Reviewed module: Forums
  - many new features including:
    - quoting
    - mark as answer
    - attachments
    - BB-style editor
    - BBCode support
    - customizable forum layouts
    - locked forums/threads
    - sticky threads
    - and many others
- Reviewed module: URL rewriting and aliases
  - you can now specify default alias path or URL redirection for every domain alias of the web site, which means that you can display different home page to visitors based on the domain name they use to access the site
  - many new features including:
    - support for unlimited URL Aliases for every document
    - tracking of marketing campaigns when some page is visited using some particular URL
    - custom extensions of pages and uploaded files

© 2009 Kentico Software

    - support for macros in URLs
- Reviewed module: Membership
    - improved member management
    - the user registration form can be easily customized with your own fields without programming
    - user registration may optionally require e-mail confirmation
    - administrator can optionally choose that all new user registrations must be approved first
    - you can now send mass e-mails to multiple users, roles or groups
    - improved user interface for management of large number of users with filtering and alphabetical sorter
    - support for mixed mode authentication
    - you can now use both Forms and Active Directory authentication together
- Administration UI: Extended functionality of MyDesk -> My profile.
- Administration UI: Asynchronous document deletion and moving.
- Administration UI: New information splash screen on logon dialog.
- Administration UI: New version of the WYSIWYG editor.
- Administration UI: Extended functionality in the web part zone properties.
- Administration UI: Extended functionality of System tables.
- Administration UI: Overviews where the document type, page template, product and category are used.
- Blogs: Bulk Approve/Reject comments functionality in MyDesk and improved comments management in Tools.
- Blogs: Support for blog moderators.
- Blogs: Support for blog post subscriptions.
- Blogs: Added support for tagging, categories and content rating
- Blogs: On-site editing is now supported for site members without access to CMS Desk
- Blogs: You can now ping other blogs and get trackbacks to your posts
- Controls: New format of inline controls macro now supports named parameters.
- Controls: New controls - context menu, error messages, datasources, filter, BBEditor, ...
- Controls: Minor improvements in localization controls from ExtendedControls.
- ECommerce: New web parts - N newest products, product filter
- ECommerce: Multiple default tax classes for department.
- ECommerce: Document types can be configured as product types which have enhanced functionality.
- E-mail engine: Support for custom subject, plain text, from, Cc and Bcc e-mail addresses in e-mail templates.
- E-mail engine: Enables more robust sending of e-mails. All e-mails from the system are sent through the e-mail queue and if sending fails, they are kept in the queue and can be sent later. It also allows to archive sent e-mails so that you can easily find out if some e-mail was sent or not.
- Event Log: The object changes can now be now logged.
- Event log: Easier browsing of events using Previous and Next buttons.
- General: New contexts for easier access to the data of current objects.
- General: Logon page now checks the CapsLock status.
- General: Minor improvements in file import module.
- General: All the obsolete methods from previous versions have been removed.
- General: Performance optimizations regarding memory consumption, amount of data selected from the database and ViewState.
- General: Google site map support
- Import/Export: Minor improvements in import/export.
- Messaging: Minor improvements in messaging.
- Content: New image editor for the attachments.
- Content: Content rating support. Allows site visitors to rate news, articles and any other content.
- Content: Image editor for the attachments. Allows content editors to resize uploaded images, convert them to another format, trim to chosen size and convert to grayscale.
- Newsletters: Performance improvements for large number of subscribers.

© 2009 Kentico Software

- Newsletters: Customizable subject in (un)subscribe templates.
- Output filter: Minor improvements in output filtering.
- Portal engine: On-click AJAX configuration of the web parts. Most web parts now support AJAX on one click. You only need to check the box Use update panel in the web part properties and the web part uses AJAX rather than classic postbacks.
- Reporting: Minor improvements in reporting.
- Security: New default (generic) roles.
- Security: Windows Live ID support.
- Settings: Improved management of settings.
- Staging: Minor improvements in staging.
- System: Administrators can now receive e-mail notification when some error is added to the event log.
- User contributions: Minor improvements in user contributions.
- Web analytics: Statistics from specific period of time can now be deleted.
- Web analytics: User registration statistics can now be logged.
- Web farms: Support for restarting of all the servers.
- Web parts: Improvement of many existing web parts.
- Web parts: News datasource and viewer webparts.

Changes:

- Administration UI: All pages are now based on master pages.
- Administration UI: Administration UI now uses CSS classes instead of the SkinIDs.
- General: Changes in filesystem and architecture to support separable modules in future versions.

Bug fixes:

- Administration: Fixes in RTL languages layout.
- Administration: Minor fixes in administration UI.
- BizForms: Image button wasn't set as default button of the form when custom layout was used.
- Bizforms: CSS stylesheet didn't work when bizform's layout was edited.
- BizForms: CAPTCHA control didn't work when the BizForm is used as a inline control.
- BizForms: Notification e-mail wasn't sent if recipients e-mail adresses ended with ';'.
- BizForms: 'UseColonBehindLabel' didn't worked on ASPX templates after postback.
- BizForms: Incorect links of uploaded files when a bizform from one site was used on another site.
- Blogs: URLs in blog comments were incorrect when inserted without 'http://'.
- Blogs: Minor fixes in blog comments.
- CMSDesk: Context menu wasn't displayed well if content tree was large and scrolled down.
- Content: Editable texts in PagePlaceholder with default page template didn't work at Page tab.
- Content: Images didn't appear occasionally during heavy load when output cache was on.
- Content: Content of PageTemplates properties -> Webparts couldn't be saved.
- Content: Moving document to another site caused an error when document name and alias had been changed before.
- Content: Document could be archived by user without required permissions.
- Content: Some links and image URLs weren't resolved on ASPX sample web sites site when output filter was switched off.
- Content: URLs of images from another site were incorrenct when using multiple web sites on a single domain (subfolders).
- Content: ID of the document custom data couldn't be used as an alias.
- Content: Documents restored after deletion had different NodeGUIDs than the deleted version.
- Content: CMSMenu tooltip didn't display special characters properly.
- Content: Template 'Text with side column' caused problems to editable regions in IE7.
- Controls: Images in submenu items didn't have the "alt" atribute.
- Controls: BasicTabControl caused index out of bounds exception with specific configurations.

© 2009 Kentico Software

- Documentation: Minor fixes in the documentation.
- ECommerce: Order status history wasn't up-to-date when the status was changed by custom payment provider.
- ECommerce: Minor fixes in permission checking in administration UI.
- E-mails: Minor fixes in resolving template based e-mails.
- File import: Minor fixes in the file import.
- Form controls: ECommerce form controls didn't work properly with property UseCodeNameForSelection set to true.
- Forums: Minor fixes in posts approval.
- Forums: 'Subscribe to post' link wasn't displayed when Maximum nesting level was set to 1.
- General: Title tag wasn't as a first tag in the head section of the page.
- General: Minor fixes in working with the flash files.
- General: Field category created in FieldEditor couldn't contain apostrophes.
- General: Custom security handler didn't work correctly with windows authentication.
- General: 'Exclude documents from search' setting didn't work if the value ended with ';'.
- General: Decimal numbers weren't displayed correctly for different cultures.
- General: Data from custom fields weren't updated in the application cache.
- General: Custom modules didn't appear in CMSDesk -> Tools if 'Display' permission for the module didn't exist.
- General: Custom data handler caused issues when working with document types and when retrieving files via GetFile.aspx.
- General: Some controls didn't generate valid html code.
- General: Alias paths weren't unique if documents had names starting with the same long prefix.
- General: Some controls were missing in VisualStudio toolbox after adding a reference to Kentico CMS API libraries.
- General: URL rewriting didn't worked properly if extensionless and SSL were used together.
- General: Pages inherited templates only from published pages which was causing inconsistency in design.
- General: Default connection string was always used when using GeneralConnection.
- General: ValidationHelper.GetDouble method didn't reflect current culture settings.
- General: SignOut button didn't work with cookieless settings.
- General: User role couldn't change permissions even if the role had the permission to do so.
- General: PageInfo didn't contain proper DocumentPublishedVersionHistoryID.
- Import/Export: Only documents of default culture version were imported to the site which had been imported before.
- Import/Export: Importing data with attachment might cause errors.
- Import/Export: Too long queries were generated during export, causing errors.
- Import/Export: Imported/exported site's cultures weren't preselected correctly.
- Newsletters: CSS stylesheet wasn't applied after uploading an attachment when editing newsletter template.
- Newsletters: 'Send now to all subscribers' option didn't work when editing dynamic newsletter.
- Polls: Two different polls couldn't coexist on the same page when the caching was on.
- Scheduler: SqlDateTime overflow error appeared when date wasn't in allowed interval.
- Scheduler: Scheduled tasks didn't run when using multiple web sites on a single domain (under subfolders).
- Staging: Staging could work even if 'Staging service authentication' settings didn't match on source and target servers.
- Staging: Root element was missing when synchronizing object's subtree.
- Staging: Automatically created blog months didn't appear in the staging task list.
- Staging: Synchronization tasks weren't logged correctly when the workflow was on.
- Web parts: Grid webpart didn't display data of two document types which had fields of the same names.
- Web parts: Minor fixes in Content slider webpart.

© 2009 Kentico Software

- Web parts: Minor fixes in Flash webpart.
- Web parts: Minor fixes in Tree view menu webpart.
- Web parts: Site map redirected to '#' when javascript action of the menu item was used.
- Web parts: Document pager webpart didn't have the 'Check permission' property.
- Web parts: Minor fixes in QueryDataList webpart.
- Web parts: Minor fixes in Lightbox webpart.
- Web parts: Minor fixes in Google maps webpart.
- Workflow: There was an incorrect message when document was submitted to approval.
- Workflow: Form fields weren't validated when a document was checked-in.
- Unigrid: Wrong item was deleted when someone else changed item order at the same moment (order status, workflow step, ...).

August 6, 2008 - Version 3.1a

New:

- Administration UI: HTML editors are used for editing invoice and e-mail templates.
- Administration UI: Link to an existing document can be created from the context menu.
- Administration UI: New macro selector control is used to insert all possible macros to the text.
- Administration UI: Color picker control now includes preview of the selected color.
- Administration UI: Section summary for the pages of administration UI.
- Administration UI: Minor improvements in all UI.
- General: Improved output filter functionality.
- General: All regular expressions for validation and macro resolving were optimized.
- General: Performance optimizations for amount of data and memory consumption.
- General: Configurable selection between standard and session authentication cookies.
- Ecommerce: Product price can be optionally displayed with or without tax.
- Ecommerce: Product option list can be now paged.
- Ecommerce: User account can be created at the same time as customer account from CMSDesk.
- Ecommerce: All currency related values can be now recalculated when changing main currency.
- Ecommerce: Tax class details can be edited when selecting tax classes for specified product.
- Ecommerce: Shopping cart process step indexes can be now optionally hidden or visible.
- Ecommerce: My Account web part tabs can be now displayed either in horizontal or vertical layout.
- Ecommerce: Shipping options are now displayed with their charge in the checkout process.
- Ecommerce: All errors while loading payment provider, payment form or checkout process step are now logged.
- Event log: Event details can be exported to the file.
- Event log: Events can be optionally logged to the file now.
- Modules: Module description field was added.
- Modules: Module permission description field was added.
- Modules: New Display permission for all modules. Module is now hidden in tools menu when user is not granted with module display permission.
- Newsletter: Imported users can be optionally subscribed / unsubscribed to the selected newsletters.
- Newsletter: Email queue can be now deleted at once.
- Scheduler: User can see how many times each task was executed.
- Settings: Settings can be exported to the file.
- Staging: Reject task is now generated for synchronization with target server when document is rejected.
- Staging: Update doc task is now generated for synchronization with target server when document is moved up or down in the content tree.
- System: Testing e-mails can be sent with attachments.

© 2009 Kentico Software

- Web farms: Web farm synchronization tasks can be now filtered by server.
- Web farms: Servers can be now disabled to avoid tasks logging for them.
- Web farms: MachineName field was added to the web farm tasks.
- Web parts: Improved scrolling text web part.
- Web parts: Improved current user web part.

Changes:

- General: XHTML output filter is now turned off by default on all sample web sites.
- Web parts: Properties NestedRepeaterID and NestedDataListID were replaced by NestedControlsID property.

Bug fixes:

- Administration UI: RTL languages layout was completely reviewed and fixed.
- Administration UI: Some pages weren't properly handled for cross-site scripting.
- Administration UI: Minor fixes for IE7 and FF3.
- Administration UI: Security fixes for some UI pages
- BizForms: Incorrect security check was applied in permission dialog.
- BizForms: Administration of BizForm layout used too strict permissions.
- Booking module: Event allowed negative capacity.
- CMSDesk: Select file dialog couldn't upload file on Windows Vista.
- CMSDesk: Document links with workflow could cause inconsistency in document tree if the document was moved.
- CMSDesk: Notify when leaving page wasn't applied in some cases.
- CMSDesk: Spell checker didn't work for words with some culture-specific characters.
- CMSDesk: Published information in document properties wasn't evaluated properly.
- CMSDesk: The document wasn't inserted on the correct position when the default order was changed from alphabetical to first.
- Content: Metadata content wasn't properly encoded to the output HTML.
- Content: When the image caching was on, original image could be returned instead of the resized image.
- Content: Cached attachment wasn't removed from the cache if the attachment was updated from API.
- Content: ASPX editable controls were losing the content with specific workflow operations.
- Content: Copying of published document didn't include the published attachments.
- Content: Rollback to the oldest version in version history could lose the version attachments.
- Content: File field could lose the attachment when copying the culture version from specific language.
- Content: When the attachment field of the document type was removed, attachments weren't deleted.
- Content: Allowed extensions for upload fields didn't have the same format in all settings.
- Content: Uploaded files allowed "+" sign in the filename, which couldn't be correctly processed by IIS7.
- Content: GetFile script didn't handle the permissions correctly.
- Controls: Editable image could cause null reference exception in specific scenarios.
- Controls: Radiobutton list form control didn't apply some settings correctly.
- Controls: Form control text area didn't validate the field length properly.
- Controls: Property UseImagePath for editable image control didn't work properly.
- Controls: Radiobutton list form control couldn't have empty default value.
- Controls: Change password control didn't handle the Visible property correctly.
- Documentation: Minor fixes in the documentation.
- ECommerce: Payment methods and Shipping options weren't displayed properly in their selection.
- ECommerce: Available amount validation could not work correctly in specific scenarios.
- E-mails: Some e-mails contained multiple Content-Type headers.
- E-mails: GetEmailTemplates method threw an exception.

© 2009 Kentico Software

- File import: Files couldn't be imported to the location covered by workflow process.
- General: Automatic import of Windows authenticated users wasn't working correctly for non-existing users.
- General: Changing the code name of the web site could cause problems with live site if the application wasn't restarted.
- General: Application couldn't properly start in Integrated mode of IIS7.
- General: Culture of the live site wasn't changed correctly in some cases with full page caching configuration.
- General: Uzbek cultures weren't defined properly.
- General: Changing the order of items didn't clear the cached objects properly.
- General: Localized transformations weren't cached.
- General: Float number validation and conversion couldn't handle small numbers with exponent.
- General: Param tag of the object element could cause incorrect HTML code when processed by output filter.
- Import/Export: Forum posts weren't properly imported from old version package.
- Import/Export: Custom web part categories couldn't be handled by import process in some specific cases.
- Import/Export: Some delete tasks couldn't be processed correctly on import.
- Import/Export: Existing site was deleted if import fails because of the existing site with the same name.
- Import/Export: Process log couldn't work in specific scenarios.
- Import/Export: Preselection of objects wasn't working properly when repeated.
- Import/Export: Next button wasn't disabled in FF3.
- Import/Export: Document fields with only field length changed weren't updated on import.
- Newsletter: Some e-mails could use different culture for unsubscription link and for other newsletter content.
- Newsletter: Newsletter module couldn't handle large amount of e-mails in specific scenarios.
- Newsletter: Some e-mails were duplicated in specific scenarios.
- Newsletter: Resend functionality wasn't working properly.
- Newsletter: Scheduled task for the newsletter wasn't rescheduled if configuration changed.
- Newsletter: New issue couldn't be placed to the Newsletter archive
- Newsletter: Generation of the e-mail queue was using too many database queries.
- Newsletter: Some newsletter pages didn't check all required permissions.
- Newsletter: Newsletter archive didn't resolve the macros properly.
- Output filter: Button text containing tag characters could damage the output HTML code.
- Polls: Multiple polls couldn't work properly on the same page.
- Polls: Incorrect security check was applied in permission dialog.
- Portal engine: Some pages could be displayed with wrong page template in heavy load.
- Portal engine: If the CSS stylesheet of the site wasn't set, the page generated an empty stylesheet tag.
- Sample web sites: Minor fixes in design and HTML code of the page templates and stylesheets.
- Scheduler: Some tasks could run two times under specific conditions.
- SiteManager: Some Administration pages could be accessed from CMSDesk in SiteManager context.
- SiteManager: User couldn't be deleted when he was allowed to be forum moderator.
- SiteManager: Site culture couldn't be changed in license editions without multilingual support.
- SiteManager: Localized transformation name couldn't be entered in transformation properties.
- SiteManager: Document type editing pages didn't have the same length.
- Staging: Document task didn't contain product information when the product was created from the new document dialog.
- URL Rewriting: Some URLs weren't resolved correctly for cookieless configuration.
- URL Rewriting: Messaging pages weren't properly excluded from URL rewriting and were logged as not existing content pages.
- URL Rewriting: Page wasn't properly redirected in specific cases with FF browser.

© 2009 Kentico Software

- Web analytics: Log processing couldn't handle large amount of data at once.
- Web analytics: Returning visitors were logged only on the second visit.
- Web farms: Too many web farm tasks or too much web farm task data could kill the application on it's start.
- Web parts: Clone web part couldn't work with some specific web part settings.
- Web parts: Content slider wasn't working properly if the delay time was 0.
- Web parts: Google maps web part couldn't handle API key for both domains with and without www.
- Web parts: Query repeater web part didn't use the Item separator property correctly.
- Web parts: User contribution web part couldn't resolve the path properties.
- Web parts: Language selector didn't display culture names in ASPX page templates.
- Web parts: Date and time web part couldn't handle some format expressions.
- Web parts: Contact and ignore list didn't use the Zero rows text property properly.
- Web parts: Video web part wasn't working properly in FF3.

© 2009 Kentico Software

May 29, 2008 - Version 3.1

New:

- New module: The new Messaging module allows users to send private messages.
- CMSDesk: BizForms can now be exported as single objects.
- Content staging: Content staging supports staging of metadata objects.
- Web parts: New web part ForumUnsubscription.
- Web parts: New messaging web parts (Inbox, Outbox, Send message, Contact list, Ignore list).
- Web parts: New web part Send to friend.
- Web parts: New web part Random products.
- Web parts: New web part Top N products by sales.
- Sample websites: New E-commerce site template presenting the E-commerce module capabilities.
- Sample websites: Corporate site now contains an example of a printing page.
- E-commerce: Newly added support for product options.
- E-commerce: Products can now be filtered by site.
- E-commerce: Order item price and name can be edited in existing orders.
- E-commerce: The Organization ID/Tax registration ID can be optionally required.
- E-commerce: User can now create document product when creating a new document.
- Import/export: Import/export now supports incremental deployment.
- Import/export: New, more user friendly user interface.
- General: Culture CSS class is now included in page body class.
- General: Kentico CMS now supports shortcut icons for web sites.
- Web analytics: Web analytics module now supports repeated visits using IP address filtering. Users with disabled cookies can also be logged.

Changes:

- CMSDesk: Both Menu items and standard documents now share the view mode in CMSDesk.
- Administration interface: More listings with many data records now support data filtering.
- Import/Export: Export of single object is now asynchronous.
- Content staging: Document page template is now synchronized together with the document.
- Web parts: General code review and minor improvements of all existing web parts.
- Documentation: New E-commerce guide.
- Documentation: New Users guide.
- Documentation: New web parts overview.
- E-commerce: Printer style for invoices now includes header and footer information for all pages.
- Forums: Improved usability of macros.
- Setup: Setup process is now asynchronous.
- Newsletters: Improved usability of macros.
- Workflow: Improved usability of macros for workflow emails.
- General: Full page caching now reflects the browser type.
- General: Kentico CMS can now handle upload and download of large files (up to 2GB) saved in file system.
- Performance: Major improvements in GetFile script performance and minor optimizations in system processing.
- Performance: Memory optimizations.

Bug fixes:

- BizForms: Export of larger amount of BizForm data to MS Excel 2007 didn't work correctly.
- BizForms: E-mail attachments weren't handled correctly.

© 2009 Kentico Software

- CMSDesk: File import tool didn't import files with names containing some special characters.
- CMSDesk: File import tool didn't save mime types correctly.
- CMSDesk: List view didn't allow deletion of all documents after filtering.
- CMSDesk: Sorting in the List view didn't work correctly.
- CMSDesk: My Documents didn't display linked documents correctly.
- CMSDesk: Settings 'Content Management New document order' didn't work correctly.
- CMSDesk: Permissions weren't checked correctly when creating a new page.
- CMSDesk: Update of a linked document damaged the document's name path.
- CMSDesk: User couldn't create link to an uploaded file with apostroph in it's name.
- CMSSiteManager: Email templates didn't reflect the site settings.
- Content staging: Deletion of the linked documents wasn't logged.
- Content staging: Deletion of document didn't delete Publish task for this document.
- Controls: CMSTabControl generated wrong where conditions for database queries.
- Controls: CMSTreeview didn't reflect the Expand/Collapse images property.
- E-commerce: PayPal and Authorize.NET didn't work for cultures using comma as decimal separator.
- E-commerce: Currency couldn't handle wrong format strings.
- E-commerce: ECommerce module didn't synchronize correctly on Web farms.
- E-commerce: Discount level wasn't applied correctly when displaying price details.
- E-commerce: Deletion of some objects didn't handle the dependent objects correctly.
- Booking system: Editing event attendee didn't allow email address change.
- Booking system: Exported iCalendar file couldn't be opened in MS Outlook 2003.
- Form user controls: Clear button in Select user form control didn't work correctly.
- Form user controls: International number and Query selector didn't reflect the Allow empty value property of field.
- Form user cotnrols: Country selector didn't work correctly.
- Form engine: If validation upon regular expression failed error message was displayed for all fields using regular expression validation.
- Form engine: Validation upon regular expression was missing for some form controls.
- Form engine: Fields of type boolean didn't work correctly with values true/false and 0/1.
- Form engine: DateTime fields weren't validated properly.
- Forums: Ad-hoc forum wasn't created when user subscribed before the first thread was inserted.
- Forums: Forum search displayed previously deleted posts.
- Forums: Forum base URL wasn't saved when creating a new forum.
- Forums: Forum breadcrumbs displayed differently in different view modes.
- Forums: Deletion of forum posts didn't work correctly.
- Newsletters: Newsletter issues were always shown in archive.
- Newsletters: Newsletters with large amount of subscribers weren't sent correctly when application restarted or application had multiple instances.
- Newsletters: Scheduled task wasn't deleted when dynamic newsletter was deleted.
- Newsletters: Newsletters weren't always sent in site default culture.
- Newsletters: Anchor links in newsletters weren't resolved correctly.
- Portal engine: DOCTYPE page definition wasn't applied properly.
- Portal engine: PageInfo didn't handle the IsPublished property correctly.
- Web analytics: Campaign logging didn't work for redirected documents.
- web analytics: Logging file downloads didn't work for files redirected to disk.
- web analytics: Log processing wasn't thread-safe for multiple application instances.
- Web analytics: Pie charts displayed only items with value over 5%.
- Web analytics: The order of days might be wrong at the turn of the months.
- Web farms: Web farm synchronization tasks weren't deleted properly.
- Workflow: Copying documents of container type using workflow was failing.
- Workflow: Workflow email wasn't sent after the Publish step.
- Workflow: Workflow emails weren't always sent.
- Workflow: When the published document was rejected, it was still published on the live site.

© 2009 Kentico Software

- Workflow: In some cases, documents couldn't be restored from the recycle bin after the import process.
- Workflow: When publishing a document, the message 'Are you sure you want to navigate away from this page?' wasn't always shown correctly.
- Webparts: Web parts didn't reflect the Show for document types property in Design tab view.
- Webparts: Some viewer web parts didn't hide when the inner control was hidden.
- Webparts: CMSMenu didn't render correctly when a submenu item had a Menu item image set.
- Webparts: CMSListMenu didn't render correctly when submenu indicator property was set.
- Webparts: Static text web part didn't resolve inline macros.
- Webparts: Related documents didn't work correctly for nonpublished documents.
- Webparts: Property Top N didn't work correctly when Check permission property was set.
- Webparts: Properties didn't handle values dependent on culture settings correctly.
- Webparts: Users couldn't select document type transformation from different site.
- Webparts: The Item separator property of the Lightbox web part could not be edited.
- Webparts: The MyAccount web part didn't allow hiding of all its tabs.
- Webparts: Property Use server time didn't work correctly for DateTime web part.
- Webparts: The Search results web part didn't reflect the Query string key property.
- Webparts: The Complete search dialog web part didn't keep the filter information for ASPX templates.
- Webparts: When the SearchDialog web part was placed after the SearchResults web part on page it didn't work correctly.
- Webparts: Setting filter for specific culture sometimes caused hiding the New document link for User contributions list web part.
- Webparts: The User contributions list web part displayed New document link for anonymous user in a special case.
- Webparts: Web part files weren't created when the web part was cloned.
- Webparts: Web part CMSMenu didn't reflect the Render image alt property.
- Webparts: Web part SiteMap didn't reflect the Render link title property.
- Webparts: The property Generate indentation inside link for TreeMenu web part didn't work correctly.
- Webparts: The property Submenu indicator image for web part TreeMenu caused incorrect rendering.
- Webparts: The Paged text web part didn't use the Path selector for Path property.
- Webparts: The Paged text web part didn't use Site selector for SiteName property.
- Webparts: The Paged text web part didn't reflect the 'Pager CSS class' property.
- Webparts: In special cases the Calendar web part threw an exception when other month should have been displayed.
- Webparts: The Forum tree web part for ad-hoc forums didn't reflect the Expanded tree property.
- Webparts: The Forum tree web part didn't reflect the Post path property.
- Webparts: The Similar products by sale web part didn't work correctly if property Document types was set.
- Webparts: The Document viewer web part didn't reflect the Select top N documents property.
- Webparts: The Forum search results web part didn't reflect the On site management property.
- Webparts: The ShoppingCartMiniPreview control wasn't rendered correctly in ASPx templates.
- Webparts: the Query datalist control didn't reflect the ShowFirstLast property in the ASPX templates.
- Webparts: The DateTime web part didn't reflect the Date and Time format property correctly in ASPX templates.
- Webparts: The option Top & Bottom was misssing for Pager position property of Document pager web part.
- Webparts: In some special cases the Query data grid web part threw exception when Display as link property was used.
- Webparts: The Edit contribution web part used only Simple path selector instead of Path selector.
- Webparts: For some web part setting both Stylesheet theme and Skin ID properties caused an error.
- Webparts: Multiple Tree menu web parts on one single page didn't work correctly.
- webparts: The SkinID property wasn't applied correctly for web part Logon form.
- Webparts: The Related documents web part didn't have the Order by and Where condition properties.

© 2009 Kentico Software

- General: ASPX page templates from older versions didn't have correct page title.
- General: Settings Combine files with default culture didn't apply correctly.
- General: The page template header tags weren't used in some cases.
- General: Users or search engine crawlers could get an error page when the browser didn't set the User-agent property.
- General: In some cases, the resource strings weren't properly loaded when the application started.
- General: Multiple linked documents could cause errors when Filter out duplicate documents was enabled in viewer controls.
- General: GetFile didn't reflect document-level permissions and published from/to properties.
- General: In some cases users were logged out when browser didn't keep session information in a new frame or window.
- General: Too many WYSIWYG editors on the page could cause the browser to crash or throw a javascript error.
- General: Data macros that weren't resolved because of missing data were resolved to their expression instead of an empty string.
- General: Permissions for network folders weren't checked properly.
- General: Deletion of some objects didn't delete associated meta files.
- General: Resolving URL filter damaged AJAX response if the response contained URLs starting with ~/.
- General: For extensionless configuration the URL rewriter wasn't able to handle URLs with query strings containing a semicolon.
- General: ASPX extension wasn't correctly applied to the page URL in special cases and extensionless configuration.

January 29, 2008 - Version 3.0

New:

- Compatibility: Added support for Visual Studio 2008 and .NET Framework 3.5 (you can use Visual Studio 2005 as well).
- Compatibility: Added support for Windows Vista, including IIS 7.0 configuration.
- Compatibility: Added support for Mac OS browsers - you can now use both web site and administration interface with Safari 3.0 and Firefox 2.5 on Mac.
- New module: The new GeoMapping module allows you to display content on Google maps. You can use it to display your offices, stores, partners, etc.
- New module: Event Manager for managing events and their attendees.
- BizForms: The notification e-mail may contain uploaded documents as an attachment.
- BizForms: The notification e-mail may use a custom layout.
- BizForms: The autoresponder now supports macro expressions.
- BizForms: You can restrict access to administration of particular forms.
- BizForms: You can use an image for the submit button and you can define the position of the submit button in the custom form layout.
- Controls and web parts: More settings were added to the pager configuration in Repeater, Datalist and other controls/web parts.
- Controls and web parts: The navigation controls now have a new property Word wrap that allows you to specify if word wrapping is allowed.
- CMS Desk: You can specify starting path of the user in the content tree in CMS Desk and restrict user from browsing the complete content tree.
- CMS Desk: New Design tab interface with drag-and-drop support.
- CMS Desk: Context menu support in content tree.
- CMS Desk: FCKeditor was updated to version 2.5.

© 2009 Kentico Software

- CMS Desk: The documents that point to some URL are now displayed with an arrow in the content tree to show that the document is a redirect.
- CMS Desk: New permission Design web site allows local users (without global administration authorization) modify the design of page templates.
- CMS Desk: The list view now supports filtering by name.
- CMS Desk: You can customize the behavior of the web application and administration interface and make minor changes to the administration interface using the new customization features described in Developer's Guide -> API programming and Kentico CMS internals -> Customizing the administration interface and web application events.
- Content staging: You can configure automatic synchronization of all content to the live server in a scheduled interval.
- E-commerce: Tracking number field added.
- E-commerce: Added support for custom fields in customer profile, order, SKU.
- E-commerce: The discount levels can be restricted to particular departments.
- E-commerce: Sales reports were added.
- E-commerce: The shopping cart optionally displays price calculation (discount and tax summary).
- E-commerce: The payment URL now supports data macros in format {%fieldname%} that inserts any value of the shopping cart, current context or customer.
- E-commerce: Added support for customer credit.
- E-commerce: New web part Similar products by sale for displaying box with "Customers who bought this product also bought...".
- File management: Improved performance of the GetFile.aspx script, added support for redirection to the disk version of the file.
- Forums: Added support for on-line editing and deleting of posts by forum administrators.
- Form controls: You can now choose which form controls should be available in report parameters designer.
- Form controls: The multiple choice and radio buttons controls now support vertical/horizontal alignment.
- General: System objects, such as templates, layouts and others may have a teaser image.
- General: Reports, form layouts and e-mail templates may contain images uploaded to the give object.
- General: Dialogs with Save button now support CTRL+S shortcut for saving the changes.
- General: The global event handler now supports OnBeforeInsertNewCultureVersion and OnAfterInsertNewCultureVersion events.
- General: The CSS styles can now depend on browser type by specifying styles in format .IE6 . MyCssClass.
- General: New macro {&<path>&} allows you to specify path or its parts in the Where condition of web parts.
- General: You can define your own custom macros and use them throughout the system.
- Import/export: You can easily export and import a single object, such as page template, web part, etc.
- Multi-lingual support: The content tree in CMS Desk displays an icon for documents that are not translated to the currently selected language.
- Multi-site support: You can configure multiple web sites to run on a single domain, in different subfolders.
- Newsletters: You can clone newsletters and newsletter templates.
- Newsletters: You can add custom fields to the subscriber profile.
- Newsletters: The subscription dialog allows you to subscribe to several newsletters at once.
- Newsletters: New My subscriptions web part allows users to manage their subscribed newsletters.
- Newsletters: New Newsletter archive web part allows you to publish previous newsletter issues on your web site.
- Newsletters: It's now possible to choose if you want to send the confirmation e-mails when the user subscribes/unsubscribes.
- Newsletters: The newsletter issue is now sent to subscribers immediately, without waiting for the next scheduler cycle.

© 2009 Kentico Software

- Newsletters: You can add attachments to the newsletter and insert in-line images that are sent with e-mail.
- Localization: You can add custom resource strings to the custom.resx file and override standard strings.
- Performance: Several performance improvements were made to page processing and image displaying.
- Relationships: It's now possible to add custom fields and custom (XML) data to the relationships (the feature requires custom-developed user interface).
- Reports: You can clone reports.
- Security: The page content access can be globally configured so that the permissions are checked for all pages, none of them or only for pages within secured site areas.
- Web analytics: New reports "Countries" and "Browser types" were added.
- Web analytics: It's possible to choose particular reports and disable others to save space and performance.
- Web parts: The documentation is now part of the web part properties
- Web parts: The transformation name and culture code properties may contain a macro expression (e. g. {%classname%}.preview).
- Web parts: New web part Language selection.
- Web parts: A new web part Lightbox allows you to display content in a new layer and browse documents without postbacks.
- Web parts: New WMP Video, YouTube, Google Video, Real Media and Quicktime web parts allow you to easily integrate videos into the page
- Web parts: New Flash web part allows you to easily integrate Flash animations.
- Web parts: New Content slider web part allows you to create a slide show of documents.
- Web parts: New Scrolling text web parts allows you to scroll documents, such as latest news.
- Web parts: You can easily clone web parts, including their code for further customization or extension.
- Web parts: You can create custom web part layouts, which allows you to fully customize the design of web parts.
- Workflow: The non-published pages may throw 404 Page not found if the Site Settings -> Web Site -> Page not found for non-published documents option is turned on.

Changes:

- CMS Desk: The Code tab is now only displayed if the CMSShowWebPartCodeTab value in the web.config is set to true.
- CMS Desk: The Code tab is now only displayed if the CMSShowWebPartBindingTab value in the web.config is set to true.
- CMS Desk: The Custom fields tab is no longer displayed when custom fields are not defined.
- CMS Desk: The default installation contains only spell checkers for en-us and en-gb cultures to save space. You need to download additional dictionaries from our site as described in Developer's Guide -> Content Management -> Using the built-in spell-checker.
- CMS Desk: The Recent documents dialog now displays only the latest 50 documents sorted in a descending order.
- E-commerce: The wishlist is now connected with particular site.
- Forums: The e-mail is not automatically pre-filled into the textbox in the new post dialog if the user is signed in.
- Polls: The cookie indicating if the user voted in the poll now uses a codename rather then ID.

© 2009 Kentico Software

Bug fixes:

- General: Next Run time didn't change after editing Start time of Scheduled task.
- General: Only last item was saved to NodeCustomData document property.
- General: Some form controls didn't work within user contributions.
- General: Culture didn't change when swithing to edit the document from MyDesk.
- General: Root document wasn't shown in Documents waiting for my approval.
- General: SpellChecker didn't recognize some words with specific suffixes.
- General: Site deletion wasn't logged in Event log.
- General: EditableItems weren't able to store CDATA sections in <![CDATA[Content]]> format.
- General: Content staging didn't support linked documents.
- General: No attachments were copied when creating new culture version of cms.file document using workflow.
- General: E-mail addresses didn't allow '+' and '-' characters.
- General: Culture of the document was determined from URL path if URL path and Alias path were same.
- General: Linked attachment could have point to different culture version than requested in specific situations.
- General: UserInfo wasn't correctly configured to be serializable and caused problems with Out-of-process session storage.
- General: Content attribute of meta tags was missing when the value was empty.
- General: Non-existing users weren't authenticated on first page request with Windows authentication.
- General: /getdoc/… links were not resolved properly with specific multilingual conditions.
- General: Preferred culture code was not validated against the allowed site cultures.
- General: License information page was not properly loading styles and images with extension less configuration.
- Web parts/controls: UseFlatView property of ForumGroup web part didn't work properly.
- Web parts/controls: It wasn't possible to set Path, CultureCode and SiteName properties in EditContribution web part.
- Web parts/controls: Application path was included in image path of EditableImage web part that caused problems when the site was imported to the root.
- Web parts/controls: Image tag was generated even if no image was selected in EditableImage web part.
- Web parts/controls: Random document web part didn't work correctly when caching was on.
- Web parts/controls: Sorting wasn't preserved while changing pages in CMSGrid.
- Web parts/controls: Pager of CMSDataList and CMSRepeater caused exception when these controls were nested.
- Web parts/controls: ClassNames selector didn't allow choosing more items if these had nearly same code names.
- Web parts/controls: MinLength property of CMSEditableRegion didn't work.
- Web parts/controls: CMSRepeater didn't preserve ClientID of controls in transformations after post back.
- Web parts/controls: Breadcrumbs' Show current item property always returned true.
- Web parts/controls: Breadcrumbs couldn't display more document types at once.
- Web parts/controls: Language selector didn't work when extension-less URLs were used.
- Web parts/controls: Some web parts didn't support ReloadData method.
- Web parts/controls: CMSRepeater and CMSDataList didn't work correctly when displaying more document types.
- Web parts/controls: Registration web part was not generating SHA1 passwords properly.
- Web parts/controls: Web part properties editor allowed selecting of the file field which is not supported on the web part properties form.
- Web parts/controls: ForumSearchResults web part didn't use Unicode for searching, problems with Cyrillic alphabet, etc.

© 2009 Kentico Software

- Web parts/controls: Random document web part didn't support multiple document types.
- Web parts/controls: CMSPagePlaceholder rendered additional element in Preview mode.
- Web parts/controls: CMSWebPartZone renders additional in preview mode.
- Web parts/controls: New item edit mode button was displayed just for Menu item document types.
- CMSDesk: MaxTreeNodes of dialogs with content tree contained only 1000 documents per parent node hiding the other documents.
- CMSDesk: Frame resizer didn't work correctly for RTL languages.
- Installation: All licenses were deleted when installing to existing DB without creating new objects.
- CMSDesk: Relationship to the manually entered document path could not been added.
- CMSDesk: CTRL+S shortcut wasn't working properly with certain E-commerce pages.
- CMSDesk: Certain edit mode controls were not using UI culture.
- CMSDesk: New link page limited the number of displayed documents in tree to MaxTreeNodes.
- CMSDesk: Version history and Workflow tabs used workflow information from incorrect document culture.
- CMSDesk: Large files stored in the database too big for the Connection to process could have not been deleted.
- CMSDesk: Documents without version history were deleted into the owner's recycle bin instead of the recycle bin of the person who deleted them.
- CMSDesk: Destroying of the latest document version may have caused exception when working with the document further.
- CMSDesk: Grid with filtering could hide filter form in certain situations if no results were found.
- CMSDesk: Document could not be deleted by its owner after it was submitted to approval.
- CMSDesk: File import procedure didn't properly check if the target document allowed CMS.File as child document.
- CMSDesk: Tasks configured just for one execution configured to be deleted may have not been
- called.
- CMSDesk: Two concurrent validation messages were displayed when both regular expression and length validation were configured in the document form.
- CMSDesk: When deleting the document, published version was deleted to the recycle bin instead of the latest version.
- CMSSiteManager: Under specific conditions, global template could have been retrieved instead of the local template.
- CMSSiteManager: Code name fields were not validated in certain locations.
- CMSSiteManager: Task configuration did not allow tasks running only on weekend days.
- CMSSiteManager: Page template tree was not correctly refreshed after deleting the page template.
- Newsletters: Unsubscribe link wasn't translated to different languages.
- Newsletters: Sender name wasn't used in confirmation e-mails.
- Newsletters: Absolute links in newsletters weren't correctly resolved if SSL was used to access CMSDesk.
- Newsletters: Localization macros didn't work in (un)subscription letters.
- Newsletters: Subscriber list caused Javascript errors in Newsletter preview.
- Newsletters: Update of Sent emails field was not thread-safe, in some cases wrong value could be written.
- Content staging: Documents order was changed when new document was synchronized.
- Content staging: No content staging task was created when the document was archived.
- Forums: When there were more forum groups on a page of ASPX website, then the forum groups didn't hide after choosing some forum.
- Forums: Certain Unicode characters weren't supported in the forum post subject.
- BizForms: Localization macros didn't work in auto-responder e-mail body.
- BizForms: Exception occurred when entered default value was longer than max length in field editor.
- Web analytics: Period settings were lost when switching between reports.
- Web analytics: Month selection was not disabled when selecting the year statistics.
- Web analytics: Stored procedures contained [dbo]. which caused problems on specific configurations.

© 2009 Kentico Software

- Content staging: Documents with attachments and workflow may have been synchronized incorrectly with specific configurations.
- Polls: Poll web part was creating duplicit items on specific postbacks causing exception.
- Polls: Polls controls HTML code wasn't XHTML valid.
- Polls: Only global administrator was able to add new polls.
- Import/Export: Import and export wasn't able to process sites with many attachments stored in the database, ended up with OutOfMemory exception.

October 8, 2007 - Version 2.3a (Service Release)

Bug fixes:

- Performance: Improved performance and optimized queries for large number of documents.
- In-line controls: The in-line controls didn't work correctly in the ASPX page templates.
- Controls: Template data pages displayed an invalid number of pages.
- Controls: CMSDocumentValue tag didn't display correct content when publish from/to was used.
- Controls: Image selector doesn't work correctly after postback.
- Import/export: The import didn't work for web sites that used workflow assigned to all document types in the given scop.
- Import/export: The attachments were not imported correctly in some special cases.
- E-commerce: The strings were not localizable in the fifth step of the shopping cart.
- URL rewriting: The parameters containing a dot (.) were not processed correctly with extension-less URLs.
- Search: The search query for custom document types without custom fields was incorrectly generated.

September 17, 2007 - Version 2.3

New:

- New module: Blogs
- New module: Polls
- New module: Reporting
- New module: Web analytics
- New module: User contributions
- Documentation: Enhanced documentation, more API examples.
- Linked documents: You can create links to existing documents so that they are displayed in multiple sections/categories.
- Installation: Simplified support for medium trust environment.
- Installation: It's now possible to deploy the web site to a local folder for later copying to the server over FTP.
- BizForms: It's now possible to specify if you want to display colons (:) in field labels.
- BizForms: The visitor who submits the form may now receive an automatic personalized e-mail response.
- CMS Desk: It's now possible to choose the language of the administration interface in the logon screen.
- CMS Desk: New report "Outdated documents" allows users to see document older than specified number of days.
- CMS Desk: The document owner property has been added to the documents. The property allows you to assign responsible users to the documents and display their documents in My Desk -> My

© 2009 Kentico Software

Documents.
- CMS Desk: The newly created document can be optionally added as first, last or at its alphabetical position. You can configure the ordering in Site Manager -> Settings -> Content management -> New document order.
- CMS Desk: The Properties tab and its sub-sections can be optionally hidden from chosen roles. It allows you to customize and simplify the look of the editing interface. You need to enable personalization in Site Manager -> Settings -> Content management -> Personalize user interface by permissions. Then, you can customize the user interface by configuring permissions for module CMS User Interface in CMS Desk -> Administration -> Permissions.
- CMS Desk: It's possible to specify a different CSS stylesheet for every editable region.
- Web parts/controls: The CMSTreeMenu control/Tree menu web part now support mouse-over images.
- Web parts/controls: The CMSTreeMenu, CMSTabControl, CMSSiteMap, CMSBreadcrumbs and CMSListMenu controls now allow you to supply custom DataSource. They also allow you to get/set their rendered HTML code.
- Data engine: It's now possible to write your own data provider.
- E-commerce: Wishlist support has been added.
- E-commerce: The payment options are now dependent on shipping options.
- E-commerce: The order list now displays the orders in different colors based on their status and the order can be moved to the previous/next status using the action buttons.
- E-commerce: The tax may be optionally zero if Tax ID is entered.
- E-commerce: It's now possible to edit user departments in the User properties dialog.
- E-commerce: Support for discount level has been added - every customer can have a global discount on all products.
- E-commerce: Support for volume discounts has been added.
- E-commerce: It's now possible to specify taxes based on states, not only on countries.
- E-commerce: It's now possible to specify the shopping cart and wishlist URL in the Site Manager -> Site Settings -> E-commerce section.
- E-commerce: A document type can be configured so that whenever a new document of that type is created, a new product is also automatically created and the data is copied to the product.
- E-commerce: It's now possible to track the number of products in stock that can be ordered and optionally limit orders to number of available items.
- Forums: The moderator can approve a post including its replies (sub-posts).
- Forums: The user may be required to enter a security (CAPTCHA) code when adding a new post to the forum. This feature helps you avoid spam.
- Import/Export: It's not possible to import only new items without overwriting duplicate items.
- Site Management: The site deletion is now asynchronous to avoid timeouts when deleting a large web site.
- Newsletters: You can now import and export subscribers.
- Newsletters: You can specify the CSS styles for every newsletter template, separately from the template body.
- Newsletters: Improved user interface of the newsletter issue editor.
- Newsletters: More robust e-mail sending. The newsletter has been successfully tested with 1000 subscribers.
- Performance: Improved performance of file retrieval and optimization of some queries.
- Search: Improved performance
- Search: The search page now uses URL parameters instead of postback so that it's possible to use the Back browser button on the linked pages.
- Security event handler: Added new method OnFilterDataSetByPermissions.

Changes:

- CMS Desk: When a new document is created, its CSS stylesheet is set to "inherit" by default.
- CMS Desk: The CSS stylesheet property has been moved to Properties -> General and it's no longer

© 2009 Kentico Software

versioned.
- CMS Desk: The destroy document and destroy version history options are no longer offered to users without Destroy permission.
- CMS Desk: The delete all culture versions option is no longer offered on single-language web sites.
- CMS Desk: The content tree is now displayed in chosen language when using multilingual support.
- Controls examples: The CMSControlsExamples folder content is now available as a part of the Corporate Site sample web site, in the Examples section.

Bug fixes:

- BizForms: The record ID wasn't available in the OnAfterSave event.
- BizForms: The textboxes in the "Send form data to e-mail" section were not validated.
- Sites: The page might end with request time out when deleting large web sites.
- Newsletters: The editable regions might not be displayed correctly when editing a newsletter issue text.
- Newsletters: The sender e-mail format wasn't validated when creating a new newsletter.
- Newsletters: The permissions were not tested correctly on the Subscriber properties dialog.
- Newsletters: The links in newsletters were not correctly made absolute when using https protocol.
- E-commerce: The disabled products could be added to the cart.
- E-commerce: The user who created the order was not stored in the order history.
- E-commerce: Invalid formatting of the forgotten password dialog.
- E-commerce: The e-mail addresses were not validated when editing order properties.
- E-commerce: When the product image was removed in the Form dialog, it hasn't been removed in the Product dialog.
- E-commerce: Some methods of the custom e-commerce providers were not called.
- Web parts/controls: The Select only published property of the Repeater web part didn't work correctly.
- Web parts/controls: The Paged text web part didn't work correctly with QueryString paging mode.
- Web parts/controls: The Related documents web part didn't work correctly in ASPX page templates.
- Web parts/controls: The Tab menu web part didn't display the first item.
- Web parts/controls: The search results didn't reflect the "combine with default culture" option.
- Web parts/controls: The logon.ascx web part displayed an error in Visual Studio, when an ASPX page template was displayed in Design tab.
- Web parts/controls: The Repeater web part set the Check permissions value incorrectly to true when it was added to the page.
- Web parts/controls: The container title wasn't localizable.
- Web parts/controls: some strings were not localized in the Bindings dialog in the Web part properties.
- Web parts/controls: The HTML code and special characters displayed in the alt tag weren't encoded in the menu controls.
- Form engine: The labels contained invalid LabelFor ID for user controls.
- Import/Export: The sites exported in the previous versions couldn't be imported in the 2.2 web site.
- Import/Export: The document permissions were not imported if they were defined by a user that doesn't exist in the new web site.
- Search: The search raised an exception if the root document wasn't published.
- Forums: The validation didn't work correctly when editing existing forum posts.
- Forums: The emoticons were not displayed correctly when editing existing forum posts.
- Forums: The WYSIWYG editor didn't work when editing existing forum posts.
- Forums: The post statistics included the non-approved items.
- Forums: The notification e-mails contained invalid URL when the post was added from the administration interface.
- Multilingual web sites: The language selection didn't work correctly for pages that use URL Path.
- Multilingual web sites: The default culture was not applied correctly based on the current domain.
- CMS Desk: The design tab didn't reflect the chosen UI culture.
- CMS Desk: The user e-mail wasn't validated in My Desk -> My profile and in Administration -> Users.

© 2009 Kentico Software

- CMS Desk: It was possible to copy/move page into sub-page which caused errors and inconsistencies in the database.
- CMS Desk: The content tree displayed the code name of the web site instead of display name.
- CMS Desk: Some of the extended characters used in the content were encoded as HTML entities which caused that the strings were not found by the full-text search engine.
- URLs: The = character was added to the forbidden characters that are replaced in URL.
- URLs: The links created in the WYSIWYG editor didn't work correctly with "combine with default culture" option turned on.
- Workflow: The notification e-mail contained workflow step code name instead of display name.
- Workflow: The documents might not be visible on the web site if they were archived and the re-published.
- Workflow: The documents using workflow didn't work correctly when they were copied to another web site.
- Workflow: The documents using workflow didn't work correctly when restored from the recycle bin.
- Workflow: The modification of page template caused that the document workflow step was set to Edit.
- Workflow: The "New workflow step" dialog contained a non-translated validation error.
- Workflow: The notification e-mail didn't point to the correct language version of the document when using multilingual support.
- Document types: The icon wasn't renamed when the document type code name was changed.
- Document types: The default values with apostrophe caused problems.
- Document types: The default value range wasn't validated correctly.
- WYSIWYG editor: The image wasn't preserved in FireFox when the <P> elements were removed around the <IMG> element.
- New site wizard: The Delete button didn't work.
- Site Manager: The e-mails were not validated correctly in the Site Manager -> Administration -> System -> E-mails dialog.
- Caching: The Cache minutes property in web parts didn't override the global settings.

June 8, 2007 - Version 2.2

New:

- General: Kentico CMS now fully supports Medium Trust environment and compiled web projects. See Developer's Guide -> Installation and deployment -> Additional configuration tasks -> Configuration for Medium trust environment. You need to save all virtual objects to the file system before compilation using CMSSiteManager -> Administration -> System -> Deployment by clicking the button “Save all virtual objects to disk”.
- General: Page templates of the portal engine now can have custom content for the HEAD element specified.
- General: The CSS stylesheet, page title, description and keywords can now be set for every section of the web site and inherited to underlying documents.
- General: The title format is now configurable in Site Manager -> Settings -> Page title format and allows you to use any common document field in the title (e.g. the document name).
- General: You can now specify which sections of the web site should be accessible only over the HTTPS protocol. The system then automatically redirects the user to the HTTPS protocol if the user tries to access the page over HTTP. You can configure this in the CMS Desk -> Content -> Properties -> Security. You need to have SSL configured correctly on your web server.
- General: Any document type can now behave as page (menu item) - this can be configured in the document type properties.
- General: Most of the web parts now work correctly with Enter key.
- General: The extended characters in aliases (URLs) are now automatically converted to basic latin

© 2009 Kentico Software

characters. This doesn't apply to complex scripts, such as Chinese or Arabic.
- General: The users now have two new fields with account creation date and last successful logon.
- General: It's now possible to use URLs based on alias path rather than on the GUID. You can configure this in Site Manager -> Settings -> URLs -> Use permanent URLs (false means use alias path).
- CMS Desk: Spellchecking support was added.
- CMS Desk: You can now upload files in the file selection dialog which simplifies inserting images into the text in the WYSIWYG editor.
- CMS Desk: You can now easily create multiple documents of the same type in the same section of the web site using the "Save and another" button.
- CMS Desk: The list view mode now allows you to delete/destroy multiple documents at once.
- CMS Desk: The editing interface in the Page and Form tab may optionally notify the user when she is trying to leave the page without saving the changes. You can configure this in Site Manager -> Settings -> Content Management -> Confirm content changes.
- CMS Desk: The content tree now displays the + sign only for items with sub-items.
- CMS Desk: The transformations can now be edited directly from the web part properties.
- CMS Site Manager: New diagnosing tools for testing e-mails and file system permissions were added to the Site Manager -> Administration -> System dialog.
- Controls: New Paged text web part now allows to display long text on multiple pages.
- Controls: The navigation controls and web parts now have the RenderImageAlt/Render image alt property that allows you to specify if alt attribute should be rendered for images used in the menu items.
- Controls: The Random document web part now supports the WHERE condition property.
- Controls: The Breadcrumbs control/web part now displays the menu items while respecting particular settings of every item (such as show in navigation).
- Controls: The Breadcrumbs control/web part now supports RTL languages.
- Controls: The image gallery web part now supports moving to the previous, next and chosen image.
- Controls: The CMSEditableRegion control used in the ASPX templates now has a property InheritContent that allows you to inherit the content of the editable regions on sub-pages placed under some page (menu item).
- Controls: New HEAD HTML Code web part allows you to render code into the HEAD element of the page.
- Controls: New web part/control Editable image/CMSEditableImage allows you to specify regions for images similar to editable regions.
- Controls: All properties of web parts now support the localization strings in format {key} where key is the string key name specified in Site Manager -> Development -> UI Cultures -> Strings.
- Controls: All web parts now have a property Display to roles that allows you to specify which roles should see the given web part.
- Controls: The CMSTreeMenu control/Tree menu web part now supports mouseover style settings.
- BizForms: You can now dynamically specify the values in the From, To, Subject, Display text and Redirect to URL fields using the macro expressions like {%firstname%} where firstname is the name of the field that will be merged with the text.
- BizForms: You can now specify the subject of the notification e-mail.
- BizForms: The system now automatically renames the BizForm and its database table if you import a BizForm of the same name with another site.
- BizForms: The country/province selection dialog now stores the values as code names rather than IDs.
- BizForms: It's now possible to export data to Excel 2007.
- Forums: The users can now have their picture and signature and edit them using the My Profile web part.
- Forums: The users can now specify their nickname in the My Profile web part.
- Forums: You can now configure the use of WYSIWYG editor for post editing.
- Forums: The users are now informed when they submit a post to a moderated forum.

© 2009 Kentico Software

- E-mails: The e-mails can be sent over SSL-secured SMTP server - you can set it up in Site Manager -> Settings -> E-mails -> Use SSL.
- Multilingual support: It's now possible to configure automatic use of default language version of the file if it's not translated - this option is now independent on the "Combine with default culture" option that is used for content. It can be configured in Site Manager -> Settings -> Web Site -> Combine files with default culture.
- Newsletter: The subscribers can have custom fields defined in Site Manager -> Development -> System tables.
- Workflow: It's now possible to configure the workflow scope for all document types.

Bug fixes:

- Controls: The CMSTreeMenu and CMSListMenu didn't recognize the selected menu item correctly if the URL path used a different prefix than the alias path.
- Controls: The PageManager didn't check the permissions correctly.
- CMS Desk: The scheduling dialog didn't work correctly with some cultures.
- Workflow: In very specific cases, the user could approve the document without being authorized to do that.
- CMS Desk: The virtual objects (layouts, CSS stylesheets) were not updated in the memory when the user modified them using the check-in/check-out function.
- CMS Desk: The browse tree permission didn't allow editors to browse content unless they had also the edit permission.
- CMS Desk: The WYSIWYG editor didn't work correctly with https URLs.
- CMS Desk: The default values of the custom fields were not applied when creating a new user.
- CMS Desk: The maximum number of tree nodes didn't work correctly with multilingual web sites.
- Controls: The MyProfile web part didn't work correctly on ASPX page templates.
- Controls: The Registration form web part didn't allow for empty value in the "Assign to roles" property.
- Controls: The related documents settings didn't work correctly in some web parts.
- BizForms: The custom query for retrieving drop-down list items couldn't use < and > characters.

Changes:

- Editor: The WYSIWYG editor is now placed in an IFRAME by default. If you experience any issue with design in the editing mode, please make sure you have <add key="CMSUseIFrameForHTMLEditorToolbar" value="true" /> in your web.config, in the appSettings section.
- Database: All tables now have the Enforce for replication property set to No.
- CMS Desk: The Approve/Publish button now saves the changes made to the text.
- E-commerce: When a customer is disabled, her user account is disabled as well.

May 11, 2007 - Version 2.1e - Service Release

Bug fixes:

- Allowed extensions for uploaded files were not applied correctly.
- The extension of the postback URL was incorrect when using an extension different to .aspx.
- Missing scrollbars in several dialogs.
- Enter did not work as a default submit button in the search dialog.
- The PageInfoProvider didn't work correctly with addresses that were in format xxx.domain.com/xxx.
- The image gallery web part didn't work correctly in ASPX templates.
- The site import wizard didn't check if there's any package to be imported.

© 2009 Kentico Software

- The COM_CurrencyExchangeRate table contained duplicated records after export/import.
- The hashtables with queries and transformations were not updated when a document type was deleted.
- The site map web part/CMSSiteMap control didn't work correctly with URL redirection.
- The custom error message of the "user control" field and drop-down list field wasn't used.
- The values of the user custom fields were deleted when the user account general properties were updated.
- The BizForm property "Send form data to e-mail" couldn't be unchecked.
- The drop-down menu/CSS menu didn't work correctly with mouse-over CSS class.
- The BizForm web part didn't work correctly with custom code in the Code tab.
- The move of the document to another site didn't work correctly.
- The tab menu/CMSTabControl didn't work correctly with URL redirection.
- The passwords in plain text format were not case sensitive.
- The GetFileUrl functions did not resolve the links correctly.
- The SMTP server name now supports an explicit port number in format smtpserver:port.
- Improved quality of resized images and client caching of images.
- Improved and more stable site import process.
- The version history of attachments was not exported/imported.
- Sorting in CMSDataGrid control/Grid web part didn't work correctly.
- The rollback didn't preserve correct links to attached files.
- The import process didn't update the workflow step correctly in the imported documents.
- The BizForm module didn't display a scrollbar in the Data -> Select fields dialog.
- The content staging synchronization didn't work correctly in special cases when the first synchronization task was "Published".
- The content staging synchronization didn't work correctly for attachments in multilingual documents.
- The information on the current workflow step wasn't updated in some cases.
- The Random Document web part didn't work correctly in ASPX templates.
- The search results were not correct for the "all words" option.
- The paths to CSS files in the Forums and E-commerce modules did not work correctly for extension-less URLs.
- The BizForm Data dialog now supports paging.
- The controls displaying relationships might fail in some cases due to invalid query.
- The custom layouts and master page template were not updated in the cache when modified.
- The root document was displayed instead of the default page in some cases, even if the user viewed the live site.
- The import process didn't import the ASPX templates, VB.NET inline user controls correctly.
- The document name path wasn't updated correctly when copying or moving a document in some cases.
- The Shopping Cart content was deleted before the OnFinishOrder method was called.
- The Shopping Cart didn't use the custom method GetPaymentURL.
- The web part properties dialog didn't work correctly when the page alias path contained extended characters.
- The file upload didn't work correctly if the files folder was outside the web site and the web site root didn't have modify permissions assigned.
- The workflow didn't work correctly after it was disabled for the documents. Now the documents finish their workflow process and then they start working as a document without workflow.
- The non-approved content changes appear on the live web site when the document was being edited.
- The ViewState didn't work correctly in ASCX user controls inserted through the "General/User control" web part.
- The upload field in BizForms raised an exception when trying to update an existing record.
- The pager used in repeater and datalist kept invalid URL parameters used on other page/by other users.
- The web part configuration dialog wasn't displayed correctly when the alias path of the page contained

© 2009 Kentico Software

extended characters.
- The non-aproved images were not displayed when inserted into the page.
- The images in version history might not be displayed in some cases due to the loss of user session.

Changes:

- The BizForm e-mails can now be sent to multiple e-mail addresses separated with a semicolon (;).

New:

- The transformations can now be configured for different language versions - you only need to define the transformation with name in format transformation_<culturecode>.
- The menu controls can now load related table content if you specify a single document type, which allows you to filter the items using the WHERE expression.
- The CMSListMenu control/CSS List Menu web part now has a new property RenderLinkTitle/Render link title property that allows you to configure the control so that it displays a title for every link for better accessibility.

March 20, 2007 - Version 2.1d - Service Release

Bug fixes:

- The permission "Check-in any document" was not applied.
- It was possible to approve a checked-out document.
- The unsubscribe link in the newsletter module contained invalid URL in case the web site was running in the site root.
- The field name couldn't be renamed.
- E-mails sent from the BizForms module did not support localized strings.
- The SkinID property of the search dialog could cause errors.
- Some of the session variables didn't support out-of-process session storage.
- The newsletter web parts didn't support localization of custom captions.
- The Add new button was displayed in the Detail view.
- The generated search query was invalid for container document types.
- The SQL Import displayed confusing messages when the connection string was not set.
- The deletion of all items in an order in the E-commerce module caused an exception.
- The RoleInfoProvider didn't raise the CustomDataHandler events.
- The shipping, billing and currency can now be localized using the localization strings.
- The layouts, transformations and web parts might be cached even after they were modified.

Changes:

- The FCKeditor shared toolbar can now be placed in a separate frame to avoid issues with design. You can set up the placement in a separate frame using the following web.config parameter:
  <add key="CMSUseFrameForHTMLEditorToolbar" value="true" />
  Please note: This value is now intended for testing purposes only, it will be fully supported in the next versions.

New:

- The BizForms data view now supports paging.
- All menu controls now support the custom menu item settings, such as styles or custom images. The

© 2009 Kentico Software

mouseover action is supported only by CMSMenu control/Drop down menu web part.
- Added browser configuration for correct behavior of the web site when it's accessed by W3C validator.
- The system now logs the restarts of the application and displays the time from the last restart.
- It's now possible to send support requests with system information from the Site Manager -> Support section.

March 1, 2007 - Version 2.1c - Service Release

Bug fixes:

- The workflow notification e-mail was sent with a confusing subject to the person who was authorized to approve the document.
- The subscription in the forum didn't work correctly in the tree view mode - the user was subscribed to the whole forum instead of particular post.
- The Design tab was not displayed for the pages with inherited template.
- The Calendar web part didn't work correctly when placed on an ASPX page template.
- If the page contained multiple forum groups, they were not displayed when the user selected a forum in some forum group.
- The code placed in the Code tab of the web part didn't work correctly on sub-pages.
- The code placed in the Code tab of the web part didn't work for editable regions.
- When the site code name was changed, the system still didn't allow to create a new site using the original code name.
- When the site code name was changed, the images were no longer visible.
- The copying of file documents didn't copy the file.
- Fixed bugs in caching of layouts, transformations and web parts.
- The string resources didn't work correctly if stored in database.
- It wasn't possible to have two BizForms of the same code name on two different sites.
- The postback didn't work with extension-less URLs on Windows Server 2003.

February 22, 2007 - Version 2.1b - Service Release

Bug fixes:

- Important security fix: The administration section didn't control the access rights correctly. It's highly recommended that you upgrade your system to 2.1b!
- The search dialog didn't work in the ASPX templates.
- The Current User web part didn't use the user name label CSS style.
- The CSS list menu rendered invalid code for inactive menu items.
- The product access permissions were fixed in the Content -> Product dialog.
- The image gallery web part didn't work correctly in the ASPX templates.
- The CMSTreeMenu control rendered invalid code in case some menu item image was specified.
- The page template code name uniqueness wasn't checked.
- The check-out function for the page layout didn't work correctly in some cases.
- The e-mails sent by the Newsletter module didn't display the line breaks in some e-mail clients correctly.
- The filtering in Customers and Orders lists didn't work correctly.
- The allowed file extensions that can be uploaded were case sensitive.
- The Relationship name property of web parts wasn't saved and applied.
- The ASPX page template files were not exported during the Export objects wizard.
- The Sign out button wasn't localized.

© 2009 Kentico Software

- Several bugs were fixed in the import/export process.

What's new:

- Partial translations were added: French, Italian, German, Spanish, Dutch, Czech.

February 7, 2007 - Version 2.1a - Service Release

Bug fixes:

- The file name couldn't be entered for ASPX page templates.
- Document check-out could lead to a database dead-lock if the version history length was too small.
- Several bug fixes in the import/export procedures.
- The left tree menu didn't unfold when some document was opened using an e-mail notification link.
- The file upload didn't work correctly if files were configured to be stored in the file system.
- The ID of the web part added to a new page template wasn't unique.
- Missing scrollbars in the New document type wizard.
- The search engine caused an exception if multiple searches were performed at the same time.
- The cloned template modifications affected also the original template.
- The RSS feeds contained invalid news item URLs if running in the web site root.
- The password format was not set correctly when creating a new user.
- Paging didn't work correctly in the Image gallery web part.
- CMSRepeater and some other controls didn't work with custom ItemTemplate sections and other nested configuration sections.
- Portal page template inserted under the ASPX page templates didn't work correctly.
- The button Submit to approval might been still displayed after the document was published in some cases.
- After editing a page and pressing check-in the content controls were not locked until you navigated away from the page and back again.
- Language selector didn't work correctly.
- The portal engine-related tabs (dialogs) were not hidden for ASPX page templates.
- Several bug fixes in the Content staging module, including synchronization of move/copy operations.
- The visual inheritance didn't work correctly if the document inherited only from the root document in some cases.
- Added documentation of new database tables.

Changes:

- The CMS system resource strings were moved to the CMSResources/CMS.resx file which speeds up the installation, makes the translation easier and saves database storage space.

January 30, 2007 - Version 2.1

What's new:

- Improved performance.
- New Forums module.
- New E-commerce module.
- New Content Staging module.
- Added full support for ASPX page templates and documentation.

© 2009 Kentico Software

- It's now possible to add custom fields to the user profile through the administration interface (Development -> System tables).
- The master page can be edited using a special tab "Master page" that is displayed for the root page. This allows you to edit DOCTYPE, HEAD element content, BODY element attributes and page layout of the master page.
- The document types can be marked as document types with "page template selection" so that the page template must be selected when a new document is being created.
- The Newsletter module now allows you to choose if you want to send confirmation e-mails to users when you subscribe/unsubscribe them through the administration interface.
- The virtual paths, such as "~/images/image1.gif", can be used also for the background attribute.
- The logon form now supports sending of forgotten passwords.
- The icons in content tree can now be clicked (for better usability).
- The Drop down menu (CMSMenu control) now supports separators.
- Support for nested repeaters/datalists.
- More robust import/export methods.
- The SQL Import utility now supports import of images.
- The web parts can now be placed directly on the ASPX pages or ASCX controls, outside the portal engine.
- New BizForm web part.
- New JavaScript web part.
- New My Profile web part.
- The Registration form web part now supports registration of users whose account needs to be activated by the administrator.
- New Web Services web parts (Datalist, Grid, Repeater) allow you to display content provided by a web service.
- New Master page tab in the CMS Desk allows you to easily modify the master page, including DOCTYPE, HEAD section and BODY attributes.
- New property Skin ID was added to several web parts.
- It's now possible to change the default culture of the web site through the user interface at any time.
- It's now possible to set content inheritance for every single page.
- It's now possible to create page templates with page template-specific HTML layout.
- The scheduled tasks can now be automatically deleted after they are completed.
- New menu action configuration section has been added to the Properties -> Menu dialog. You can use it to define an inactive menu item.
- New CMSDocumentValue control allows you to display the given value of the current document.
- The transformations can now use a new method IfEmpty to decide if the value (e.g. image field) is empty and display conditional text.
- New example of RSS feed with content from Kentico CMS was added to the Developer's Guide -> Extending modules -> RSS feeds.

Changes:

- The Design tab is not applied only to the current page (page template), not on the whole page.
- The PDF documents are now returned with content disposition inline, so that they do not display a download dialog.

Bug fixes:

- The localization was not fully supported in the BizForm form.
- The CMSEditModeButtonAdd control rendered empty element in the live site mode.
- The repeater/datalist/grid controls/web parts didn't work correctly if placed on the page template assigned to a document of other type than "page (menu item)".
- Page templates with empty parent category were not displayed in the page template selection dialog.

© 2009 Kentico Software

- Several dialogs were not displayed correctly in IE 6.0.
- The drop down menu was displayed as vertical when it was approved in the Preview mode.
- The date time picker might not work correctly when the content was in other culture than en-us.
- The "is custom string" box value in the UI Cultures section was not saved correctly.
- The "created by" field of the document was not set when a new document was created.
- The full-page caching didn't work correctly with personalized web sites (authenticated users).
- Document links couldn't be created correctly in the Static HTML web part properties in IE 7.0.
- Extended characters were not displayed correctly in page layouts and transformations.
- The List view mode was displaying only published documents.
- The file selection dialog did not work correctly for other file types than images.
- The output filter did not work correctly in some special cases.
- The e-mail form field didn't validate the e-mail addresses written in uppercase correctly.
- The BizForm module didn't support localization of all form captions.
- The Grid (CMSDataGrid), Datalist (CMSDataList) and Repeater (CMSRepeater) controls didn't work correctly if placed on page template assigned to non-page document type.
- The icons of the custom document types were not exported and imported.
- Storing passwords in hashed format didn't work correctly.
- The BizForm module did not save the uploaded files.
- The Design tab of the web parts rendered an incorrect code of the table elements.
- The changes made to the web part container code were not updated on the live web site automatically.
- The session variables are now serializable, so that they can be used within a web farm with SQL Server session store.
- The files placed within a secured area didn't require authentication.

November 29, 2006 - Version 2.0b

What's new:

- IE 7.0 and FF 2.0 are now fully tested with Kentico CMS and supported.
- It's now possible to get the time when the scheduler was last run and restart it manually if necessary.
- New Document page web part that can be used for displaying a list of documents, one document on every page. It's useful for paging of long articles and paging of "Take a tour" wizards.
- New Random document web part that enables displaying a random document, such as "featured product".
- Improved performance of the tree view in CMS Desk -> Content section.
- Improved performance of output filters and portal engine.
- New system of caching that enables caching of whole pages which improves the performance around ten-times in comparison to web part-level caching. The caching can be set up in document properties -> General.
- The information message about editing/preview mode is no longer displayed if the page is displayed inside the CMS Desk.
- Improved support for editing page layouts directly from the Design tab.
- TAB key is now supported in several code editors (such as page layout or transformation editor) throughout the user interface.
- The CSS list menu web part/CMSListeMenu control now supports ID prefixes for differentiating several list menus on the same page.

© 2009 Kentico Software

Bug fixes:

- Fixed design in master page template selection in the New site wizard.
- Fixed problems with scheduling engine that appears in some server environments where the server cannot request page from itself (due to firewall or DNS settings). If you experienced problems with crashing ASP.NET process, you need to add the following parameter to the appSettings section of your web.config file: <add key="CMSUseAutomaticScheduler" value="false" />.
- Datalist no longer renders a table element in the detail view.
- The web site now contains App_Browsers folder with configuration for search engines, such as Google, so that they can access sub-pages using friendly URLs (it workarounds a bug in ASP.NET 2.0 URL rewriting process).
- The forbidden characters were replaced with underscore (_) instead of configured replacement character in some cases.
- The newsletter module doesn't use the Sender from name when sending a newsletter issue that has been already mailed out.
- The newsletter module may display a scheduling dialog after saving the static newsletter configuration.
- The newsletter module doesn't resolve the e-mail address in <A> element correctly.
- The content tree may display a JavaScript error when the document name contains an apostrophe.
- The global administrator can select links or images from any web site even if he/she is not assigned to the web site.
- UI culture (string translations in BizForms, date/time format, etc.) is now set correctly on the web site based on the current user's preferences.
- More stable import/export module.
- String translation in Development -> UI Cultures -> Strings threw an error saying the string already exists.
- The page template wasn't editable in Design tab if visual inheritance was broken by the Inherit page levels property.
- The documents are now correctly displayed if they are placed directly under the page template with page placeholder that has a default page template specified.
- The web parts can now be correctly moved to newly added web part zones.
- The Breadcrumbs web part contained an extra element.
- The files referred using their URL based on alias path did not reflect the currently selected content culture.
- The notification e-mail in BizForms module now contains correctly translated field names.
- The document creation through API failed for long names/alias paths.
- HTML files uploaded to Kentico CMS are now displayed directly in the browser, without displaying a download/open dialog.
- The search didn't work correctly for selected document types.
- The roles assigned to workflow steps were not exported/imported.
- The newsletter issue preview didn't display correct URLs when the site was running in the root.
- The user interface culture and translated strings were not displayed correctly in some cases.
- The content culture was set incorrectly when the session expired.
- The file selection dialog didn't work correctly and didn't contain the Clear button.

November 7, 2006 - Version 2.0a

What's new:

- New design of the sample Corporate Site project.
- Improved performance and optimized output filters.
- The folder app_code/<sitename> is now automatically exported/imported with web site.

© 2009 Kentico Software

Bug fixes:

- If an invalid default alias path is used, the user is redirected to the root.
- Fixed bugs in the licensing mechanism.
- The connection string is now saved to the web.config file only after the database is successfully created.
- Documents with long names might not be saved.
- Import/export didn't save settings values correctly.
- The registration form raised validation on every postback.
- The web site might not be deleted.
- The URL path was incorrectly updated when alias path was modified.
- The WYSIWYG editor created links with domain, although they were inside the given site, the URL didn't follow the configured extension.
- The Save as new template button updated all pages using the original template.
- The breadcrumbs control displayed incorrect links.
- Several minor bug fixes.

October 26, 2006 - Version 2.0

What's new:

Framework and infrastructure changes:
- All code rewritten to C# 2005, VB.NET version is no longer available, but development in VB.NET will be still supported.
- Visual Studio 2003/ASP.NET 1.1 is no longer supported.
- Improved and enhanced API. All operations are now accessible through the object model.
- Custom event handlers throughout the whole system that allow developers to enhance the code with custom actions when e.g. a new document is created, when a user is authenticated, etc.
- All possible settings (web.config settings, transformations, etc.) are now stored in the database instead of the file system.
- It’s possible to configure the web site so that it doesn’t write into the file system.

New Portal Engine
- It’s now possible to create pages using webparts in the web browser, without having to use Visual Studio.
- Several webparts are now available: navigation, content, membership etc.

Multi-site Management
- It’s now possible to run multiple web sites using a single database and code installation.
- The web sites can have different or shared users, content, structure and settings.

Content Management
- New database structure for storing content.
- Every site is “multilingual” by default, even if it uses only a single language. It means that it’s not necessary to configure multilingual support.
- Multilingual web sites may have different structures – it’s no longer necessary to have all documents in the default language.
- New, easier-to-use user interface with preview functionality (without staging) and simplified editing.
- It’s now possible to sort all content tree items manually using arrows instead of setting Menu item order value.

© 2009 Kentico Software

- All documents (not only pages) now can have their menu item caption, page title, keywords, order and page template.
- All documents can be restored from the recycle bin after being deleted accidentally even without versioning.
- Workflow can be assigned to particular site sections and document types, instead of per-document type basis.
- Global search & replace.
- Improved link management using the permanent links that keep working after the target document has been moved or renamed.

Security
- Added membership provider implementation that enables use of Kentico CMS user management with standard ASP.NET 2.0 membership controls.
- Support for custom authentication (user and role information) from an external source.
- Support for automatic import of user account and roles from Active Directory/NT domain.
- Users can change their profile (e-mail, password, preferred culture) in the My Desk section.
- Customizable user profiles
- New user attributes "is editor" and "is global administrator".
- Local deny permission overrides the global permissions.
- Secured areas can be easily defined through the user interface.

Form Engine
- It’s possible to specify custom form layout for editing forms and BizForms.
- Custom validation (value range, regex) is now supported.
- Custom styles for every control.
- Support for field groups.

Deployment
- It’s possible to export the whole web site or its parts (e.g. document types) into a single file (on the development machine) and restore it on the target (production) server.
- Global search & replace enables easy updating of links.
- Kentico CMS now can run without disk write permissions and in the medium trust environment.

File Management
- All files are now stored in a special folder and retrieved using a dedicated ASPX page.
- It’s possible to store files only in the database.

URL Rewriting
- URL Rewriting now supports extension-less URLs without extra “dummy” files on the disk.
- Custom actions and URL rewriting rules are now supported.

BizForms
- Optional switching to advanced user interface with more options.
- Custom form layout, validation and styles.

Newsletters
- Completely new, more robust interface and API.
- Support for dynamic newsletters (such as last week's articles, etc.).

Forums
- Simplified, more flexible configuration.
- Forums can be optionally opened only for registered users.
- Support for ad-hoc forums.

© 2009 Kentico Software

© 2009 Kentico Software

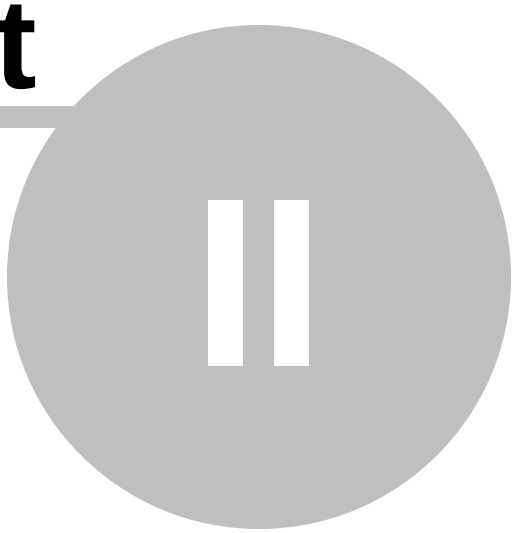
Scheduling
- New scheduling sub-system enabling scheduling of custom tasks.

Search
- New provider-based model enabling use of custom search engine.
- Customizable search results design.
- Search results can be paged.

CMS Controls
- DataGrid, Repeater and DataList controls now support selection of only top N rows.
- DataGrid, Repeater and DataList controls now support paging.

© 2009 Kentico Software

Part



Kentico CMS Overview

2 Kentico CMS Overview

2.1 Should I use Kentico CMS?

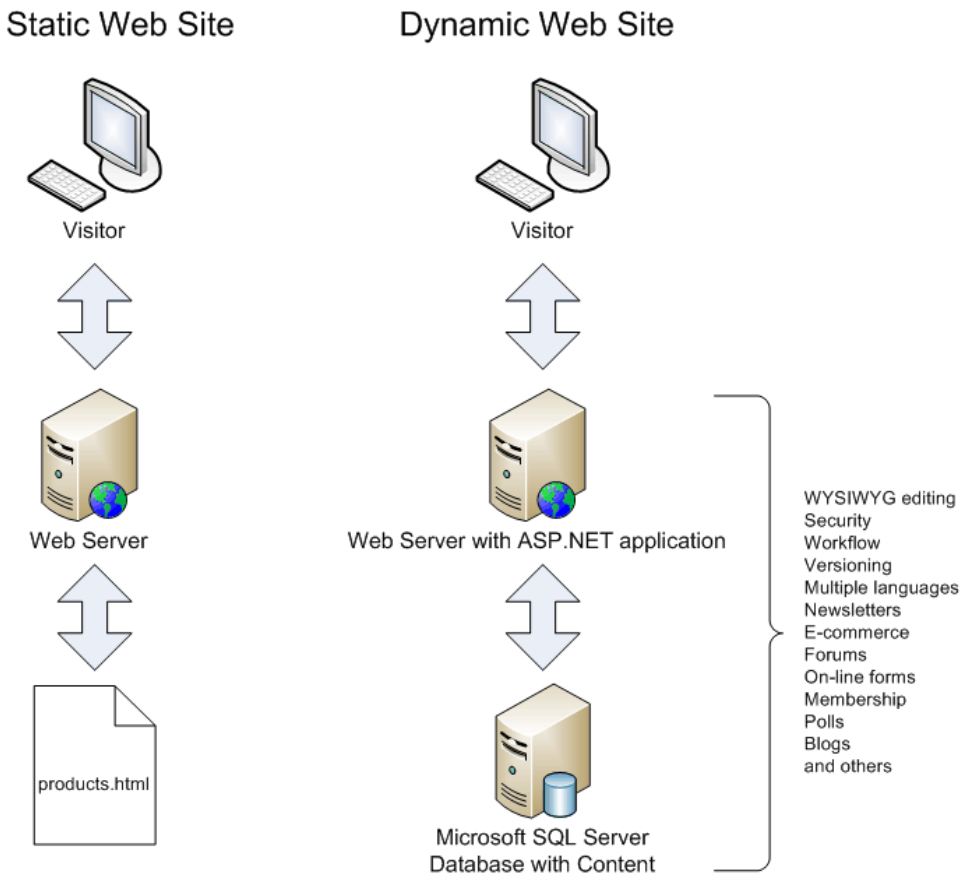
Before you dive into the details, it may be useful to understand the big picture. This chapter explains how the system works, describes its architecture and answers the most common questions you may have.

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



© 2009 Kentico Software

© 2009 Kentico Software

The main advantages of dynamic web site 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** - web site 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 web sites. 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 web site 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 web site 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 web sites 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 web site 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 web sites, clients and testimonials.

© 2009 Kentico Software

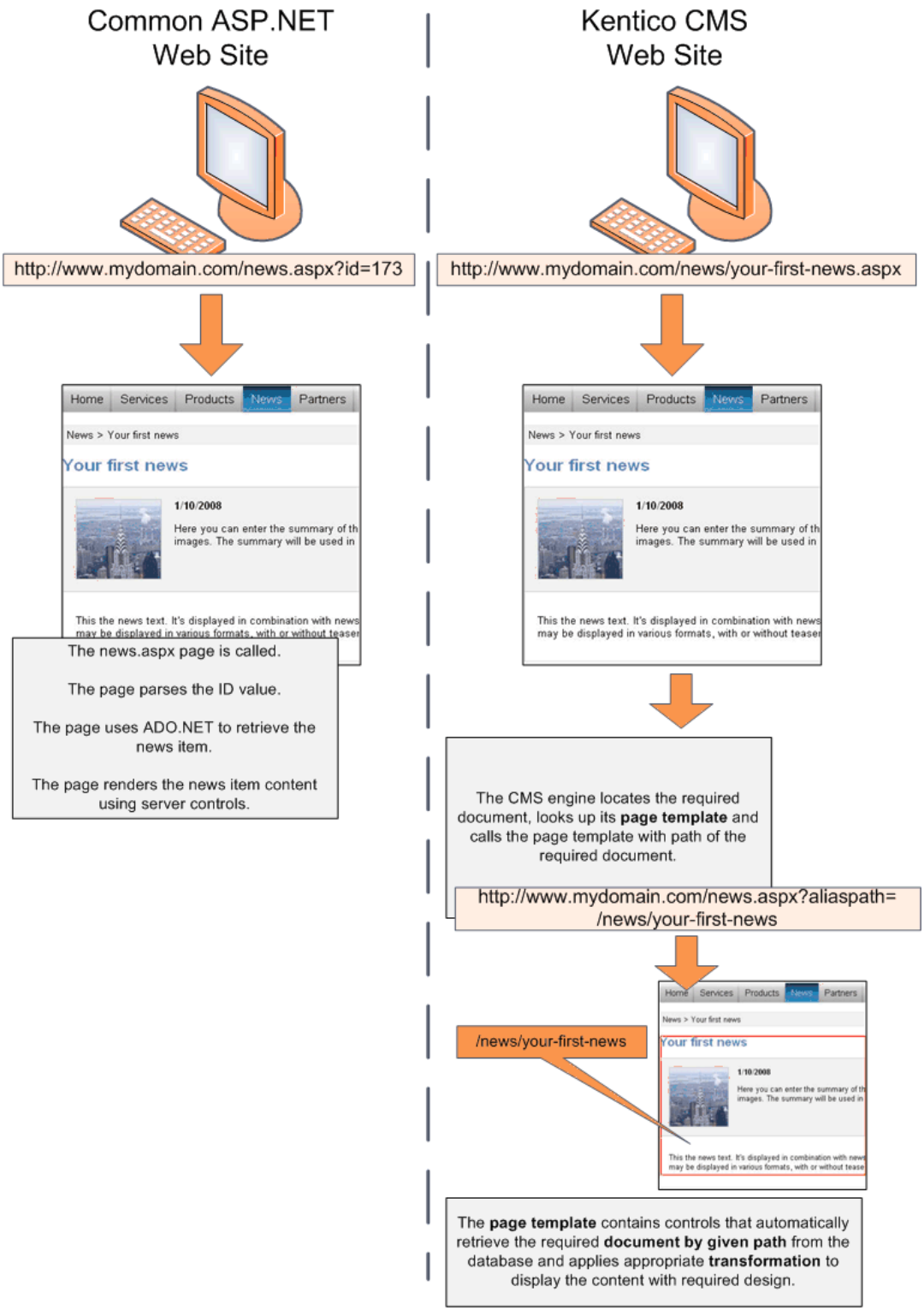
2.2 How does it really work?

If you're familiar with dynamic web sites, you may want to know what the difference between a CMS system and a common ASP.NET web site 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:

© 2009 Kentico Software


Common ASP.NET Web Site
Kentico CMS Web Site
http://www.mydomain.com/news.aspx?id=173
http://www.mydomain.com/news/your-first-news.aspx
Home Services Products News Partners
News > Your first news
Your first news
1/10/2008
Here you can enter the summary of th
images. The summary will be used in
This the news text. It's displayed in combination with news
may be displayed in various formats, with or without teaser
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.
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?

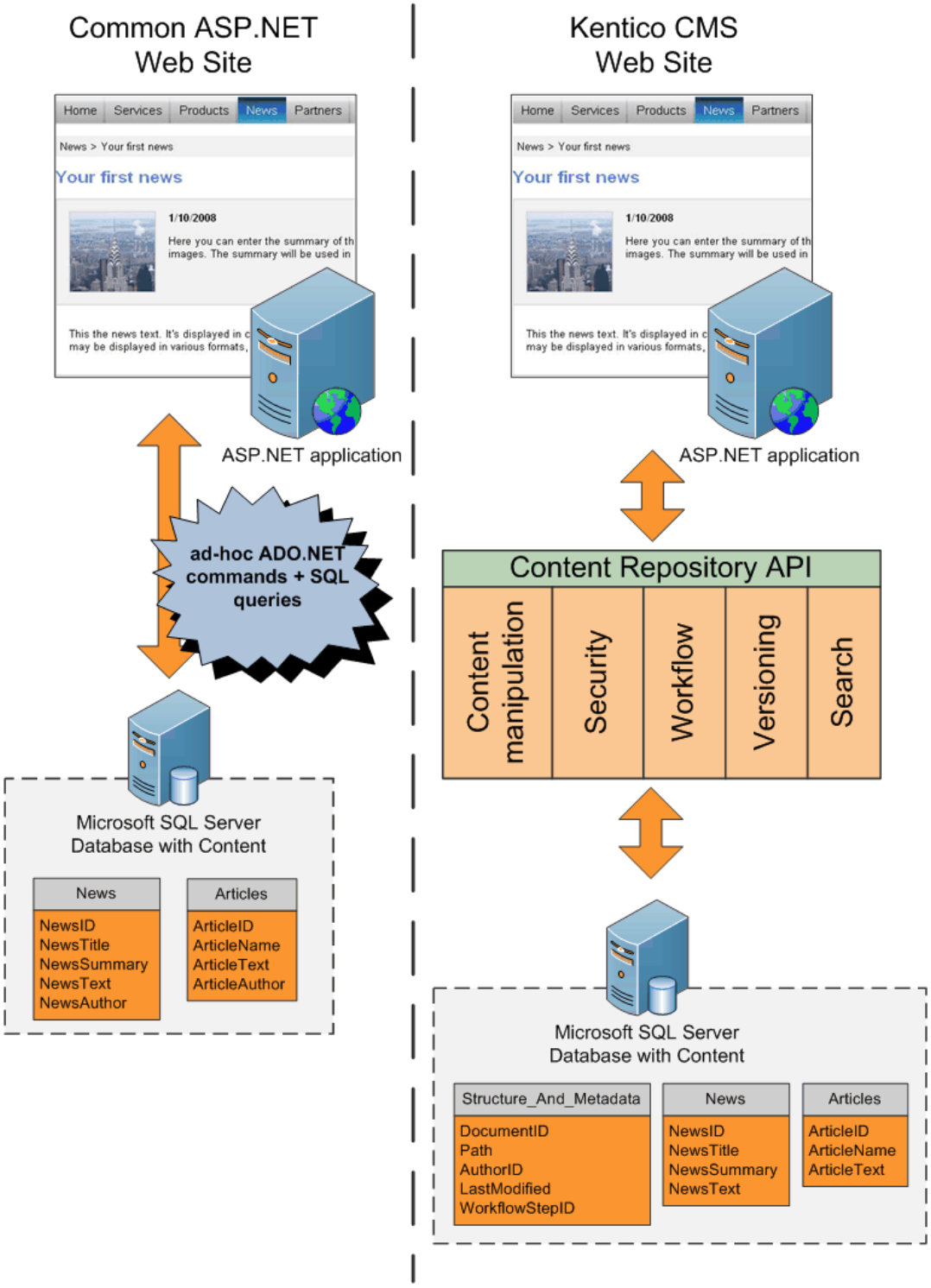
Kentico CMS provides a powerful content repository for your web content. Read the next chapter to learn more.

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 web site 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:

© 2009 Kentico Software



As you can see, a common approach to building dynamic web sites 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.

© 2009 Kentico Software

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**.

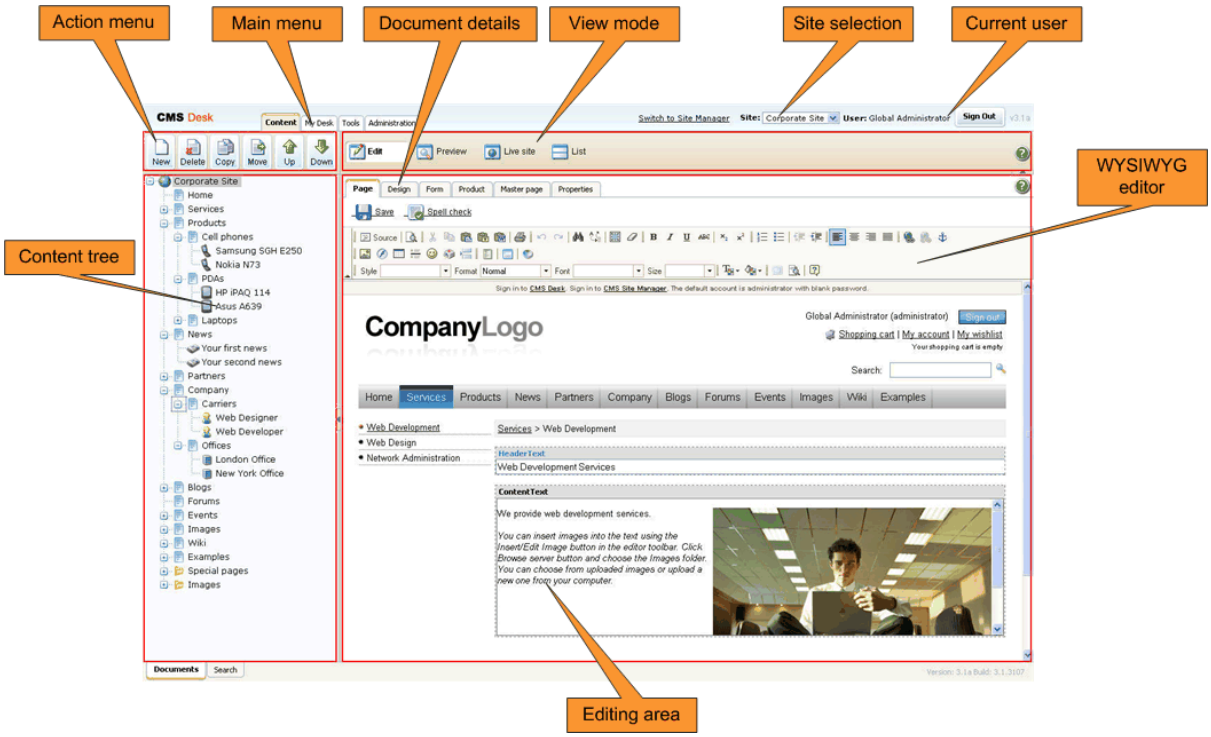
2.4 How do I edit content?

Until know, 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.

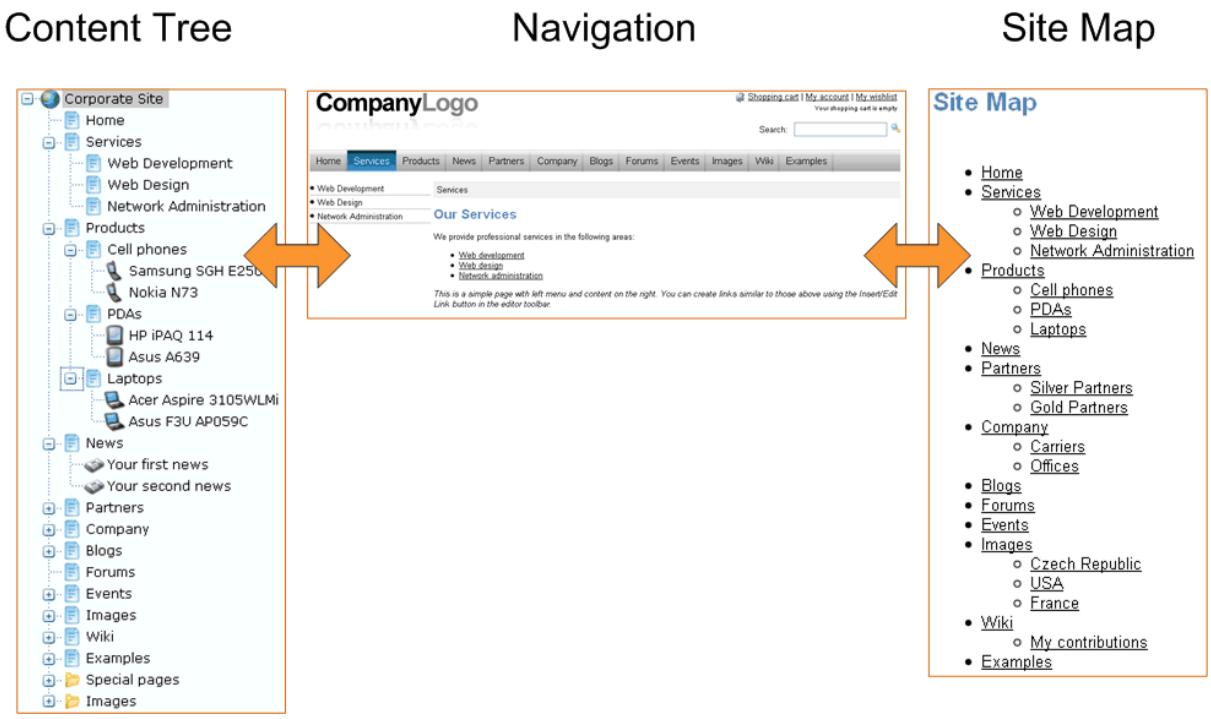
Kentico CMS comes with browser-based administration interface. It's divided into two parts:
- **CMS Desk** (typically http://www.mydomain.com/cmsdesk) - the user interface for content editors
- **CMS Site Manager** (typically http://www.mydomain.com/cmssitemanager) - the user interface for administrators and web developers

© 2009 Kentico Software

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:



© 2009 Kentico Software

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

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

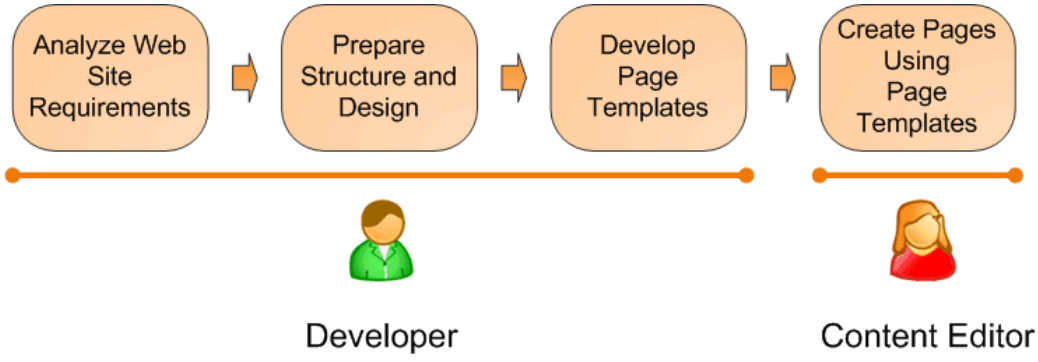
- **Edit** - editing mode
- **Preview** - preview mode. It displays the current version of the page before it's published (if you're using workflow). It also displays the content without using caching, which allows you to preview the content even if the live web site displays the cached version.
- **Live 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 web site?

Now that you know how to edit the content, you may want to know how to develop the web site 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 web site 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.

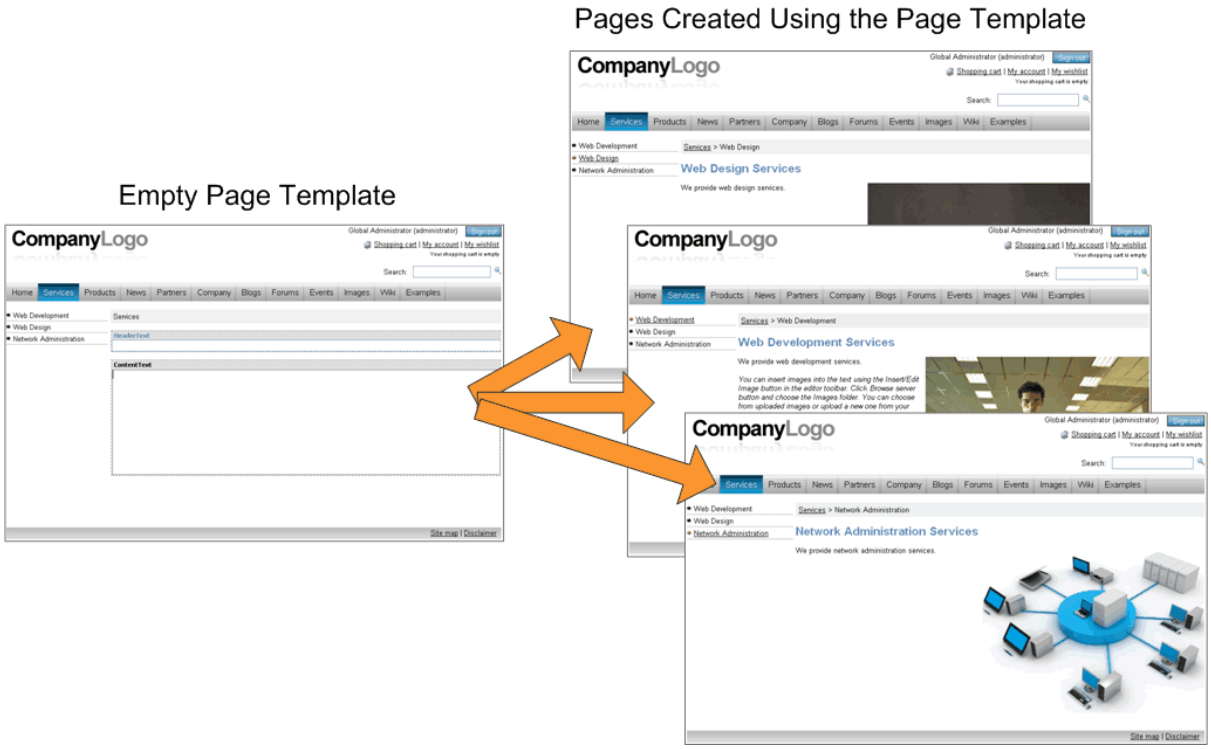
© 2009 Kentico Software

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 - she enters text and images into the page templates defined by 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.

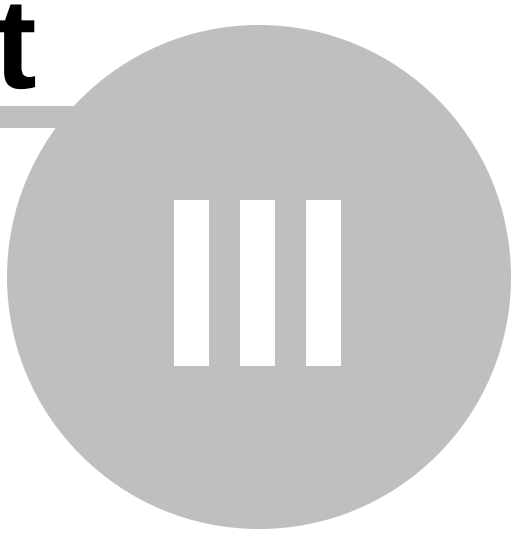
The templates allow content editors to focus on content editing, without taking care of the page formatting. They also help keep the web design consistent throughout the web site. The following figure shows how a single page template can be used for multiple pages:



The details on page template development will be described later.

© 2009 Kentico Software

Part



Installation and deployment

3 Installation and deployment

3.1 Installation 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 web site 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 web 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 web site, you will need to create a virtual directory - see 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 chapter Troubleshooting installation issues.



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/CMSConnectionString value.

© 2009 Kentico Software

3.2 System requirements

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

Web Server Requirements

- One of the following operating systems:
  - Microsoft Windows 2000 Professional with MDAC 2.8 or later
  - Microsoft Windows 2000 Server with MDAC 2.8 or later
  - Microsoft Windows XP Professional with MDAC 2.8 or later
  - Microsoft Windows Server 2003 with MDAC 2.8 or later
  - Microsoft Windows Vista Business, Enterprise or Ultimate with MDAC 2.8 or later
  - Microsoft Windows Server 2008 with MDAC 2.8 or later
  - Microsoft Windows Server 2008 R2 with MDAC 2.8 or later
  - Microsoft Windows 7 with MDAC 2.8 or later
- .NET Framework 2.0 or later
- Microsoft Internet Information Services 5.0 or higher and ASP.NET 2.0 or higher installed and correctly registered in IIS.
- Graphic adapter with resolution at least 1024x768 pixels.
- 100 MB free disk space.

ajax + shared hosting requirements

SQL Server Requirements

- Microsoft SQL Server 2000, MSDE 2000, SQL Server 2005 or SQL Server Express 2005, Microsoft SQL Server 2008. The server must use case insensitive (CI) collation.

Development Machine Requirements

- One of the following operating systems:
  - Microsoft Windows 2000 Professional with MDAC 2.8 or later
  - Microsoft Windows 2000 Server with MDAC 2.8 or later
  - Microsoft Windows XP Professional with MDAC 2.8 or later
  - Microsoft Windows Server 2003 with MDAC 2.8 or later
  - Microsoft Windows Vista Business, Enterprise or Ultimate
  - Microsoft Windows Server 2008 with MDAC 2.8 or later
  - Microsoft Windows Server 2008 R2 with MDAC 2.8 or later
  - Microsoft Windows 7 with MDAC 2.8 or later
- .NET Framework 2.0 or later
- Microsoft Internet Information Services 5.0 or higher and ASP.NET 2.0 or higher installed and correctly registered in IIS.
- Graphic adapter with resolution at least 1024x768 pixels.
- 100 MB free disk space.
- Recommended:
  - Microsoft Visual Studio .NET 2005/2008 or Microsoft Web Developer 2005/2008.
  - 2 GB RAM
  - Pentium IV or Pentium Core 2 Duo

Web Client Requirements

- **The Web site** created using Kentico CMS can be viewed on virtually any browser depending on the code you generate. Some of the Kentico CMS Controls (such as DHTML drop-down menu) are limited to higher-level browsers only as described in the Kentico CMS Web Parts and Controls Reference.
- **Kentico CMS Desk** (the administrative user interface for administrators, developers and site

© 2009 Kentico Software

contributors) was tested with the following browsers running on Microsoft Windows XP SP2:
    - Internet Explorer 6.0 or later
    - Mozilla 1.7.1 or later
- If you're using **Mac OS** as a web client, you can use Safari 3.0 or Firefox 2.0 to access the web site and administration interface.
- The administration interface requires a graphic adapter with resolution at least 1024x768 pixels.

Shared Web Hosting Requirements

- Support for ASP.NET 2.0 or later.
- Microsoft SQL Server 2000, MSDE 2000, SQL Server 2005 or SQL Server Express 2005, Microsoft SQL Server 2008.
- The server must use case insensitive (CI) collation and the IDENTIFIER_CASE parameter must be set to MIXED.
- The server must support medium-trust or full-trust security level.
- If the server uses medium trust, ASP.NET AJAX 1.0 must be installed on the server.

© 2009 Kentico Software

3.3 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 the chapter Installation on shared hosting server to find how to solve this.

Run KenticoCMS.exe. You will see the welcome screen:



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

Choose the location where Kentico CMS web installer and documentation will be deployed. Please note: this is not the folder where your web site will be placed, it's only a place for Kentico CMS program files and help files. Click **Next** and then **Install**.

After the installation is finished, choose to launch Kentico CMS Web Installer and click **Finish**. Continue to Kentico CMS Web Installer.

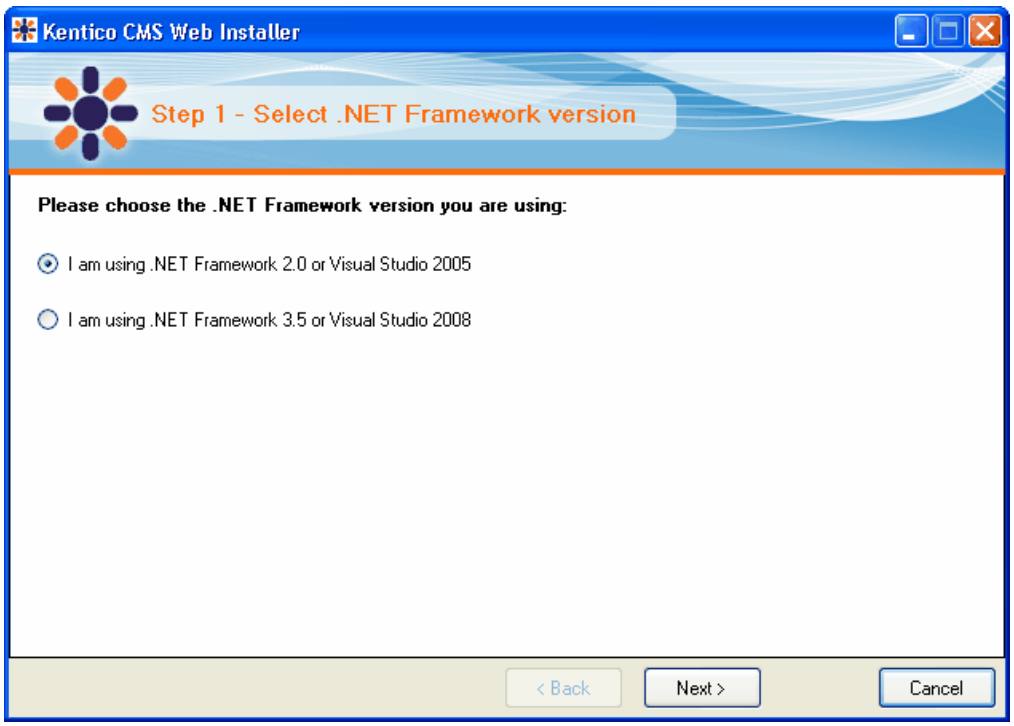
© 2009 Kentico Software

3.4 Web Installer

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

Step 1 - Select .NET Framework version

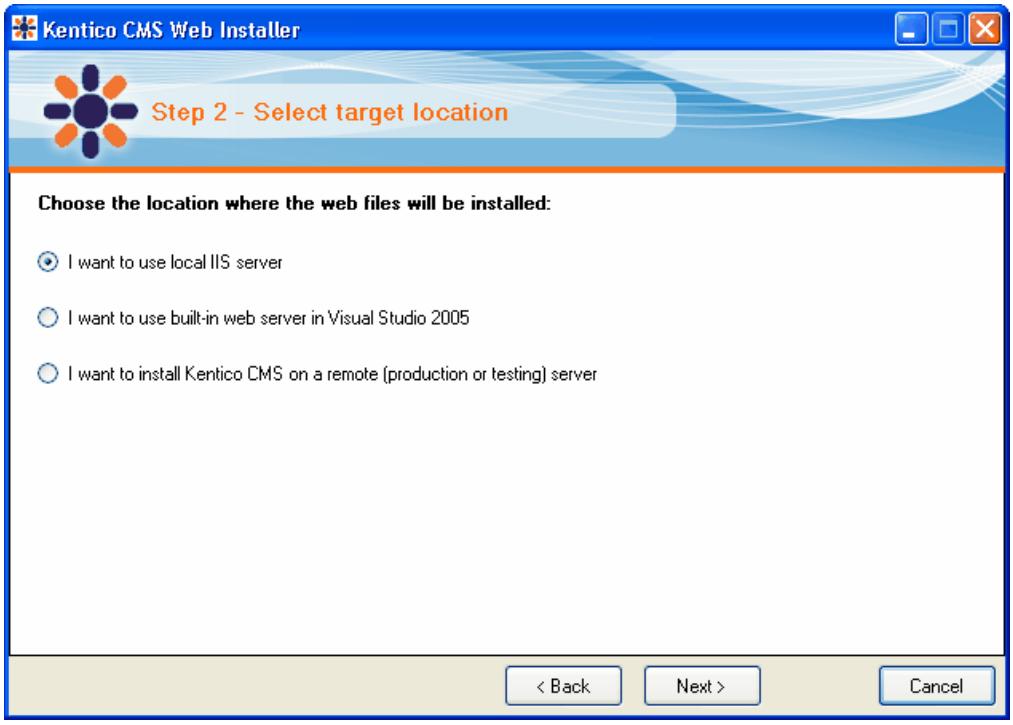
First, you need to choose whether you use Visual Studio 2005 or Visual Studio 2008. Depending on your choice, the installer will use appropriate web.config and webproject.sln files. The binaries and code are same for both options; they are compiled for .NET 2.0 and can be used with .NET 3.5 as well.



© 2009 Kentico Software

Step 2 - Choosing the target location

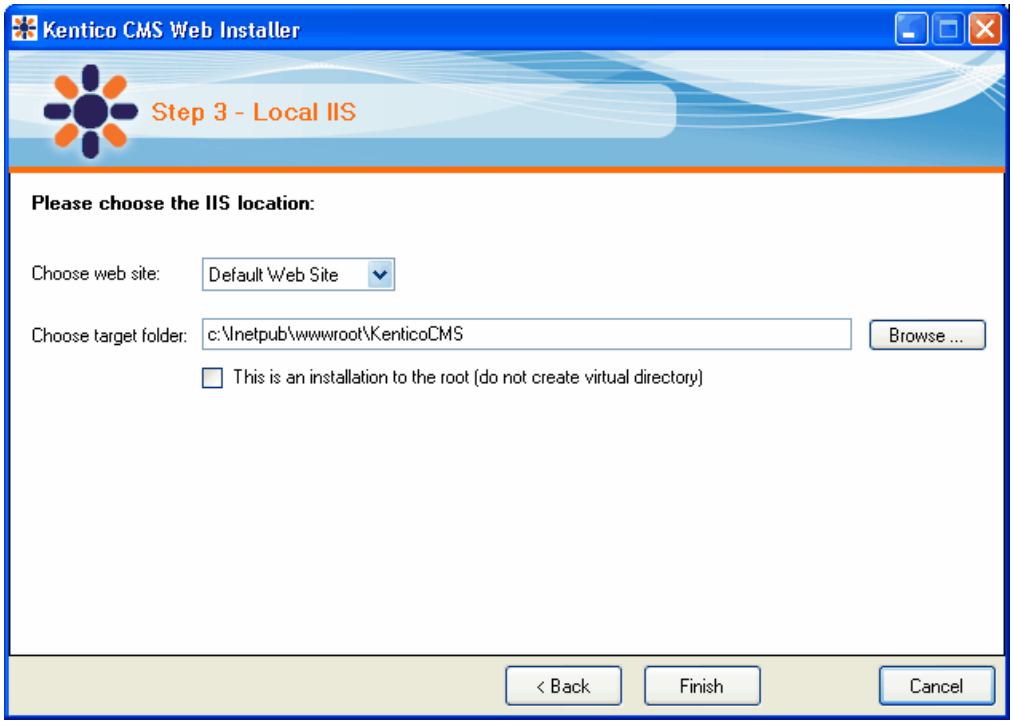
Choose one of the options:
- installation on IIS server - you must have local IIS server installed, configured for ASP.NET 2.0 and running
- Visual Studio built-in web server - you must have Visual Studio or Visual Web Developer Express Edition installed on your local machine
- **remote server** - this 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)



© 2009 Kentico Software

Option 1 - Installation on your local IIS server

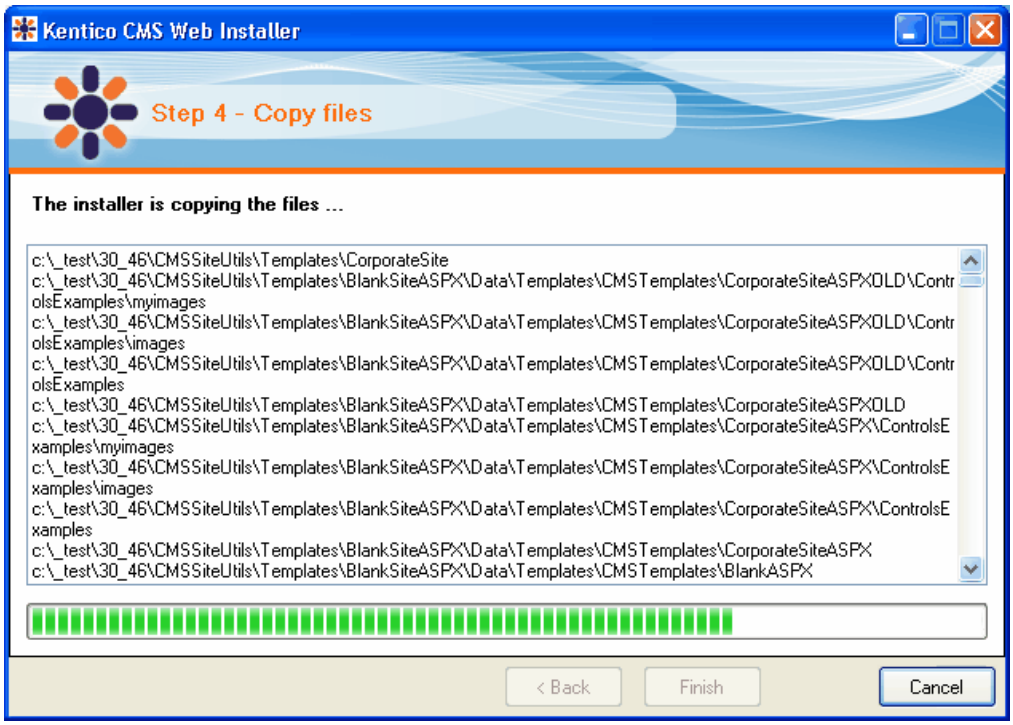
If you run local IIS server on your machine, choose the first option in Step 2 and click **Next**. In step 3, you need to choose one of the web sites configured on your IIS and choose disk folder where files will be placed. Please make sure that the web site you choose is running.



Please note: if you're installing Kentico CMS into the root of your web site (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 box **This is an installation to the root**.

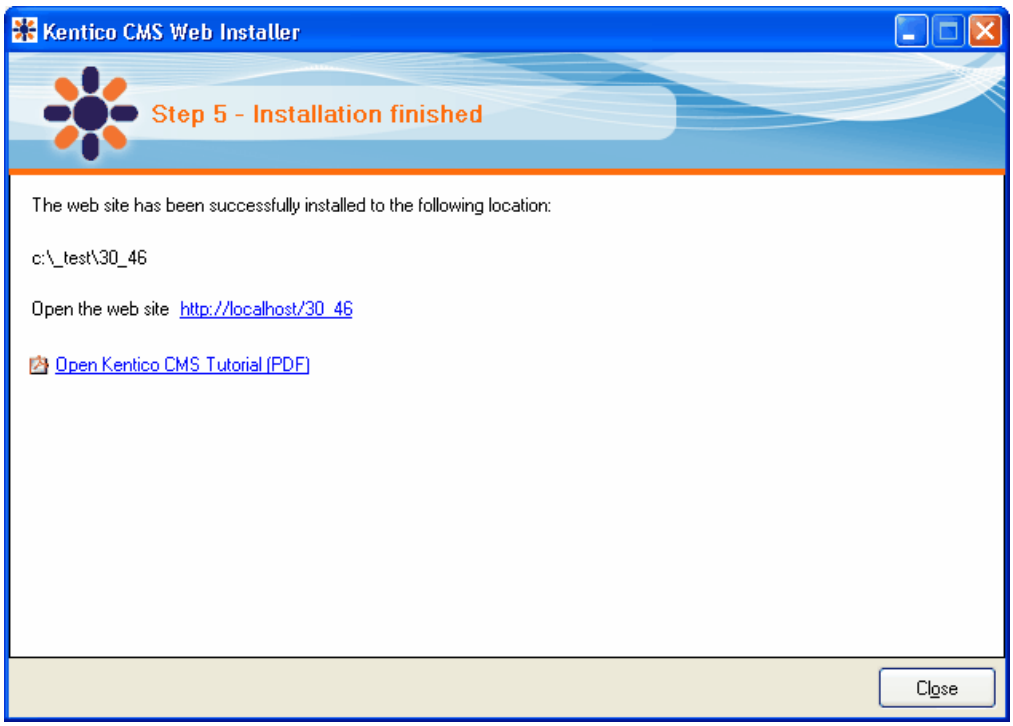
© 2009 Kentico Software

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



© 2009 Kentico Software

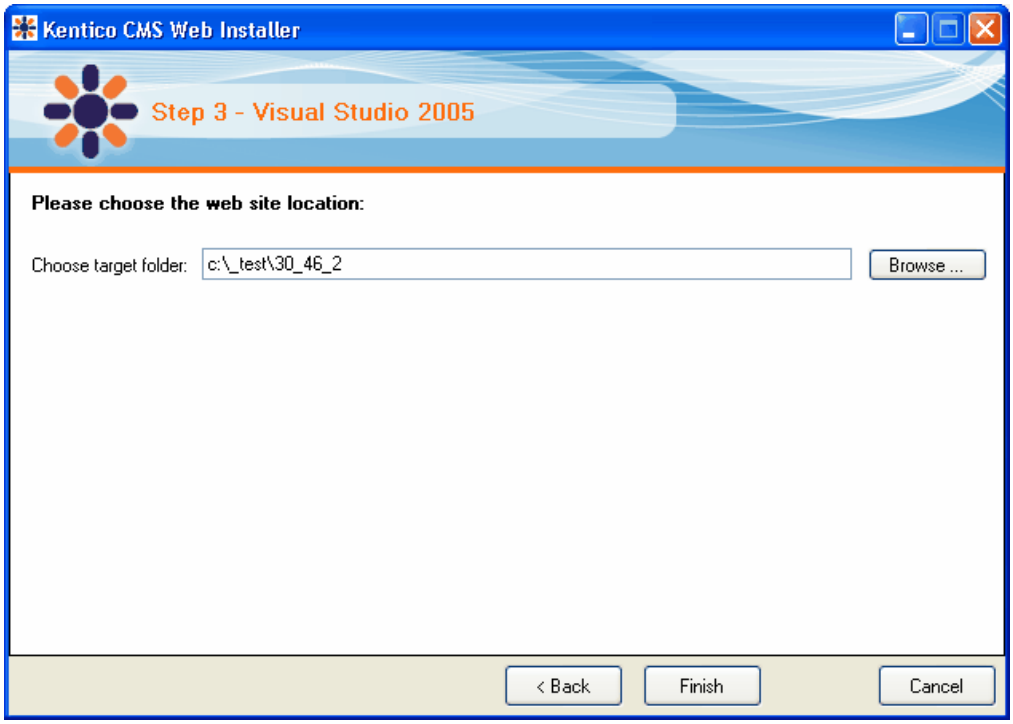
At the end, you're displayed with URL of the new Kentico CMS installation. Please put down this URL for future use.



© 2009 Kentico Software

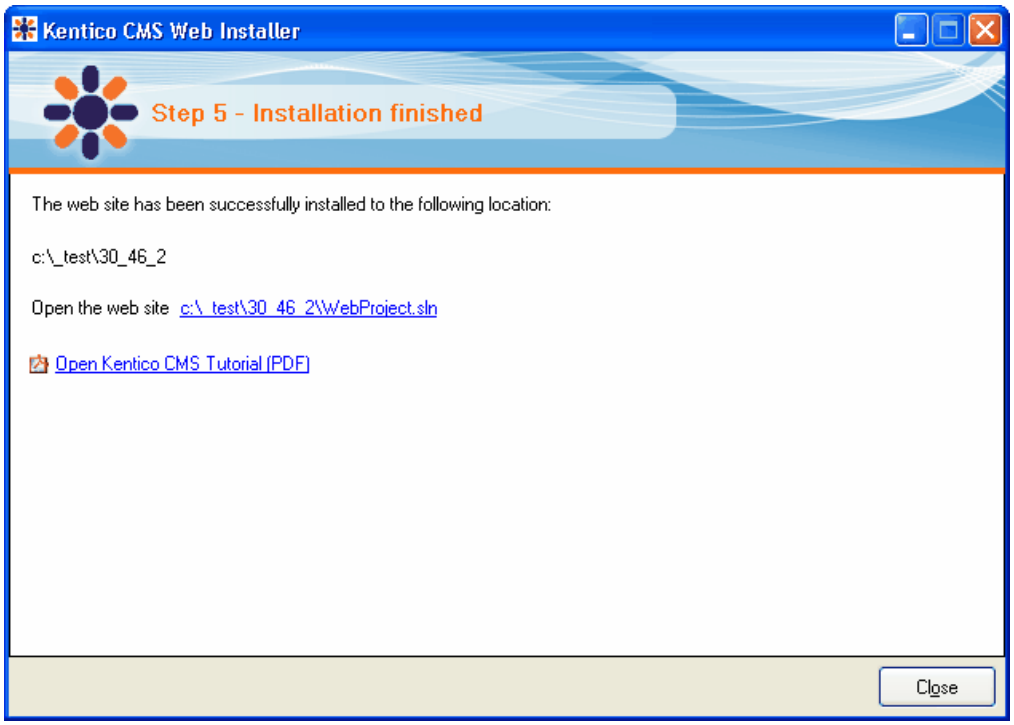
Option 2 - using the built-in Visual Studio web server

If you want to use only the built-in web sever in Visual Studio (or Visual Web Developer), choose the appropriate option and click Next. You will need to enter the target location of the files on your disk:



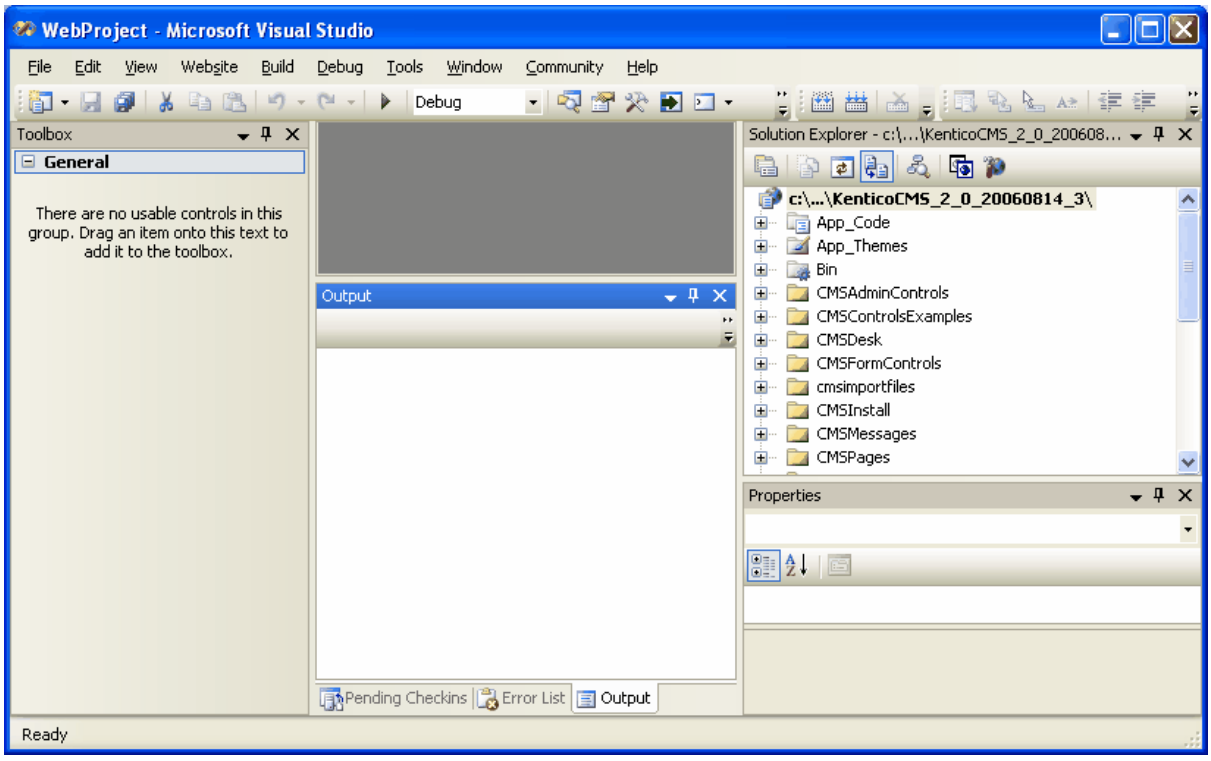
© 2009 Kentico Software

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



© 2009 Kentico Software

The project will open in Visual Studio:



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.



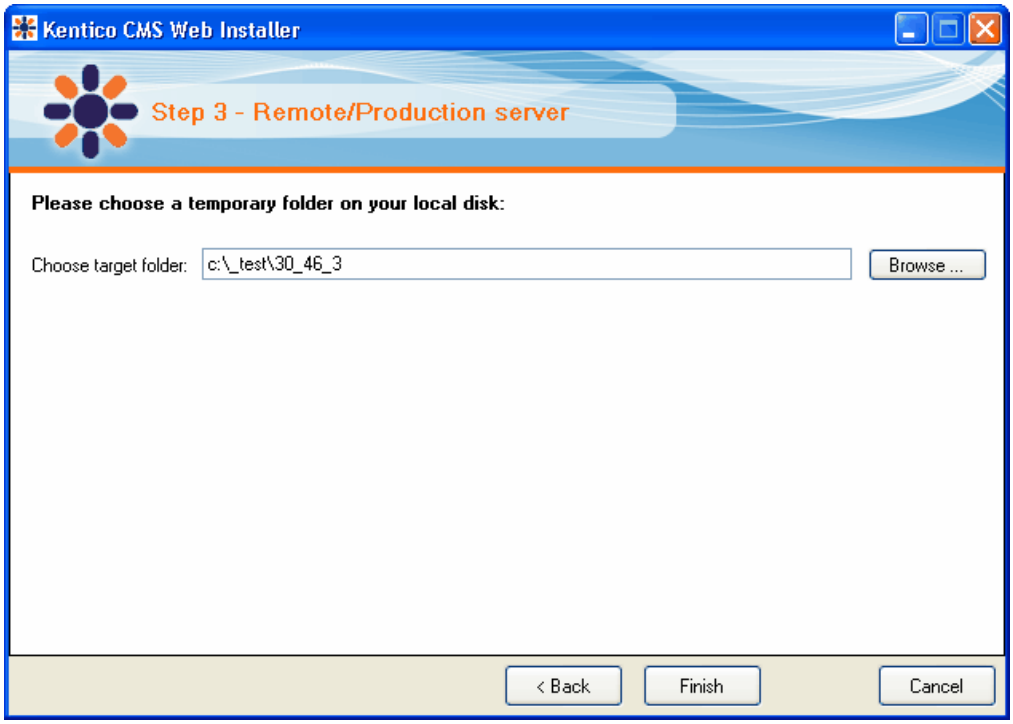
When you cannot open the web site in Visual Studio

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

© 2009 Kentico Software

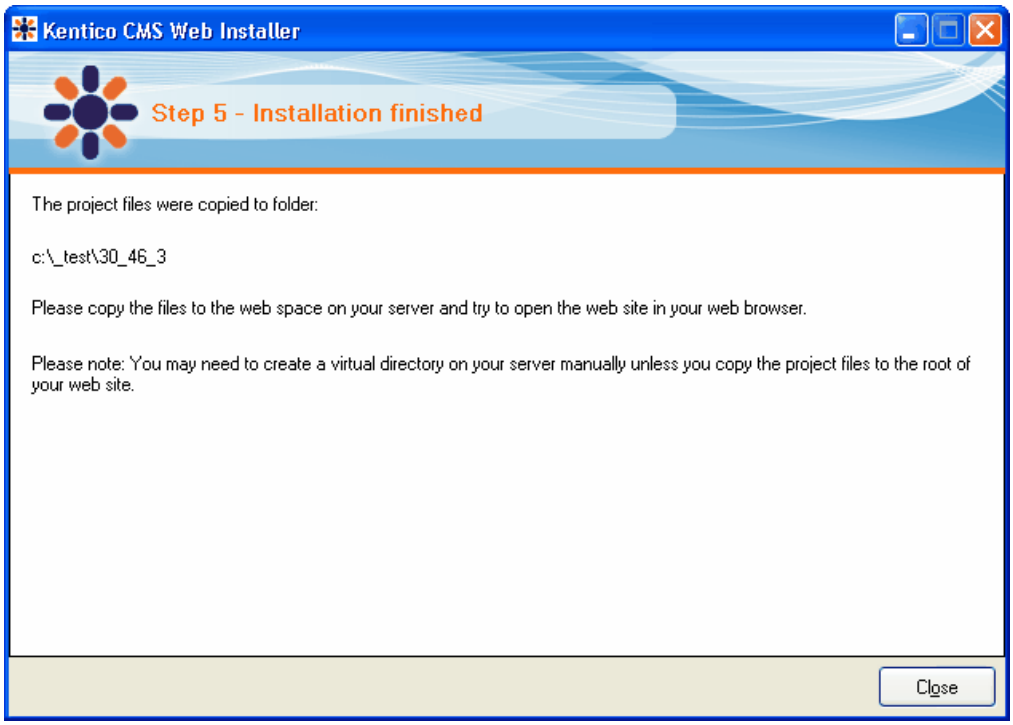
Option 3 - Installation on the remote server

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 can choose the last option - installing Kentico CMS on a remote (production) server. You will need to specify a temporary folder on your local disk where the web project will be created:



© 2009 Kentico Software

Click Finish. Now the web project is created on your disk and a confirmation message is displayed:



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

Now you can continue to Database setup wizard.

3.5 Database setup

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

In Step 1, you need to specify the Microsoft SQL Server and login:

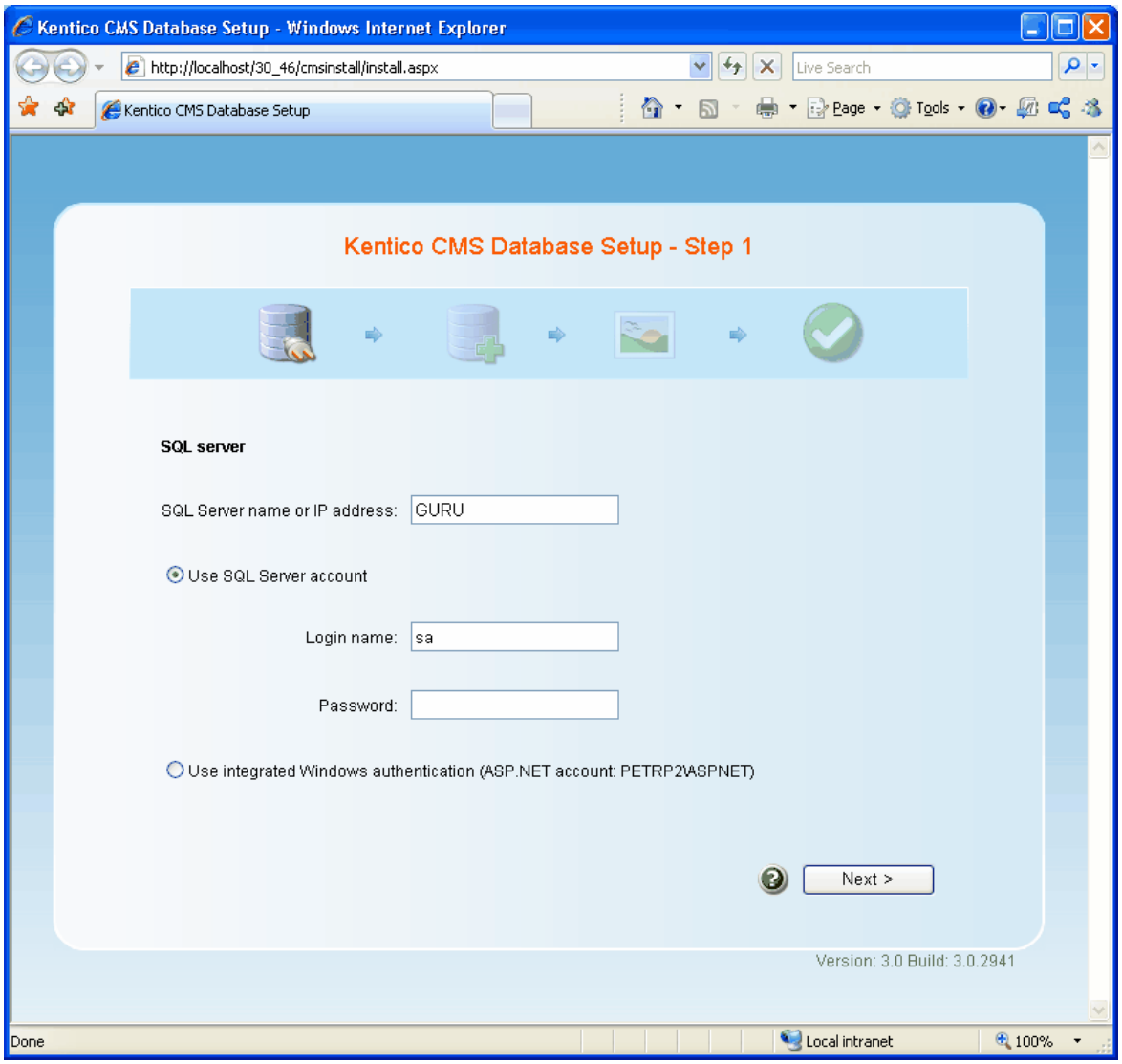
- SQL Server name or IP address - enter the name of the server. You will typically use one of these:
- the name of the server (such as DBSERVER1) or
- the IP address of the server (such as 192.168.1.105) or (local)
- <SERVERNAME>\sqlexpress (if you're using Microsoft SQL Server 2005 Express Edition)

- 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 Management Studio (or SQL Server 2000 Enterprise Manager) to create a new login for user account under which you currently run the web application (ASPNET for Windows XP and Network Service for Windows 2000/2003 - the actual ASP.NET account name is displayed on the screen).

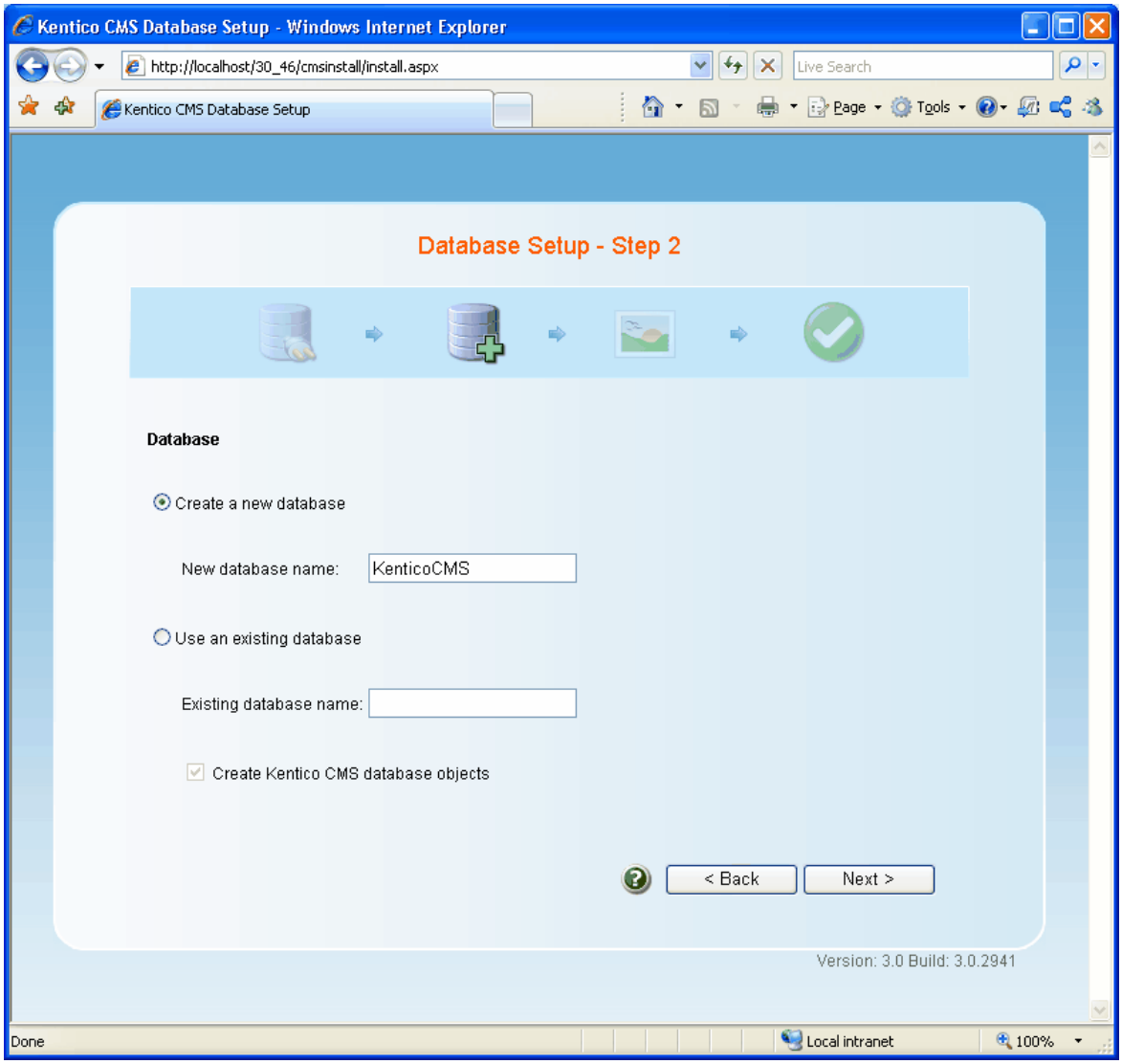
© 2009 Kentico Software

Click the **Next** button.



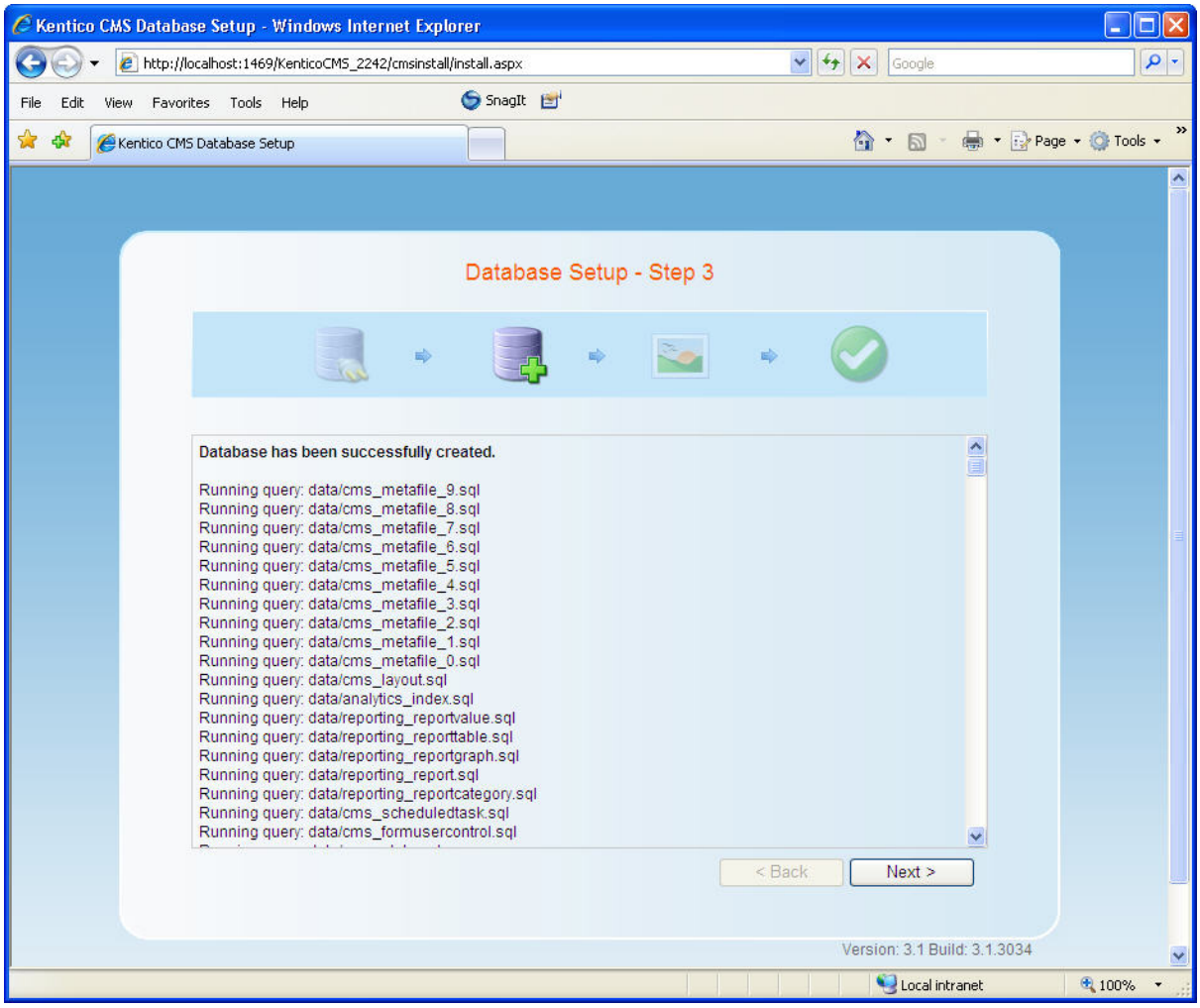
Now you can decide if you want to use an **existing database** or **create a new database**.

In case of using an existing database, you can choose to create the database tables, stored procedures and views - If the existing database already contains Kentico CMS objects, you need to uncheck the box **Create Kentico CMS database objects**. Click **Next.**

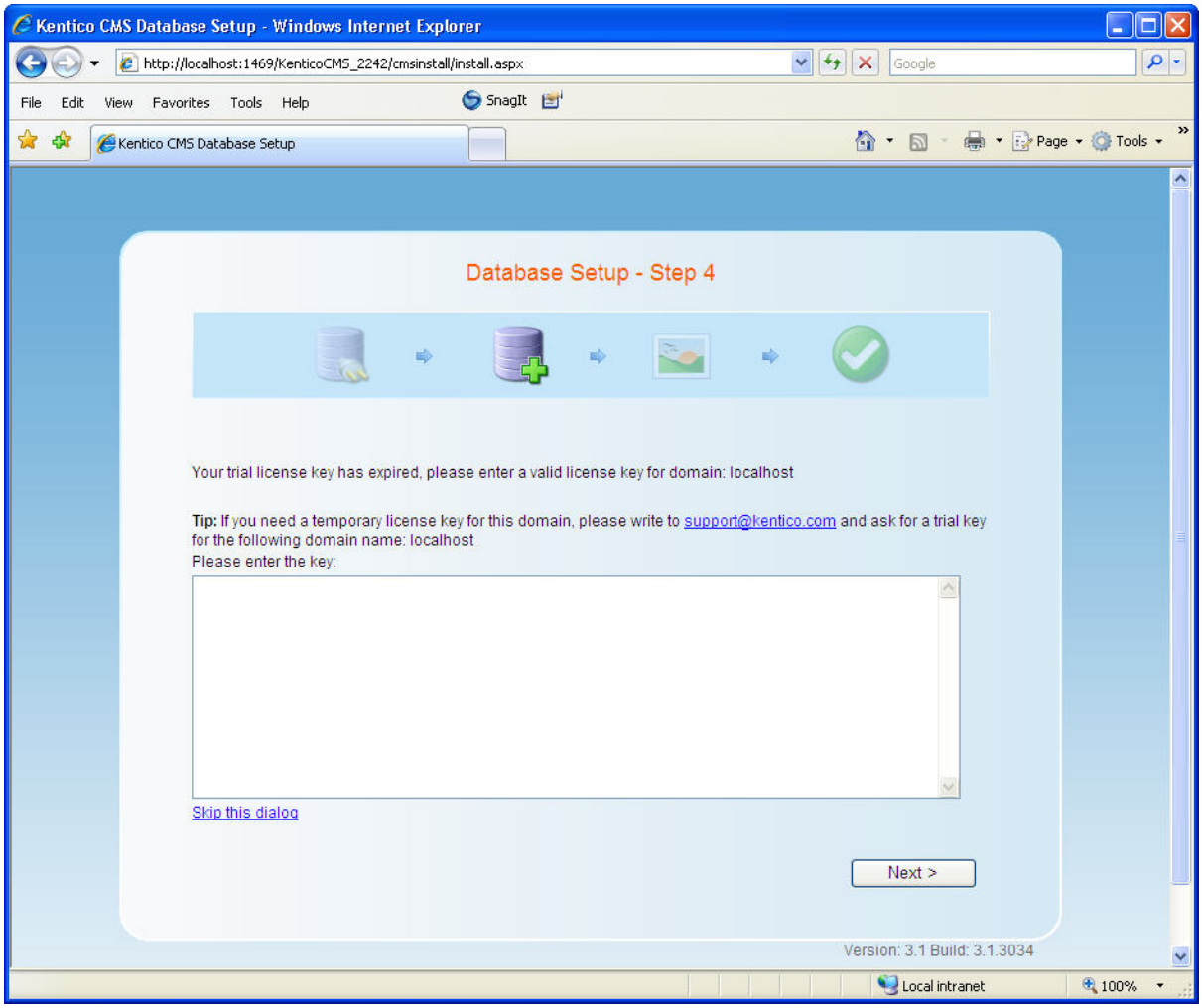


© 2009 Kentico Software

A log will be displayed, showing the progress of creating the database. 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.



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. Please note that you can skip this dialog and go to CMS Site Manager/Sites/New site wizard by clicking **Skip this dialog** at the bottom left.



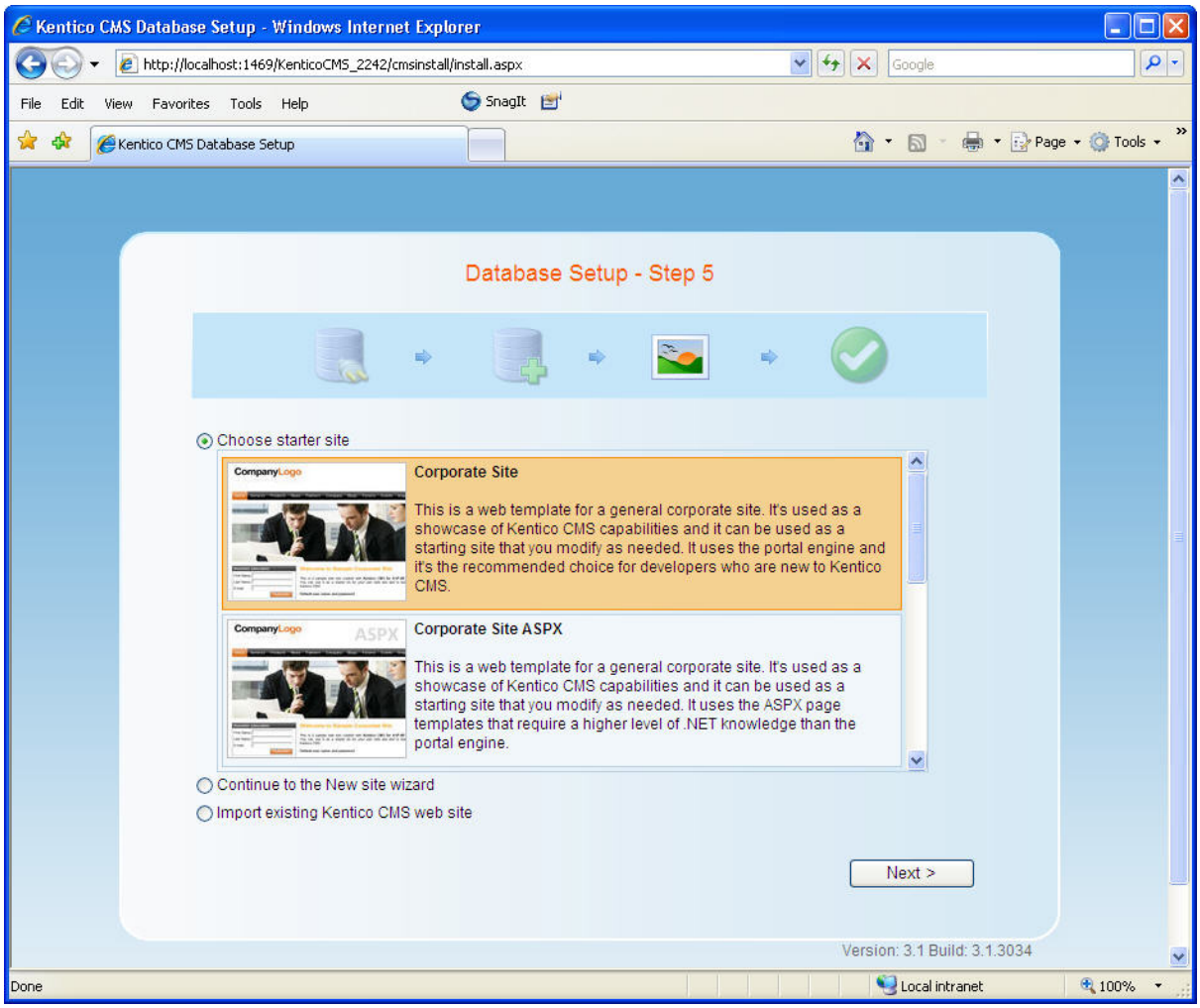
© 2009 Kentico Software

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 other

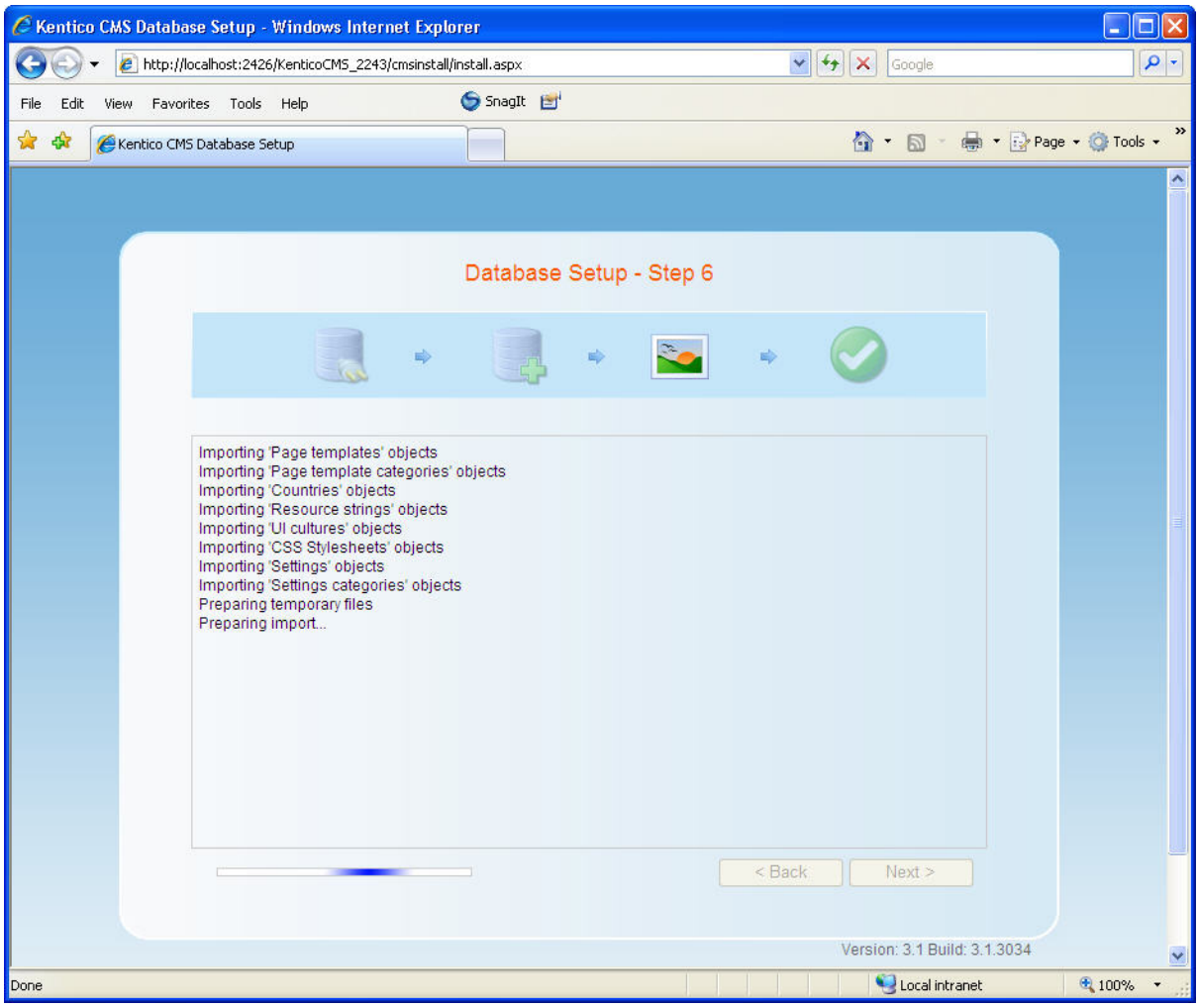
- **Continue to the New site wizard** - this option is recommended if you're starting a new site from scratch.
- **Import an existing Kentico CMS web site** - use this option is you already created a web site with Kentico CMS and need to import it into a new installation (e.g. on the production server).

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.



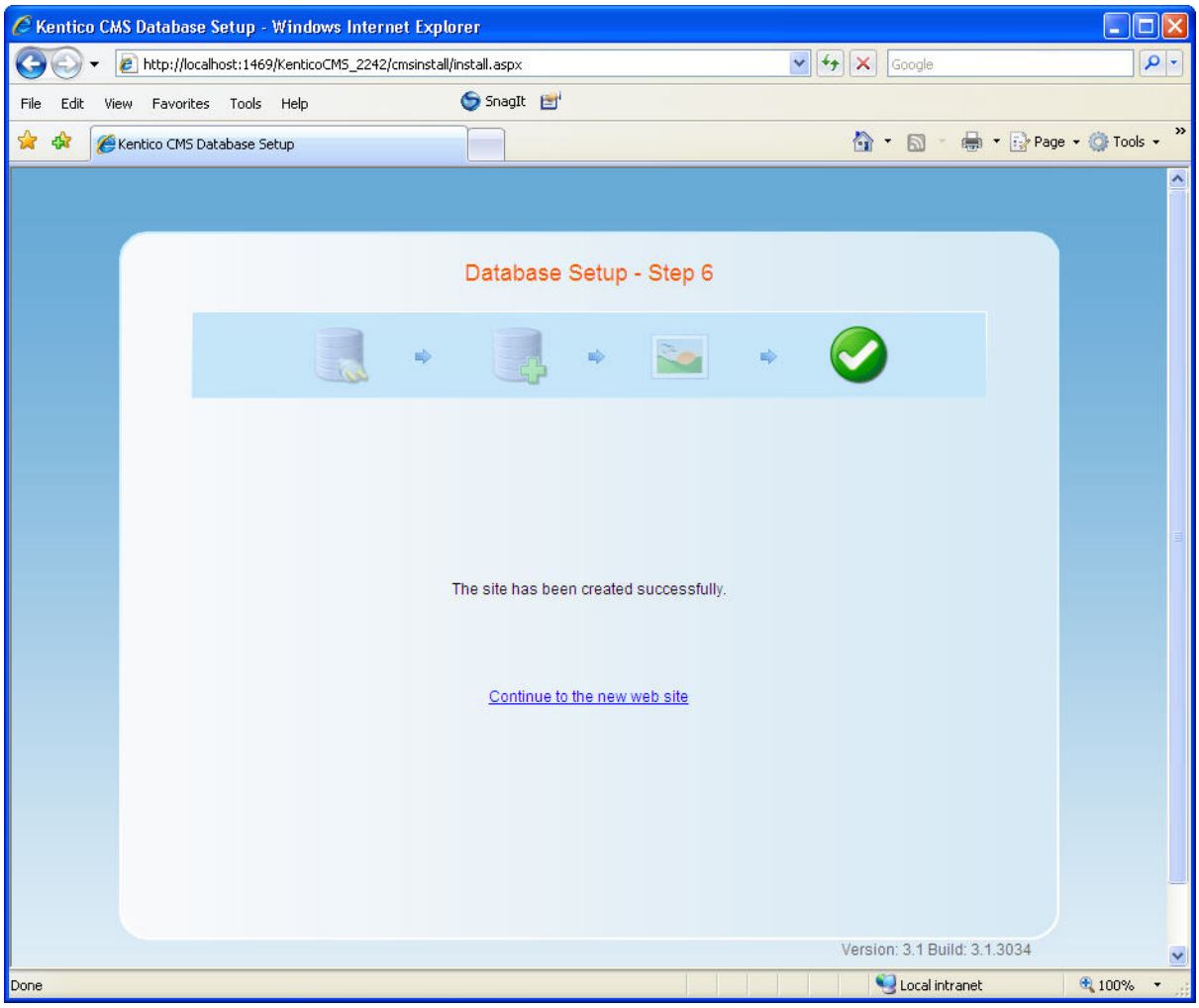
© 2009 Kentico Software

A log will be displayed in the next step, showing you the progress of creating the web site.



© 2009 Kentico Software

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





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.

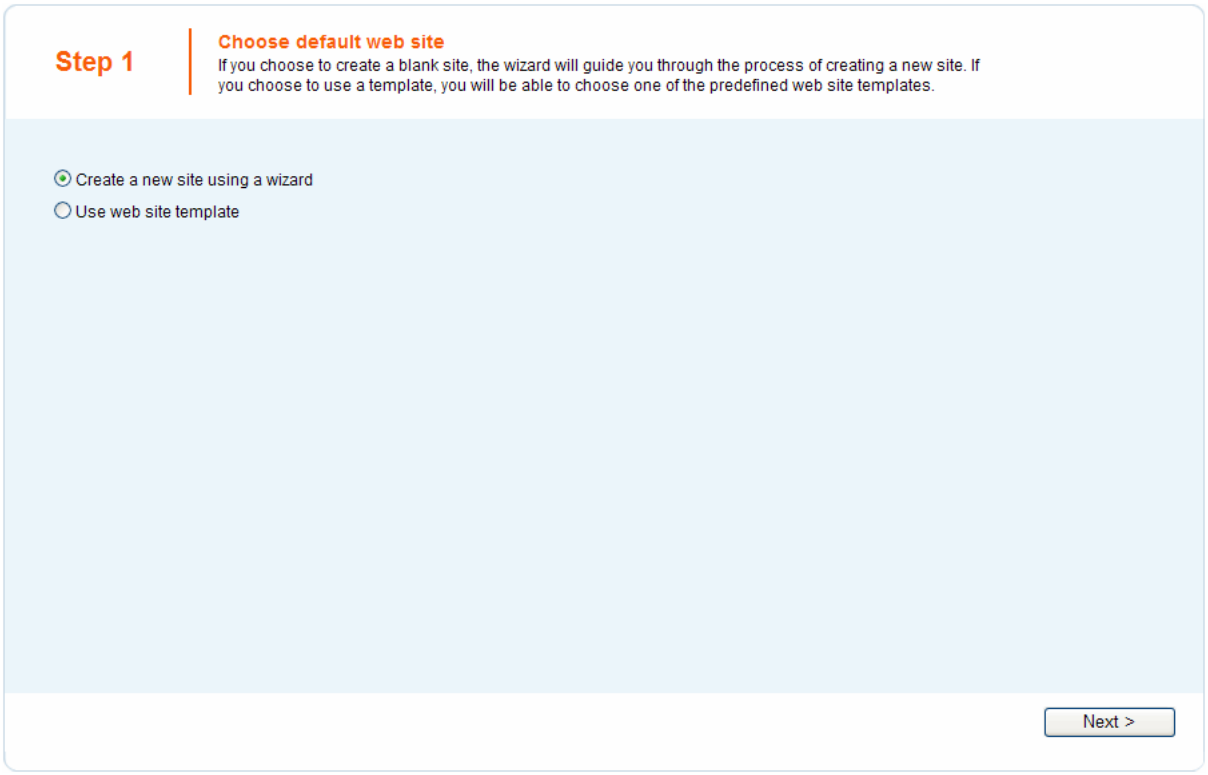
© 2009 Kentico Software

3.6 New site wizard

The New site wizard guides you through the process of creating a new web site. You can start it in **Site manager -> Sites -> New site wizard**.

Step 1

In the first step of the wizard, you can select if you want to create the new site using a wizard or use a web site 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 web site template** - creates a new site based on a template chosen in the next step.

Select one of the options and click the **Next** button.

Depending on the settings made in this step, the wizard can continue in two different ways.

© 2009 Kentico Software

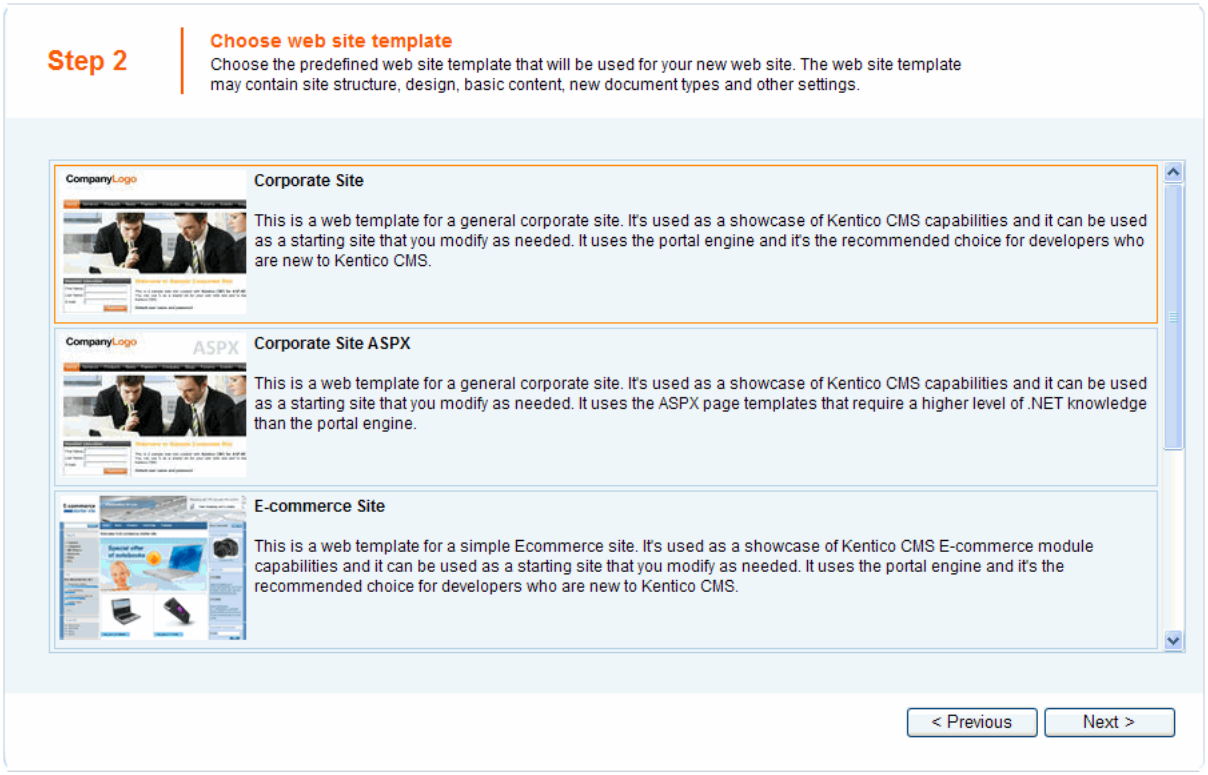
'Use web site template' version:

Step 2

In Step 2, you can choose from a number of web site 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.
- **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.

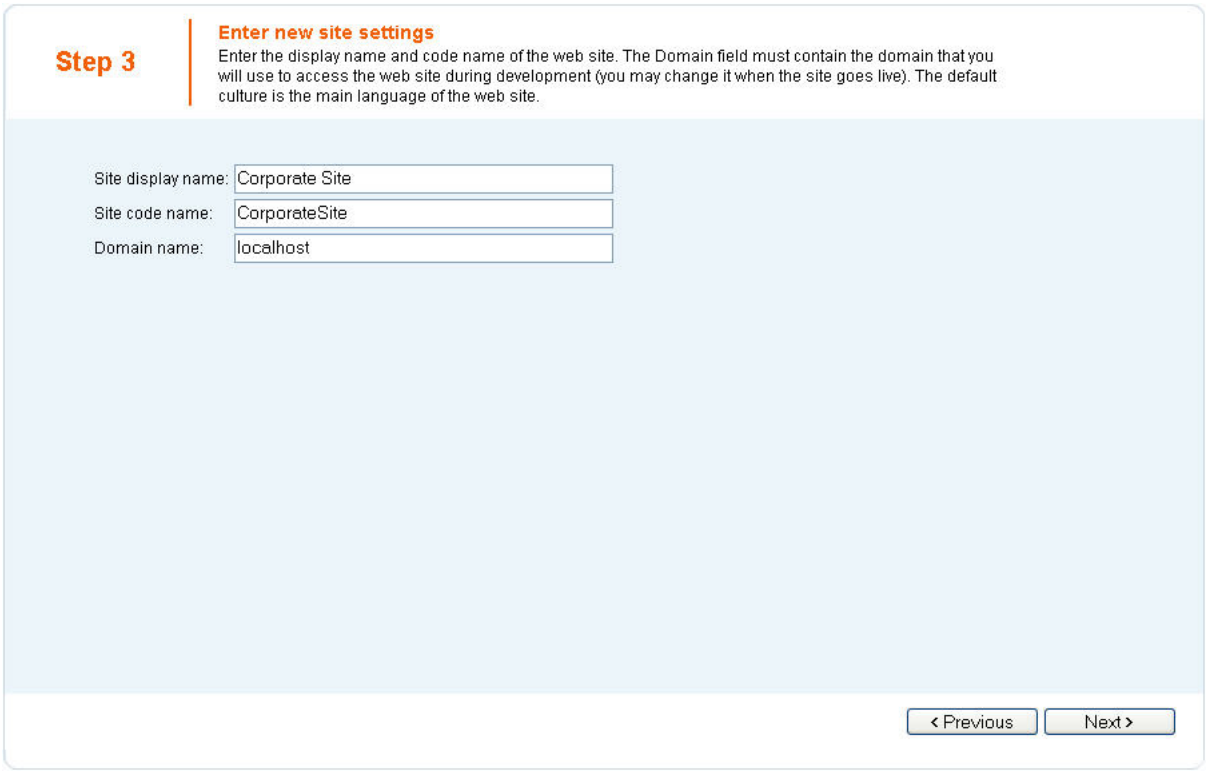


Choose one of the offered sites and click the **Next** button.

© 2009 Kentico Software

Step 3

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.

© 2009 Kentico Software

Step 4

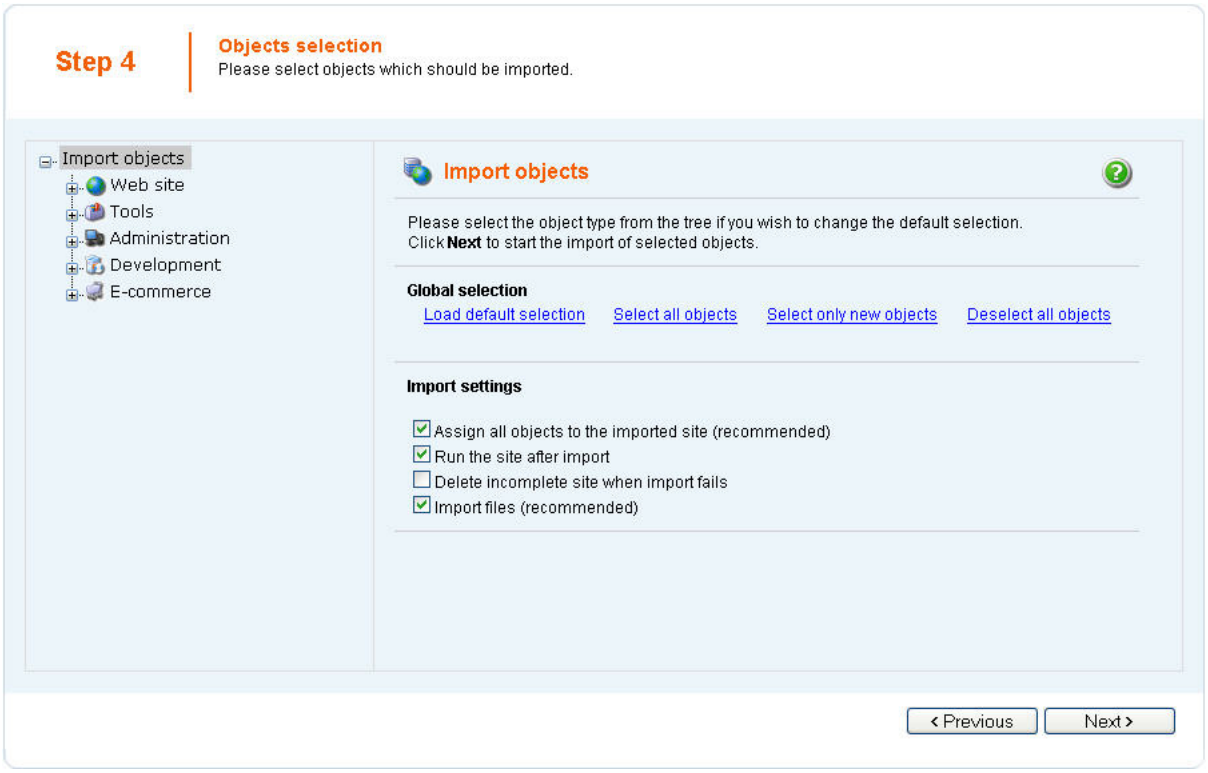
In Step 4, you can select which of the objects from the import package are to be imported and which are not. You can make this selection by choosing one of the categories displayed in the tree view on the left side of the screen. By selecting a category, a set of check boxes appears in the right part of the screen, letting you select which objects are to be imported and which are not.

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.

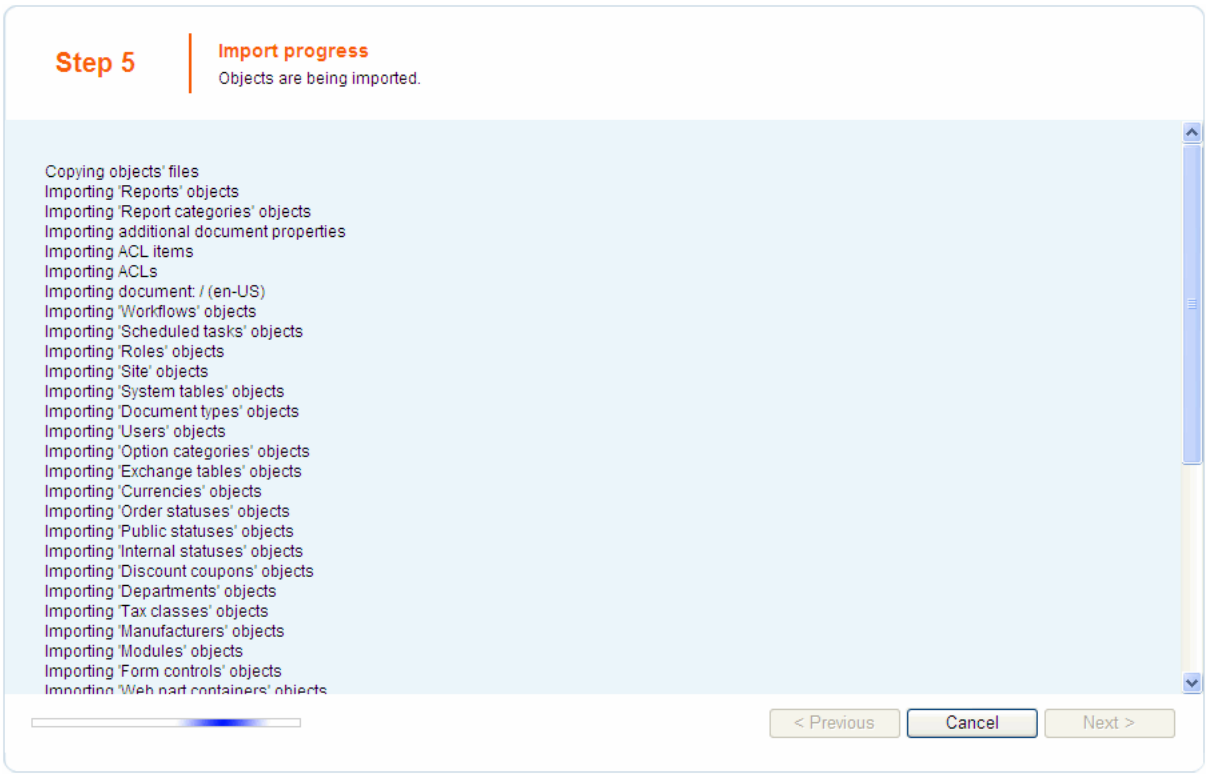


Click **Next** to continue.

© 2009 Kentico Software

Step 5

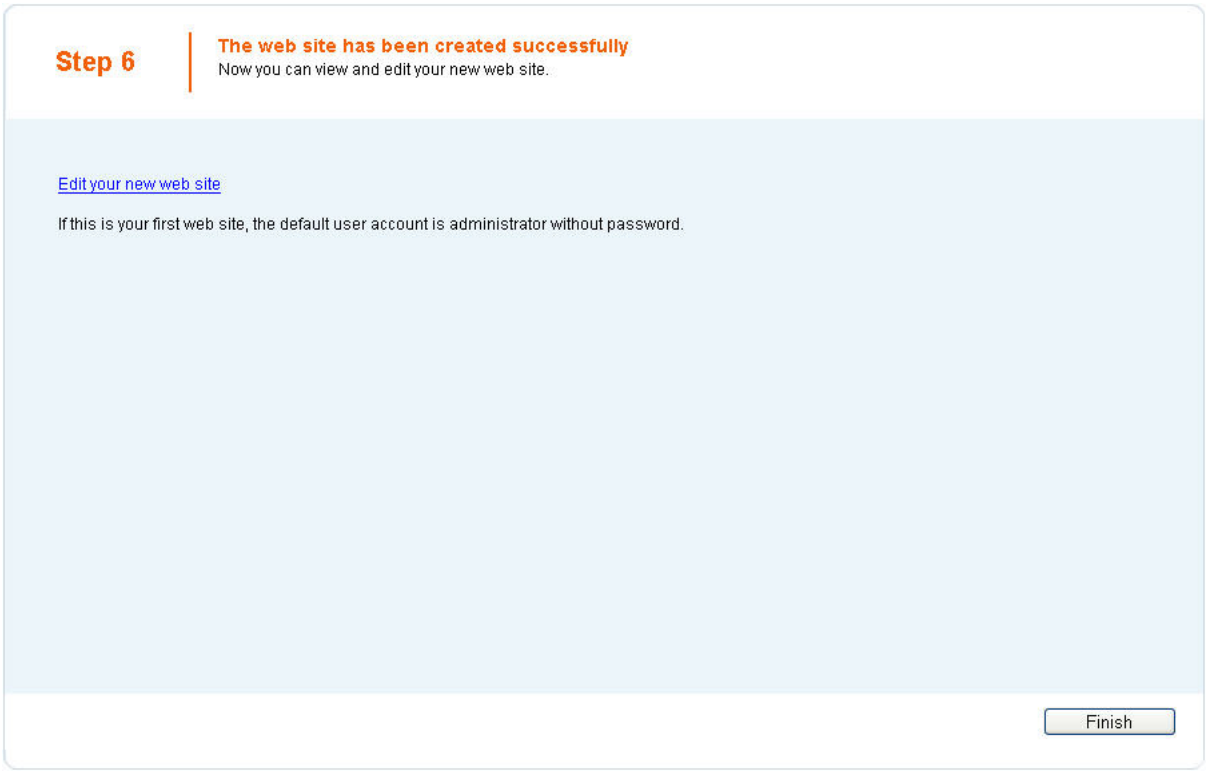
A log will be displayed, showing you the progress of files import.



When the export process finishes, click the **Next** button.

© 2009 Kentico Software

Step 6



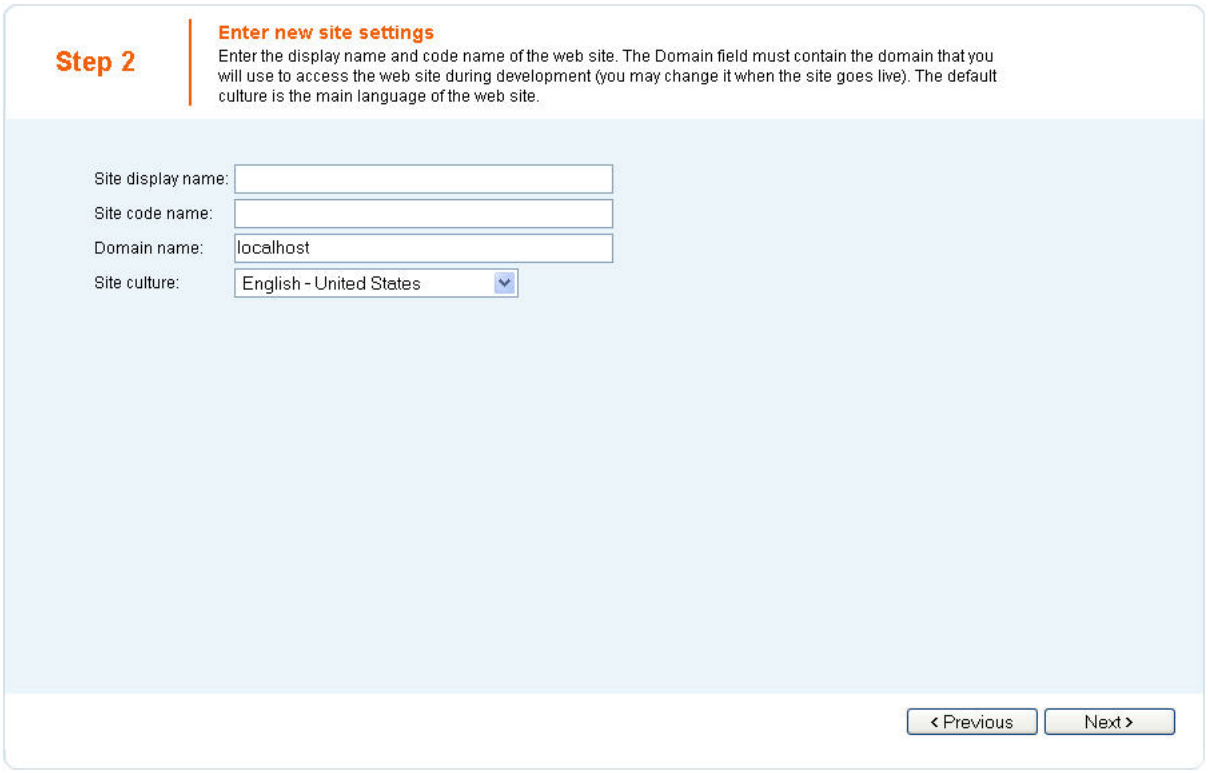
If you have reached Step 6, you have successfully created the new web site. Click the **Edit your new web site** link to switch to CMSDesk and start editing the site immediately. Alternatively, click the **Finish** button to get back to **Site manager -> Sites**.

© 2009 Kentico Software

'Create a new site using a wizard' version:

Step 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.
Site culture - default culture of the site.



Click **Next** to continue.

© 2009 Kentico Software

Step 3

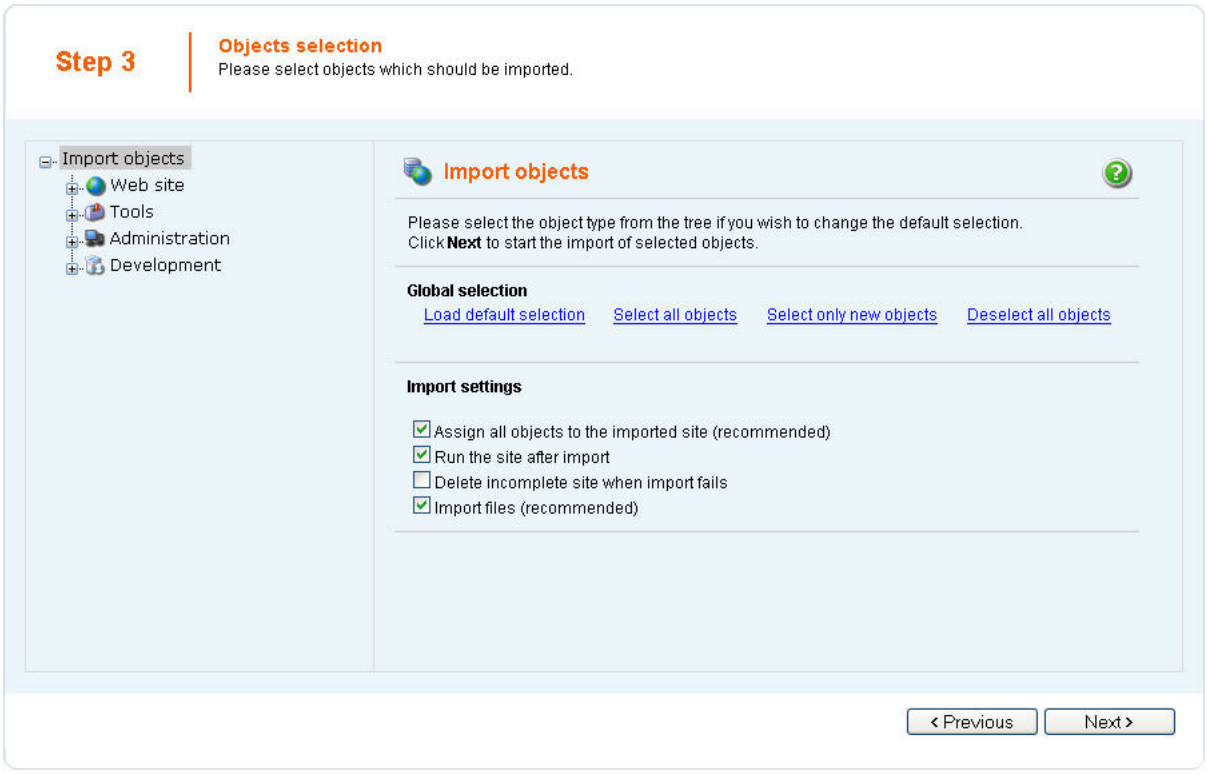
In Step 3, you can select which of the objects from the import package are to be imported and which are not. You can make this selection by choosing one of the categories displayed in the tree view on the left side of the screen. By selecting a category, a set of check boxes appears in the right part of the screen, letting you select which objects are to be exported and which are not.

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.

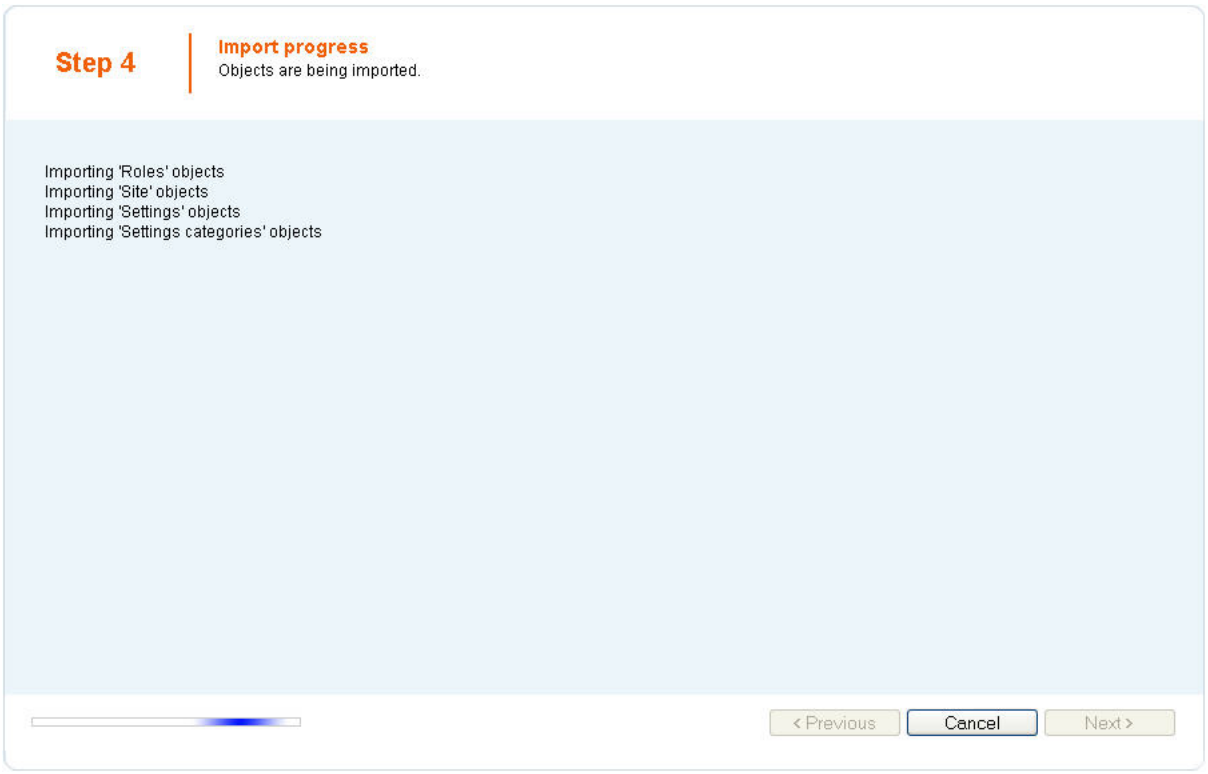


Click **Next** to continue.

© 2009 Kentico Software

Step 4

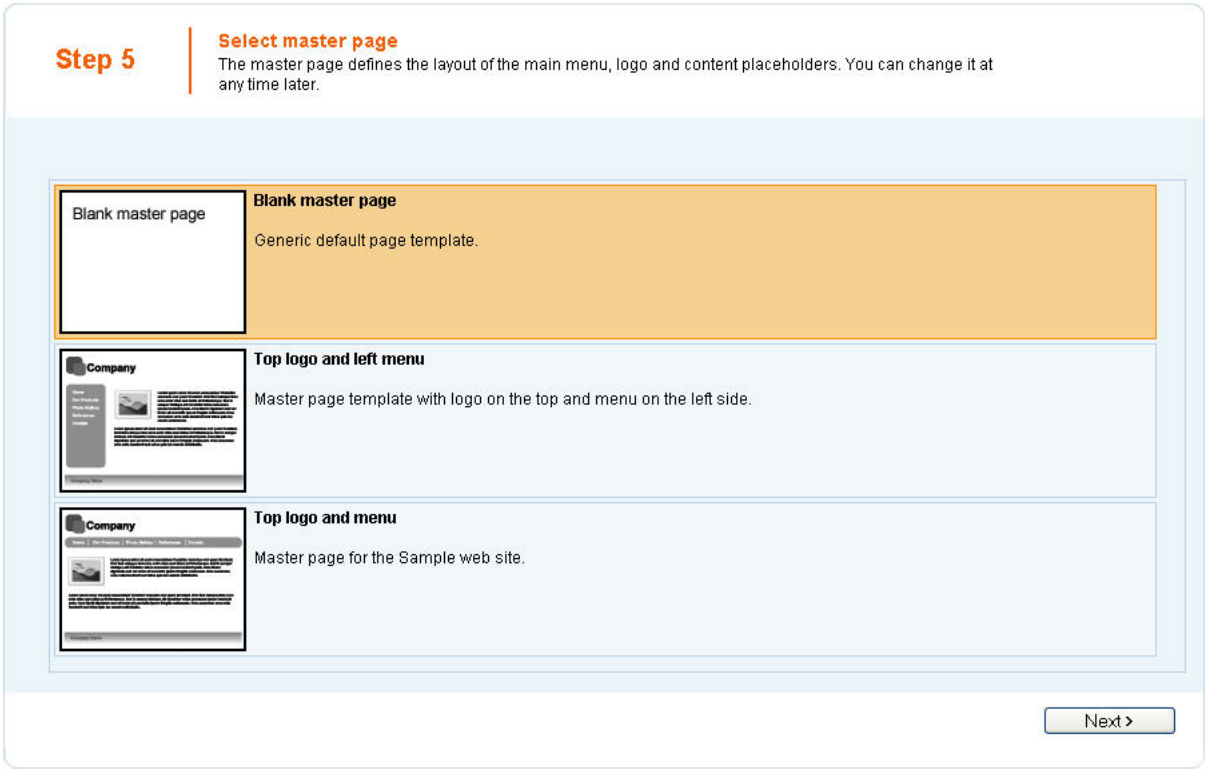
A log will be displayed, showing you the progress of files import.



When the export process finishes, click the **Next** button.

Step 5

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.

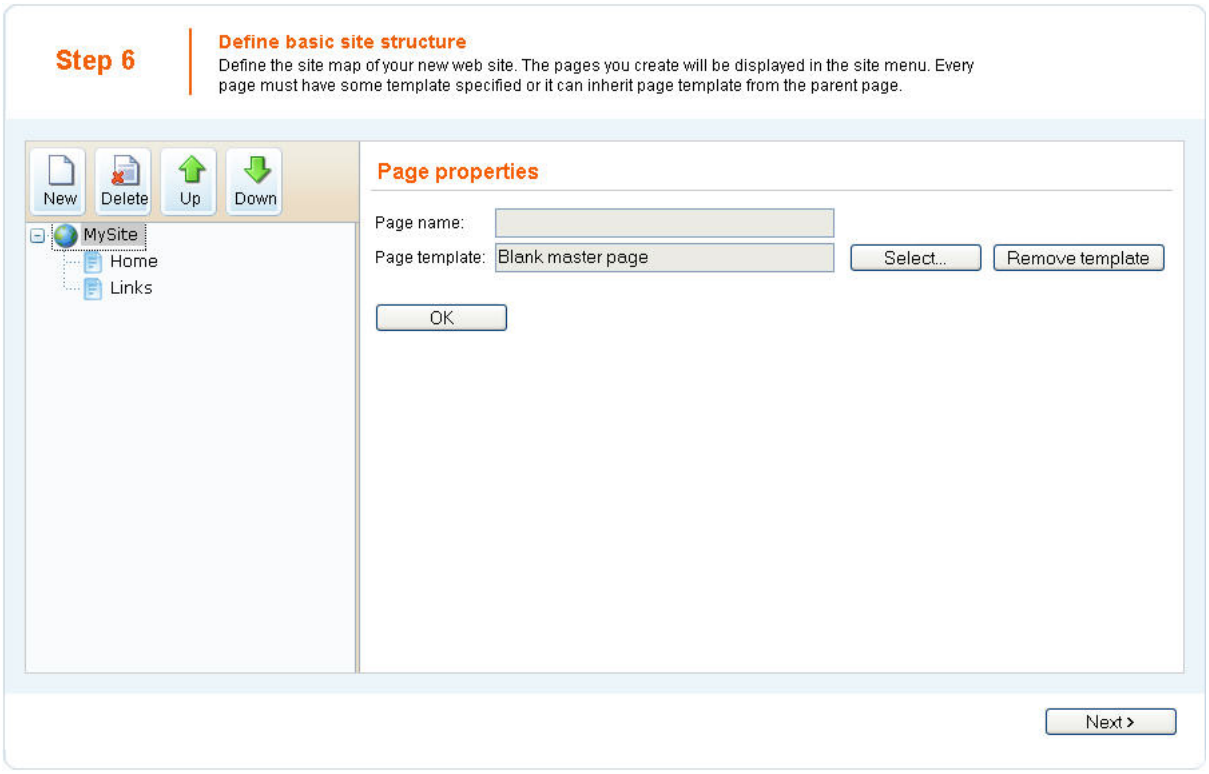


Select one of the layouts and click **Next**.

© 2009 Kentico Software

Step 6

Site map of you new web site can be defined in Step 7. Select the node of the tree under that you want to place the new page and click **New**. Enter the name of the new page and select one of the page templates. Alternatively, you can inherit the page template from the parent in the tree by clicking the **Inherit template** button. Click **OK**. The newly created site will appear in the tree view.

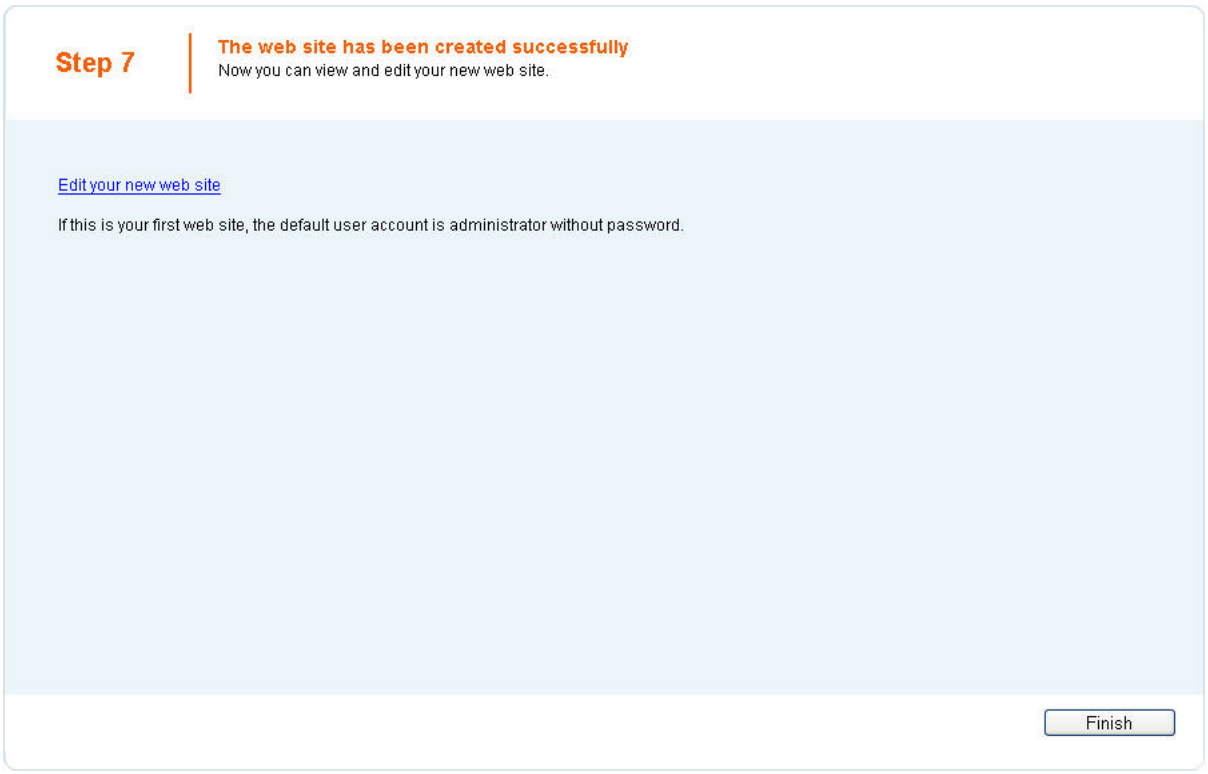


Repeat this procedure until you have defined the desired site structure, then click **Next**.

© 2009 Kentico Software

Step 7

If you have reached Step 7, you have successfully created the new web site.



Click the **Edit your new web site** link to switch to CMSDesk and start editing the site immediately. Alternatively, click the **Finish** button to get back to **Site manager -> Sites**.

3.7 Deployment to the live server

With Kentico CMS, you can easily develop the web site on your local machine. When the web site 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.

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:

- Run **Kentico CMS Web Installer on your local development computer**.
- Choose to create a new web site **on a remote (production) server** and deploy the web site into some local disk folder.
- **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 web site in a sub-folder, you need to create virtual directory manually as described in Creating a virtual directory.
- Copy your exported package into the **<web site root>\CMSSiteUtils\Import** folder.

© 2009 Kentico Software

- 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).
- Open the page /default.aspx of your live web server in the web browser.
- You will be displayed with Database setup wizard. Create the database for Kentico CMS.
- You may be asked for the license key for your production domain.
- In step 3, choose to **Import existing Kentico CMS web site**.
- Choose to import the previously exported package and overwrite all duplicates. The import wizard is described in chapter Importing a site.

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

- Go to the **Sites** section. Edit web site properties and make sure the web site domain and domain aliases are configured correctly for the production domain(s).
- 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.
- Go to the **Sites** section. Click the **Open live site** icon next to your new site and make sure the web site is displayed correctly.

Alternative Approach

If you, for some reason, cannot deploy the web site 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 web site.
3. Update the CMSConnectionString 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 chapter Configuration for Medium Trust environment.

Related topics: Pre-compilation (Publish function), Configuration for Medium Trust environment

3.8 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:

- Install Kentico CMS on your **local machine** if you haven't done so yet.
- Run **Kentico CMS Web Installer** (you can find it in Start -> All Programs -> Kentico CMS).
- Choose to **install Kentico CMS on a remote (production or testing) server** and enter the path C:\tempsite. Finish the wizard - it only copies the files to the given folder. You do not need to have Visual Studio installed.
- **Copy the files** from your local folder C:\tempfiles to the root of the web site 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.

© 2009 Kentico Software

- **Open web browser** and navigate to your web site. You will be displayed with **Database Setup Wizard**.
- Go through the wizard and create a **new Kentico CMS database** on your live server.
- At the end of the Database Setup Wizard, choose either to create a new web site or import your existing Kentico CMS web site.



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

3.9 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:

- Install Kentico CMS on your **local machine** if you haven't done so yet.
- Run **Kentico CMS Web Installer** (you can find it in Start -> All Programs -> Kentico CMS).
- Choose to **install Kentico CMS on a remote (production or testing) server** and enter the path C:\tempsite. Finish the wizard - it only copies the files to the given folder. You do not need to have Visual Studio installed.
- **Copy the files** from your local folder C:\tempfiles to the root of the web site 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.
- 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" />
```

- **Open web browser** and navigate to your web site. You will be displayed with **Database Setup Wizard**.
- 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.
- Choose either to create a **new web site or import your existing** Kentico CMS web site.
- After you create a new web site, 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

© 2009 Kentico Software



For more information on medium trust level please read chapter Configuration for Medium Trust environment.

3.10 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 Web site files and create a virtual directory for it.

3.11 Uninstallation

To uninstall Kentico CMS from your computer, open **Start -> Control Panel -> Add/Remove Programs**. Choose Kentico CMS and click **Uninstall**.

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

3.12 SMTP server configuration

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

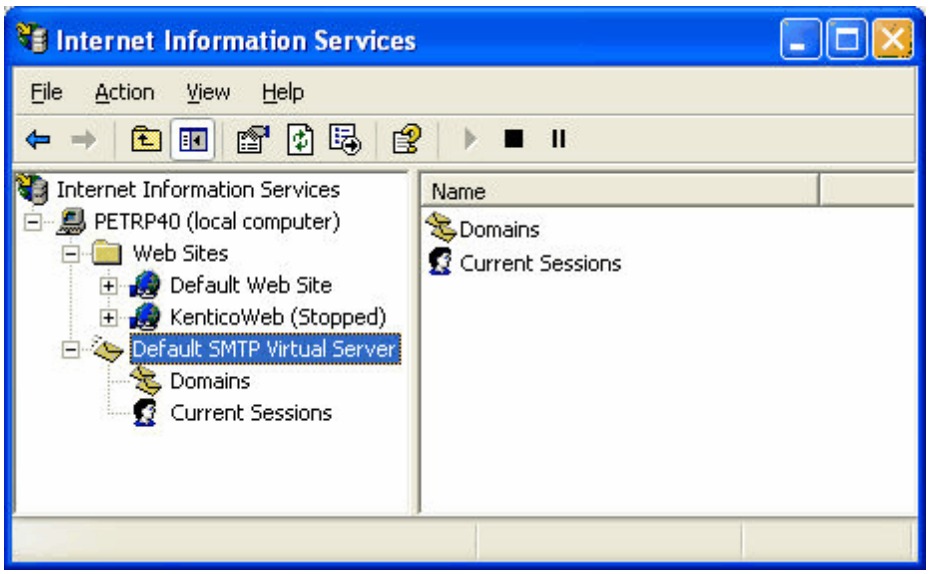
After you finish the New site wizard, you can configure the SMTP server in **Site Manager -> Settings -> E-mails**. Here, you can set up the following values:

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.

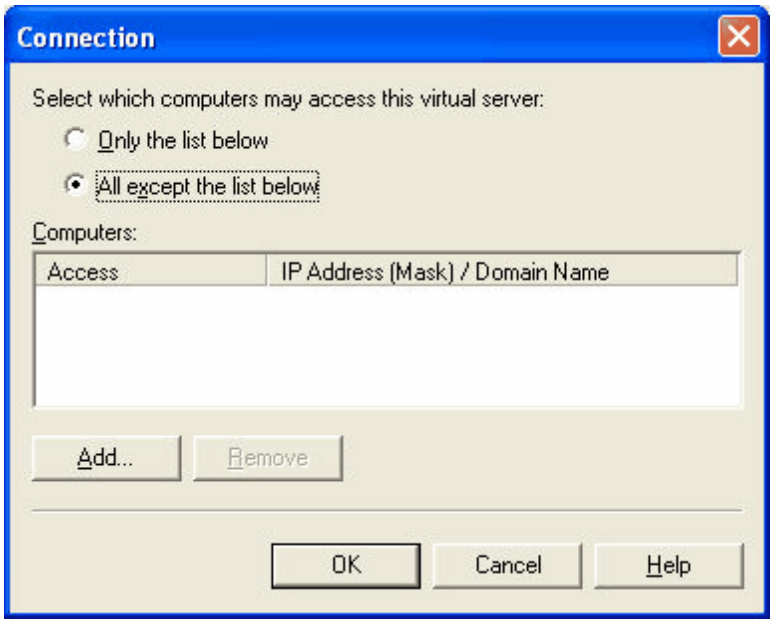
If you experience any problem when sending e-mails through your own SMTP server that is part of IIS, please follow this guide:

© 2009 Kentico Software

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

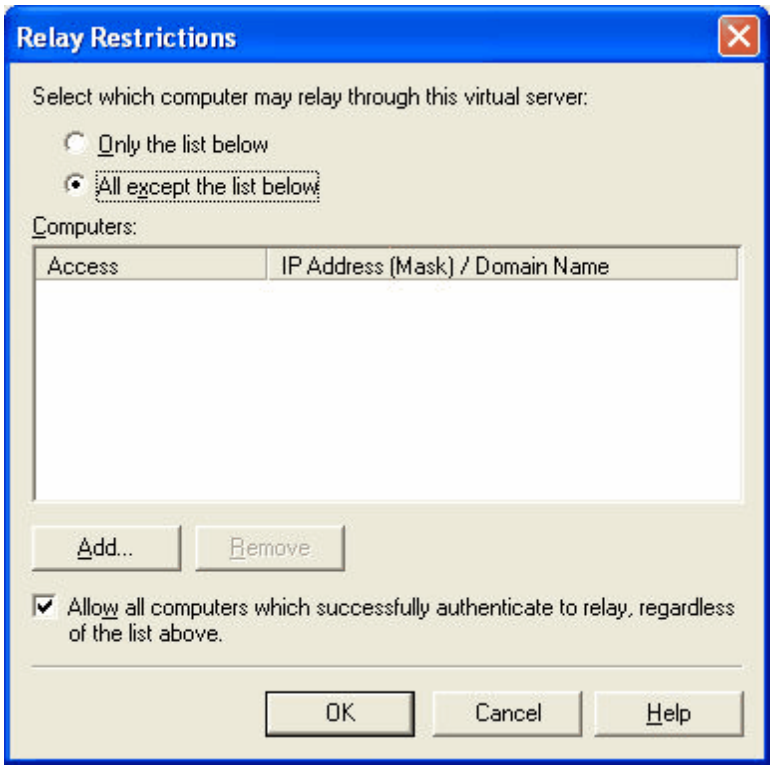


2. Open SMTP server properties and choose tab **Access**. Click **Connection control** and make sure that the local machine may access the SMTP server:



© 2009 Kentico Software

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.

© 2009 Kentico Software

3.13 Additional configuration tasks

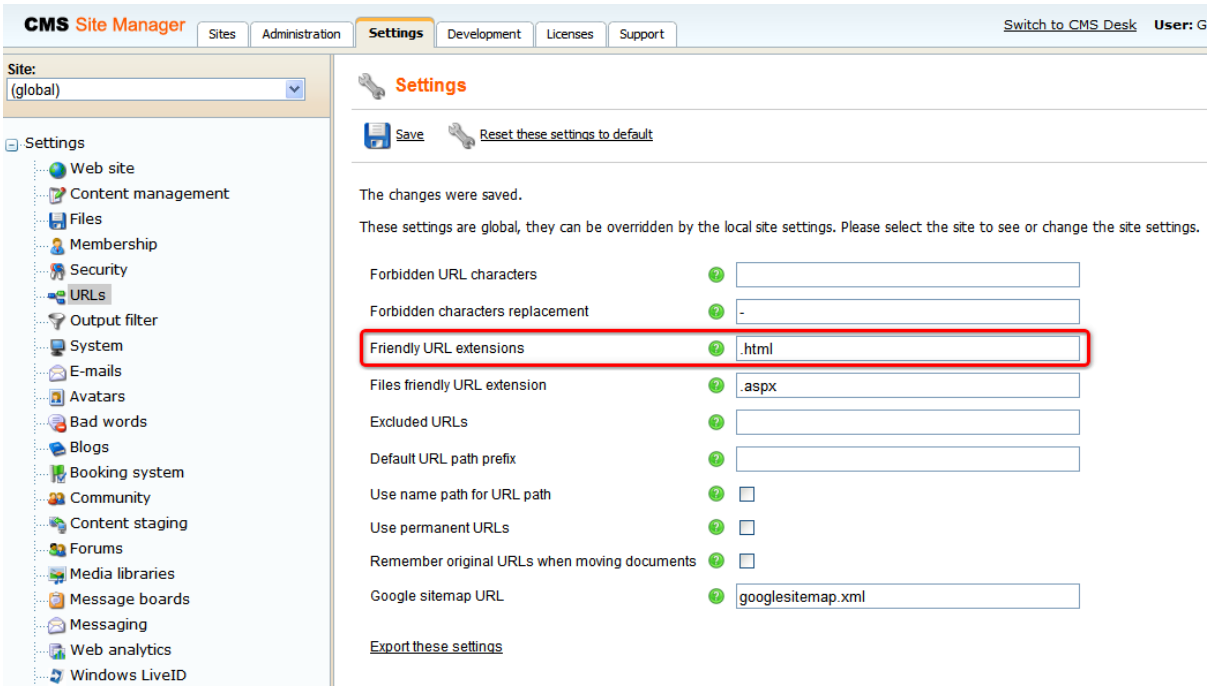
3.13.1 Overview

The following chapters contain description of different configuration tasks that require changes to your system. You needn't perform them for standard installation.

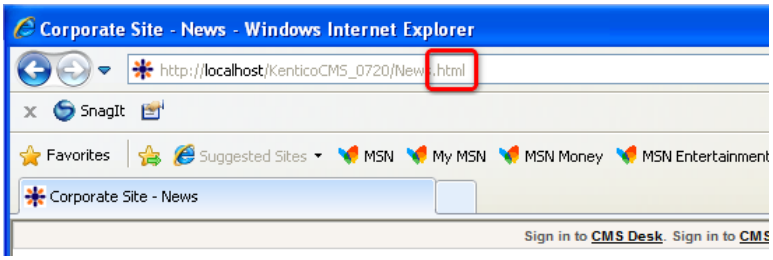
3.13.2 Configuration of custom URL extensions (.html or other)

The procedure is the same as for extension-less URLs. You will only configure a different extension or set of extensions at the end of the procedure:

Go to **Site Manager -> Settings -> select Global or particular web site -> URLs** -> set **Friendly URL Extension** value to **.html** and click **Save**.



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



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 will also be supported.

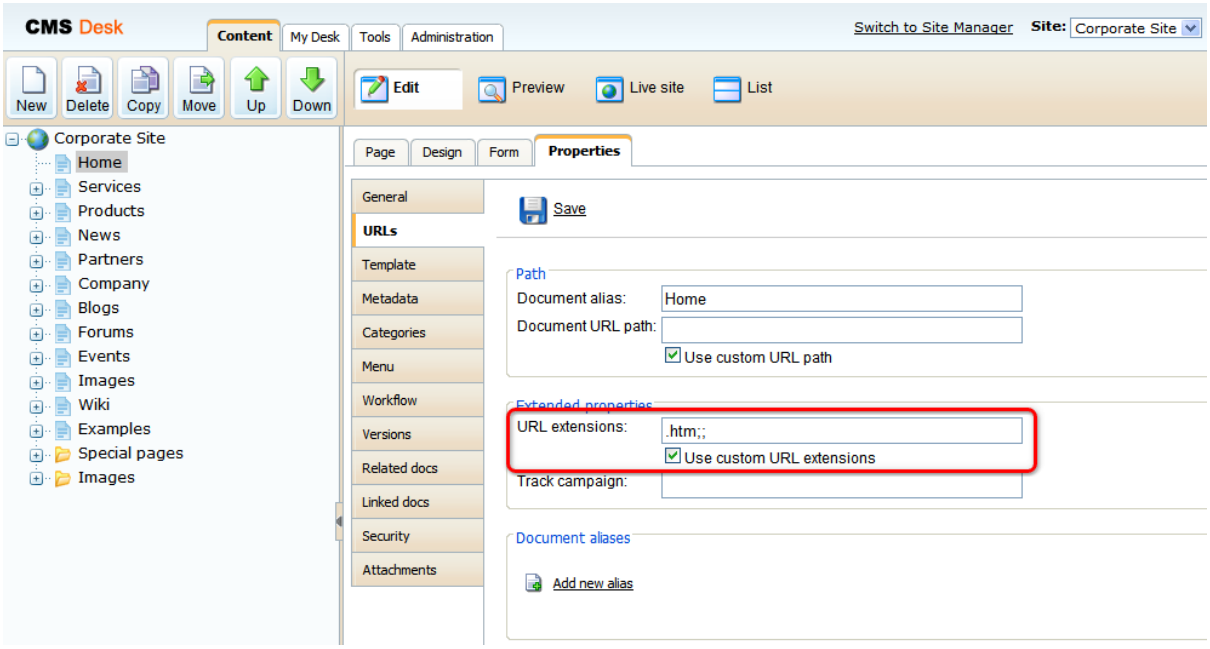
Document-level extensions settings

Apart of 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 are 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.

© 2009 Kentico Software


CMS Desk
Content
My Desk
Tools
Administration
Switch to Site Manager
Site: Corporate Site
New
Delete
Copy
Move
Up
Down
Edit
Preview
Live site
List
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
Path
Document alias:
Home
Document URL path:
Use custom URL path
Extended properties
URL extensions:
.htm;;
Use custom URL extensions
Track campaign:
Document aliases
Add new alias

3.13.3 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 web sites running on the server. Since version 2.2, 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 with this trust level:

- **VirtualPathProvider** – provides the virtual objects (layouts, transformations) from the database.
- **ContentStaging** – ensures the synchronization of content between production and live site servers.

Virtual path provider

This library provides the interface to the 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 web site 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.

© 2009 Kentico Software

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

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:

- Go to **Control panel -> Administrative tools -> Microsoft .NET Framework 2.0 Configuration**
- Select the **Assembly cache**, click on **Add an Assembly to the Assembly Cache** and select the library file **bin\Microsoft.Web.Services3.dll** from your web project.
- Delete the file **bin\Microsoft.Web.Services3.dll** from your web project if it's present.
- 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 web site

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

If your web site 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

© 2009 Kentico Software

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 file **bin/Microsoft.Web.Services3.dll** 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.

© 2009 Kentico Software

3.13.4 Creating a virtual directory

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



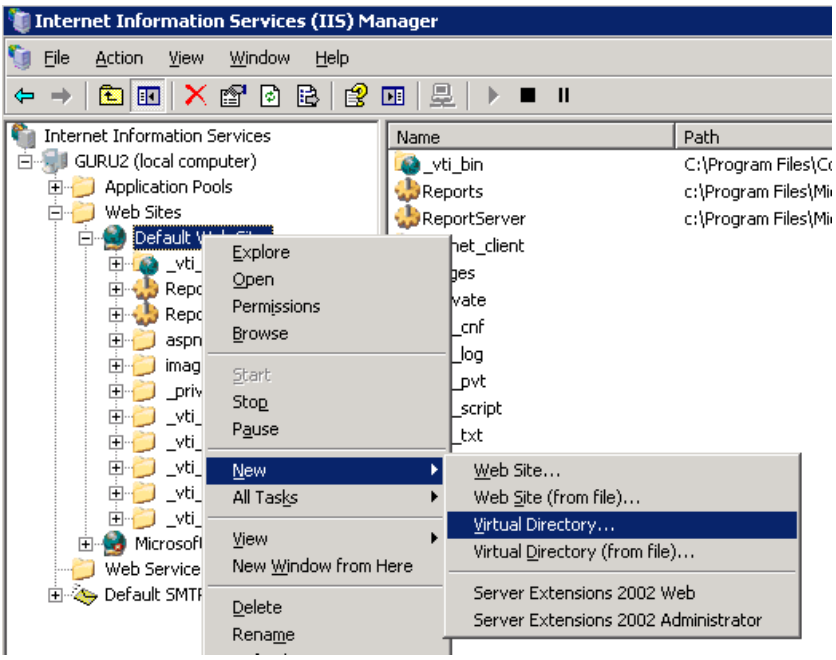
Application root

The root of the web site 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**.

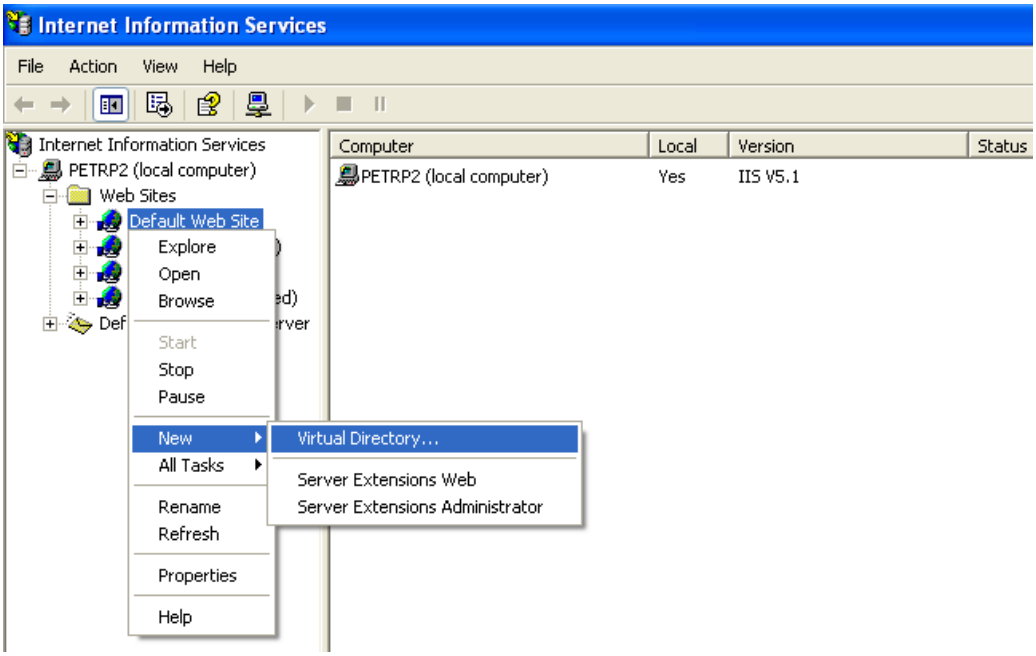
Follow these steps to create and configure a virtual directory on your web server:

Configuring a Virtual Directory

On Windows Server 2000/2003, open **Start -> Administrative Tools -> Internet Information Services (IIS) Manager**. Right-click **Computer -> Web Sites -> chosen web site** and choose **New -> Virtual Directory**.

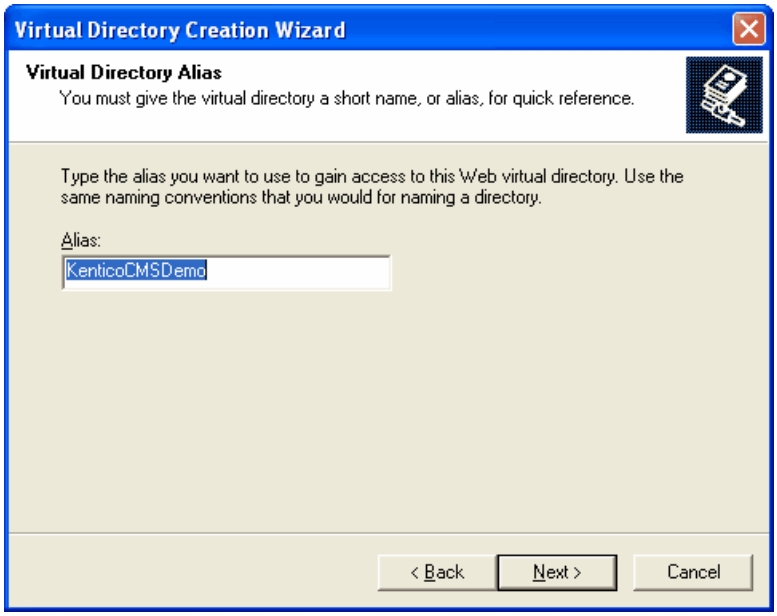


On Windows XP, **open Start -> Control Panel -> Administrative Tools -> Internet Information Services**.Right-click the **Computer -> Web Sites -> Default Web Site** item (or other web site if you're running multiple web sites on the same computer) and choose **New -> Virtual Directory...**.



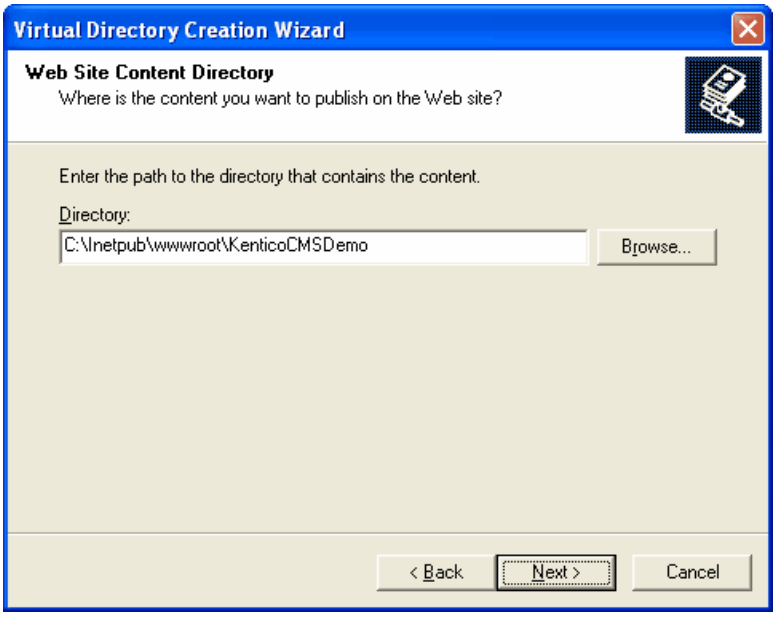
The rest is same for all operating systems:

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

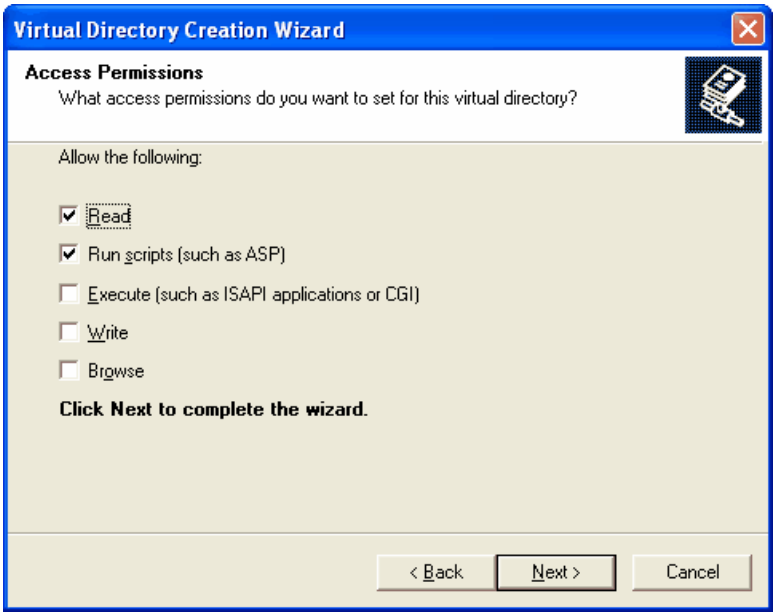


© 2009 Kentico Software

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**.

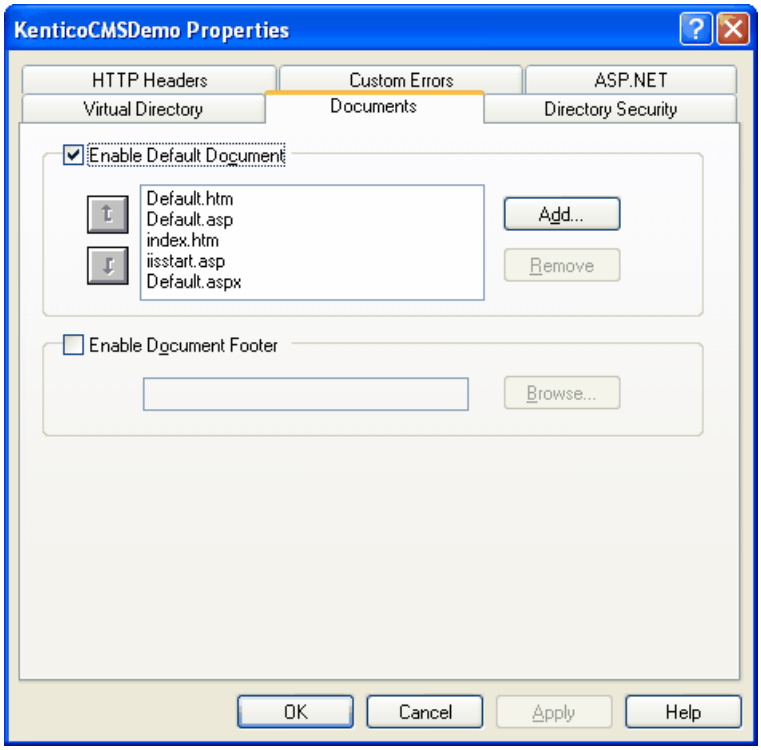


4. Now you need to specify the access permissions for the new virtual directory. You need to choose at least **Read** and **Run scripts** and it's recommended that you do NOT allow any other options. Click **Next** and click **Finish**.



© 2009 Kentico Software

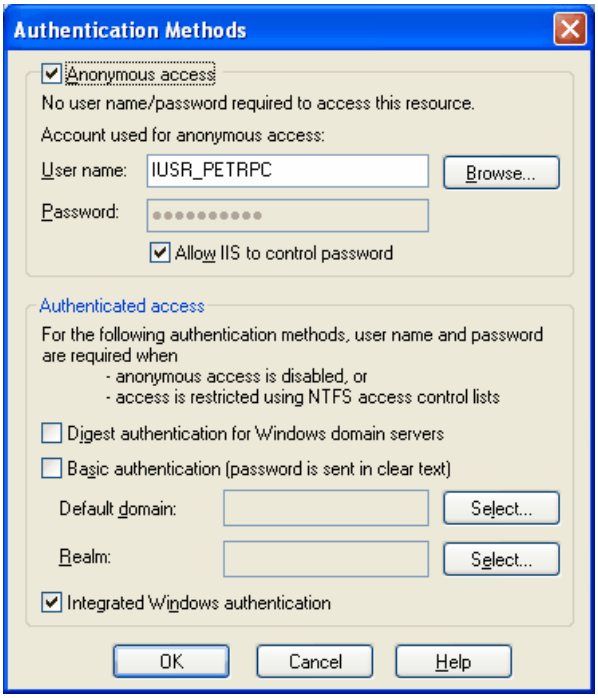
5. Right-click the newly created virtual directory and choose **Properties**. Choose the **Documents** tab and make sure the **Enable Default Document** box is checked and the list contains the **Default.aspx** file.



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.

© 2009 Kentico Software

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.

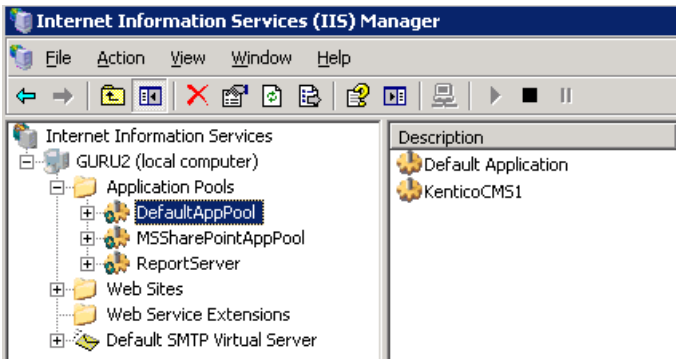


8. Click **OK** on all dialogs to save the changes.

© 2009 Kentico Software

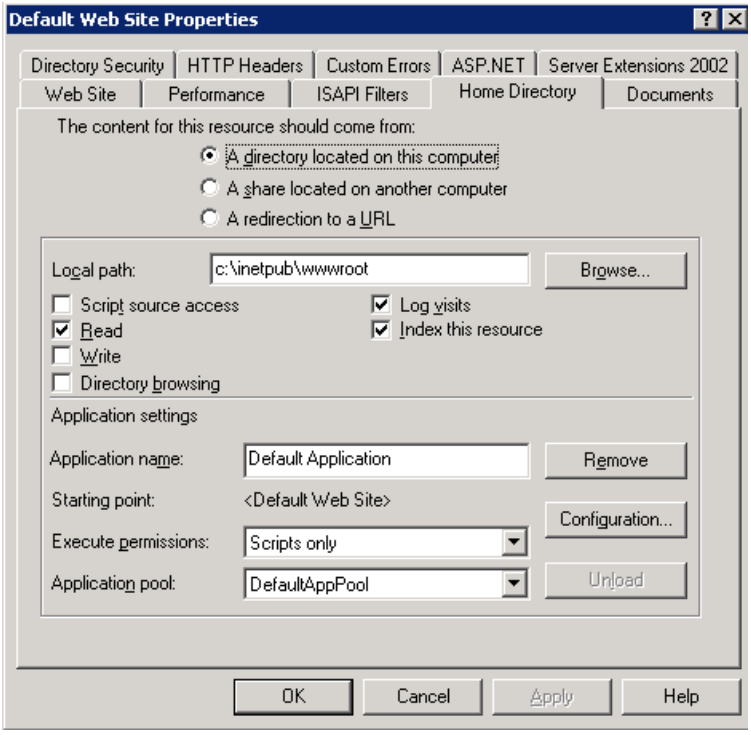
3.13.5 Configuring Application Pools

Application Pools provide you with additional level of web site management. They are supported only on Windows Server 2000/2003/2008/Vista. You can configure them in **Start -> Administrative Tools -> Internet Information Services (IIS) Manager -> Computer -> Application Pools.**

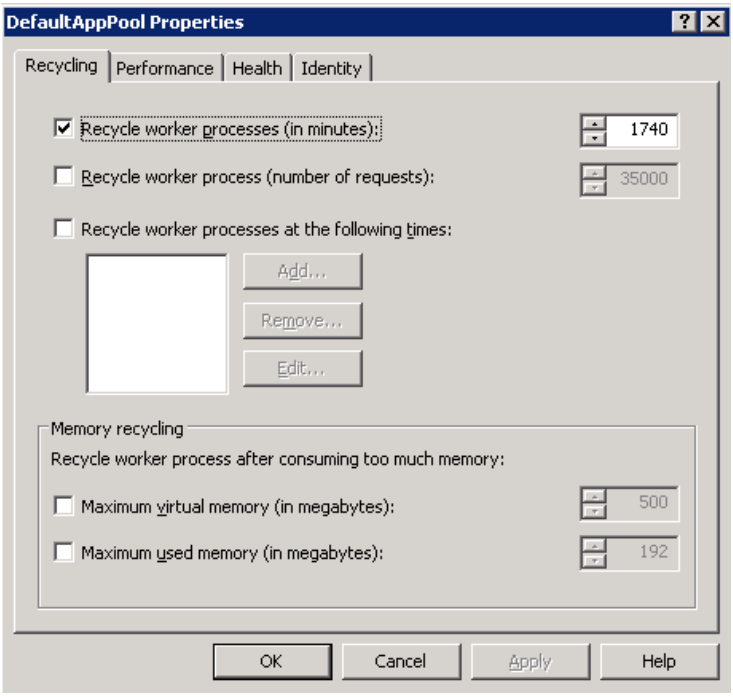


The application pools allow you to group applications (web sites) into pools that share server resources using the same rules. This chapter contains recommendations on how to configure the web site application pool for Kentico CMS.

You can check the name of the application pool in the Web Site 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 web sites, the system may behave unpredictably.

2. If you need to run multiple web sites 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 web site freezes** time to time, you can temporarily set the value to 30 minutes to ensure that the web site 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 web site 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 web site 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

© 2009 Kentico Software

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**.

3.13.6 Setting up html extension for IIS7

For setting up html extensions for IIS7, please go through the following procedure

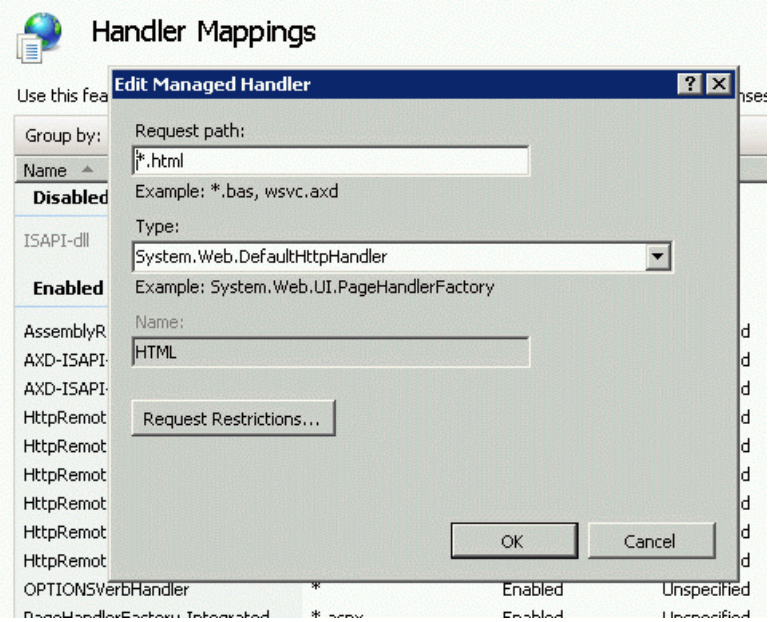
1. Run **IIS Manager** .

2. Select your web.

3. Open handler mappings.

4. Click to **Add managed handler...** .

5. Set dialog values just as the following image shows.



© 2009 Kentico Software

3.13.7 Configuration of extension-less URLs

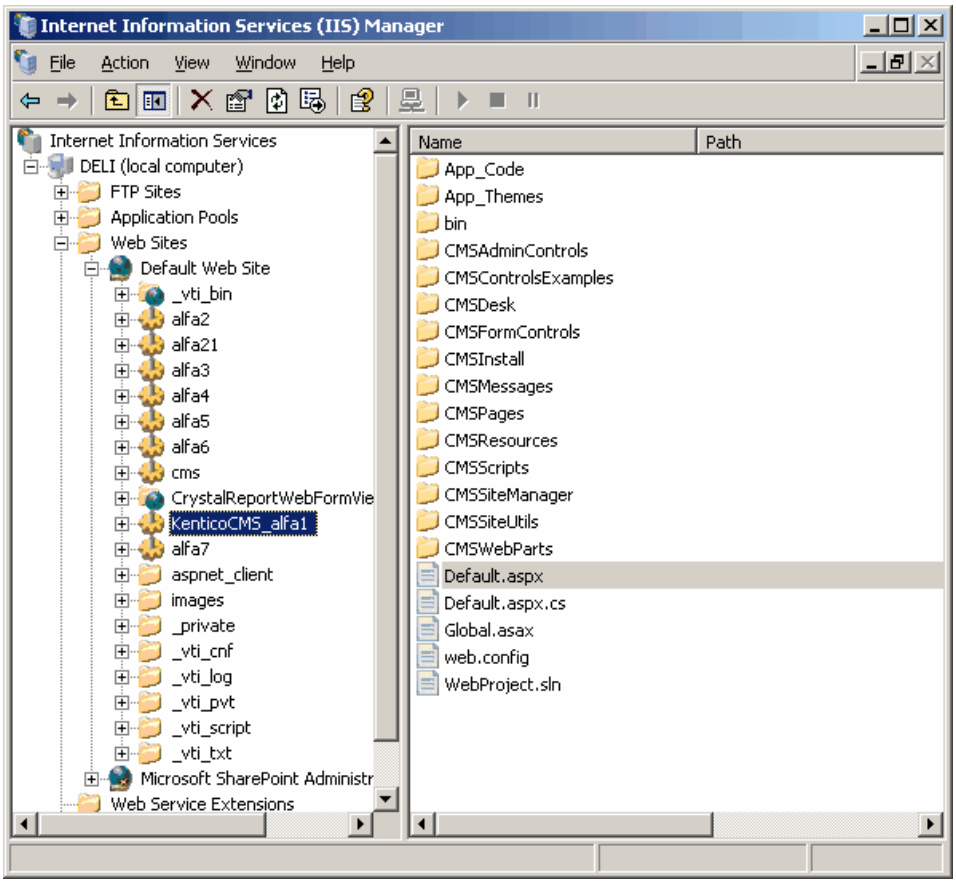
This chapter describes how to configure the system for using extension-less URLs, such as
`http://www.mydomain.com/products/kenticocms`
instead of
`http://www.mydomain.com/products/kenticocms`***.aspx***

Prerequisites

You can use this configuration on Windows XP, Windows 2000 and Windows Server 2003 with Internet Information Services (IIS) installed. It's not possible to use it with Visual Studio's built-in web server.

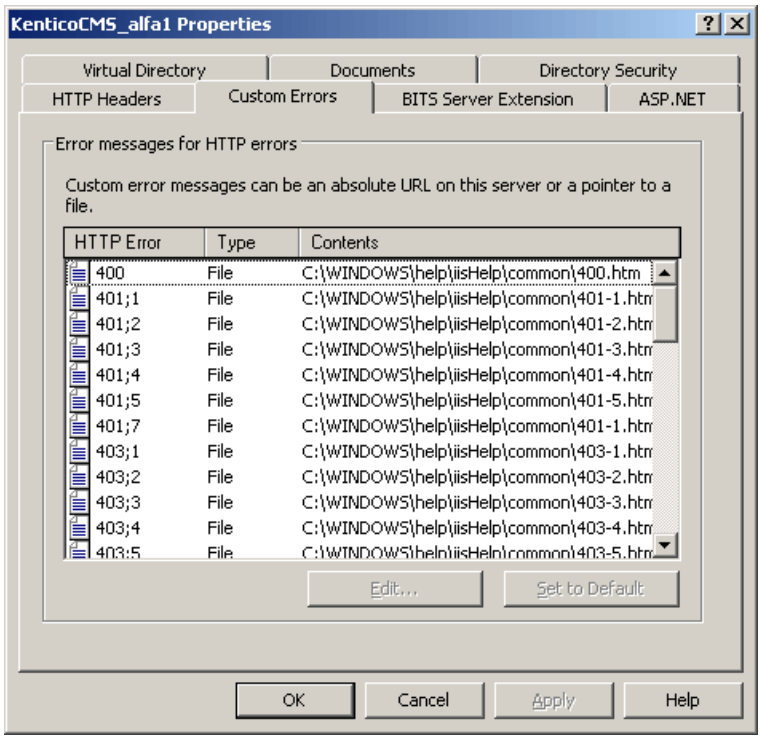
Configuration

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



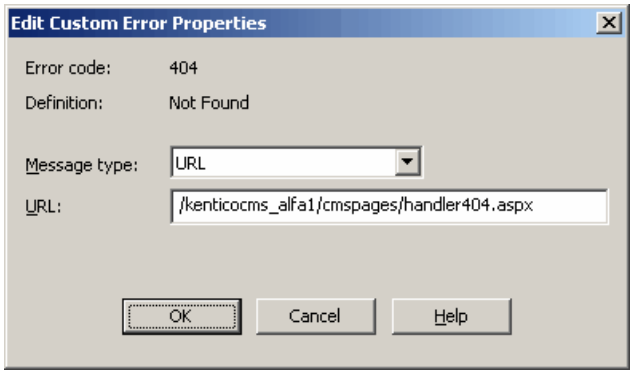
© 2009 Kentico Software

2. Right-click the directory (or web site) 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.
  Example: 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.

5. Now go to **Kentico CMS Site Manager -> Settings**. Choose either the global configuration or site-specific configuration and choose the **URLs** configuration section. Clear the **Friendly URL extension** textbox value and click **Save**.

© 2009 Kentico Software

If you want to enable other friendly URL extensions along with extension-less URLs, you can enter the URLs divided by a semicolon, while two semicolons enable the extensionless URLs. The first value will be used for generating the URLs displayed in browsers.

Example: entering **;;.aspx;.html** enables .aspx and .html extensions and extensionless URLs; because the two semicolons are entered first, extensionless urls will be displayed in your browser.

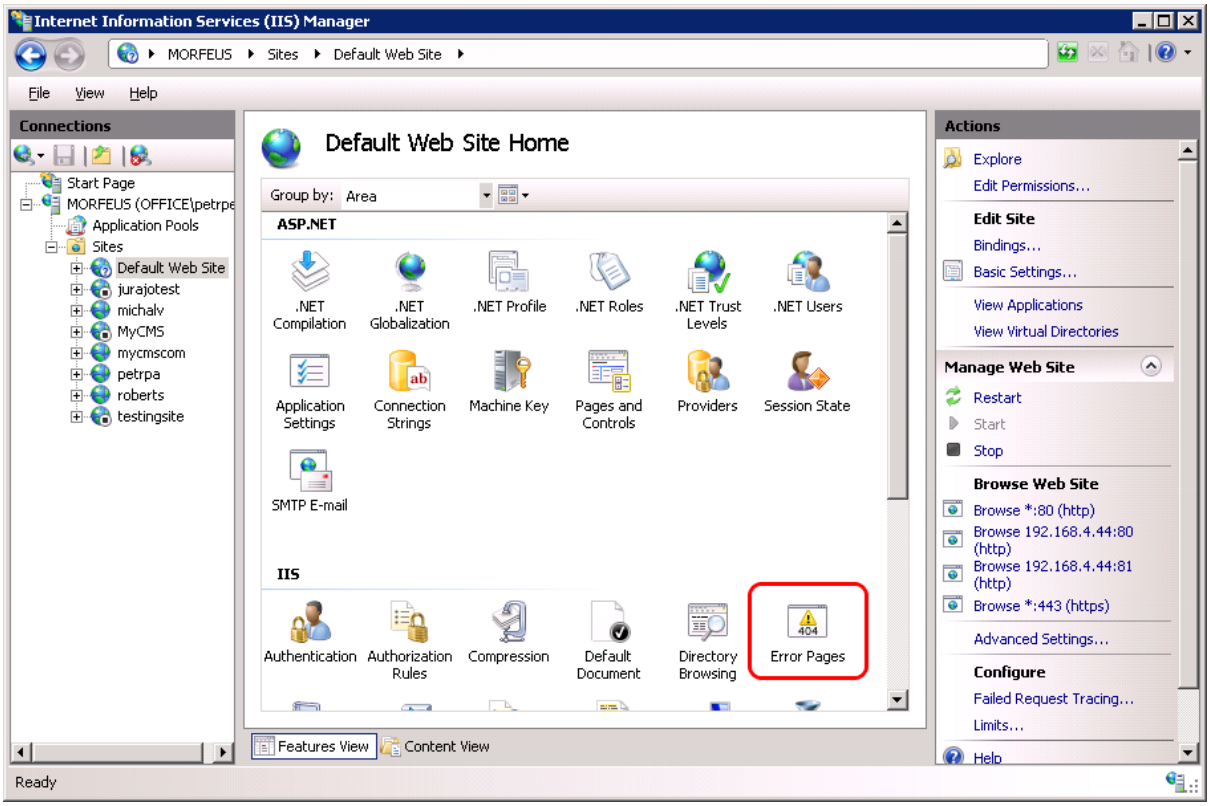
Now when you go to the live web site, you will see that all URLs in menus and listings are rendered without extension. You may, however, need to update some static links that were created with default .aspx extension.

Configuring extension-less URLs on IIS 7

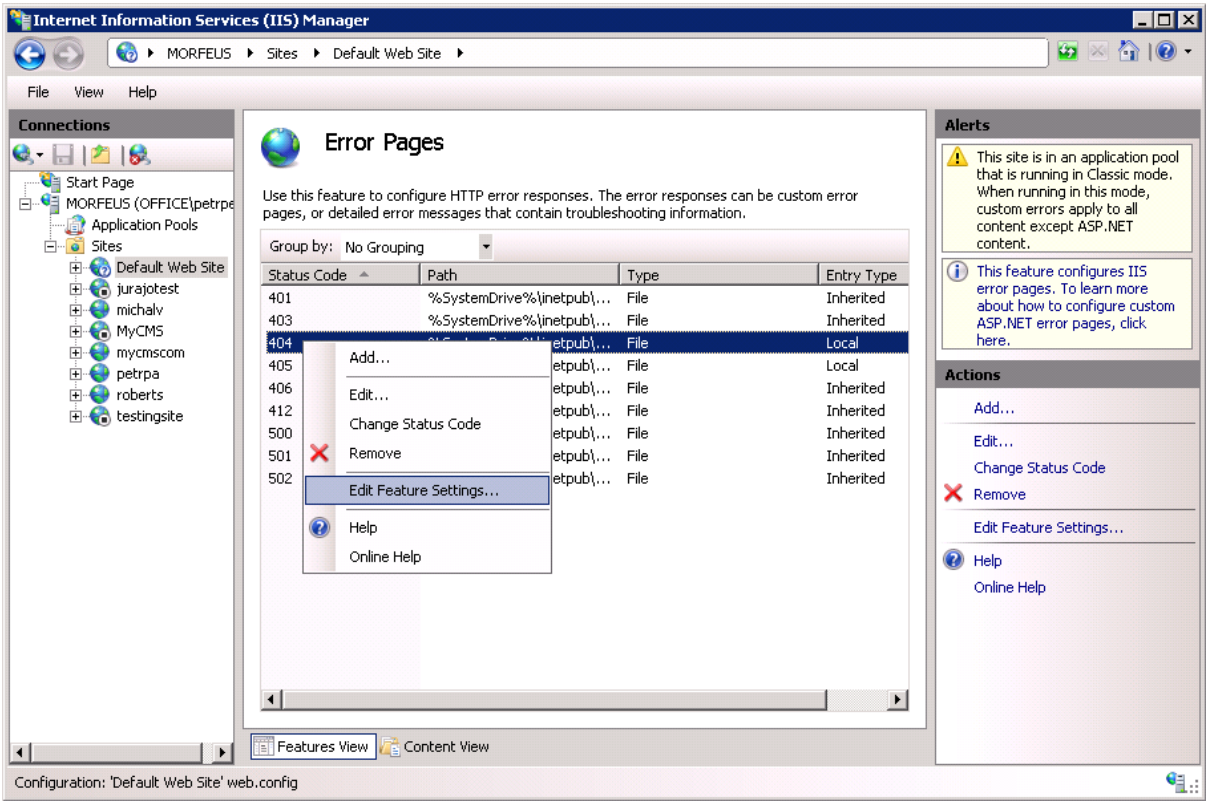
The setup procedure on IIS 7 is slightly different due to IIS 7's different user interface.

1. Open **Start -> Control Panel -> Administrative Tools -> Internet Information Services (IIS) Manager**.

2. Select your web site from the tree on the left and open the **Error pages** section.



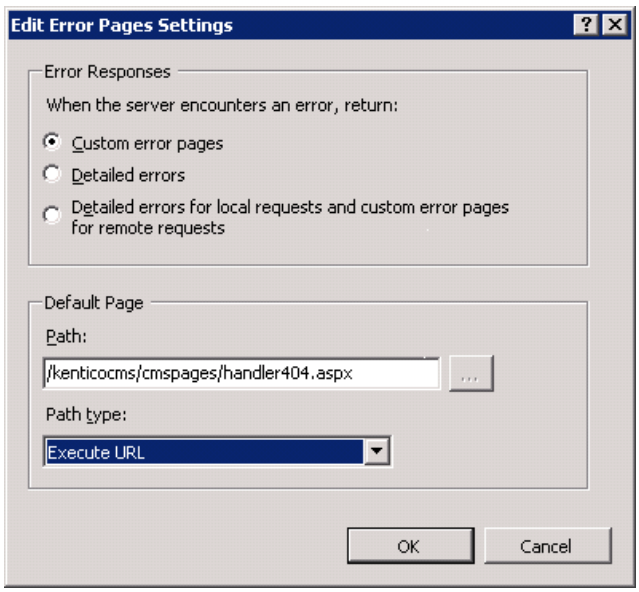
3. Right-click the **404 error** and choose **Edit Feature Settings**.



4. Enter the following values:

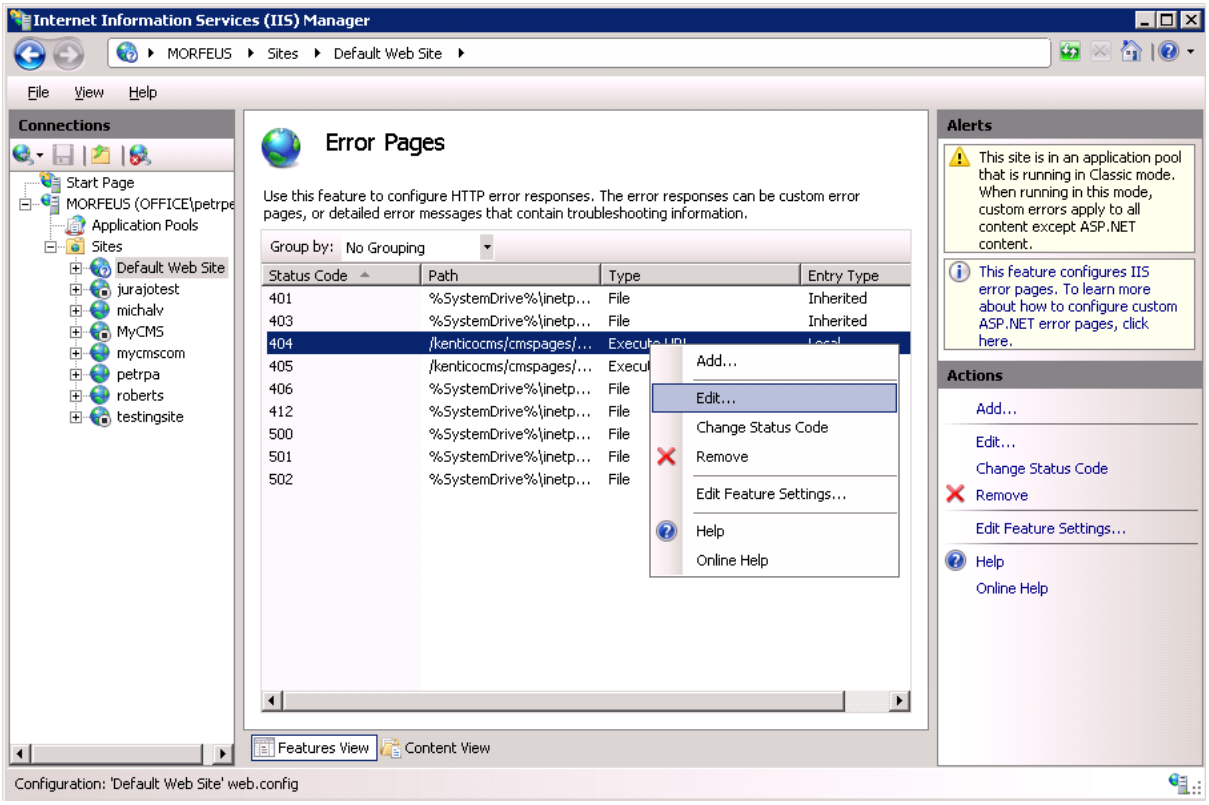
- **Path:** enter the URL of the **cmspages/handler404.aspx** page according to your application's URL.
  Example: if you run your web project in virtual directory `/kenticocms`, you need to enter `/kenticocms/cmspages/handler404.aspx`
- **Path type:** Execute URL

Click **OK**.

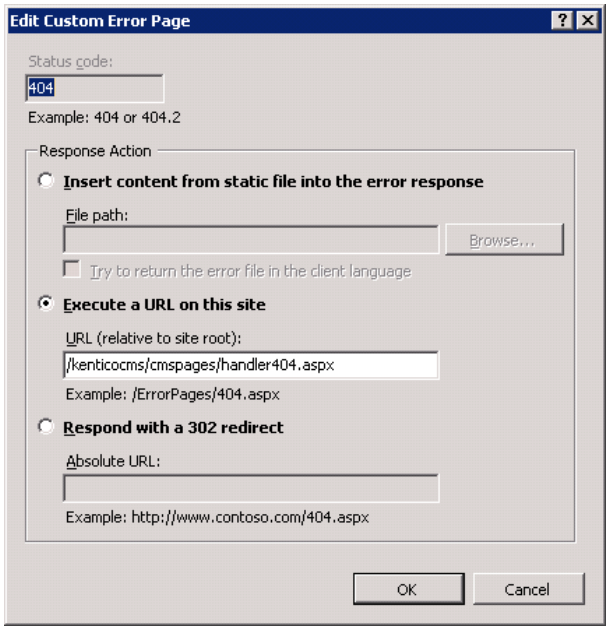


© 2009 Kentico Software

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**.



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.

9. Now go to **Kentico CMS Site Manager -> Settings**. Choose either the global configuration or site-specific configuration and choose the **URLs** configuration section. Clear the **Friendly URL extension** textbox value and click **Save**.

If you want to enable other friendly URL extensions along with extension-less URLs, you can enter the URLs divided by a semicolon, while two semicolons enable the extensionless URLs. The first value will be used for rendering the URLs displayed in browsers.

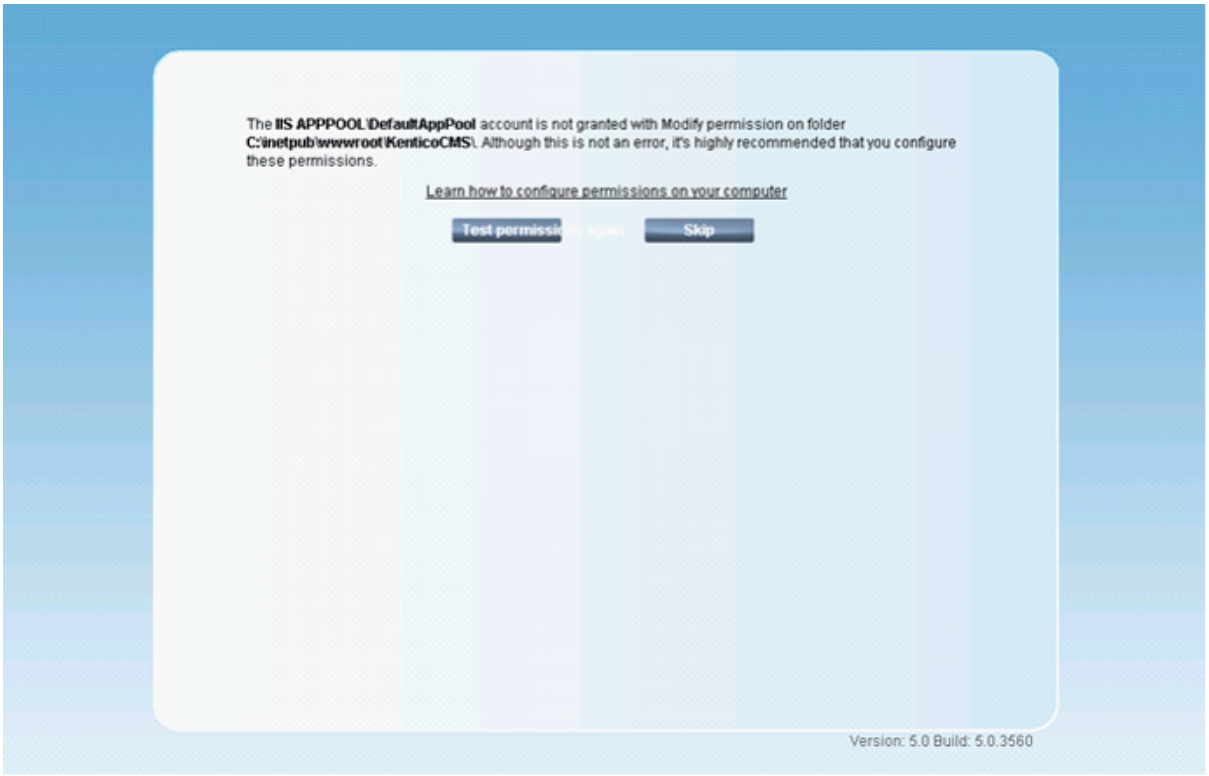
Example: entering **;;.aspx;.html** enables .aspx and .html extensions and extensionless URLs; because the two semicolons are entered first, extensionless urls will be rendered in your browser.

Now when you go to the live web site, you will see that all URLs in menus and listings are rendered without extension. You may, however, need to update some static links that were created with default .aspx extension.

3.13.8 Windows 7 and Windows Server 2008 R2

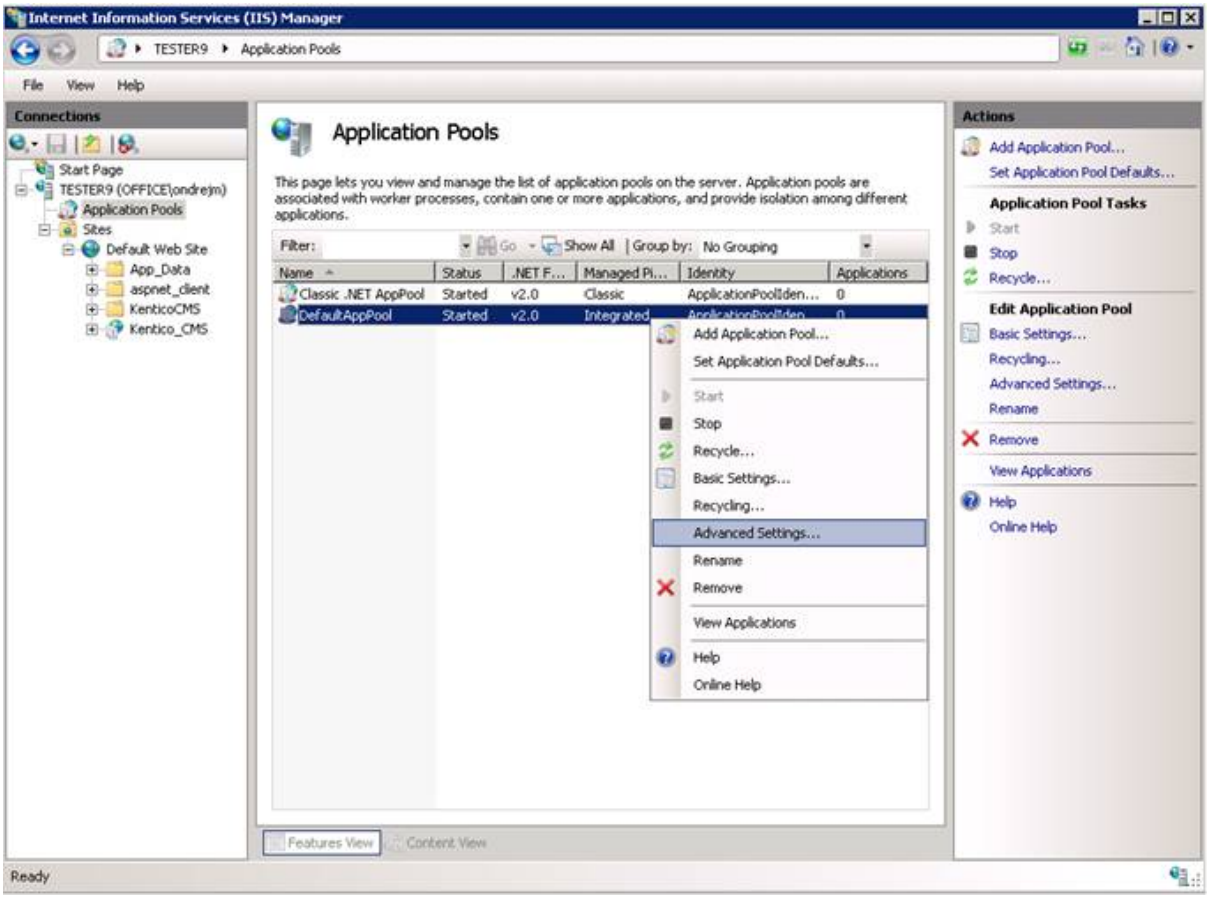
Kentico CMS runs on both **Windows 7** and **Windows Server 2008 R2**. On both systems, you need to add the **Write** permission to the website's folder as described here.

If you can see the following screen after the end of the database setup, it's necessary to make some settings in your IIS.



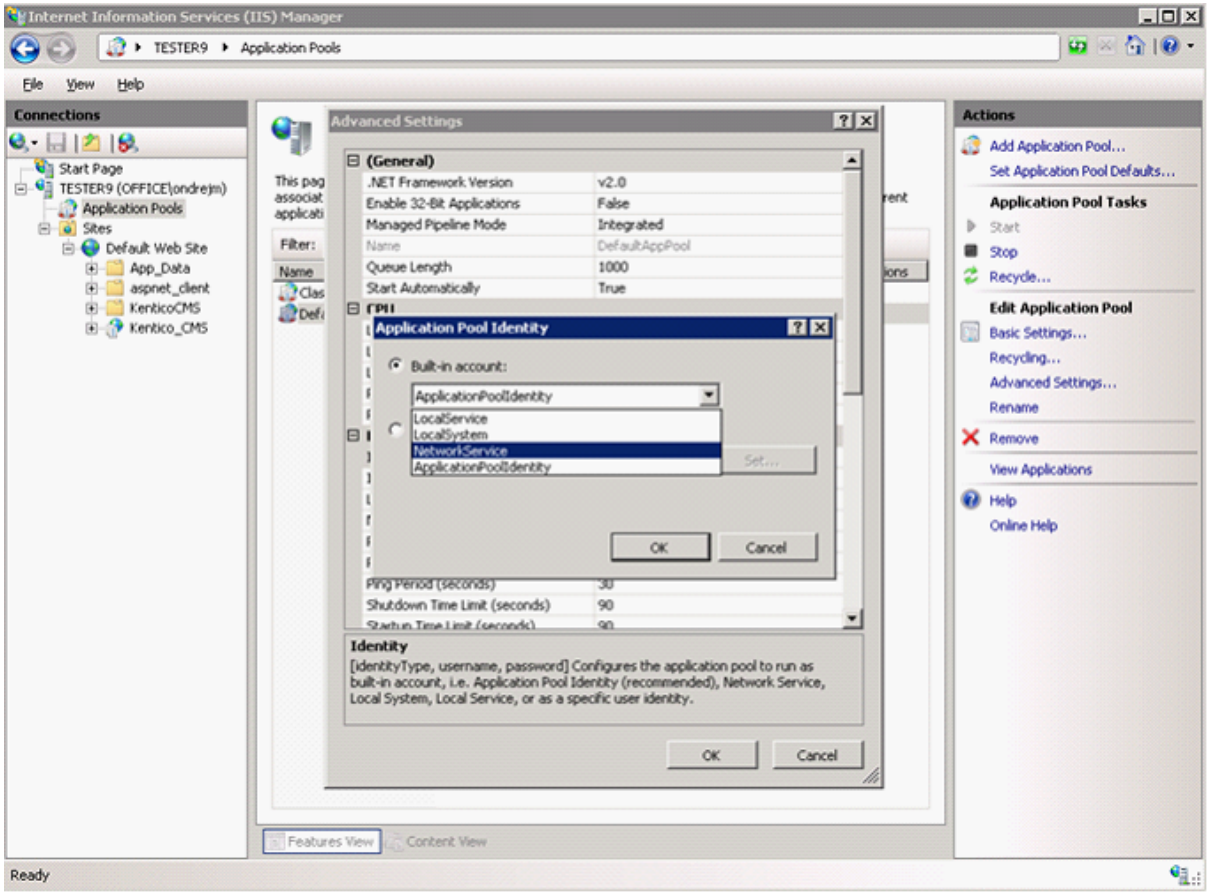
© 2009 Kentico Software

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.



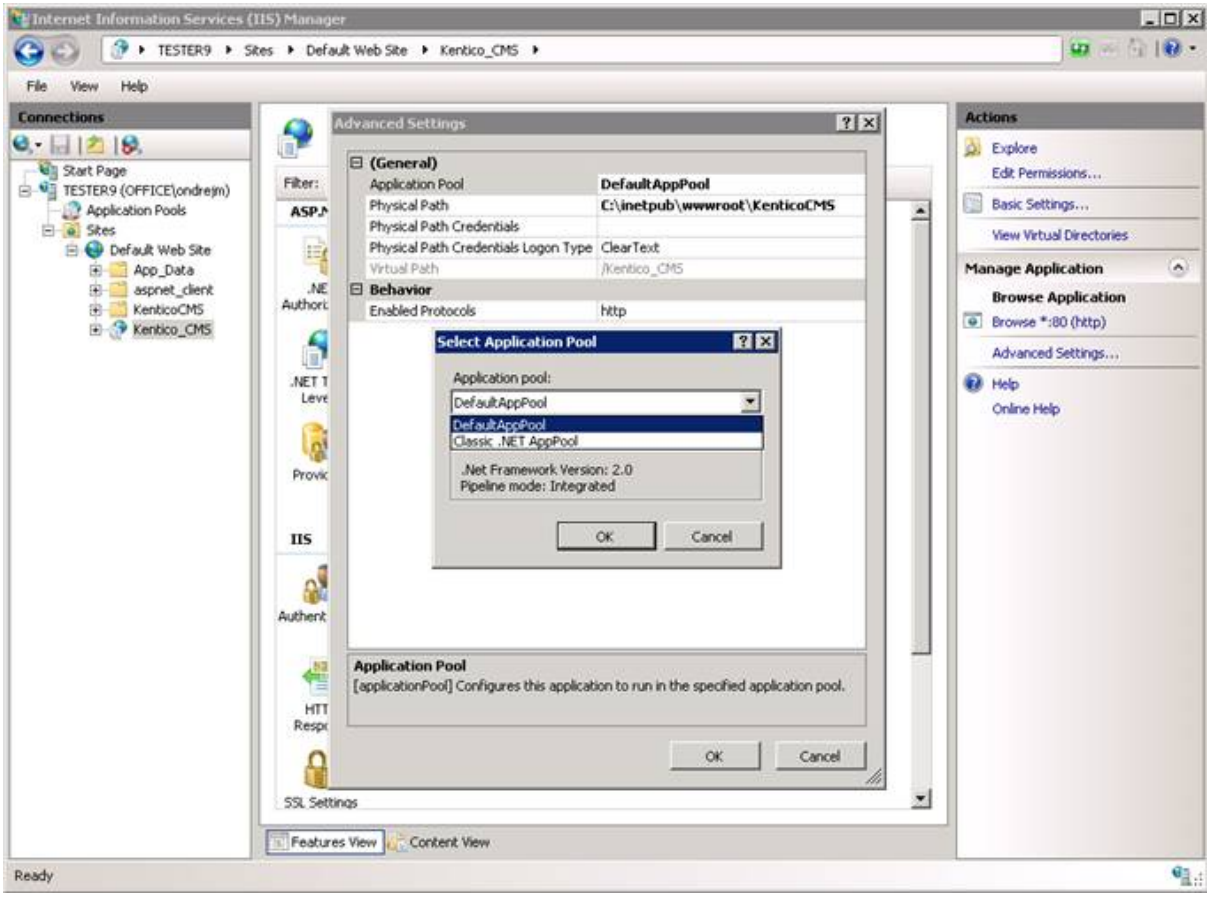
© 2009 Kentico Software

In the following dialog, switch the **Identity** in **Process Model** property to **Network Service**.



© 2009 Kentico Software

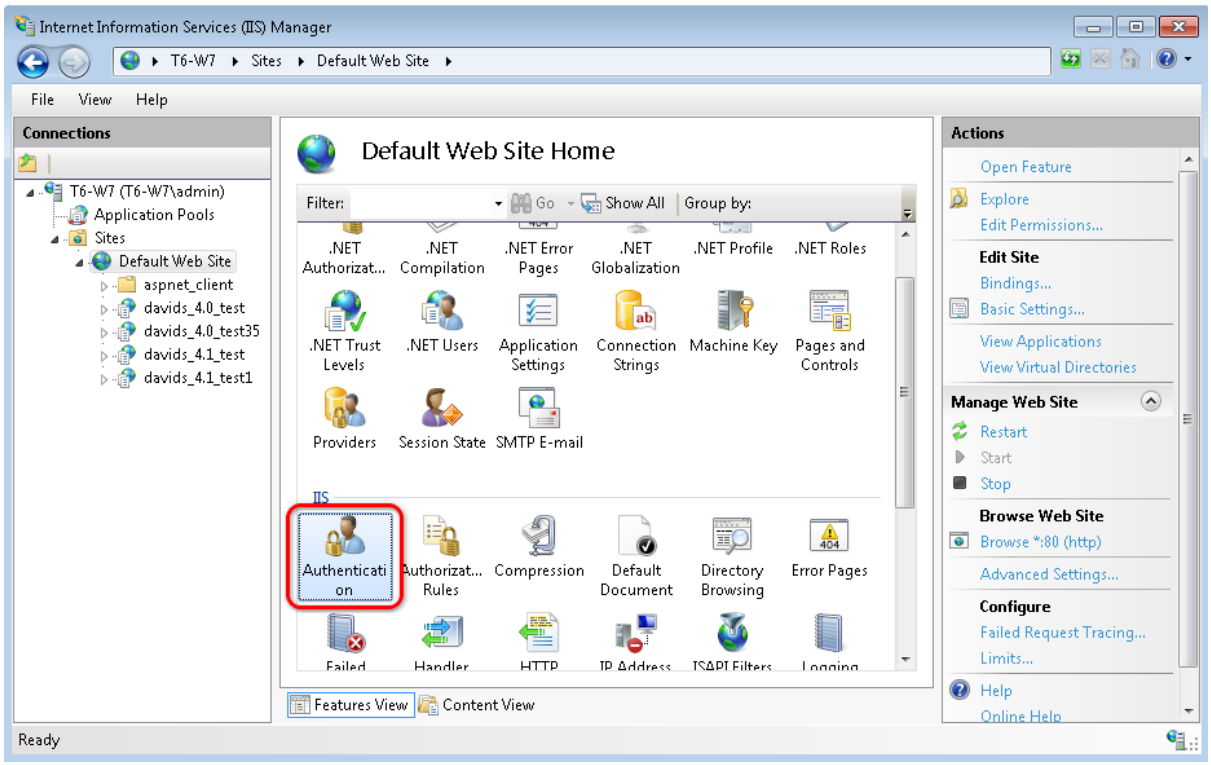
Now edit your web site and in **Advanced settings**, set the **Application Pool** property to **DefaultAppPool**.



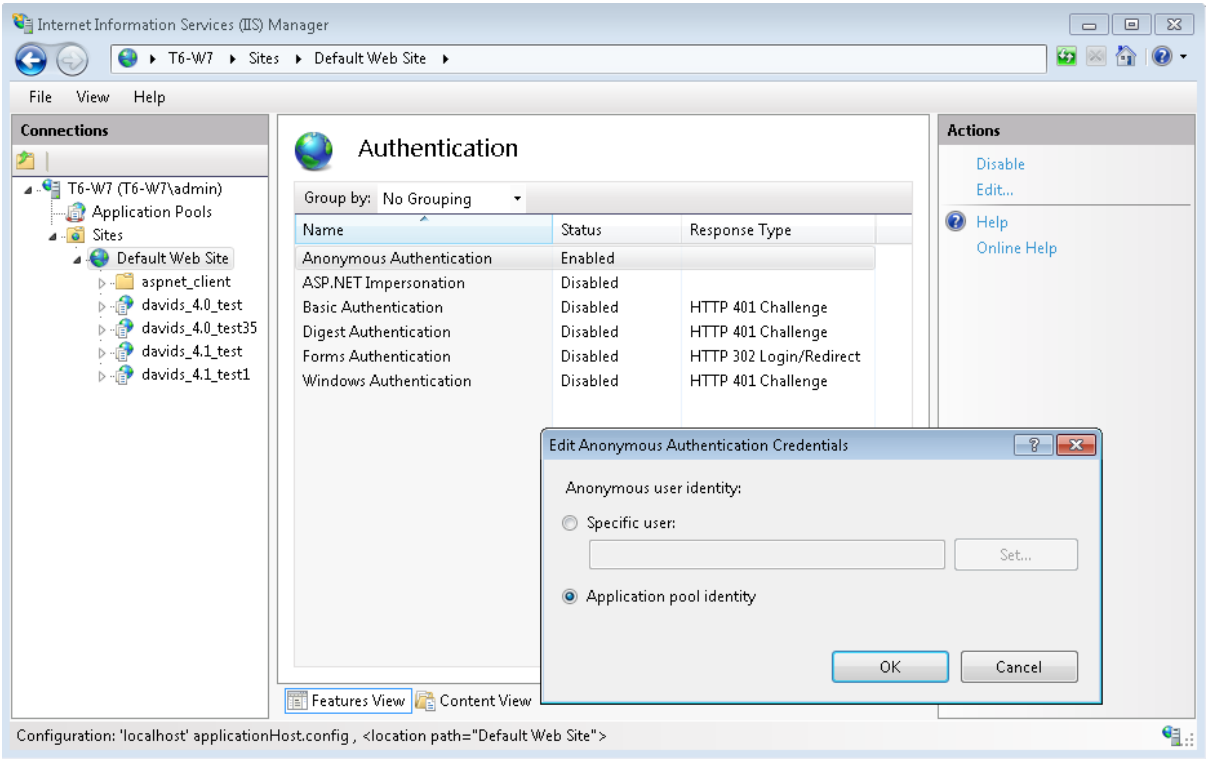
© 2009 Kentico Software

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**.



3.14 Configuration of full-text search in files

3.14.1 Configuration of full-text search in files

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 2000, you need to use Microsoft SQL Server 2000 Standard or Enterprise Edition - Full-text search is not supported with MSDE or in the Developer Edition.

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 web site must be configured for storing files in database (**Site Manager -> Settings -> Files -> Store files in database** must be checked).

Now follow one of the following guides:

- Configuration of full-text search on Microsoft SQL Server 2000
- 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).

© 2009 Kentico Software

3.14.2 Configuration on MSSQL 2000

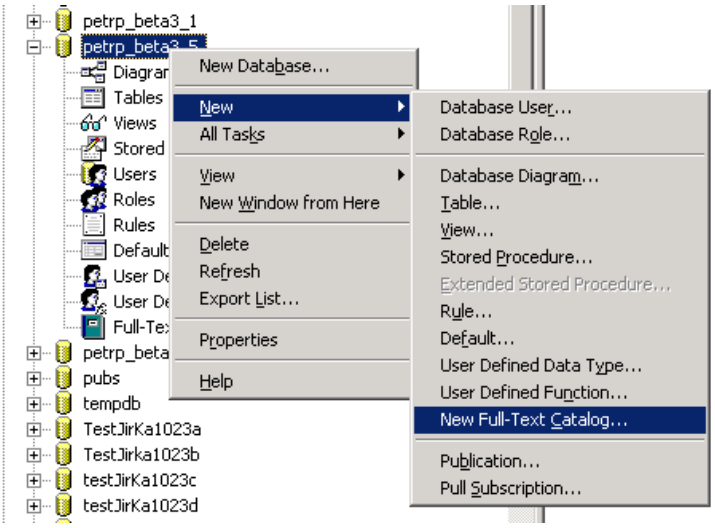
Prerequisites

If you are using Microsoft SQL Server 2000, you need to use Microsoft SQL Server 2000 Standard or Enterprise Edition - Full-text search is not supported with MSDE or in the Developer Edition. Full-text search must be installed on your SQL Server.

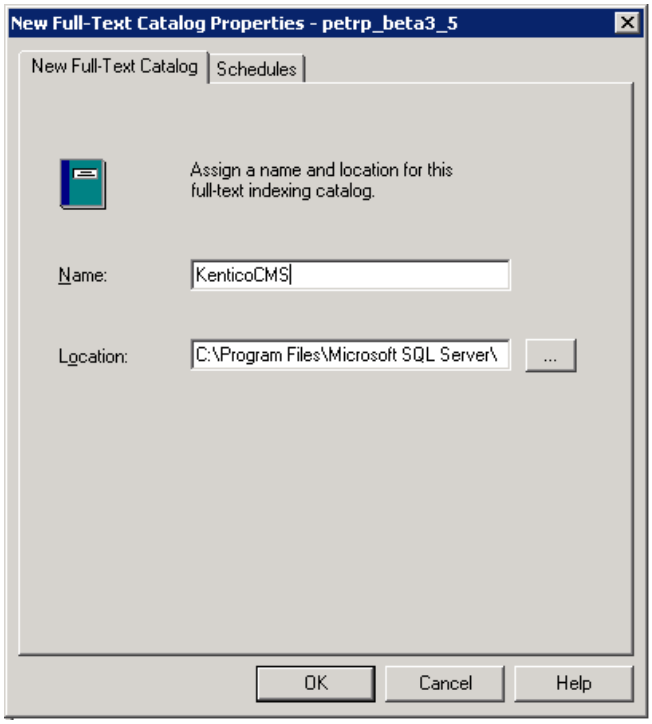
How to set up full-text search

1. Run **Microsoft SQL Server Enterprise Manager** console.

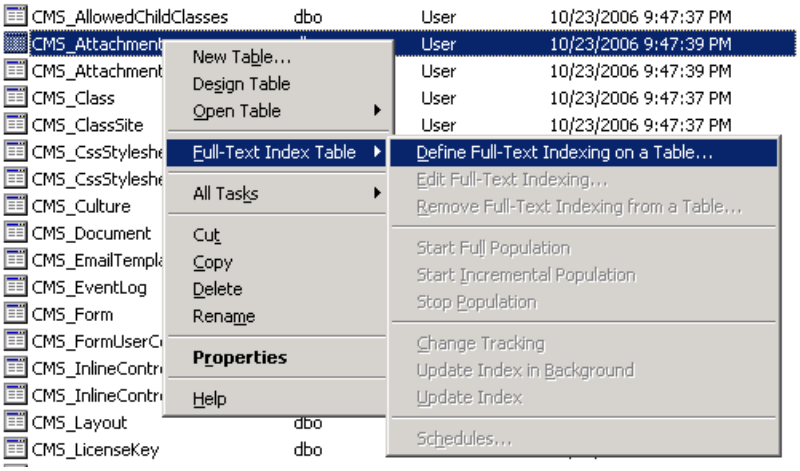
2. Locate your Kentico CMS database, right-click it and choose **New -> New Full-Text Catalog**:



3. **New Full-Text Catalog Properties** dialog appears. Enter the name of the new catalog - e.g. KenticoCMS. Click **OK** to save.



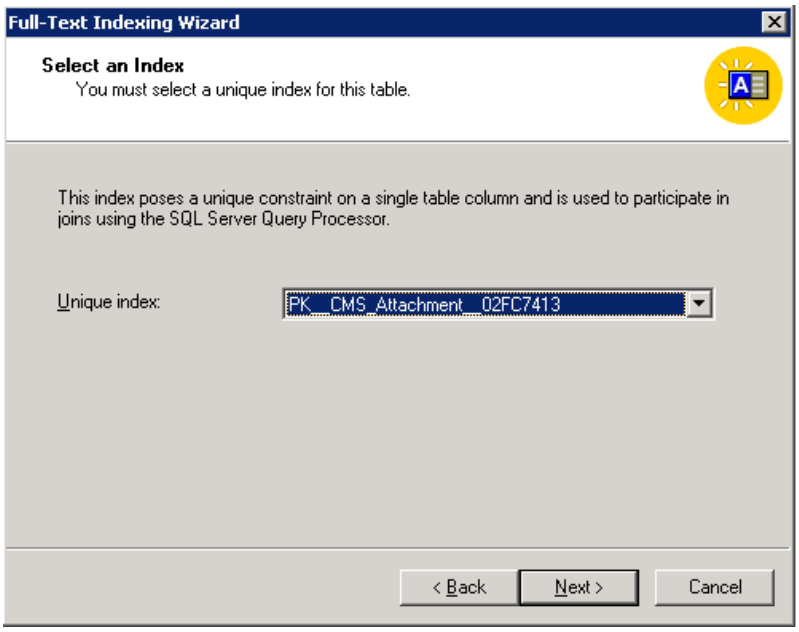
4. Right-click the **CMS_Attachment** table in the Kentico CMS database and choose **Full-Text Index Table -> Define Full-Text Indexing on a Table...**



5. The **SQL Server Full-Text Indexing Wizard** opens. Click **Next**.

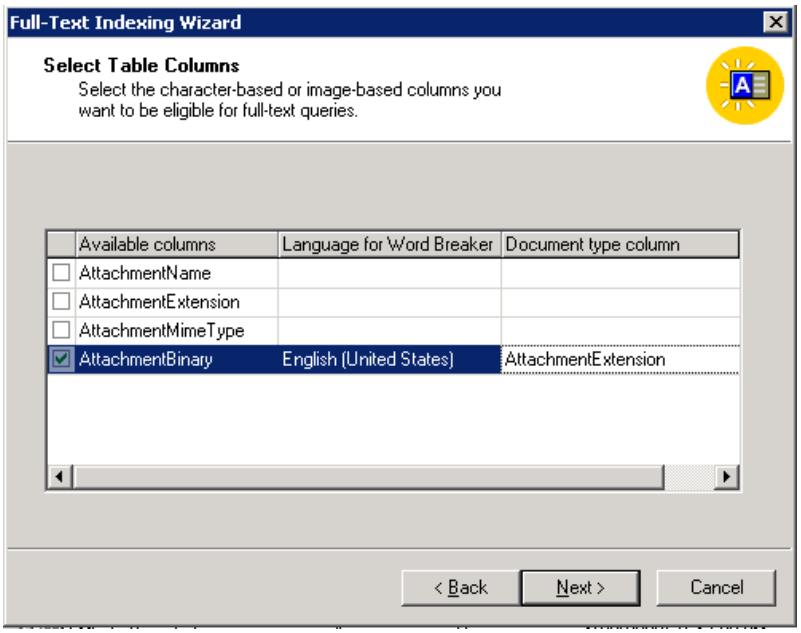
© 2009 Kentico Software

6. Choose the primary key PK_CMS_Attachment_... in the **Unique index** field.



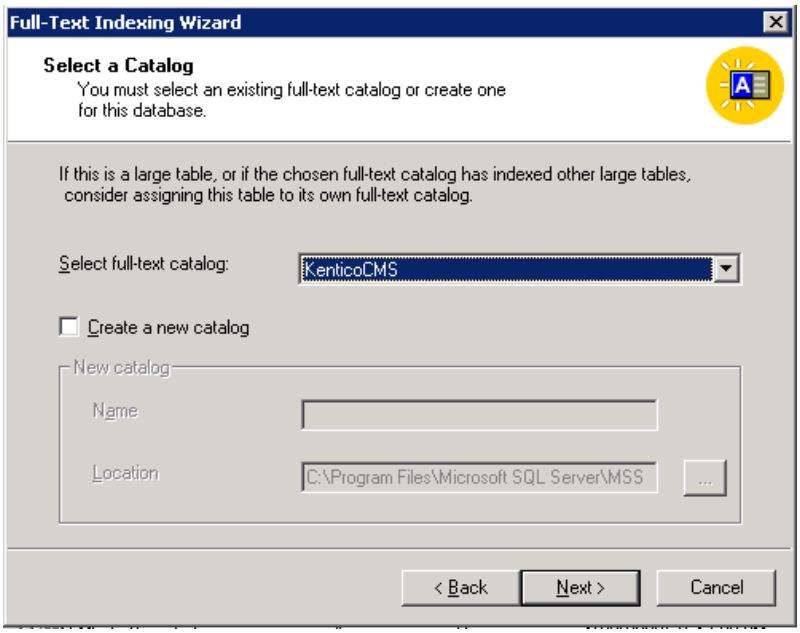
7. In the next step, check the **AttachmentBinary** column, choose the appropriate language that will be used for indexing and choose **AttachmentExtension** column as **Document type** column. Click **Next**.

Please note: if you choose English language, French (Italian, etc.) documents will be indexed too, but without native support (noise words, stop words, etc.) which can lead to inappropriate search results in some cases.

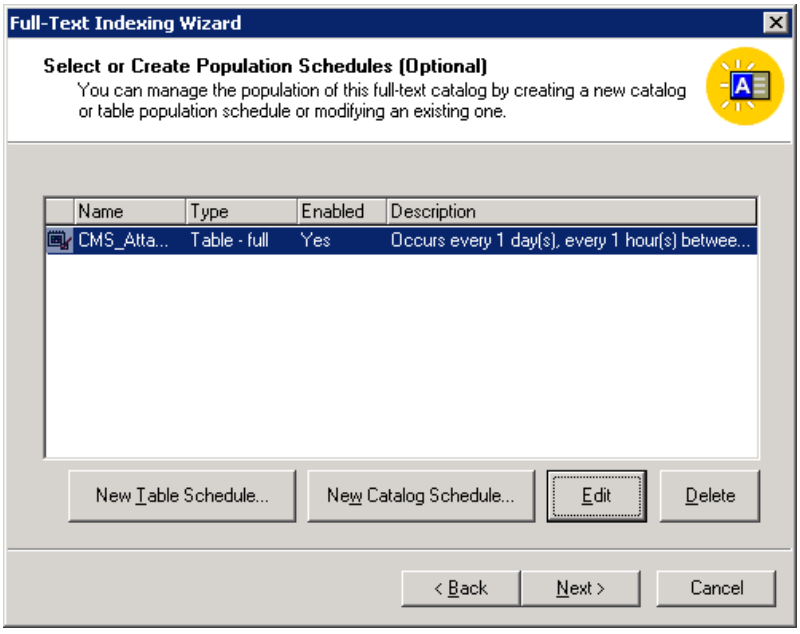


© 2009 Kentico Software

8. In the next step, choose the catalog you created in step 3. Click **Next**.

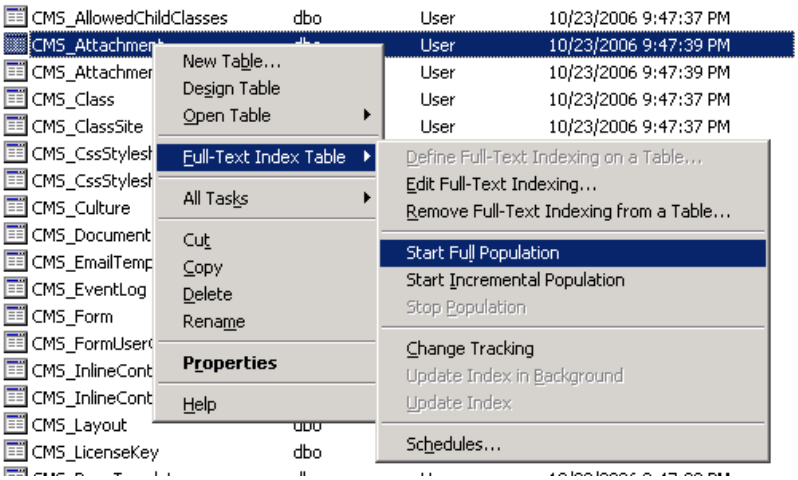


9. Now you can define a new indexing schedule. This is important, since all documents must be indexed before they can be searched. The index catalog must be updated after new files are added. You can do that manually or (preferably) you can schedule automatic indexing (incremental indexing is usually sufficient).

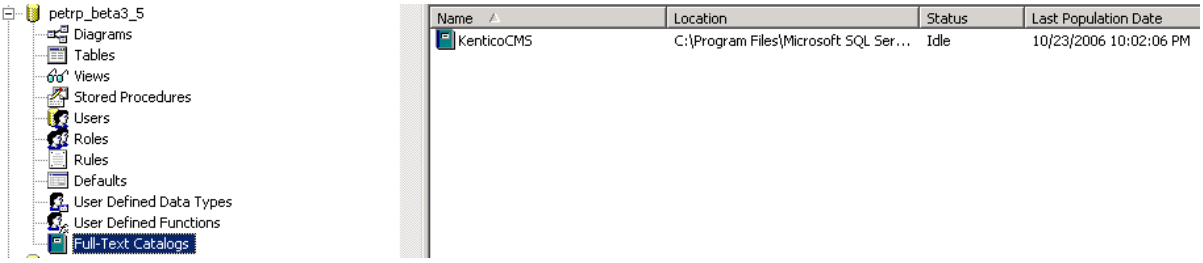


© 2009 Kentico Software

10. Click **Next** and click **Finish**. Now you have created a new catalog. However, it's not indexed yet. You need to start the first full indexing manually. Right-click the **CMS_Attachment** table, choose **Full-Text Index Table -> Start Full Population**.



11. Wait a few seconds and then refresh the **Full-Text Catalogs** listing. Check that the **Last Population Date** has been updated.



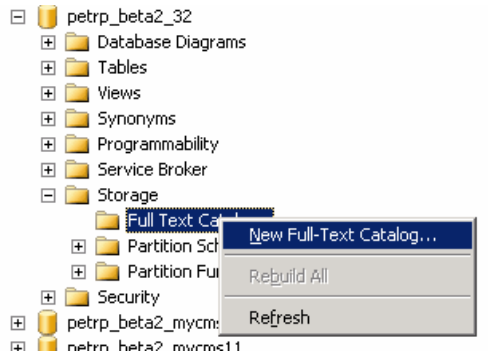
12. Sign in as administrator and go to **Site Manager -> Development -> Document types -> Root** and edit the **searchattachments** query. Uncomment the following query:

```
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 )
```

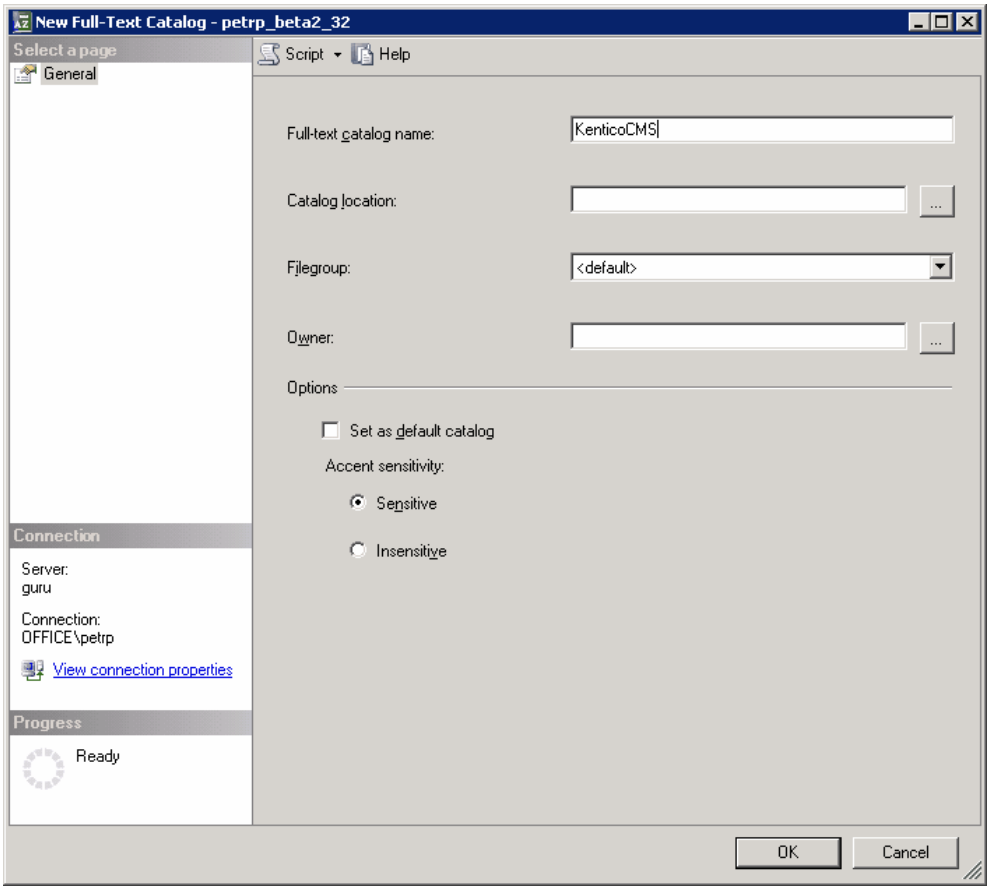
© 2009 Kentico Software

3.14.3 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**.



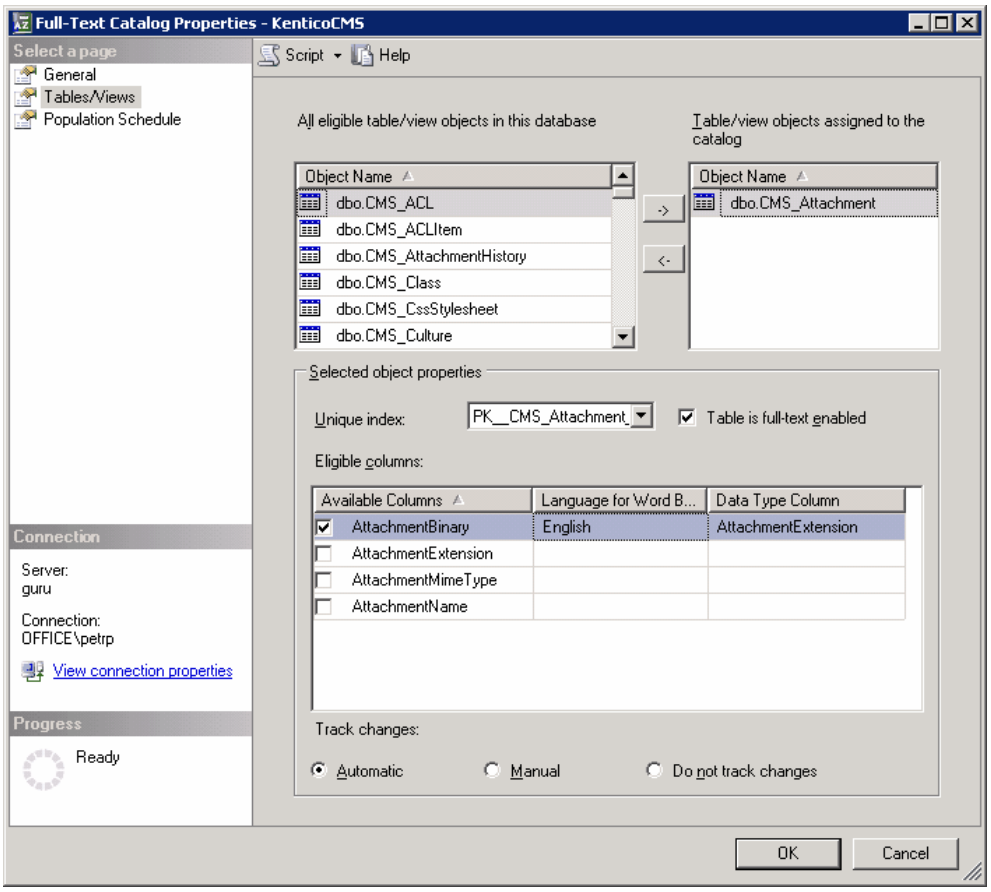
3. On the **New Full-Text Catalog** dialog, enter Full-text catalog name *KenticoCMS* and click **OK**.



© 2009 Kentico Software

4. Right-click the newly created KenticoCMS full-text catalog and choose **Properties**. On the Full-Text Catalog Properties dialog, choose the **Tables/Views** tab.

5. 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**.



6. 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 )
```

© 2009 Kentico Software

3.14.4 Configuration using SQL 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 MSSLQ 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 )
```

3.14.5 Searching PDF files

Please download the free Adobe PDF IFilter 6.0 from the Adobe Web site: http://www.adobe.com/support/downloads/detail.jsp?ftpID=2611

Run the installer and follow the instructions. 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.

Note 1: Adobe PDF IFilter is not a product of Kentico Software and we cannot guarantee its functionality.

Note 2: 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:

© 2009 Kentico Software

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

3.15 Troubleshooting installation issues

3.15.1 Troubleshooting overview

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

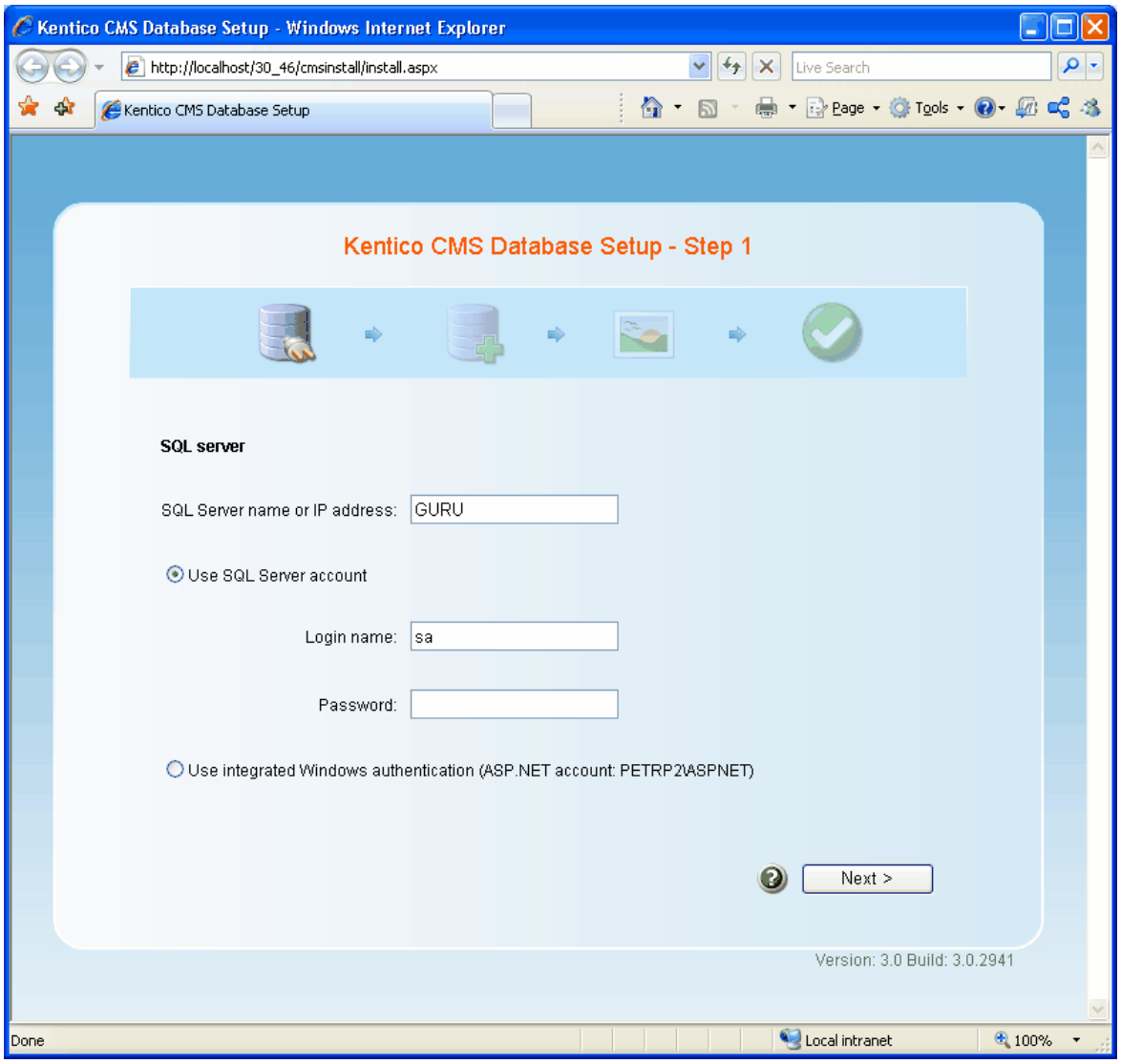
You may encounter problems in following areas:

- SQL Server connection problems
- Disk permissions problems
- ASP.NET not working on Windows Server 2003

3.15.2 SQL Server connection problems

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

© 2009 Kentico Software



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

© 2009 Kentico Software

- (local)

2. Make sure the server has Microsoft SQL Server 2000 or 2005 installed and running.

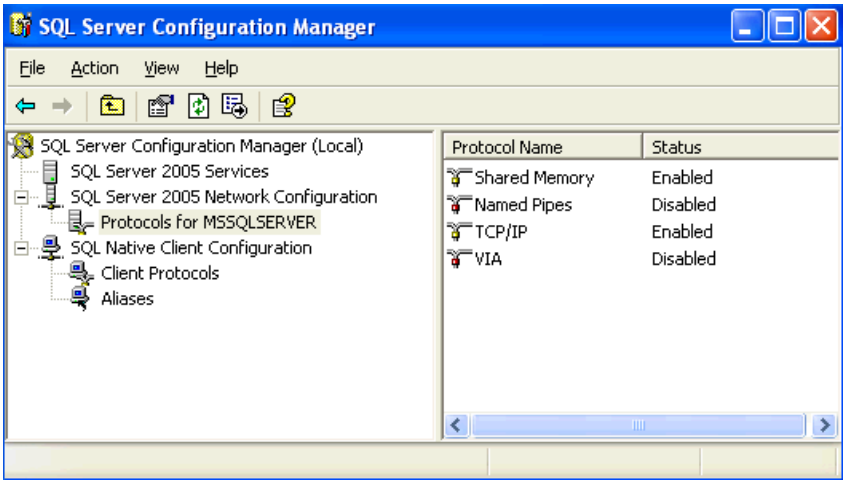
3. Make sure you are using the appropriate instance of the SQL Server in case you are using different instances of SQL Server. The instance name must be entered as myserver\myinstance (please note there's a backslash ****).

4. If you're using Microsoft SQL Server Express 2005 with default installation settings, the correct server name is **.\sqlexpress** or **computername\sqlexpress** .

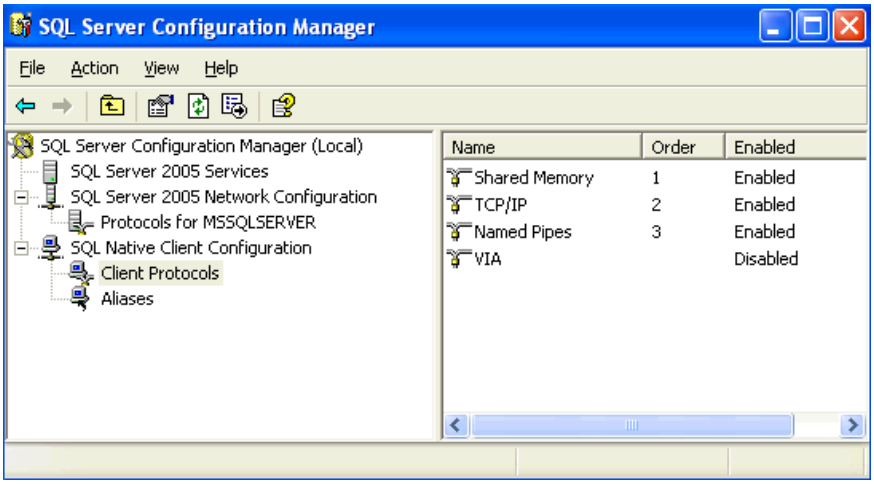
5. Make sure the access to the database server is not blocked by some firewall (the default port number for TCP/IP protocol is 1433).

© 2009 Kentico Software

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:



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



© 2009 Kentico Software

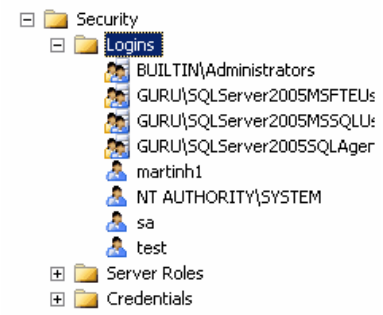
Error 2: Login failed for user 'xy'

Error message:

```
Login failed for user 'xy'
```

Troubleshooting for SQL Server account

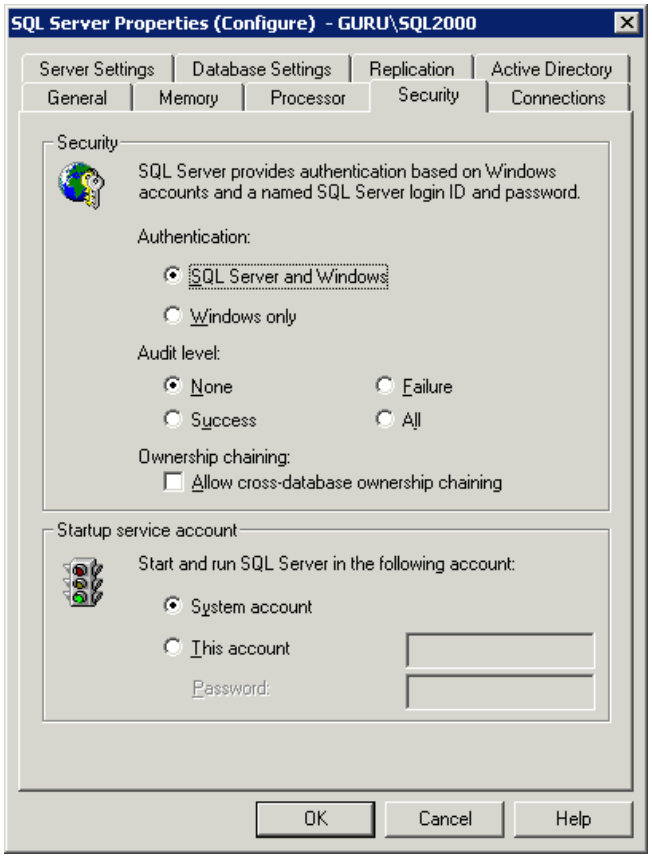
If you're using SQL Server account with password, make sure you are using a valid user name and password. The login must be created on the server, it must be enabled and granted with permission to connect to the server. You can check the user account in Enterprise Manager/SQL Server Management Studio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



© 2009 Kentico Software

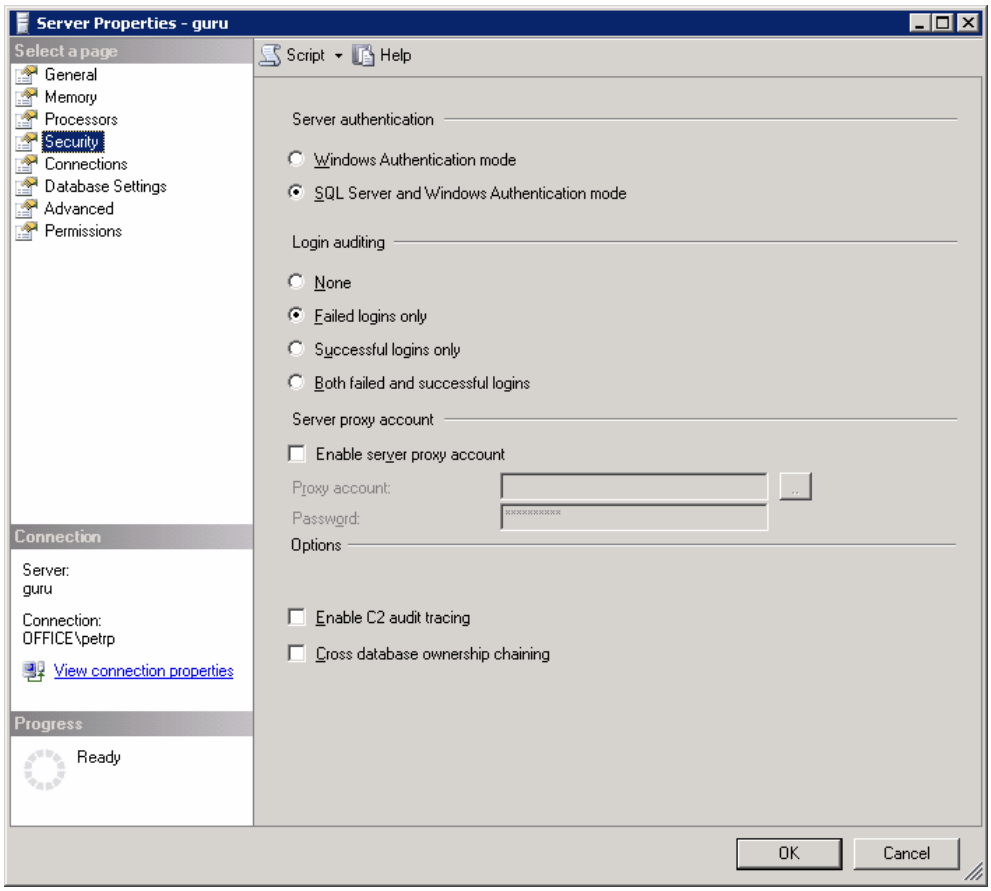
Also, check the **Server Properties -> Security** dialog in Enterprise Manager/SQL Server Management Studio and make sure your server supports **SQL Server and Windows Authentication mode**:

- SQL Server 2000:



© 2009 Kentico Software

- SQL Server 2005:



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. The ASP.NET applications run under some particular local or domain account. This current account is displayed on the screen:



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 you 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.

© 2009 Kentico Software

3.15.3 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 web site.

User account of the web application

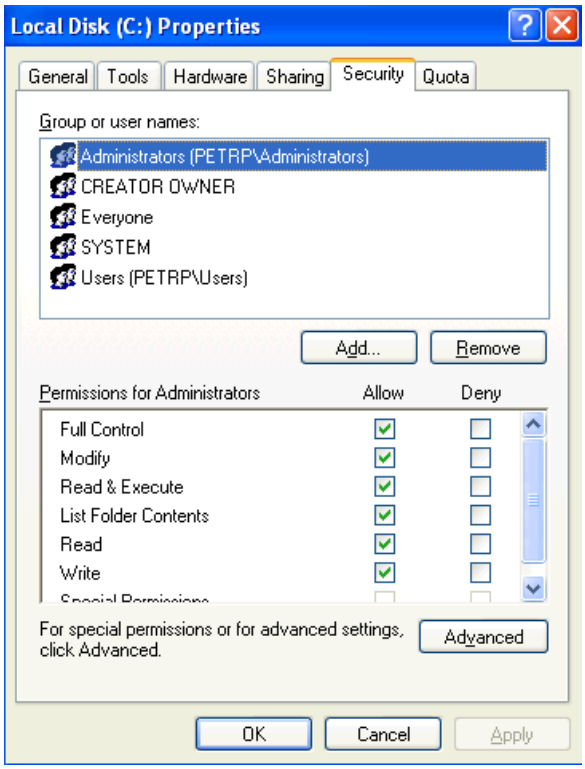
The web application runs under user account that depends on your environment:

1. In **Windows XP**, the user account is the local **ASPNET** account (aspnet_wp) by default.
2. In **Windows 2000 and 2003**, the user account is the local account **NT Authority\Network Service** by default.
3. 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.

Granting user account with Modify permission on Windows XP

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

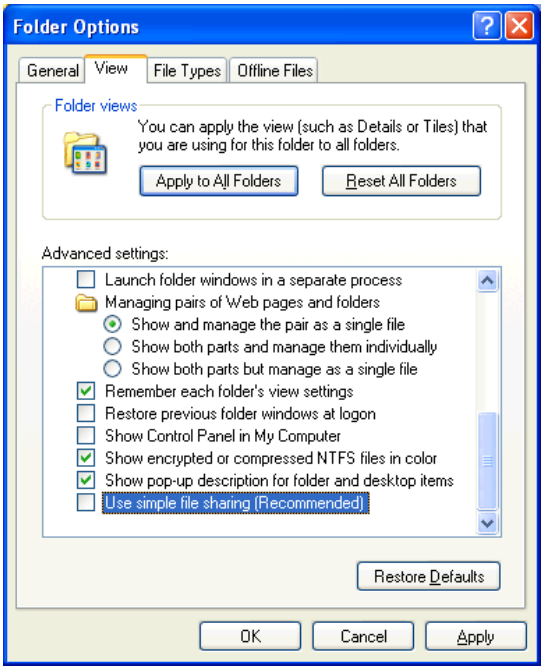


© 2009 Kentico Software

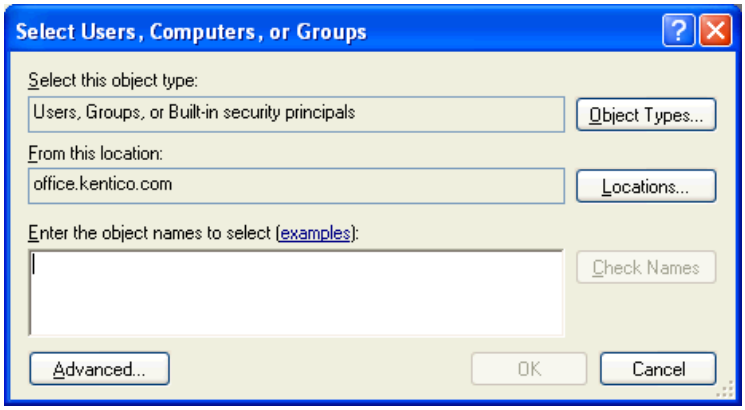
© 2009 Kentico Software

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.

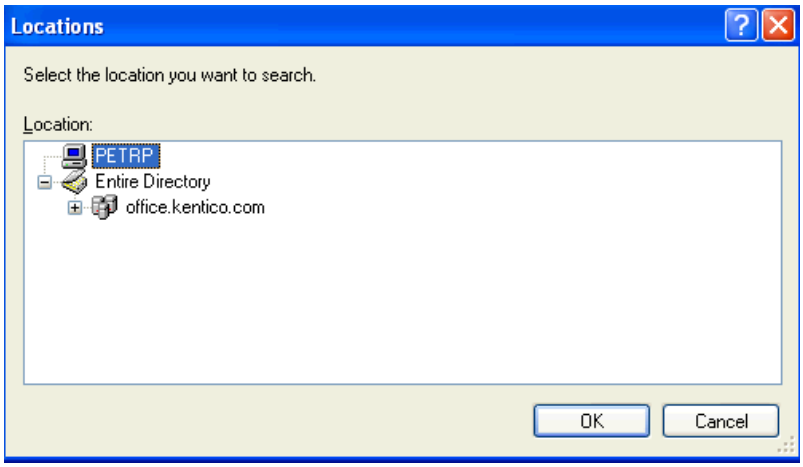


Click **Add...** The **Select Users, Computers and Groups** dialog appears.

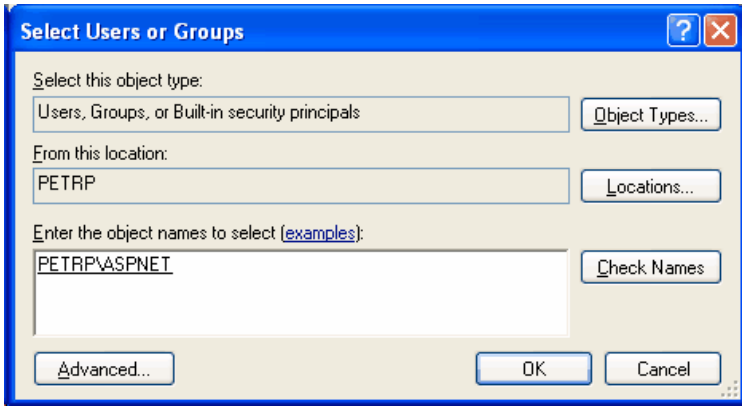


© 2009 Kentico Software

Click **Locations...** and choose your local computer:

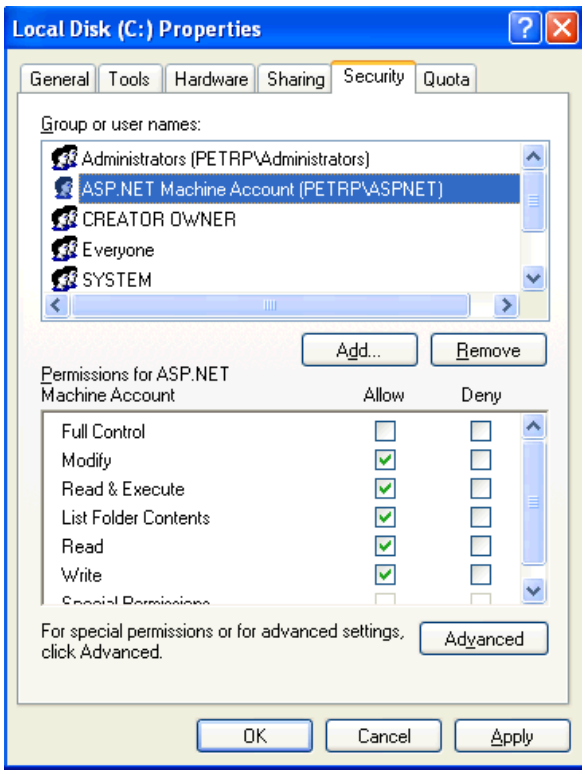


Click **OK**. Enter **aspnet** into the box and click Check Names. The name should be resolved to **<your computer name>\ASPNET**.



© 2009 Kentico Software

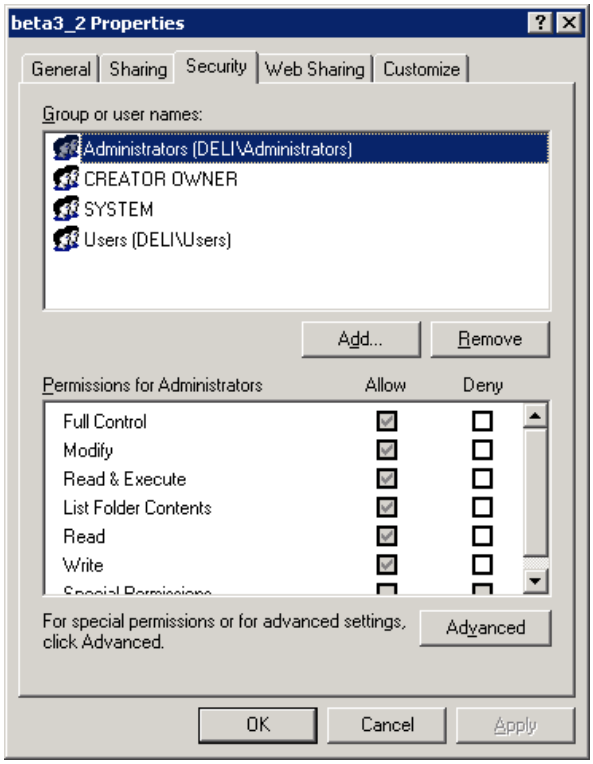
Click **OK**. The account is added to the list of accounts. Grant the account with **Modify** permissions and click **OK**.



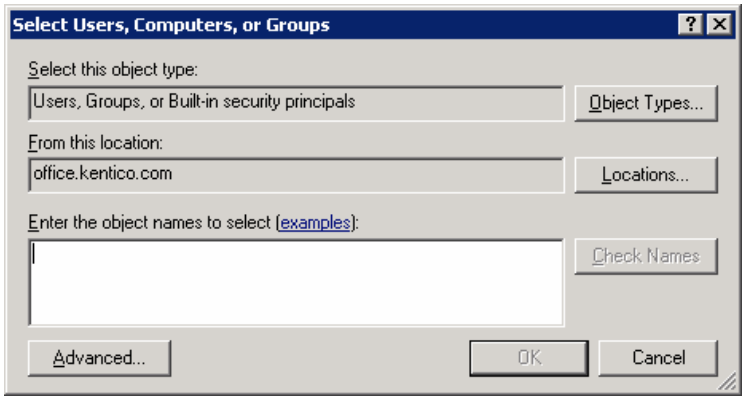
© 2009 Kentico Software

Granting user account with Modify permission on Windows 2000/2003

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

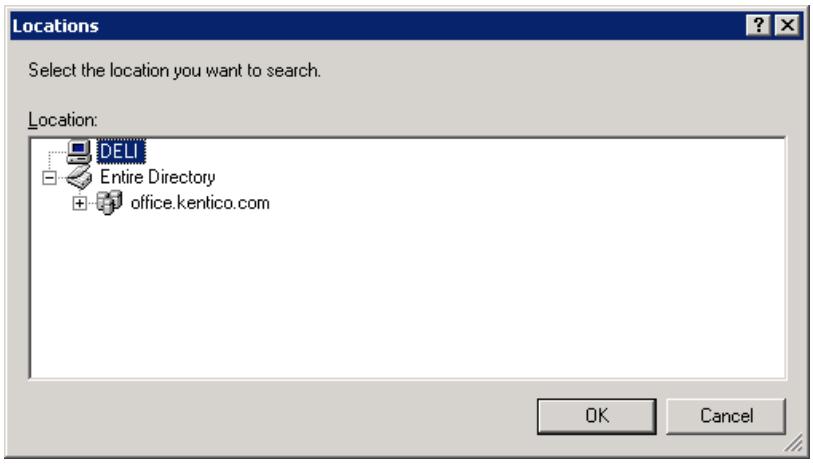


Click **Add...** The **Select Users, Computers and Groups** dialog appears.

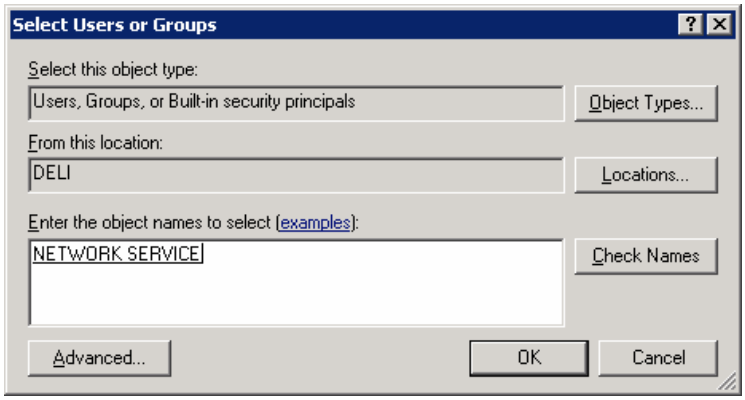


© 2009 Kentico Software

Click **Locations...** and choose your local computer:

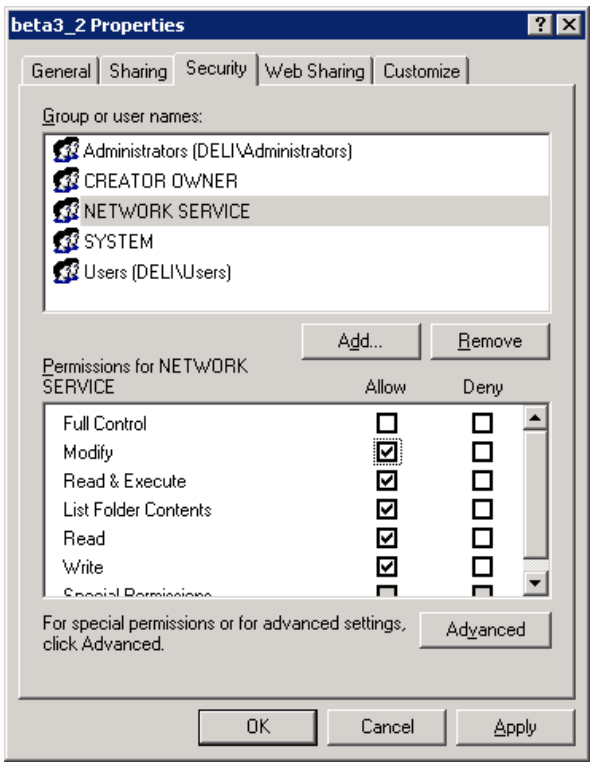


Click **OK**. Enter **network service** into the box and click Check Names. The name should be resolved to **NETWORK SERVICE**.



© 2009 Kentico Software

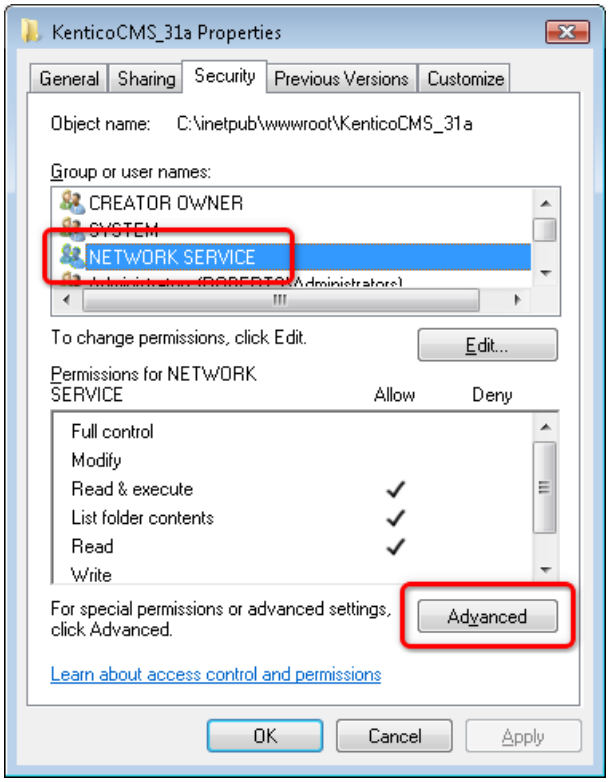
Click **OK**. The account is added to the list of accounts. Grant the account with **Modify** permissions and click **OK**.



© 2009 Kentico Software

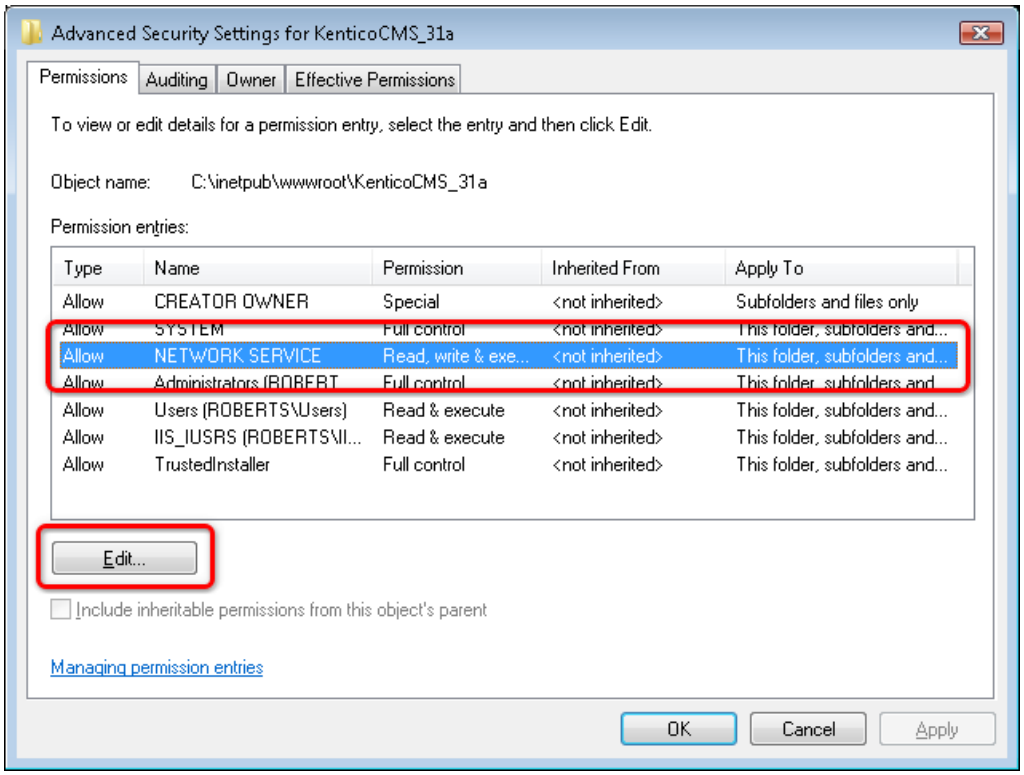
Granting user account with Modify permission on Windows Vista/Server 2008

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



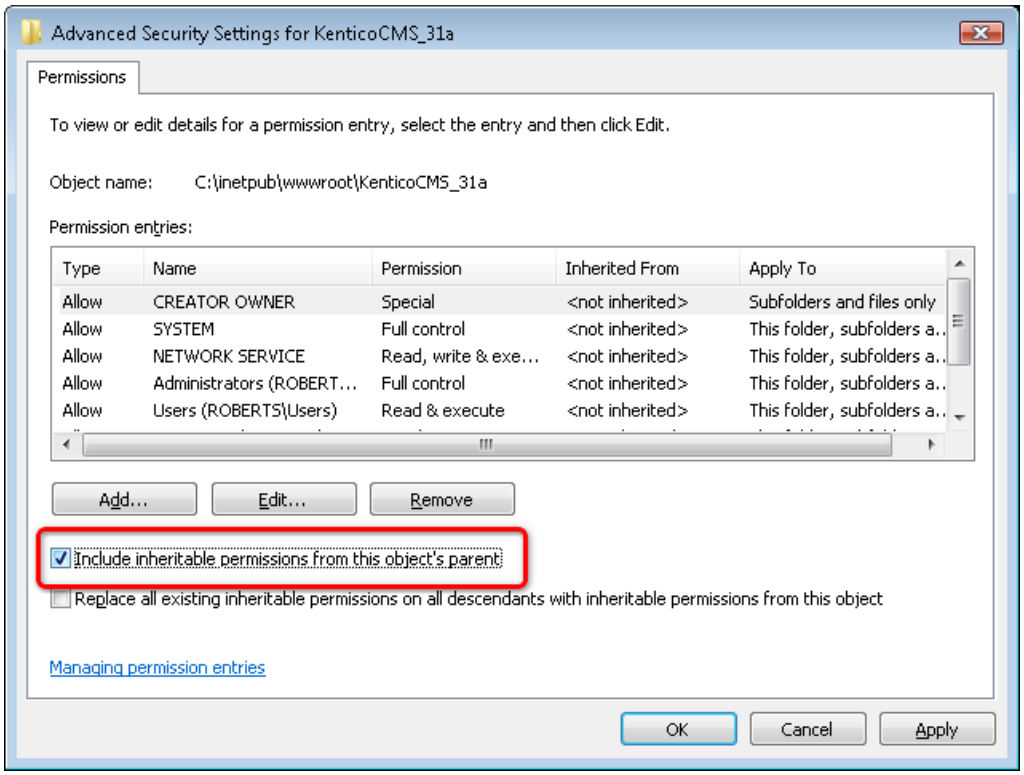
© 2009 Kentico Software

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

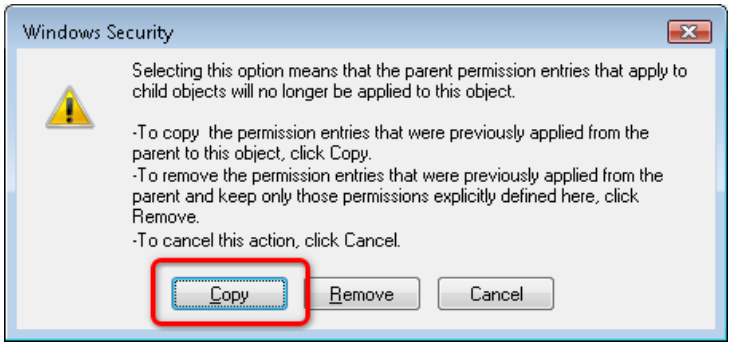


© 2009 Kentico Software

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

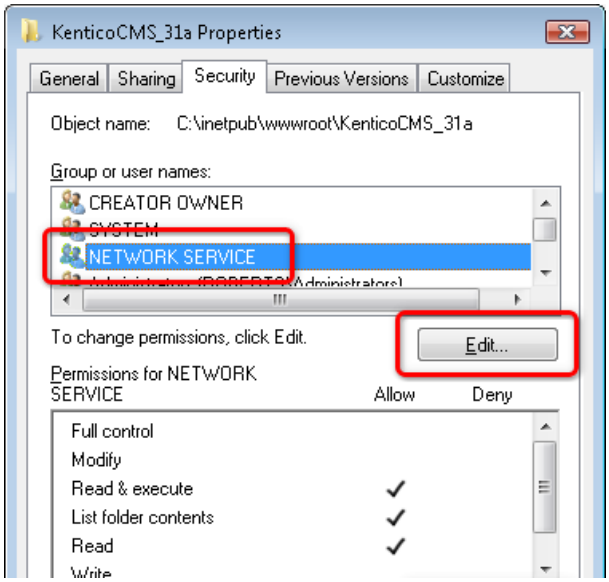


4. On the pop-up dialog, click **Copy**.

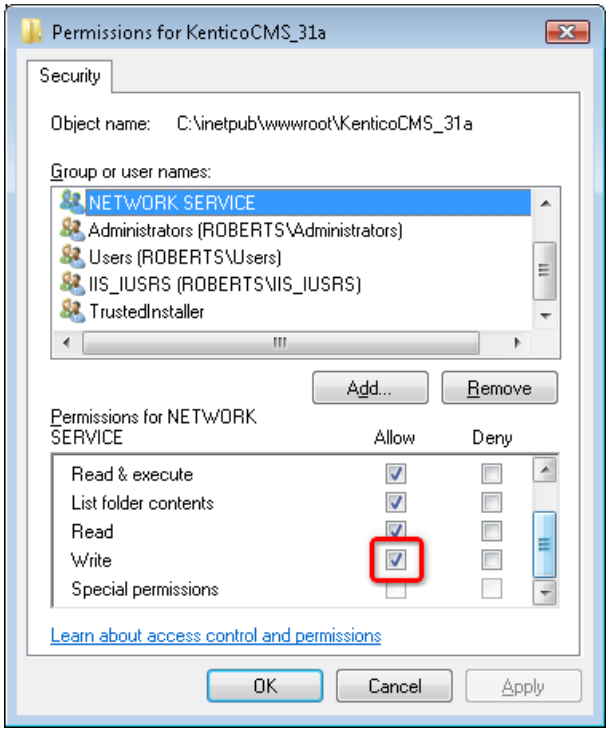


© 2009 Kentico Software

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** permission and click **OK**.



© 2009 Kentico Software

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.

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:

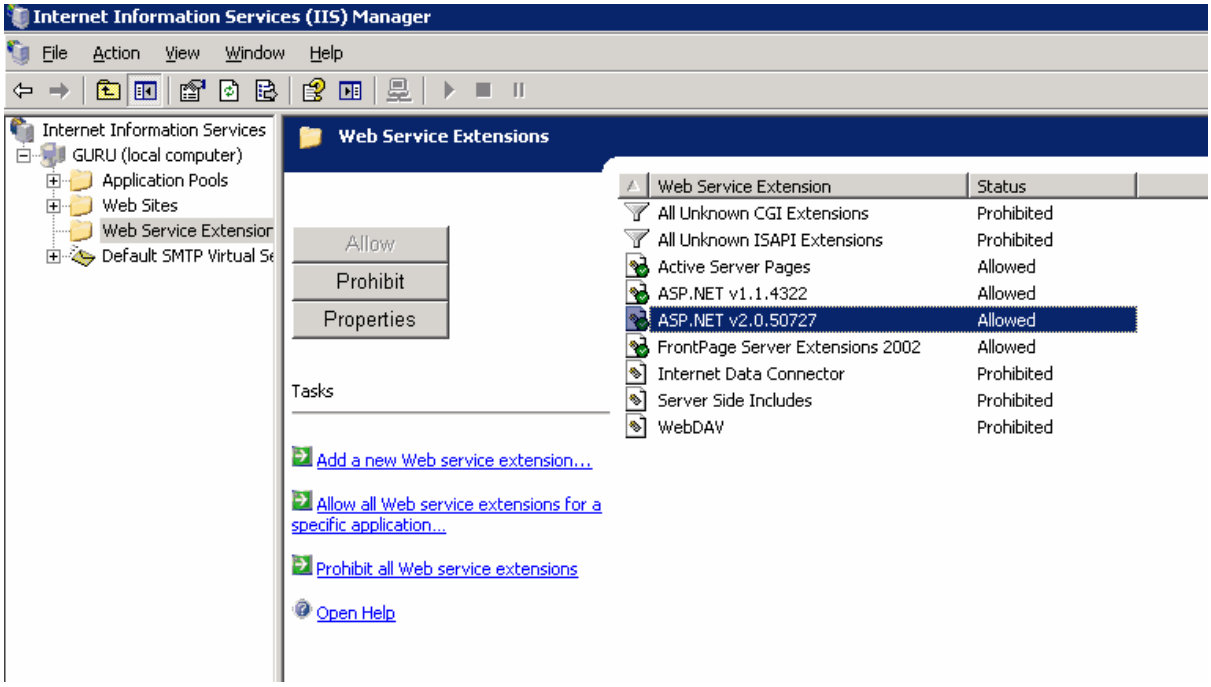
<add key="CMSDirectoryProviderAssembly" value="CMS.DirectoryProviderWin32" />

© 2009 Kentico Software

3.15.4 ASP.NET not working on Windows Server 2003

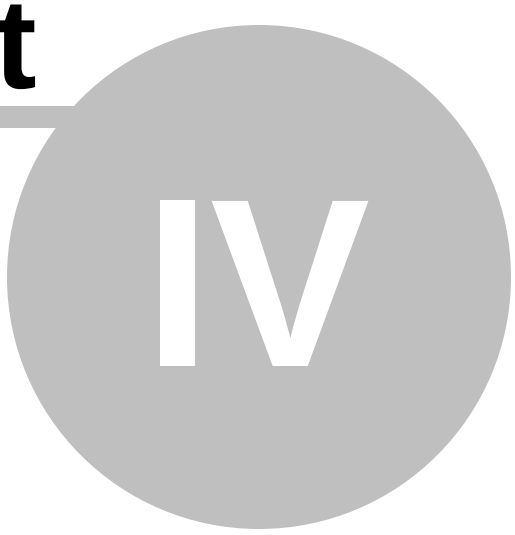
If you get error Page not found or similar error every time you request some ASPX page on your server and this is the first ASP.NET application installed and running on your server, it may be caused by configuration of Web Services Extensions on Windows Server 2003.

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 on the following figure:



© 2009 Kentico Software

Part

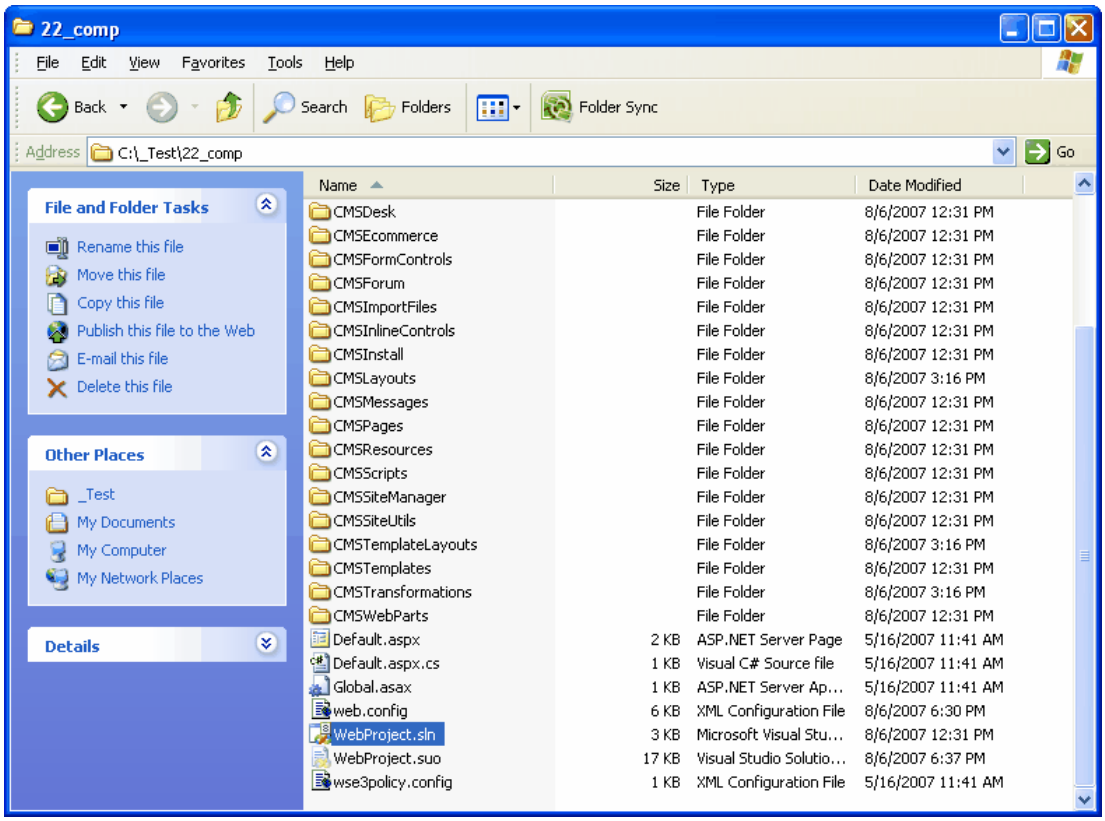


Visual Studio Integration

4 Visual Studio Integration

4.1 Opening the project

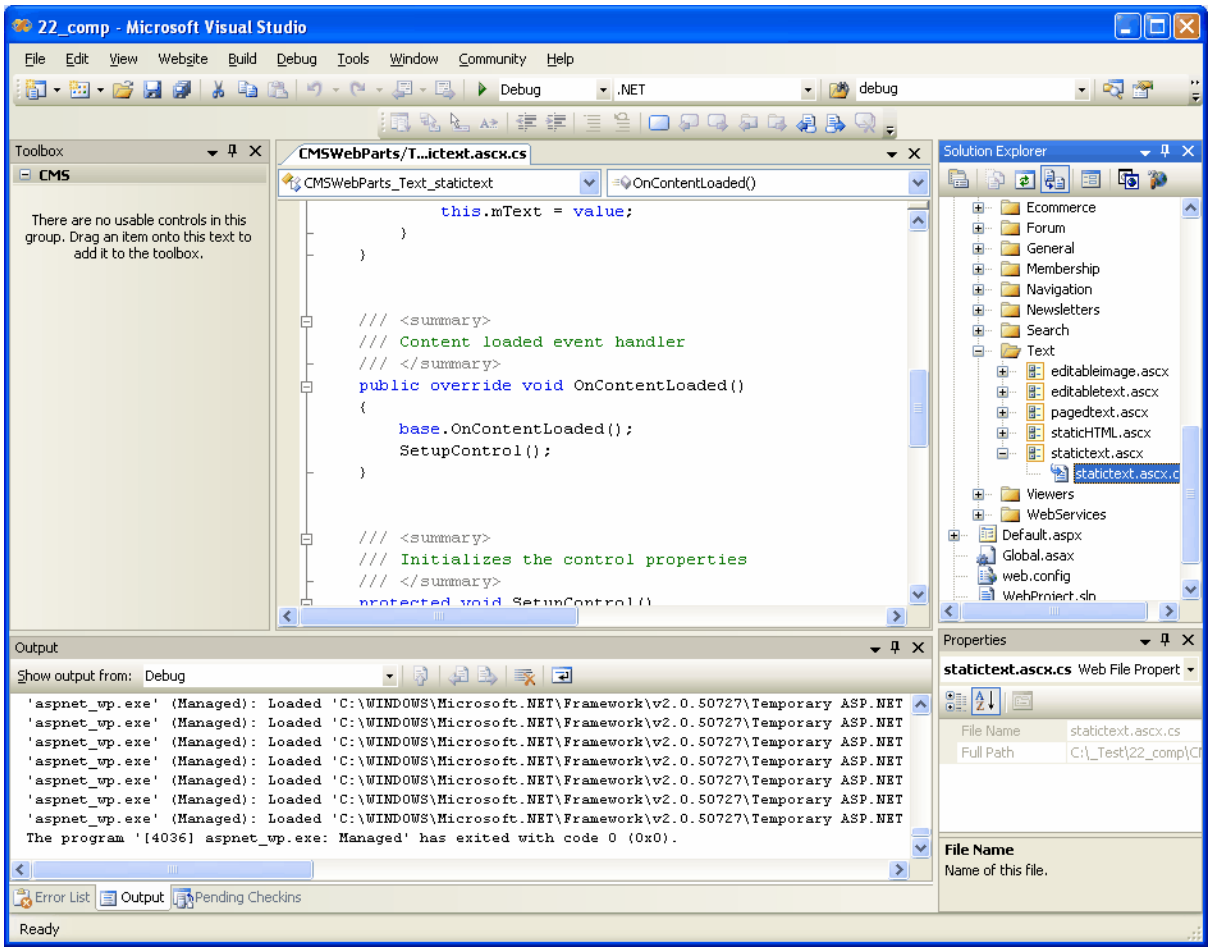
After you create a new Kentico CMS web project, you can open it in Visual Studio by double-clicking the WebProject.sln file in Windows Explorer:



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

© 2009 Kentico Software

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.

© 2009 Kentico Software

Source Code Options

There are two levels of source code:
- the **source code of the web site**, 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 Unlimited License and Server License 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 keep other licensing conditions.

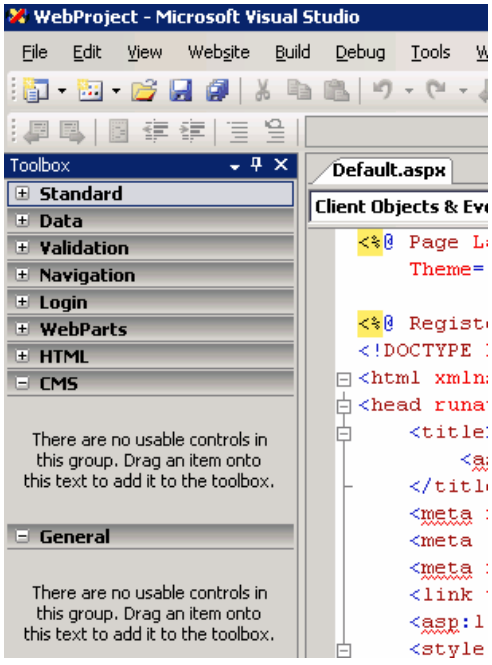
4.2 Adding Kentico CMS Controls to the Toolbox

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

1. Open the web site project in Visual Studio and open some ASPX page.

2. Right-click the **Toolbox** and choose **Add tab** from the context menu.

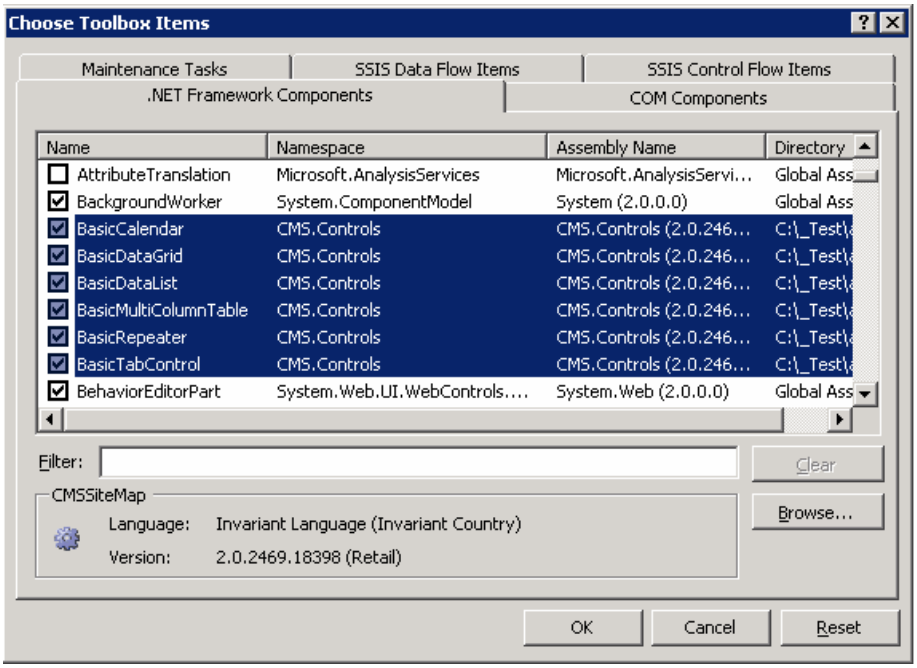
3. Type the name of the new tab (e.g. CMS) and press Enter:



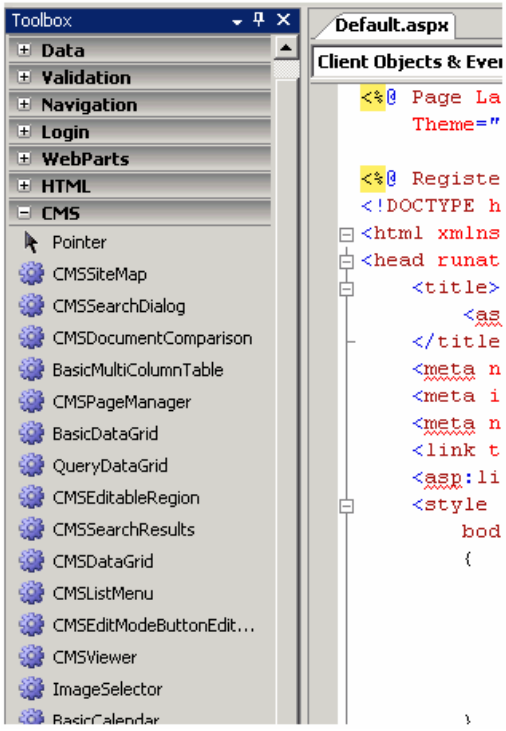
4. Right-click the new tab and choose **Choose items...** from the context menu.

© 2009 Kentico Software

5. In the **Choose Toolbox Items** dialog, click Browse and locate the **CMS.Controls.DLL** library in the **bin** folder under your web site. Click **Open** and then click **OK**.



6. **The controls are now added to the Toolbox:**

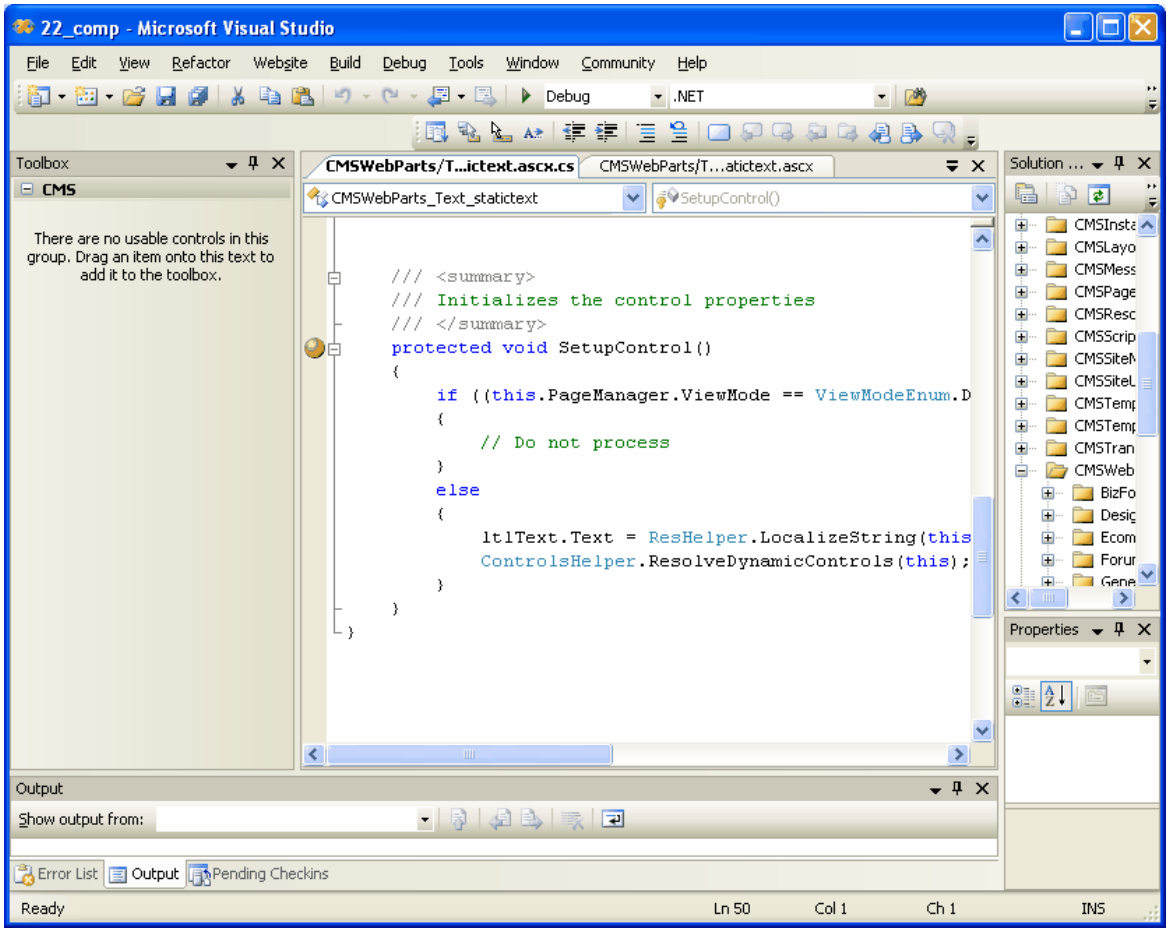


7. Now you can easily drag and drop the controls on your Web form.

© 2009 Kentico Software

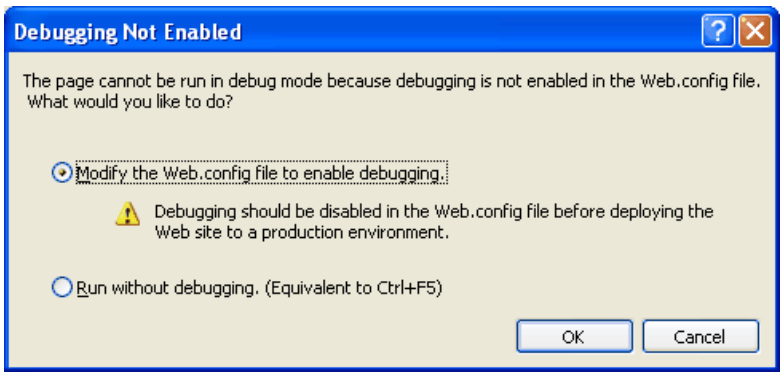
4.3 Debugging

12If 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:



© 2009 Kentico Software

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



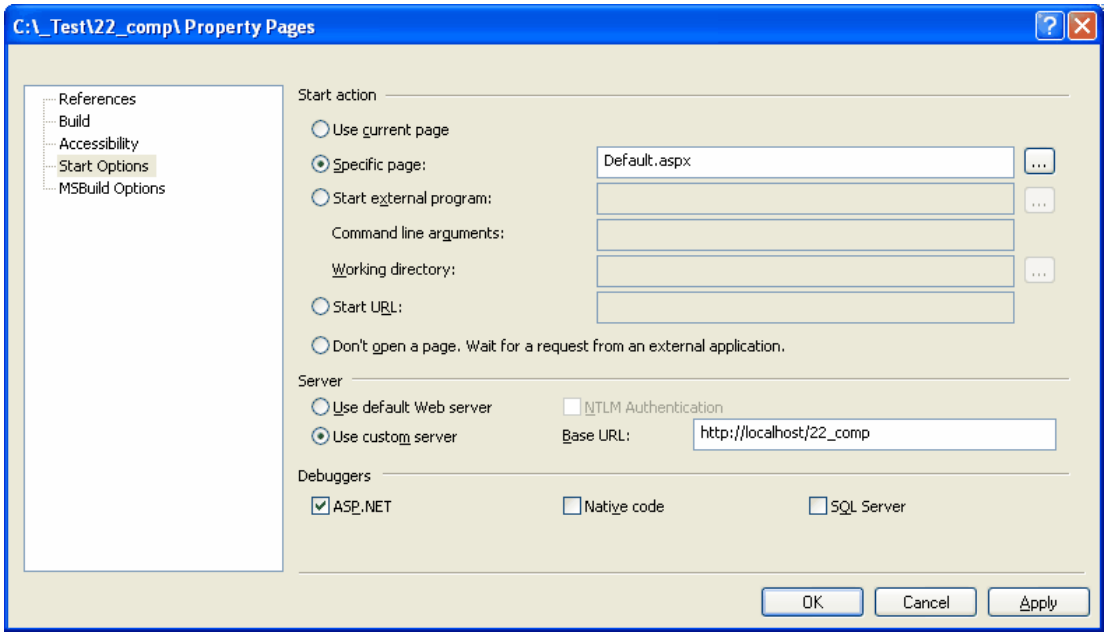
You will need to choose to **Modify the web.config file to enable debugging** and click **OK**. It's recommended that you disable debugging before deploying the web site to a production environment by setting the value

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

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

Debugging using IIS web site

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



Please note that you need to be local administration and the web site or virtual directory must be configured for both anonymous and Windows authentication (see Creating a virtual directory for details).

© 2009 Kentico Software

4.4 Pre-compilation (Publish function)

If you want to pre-compile the web site 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 web site code, he 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 web site, you will not be able to use some of the Kentico CMS features:

- Import of the web site.
- 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 web site, 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 Web Site

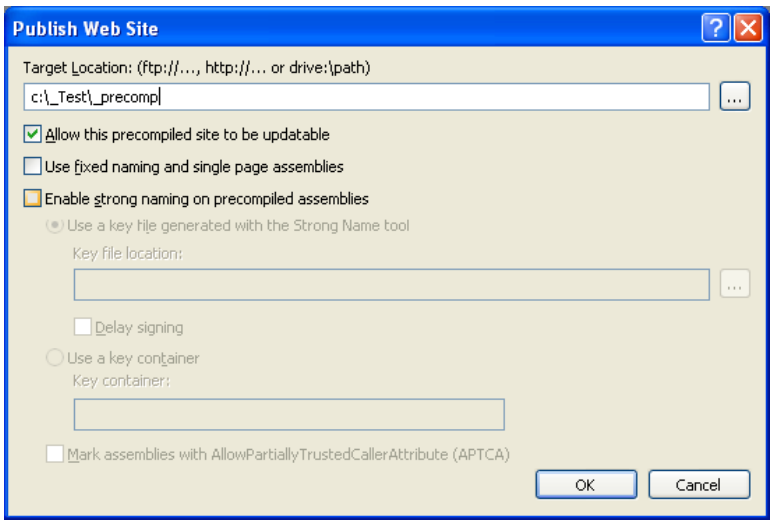
Please note that for building the pre-compiled web site, you have to rename **Microsoft.Web.Services3.dll.rename** file to **Microsoft.Web.Services3.dll** in ~\Bin directory.

Since the virtual provider cannot run in a pre-compiled web site, 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.

© 2009 Kentico Software

Then, you can use **Build -> Publish** item in **Visual Studio** main menu and pre-compile the web site. 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 web site 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.

© 2009 Kentico Software



Limitations

In the precompiled web site, 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 web site cannot be used for SQL Server database installation. Other options are:

- to install a non-compiled web site 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 web site 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 web site 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 web site before compilation

If you wish to check if your web site 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.

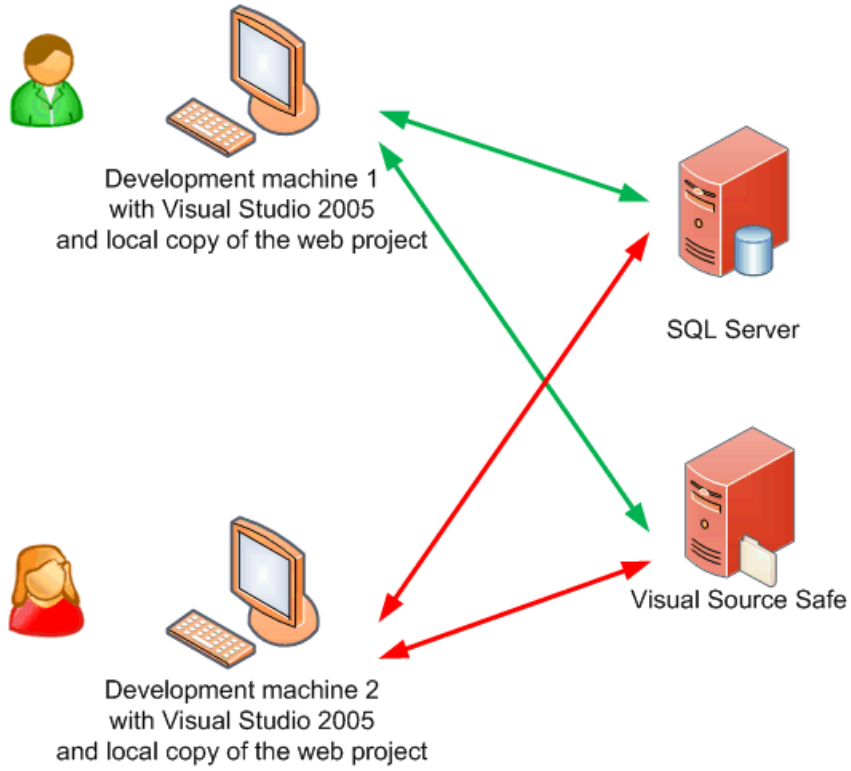
Related topics: Configuration for Medium Trust environment, Deployment to the live server, Installation on shared hosting server

© 2009 Kentico Software

4.5 Visual Source Safe and Team Development

`1Kentico CMS can be used in team development environment as any other web site project in Visual Studio. You can also use Microsoft Visual Source Safe (VSS) as you're used to: you simply add the web site 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 web site through the browser-based interface.

© 2009 Kentico Software

4.6 Opening VS2005 project in VS2008

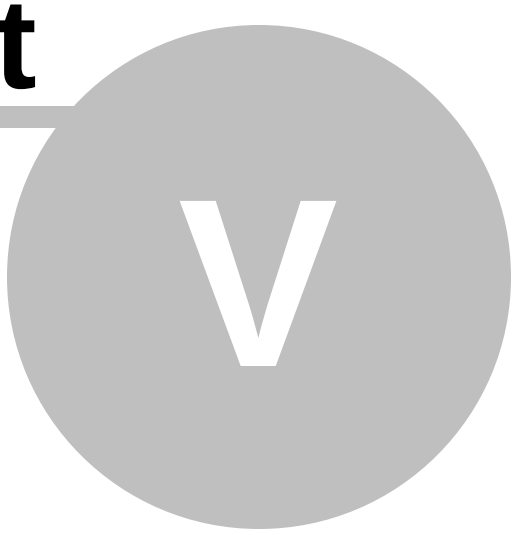
If you were using Visual Studio 2005 for your web project and wish to convert to Visual Studio 2008, all you need to do is:

- Start **Visual Studio 2008**
- Click **File -> Open web site...**
- Choose the folder with your web project on the disk and click **OK**.
- If you're asked if you wish to upgrade the web site to .NET Framework 3.5, choose **Yes**.

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.

© 2009 Kentico Software

Part

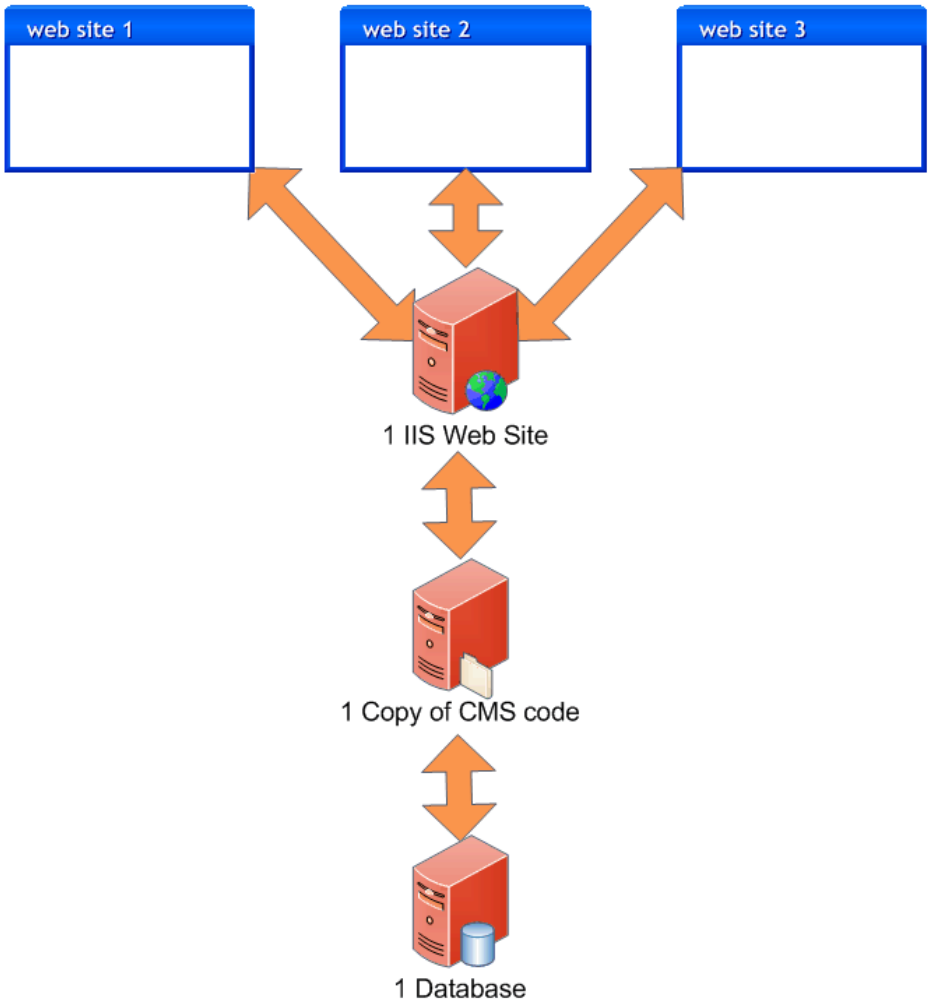


Managing sites and settings

5 Managing sites and settings

5.1 Site Management Overview

Kentico CMS allows you to manage multiple sites in a single installation. The database contains data for all web sites and the web sites 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 web sites.



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 web sites for a single company and share users/ documents/settings between them.

© 2009 Kentico Software



When to choose separate installations

There are situations in which we recommend running separate instances of Kentico CMS for every web site:

- You build web sites 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 web sites by administrator's mistake.

5.2 Managing sites

You can manage the web sites in **Site Manager -> Sites** dialog.
Creating a new web site
Please see New site wizard for more details on creating a new web site.

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	The main domain of the web site. Use domain name without http:// protocol and without www. If you use other port than 80, specify it as well. Correct: mycompany.com partners.mycompany.com mycompany.com:8080 Incorrect: http://mycompany.com www.mycompany.com
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 the visitor if she doesn'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.

© 2009 Kentico Software

Site description	Optional description of the web site for internal use.

Domain aliases tab

Here you can add domain aliases that point to this web site.



Example of domain aliases

If your web site uses **mycompany.com** domain as the primary domain and you also use **my-company.co.uk** domain name that points to the same web site, 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 web site content is available. You will use this tab to configure web site that provides content in multiple languages.

5.3 Starting and stopping sites

You can run and stop web sites 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 web sites on a single domain**, such as http://localhost, you need to specify the domain (localhost) for multiple web sites 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 web sites in chapter Configuring multiple web sites.

5.4 Creating a new site

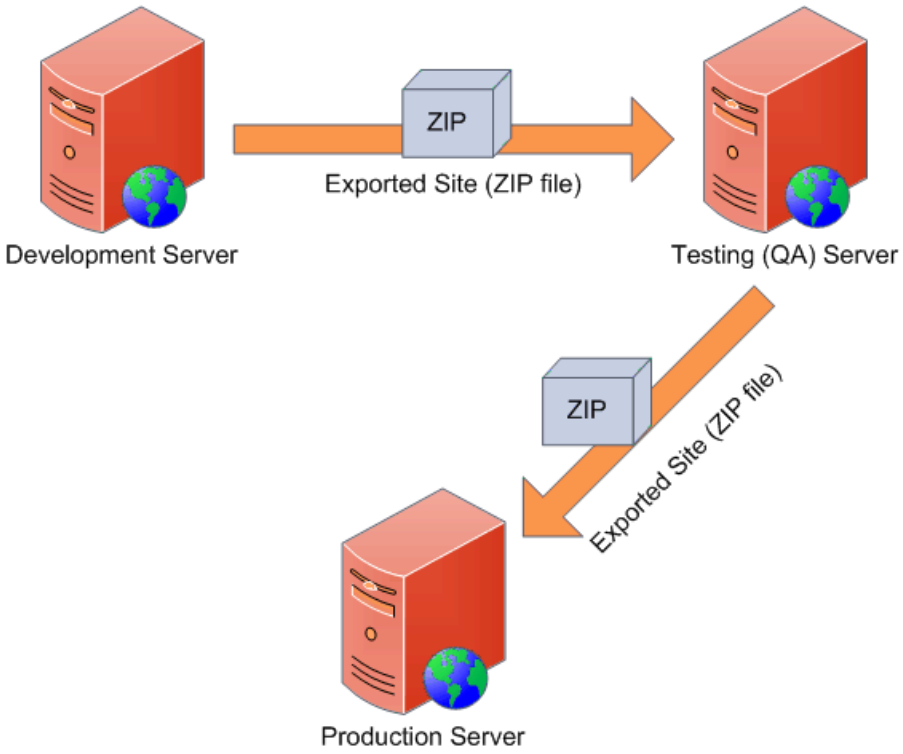
Please see New site wizard.

© 2009 Kentico Software

5.5 Export and Import

5.5.1 Export and Import Overview

You can export and import web site content and settings from one Kentico CMS instance to another. You can use this feature to move web site or chosen objects between development, testing (QA) and production (live) server as illustrated in the figure below:



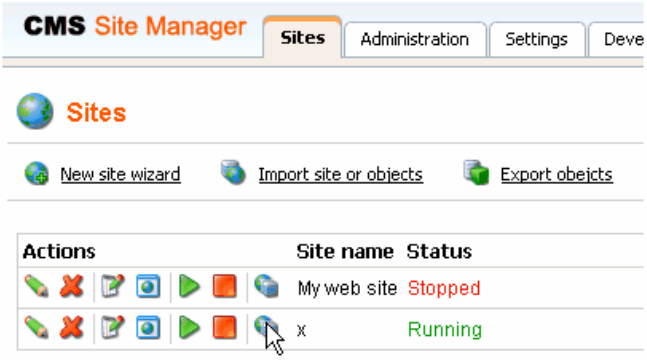
© 2009 Kentico Software

5.5.2 Exporting a site

Kentico CMS allows you to export whole web site 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.

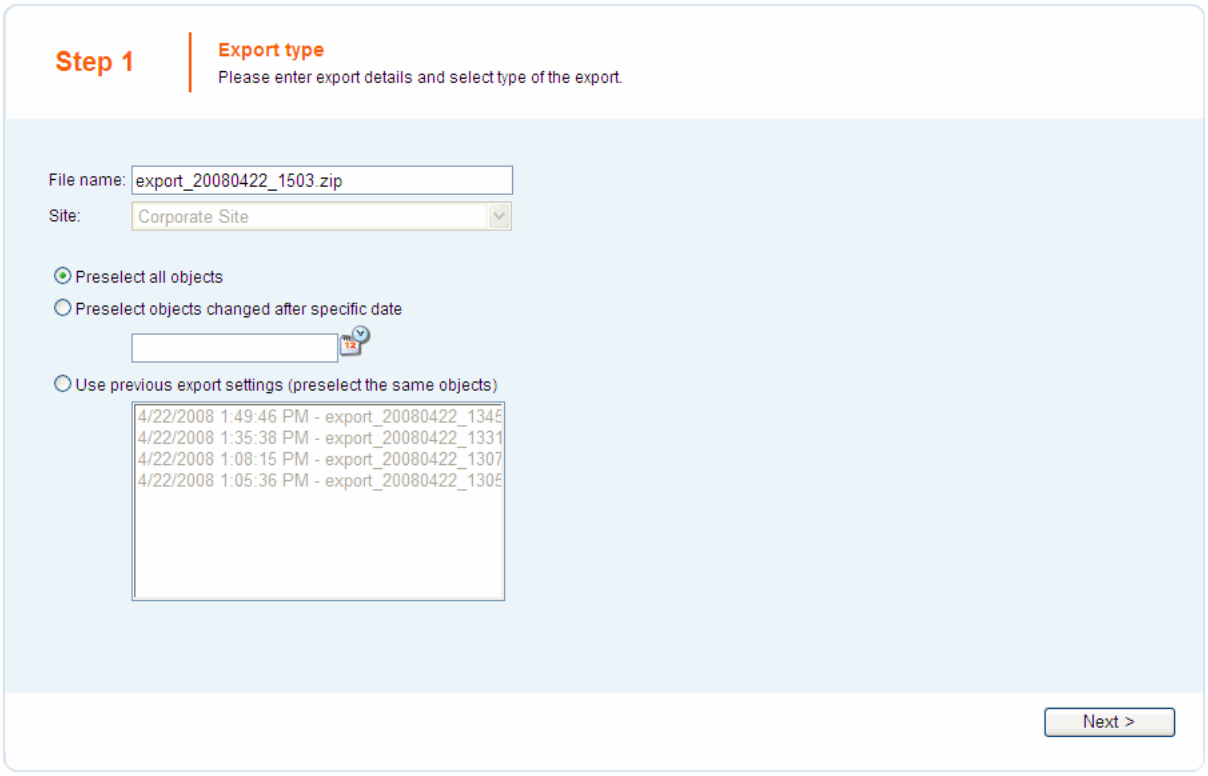


In the first step of the wizard, you have to fill in the name of the export package and choose type of objects pre-selection:

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.



© 2009 Kentico Software

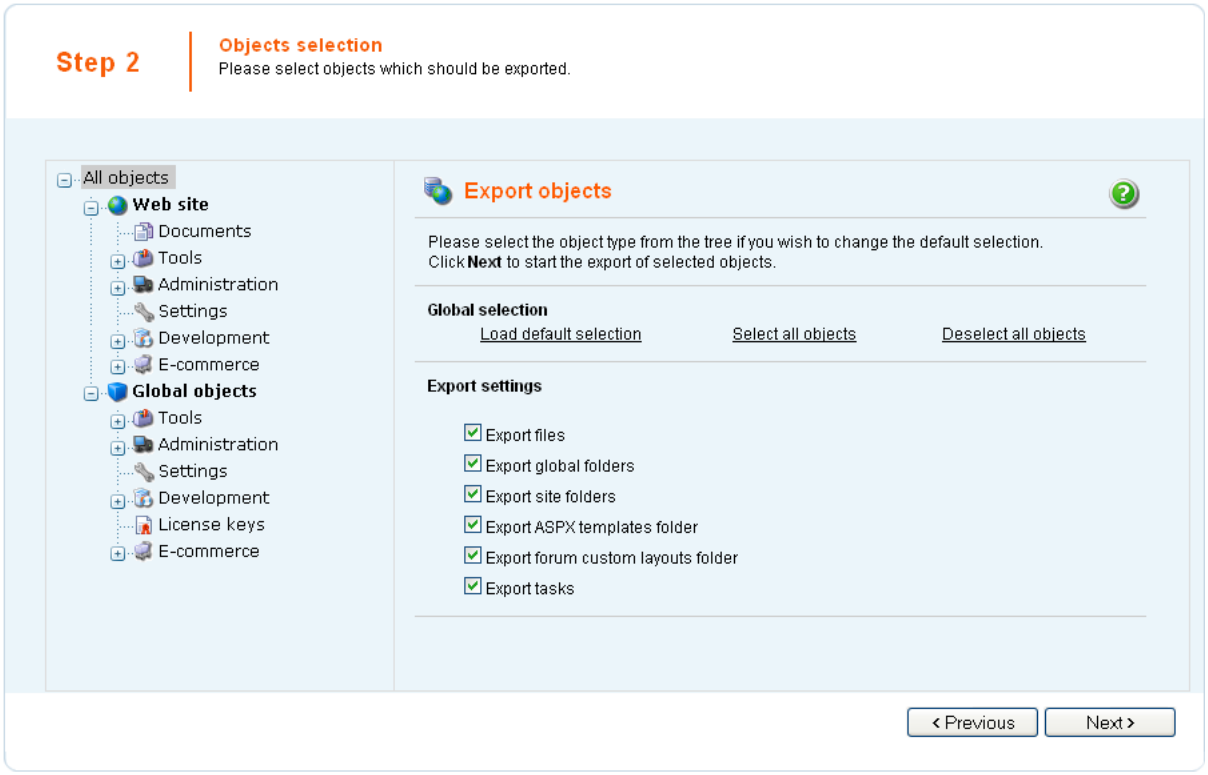
In **Step 2**, you can select which objects will be exported. The tree on the left represents object categories. These reflect the sections of the administration interface under that the objects can be found. The **Site** category contains objects related to the selected web site. The **Global objects** 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



© 2009 Kentico Software

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

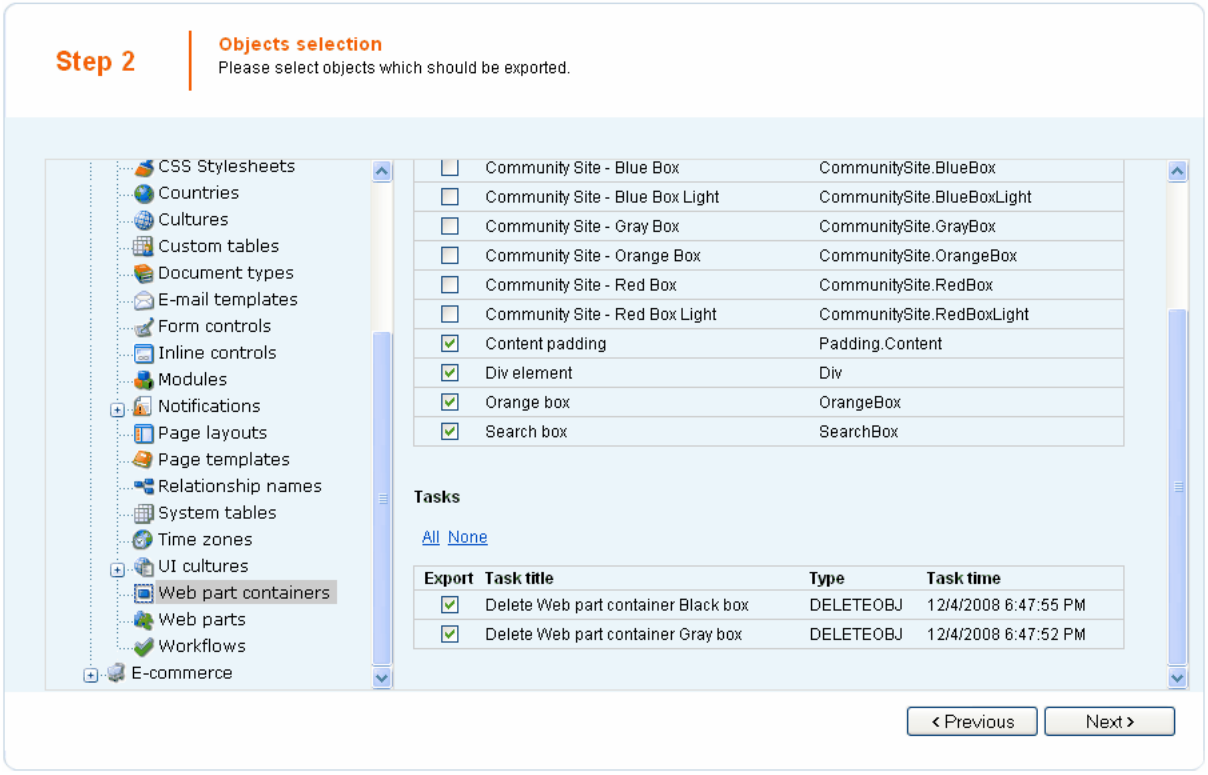
- **Export board messages** - if checked, board messages will be exported together with particular message boards

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.

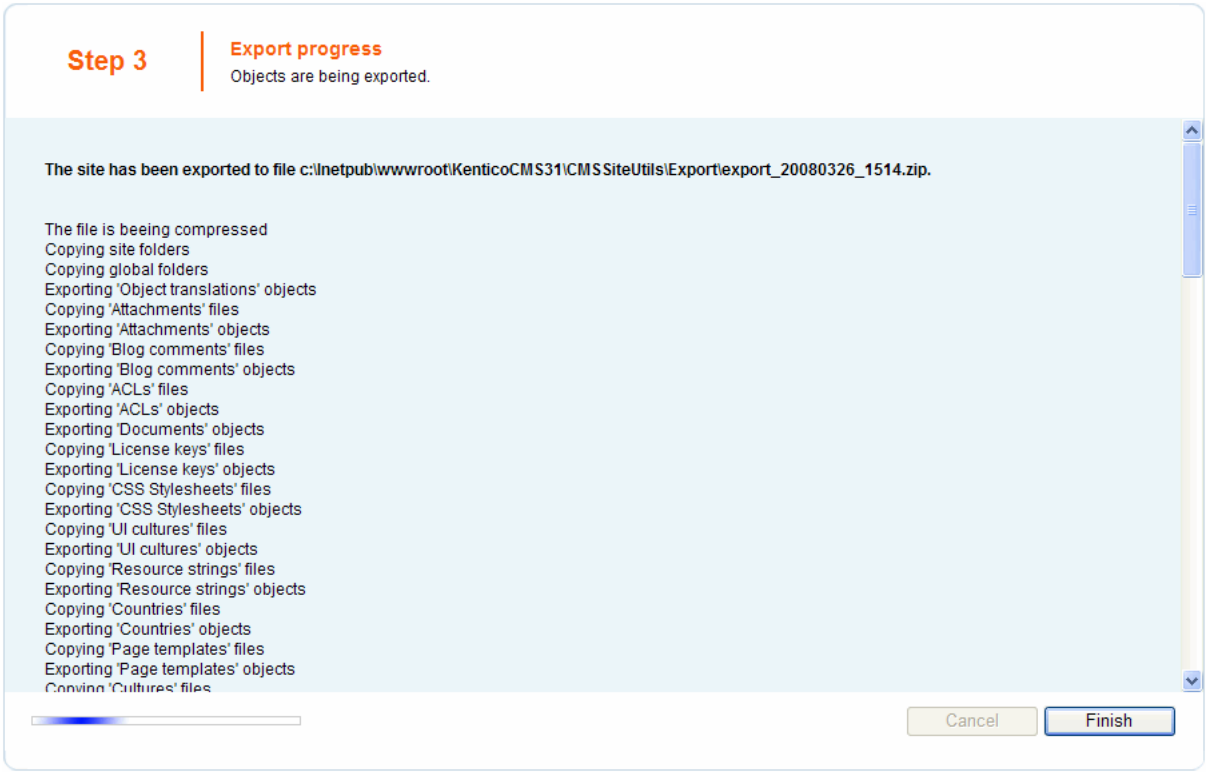
© 2009 Kentico Software



After making all required selections, click **Next** to proceed to the next step.

© 2009 Kentico Software

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.

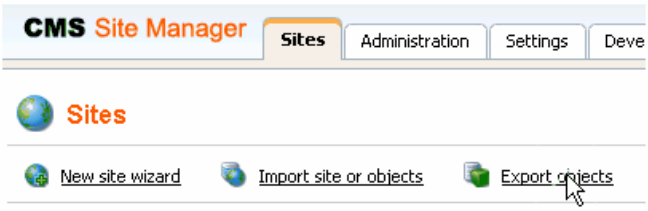
© 2009 Kentico Software

5.5.3 Exporting objects

Besides exporting the whole web site, 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.

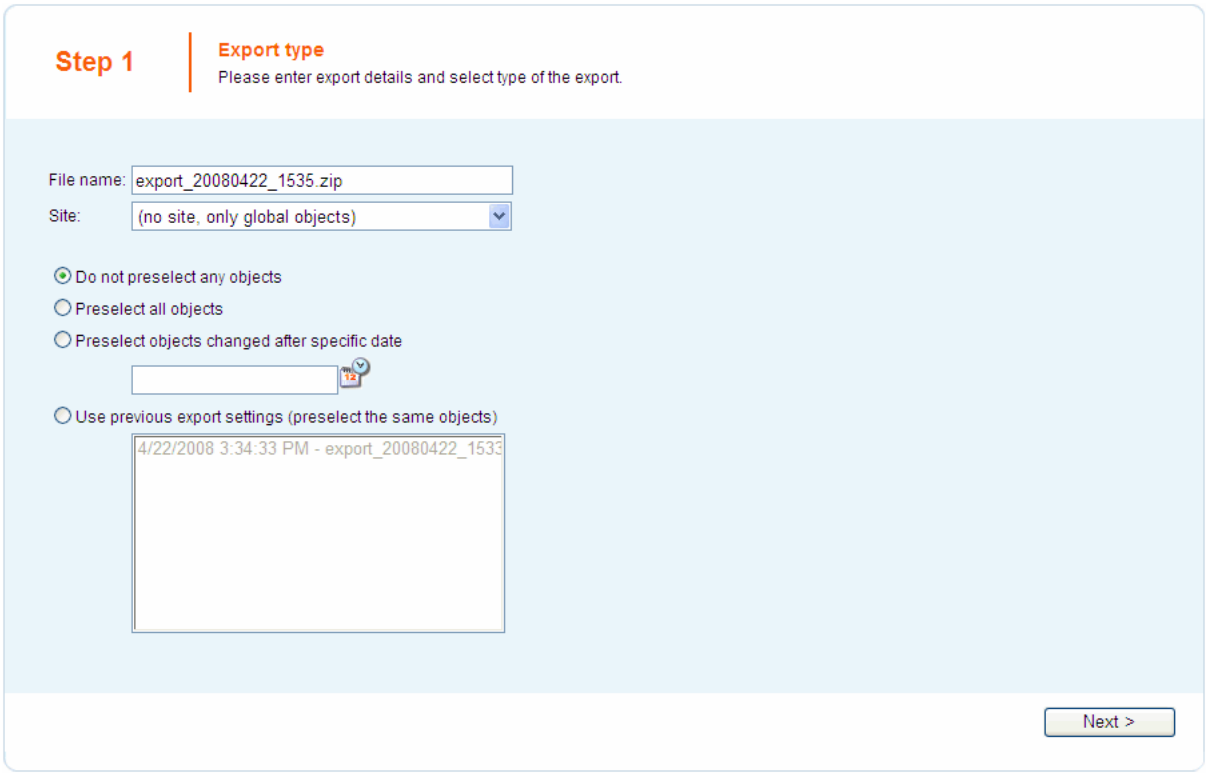


In the first step of the wizard, you have to fill in the name of the export package and choose type of objects pre-selection:

- **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.



© 2009 Kentico Software

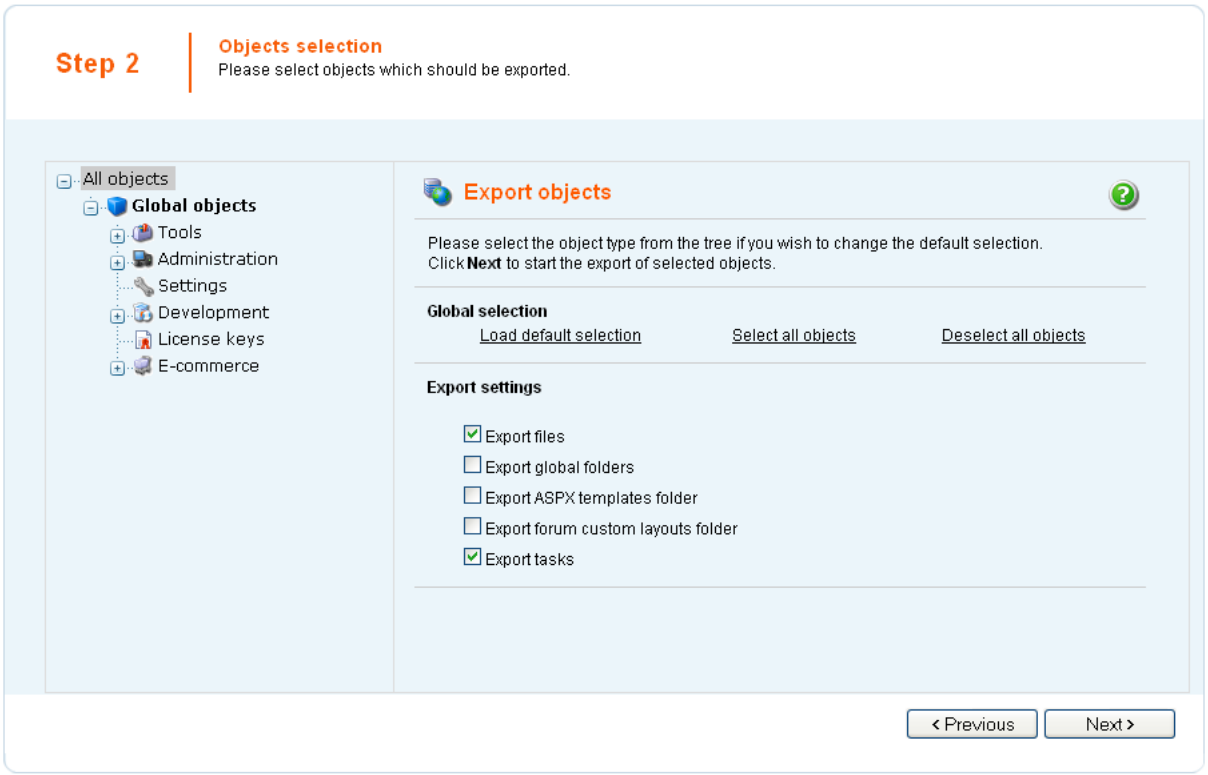
In **Step 2**, you can select which objects will be exported. The tree on the left represents object categories. These reflect the sections of the administration interface under that the objects can be found. The **Site** category contains objects related to the selected web site. The **Global objects** 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

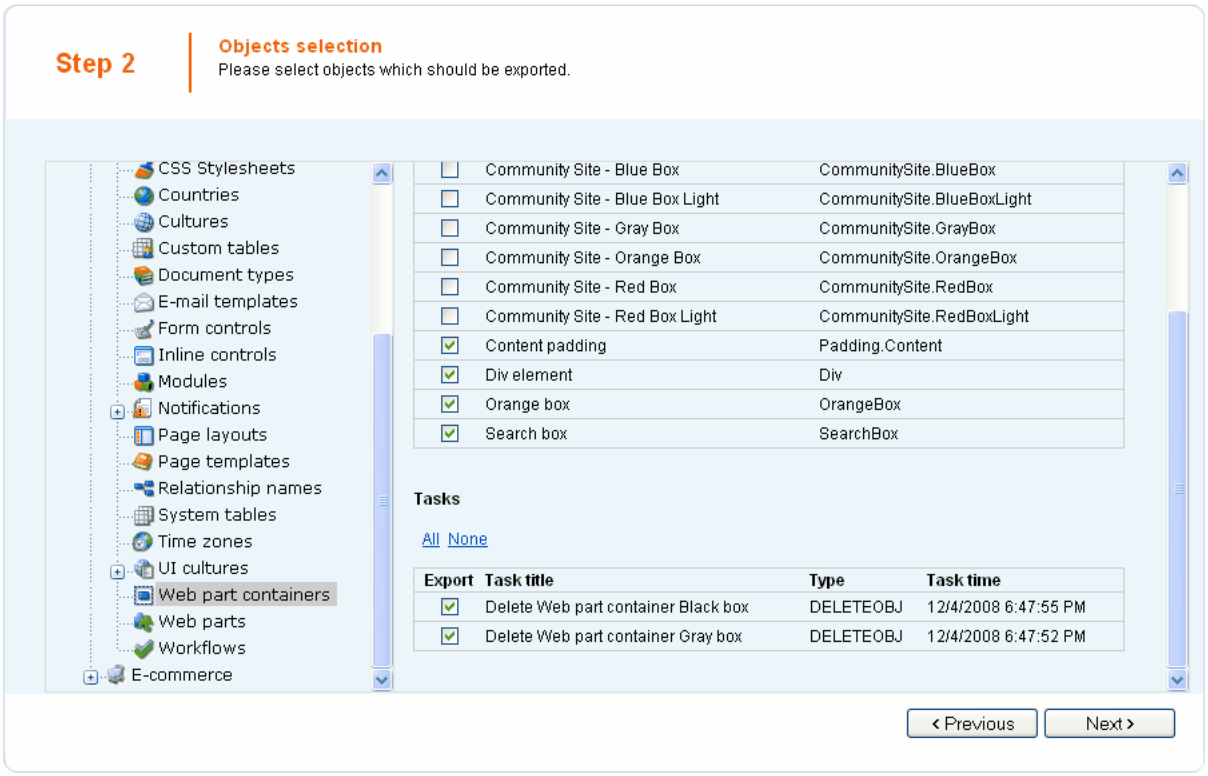
Export settings

- **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



© 2009 Kentico Software

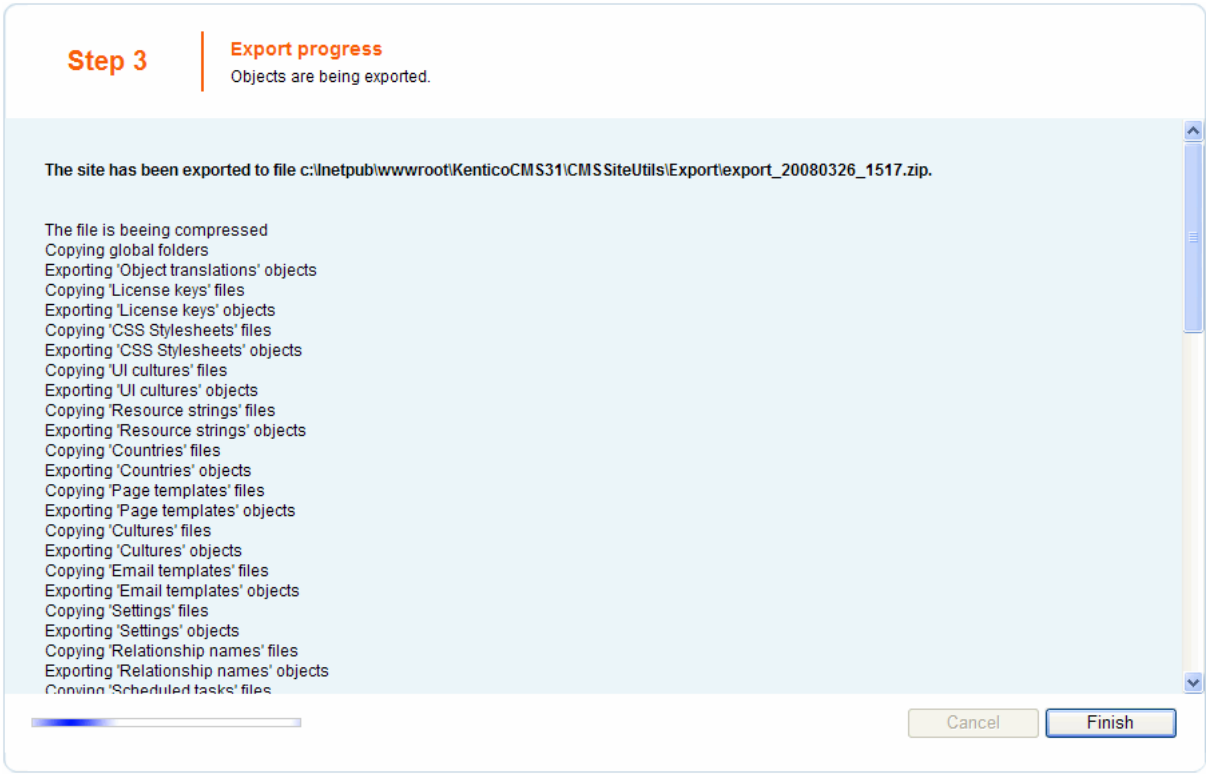
If you have the "**Log export tasks**" option enabled in **Site Manager -> Settings -> Content Staging**, a list of object deletion tasks may also be displayed at the bottom of the list. This happens when some objects have been deleted (just as the two Web part containers in the screenshot below). If you leave the check-boxes checked, the objects will be deleted after importing the package on the target server.



After making all required selections, click **Next** to proceed to the next step.

© 2009 Kentico Software

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 copy the exported file to the target installation of Kentico CMS, into the **<web project>\CMSSiteUtils\Import** folder and use the **Import site or objects** wizard described in the following chapter.

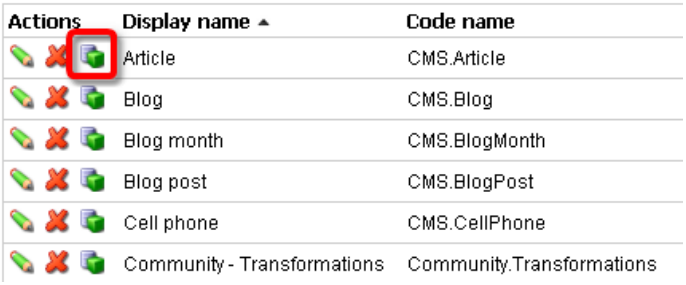
© 2009 Kentico Software

5.5.4 Exporting single objects

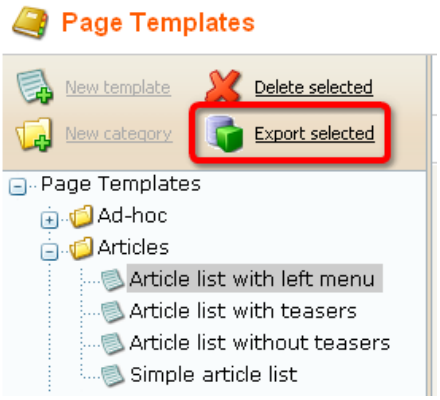
Some objects can also be exported separately as single object packages. This is useful when you want to quickly export only one or few objects apart from the rest of all other objects.

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.

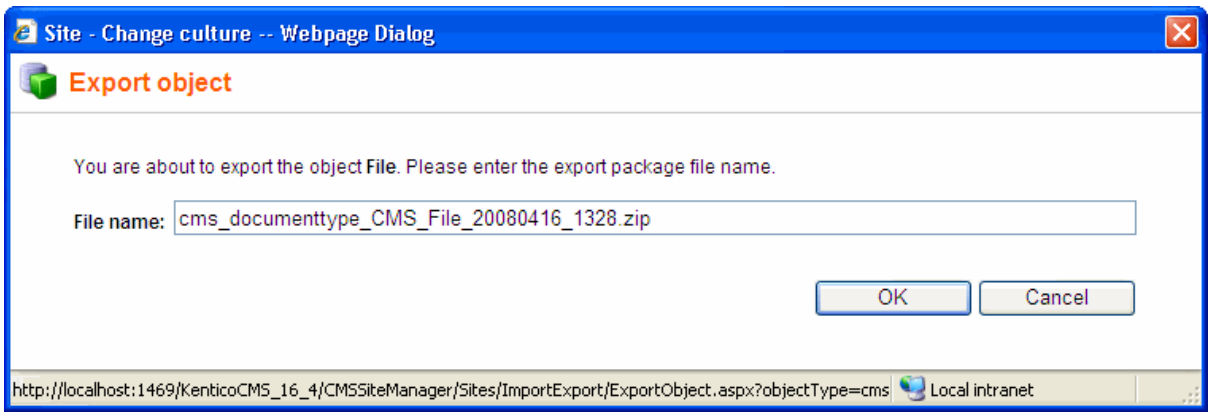


Or the **Export selected** link in case of Page templates and Web parts.

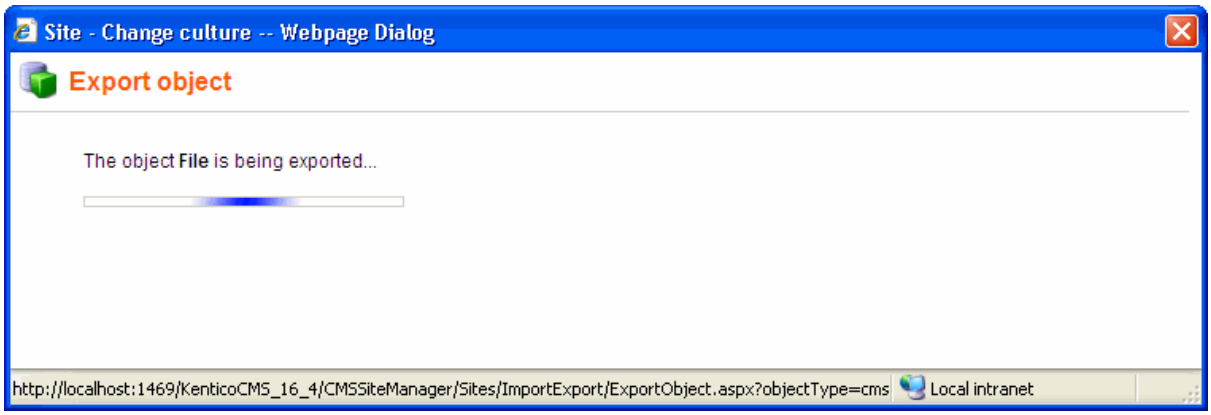


© 2009 Kentico Software

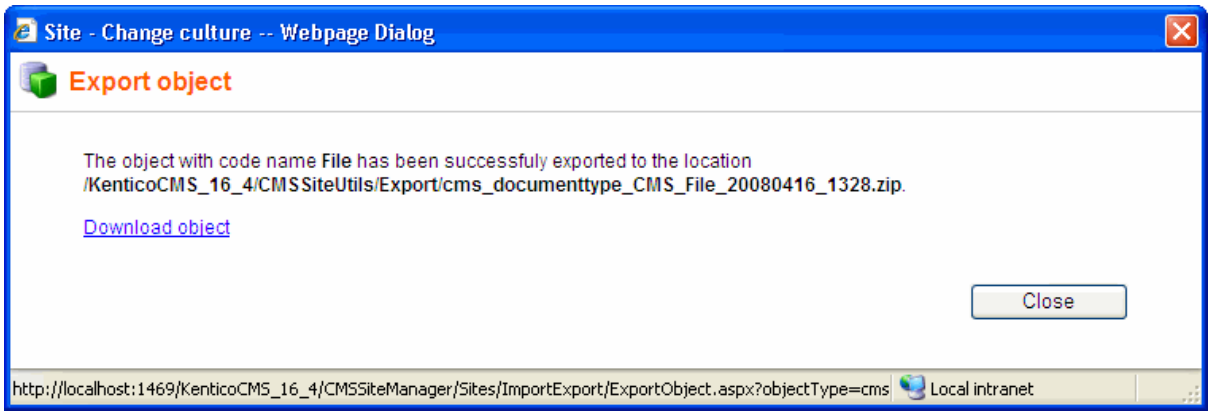
The following window will appear. Enter the name of the export file (default name will be pre-entered) and click **OK**.



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.

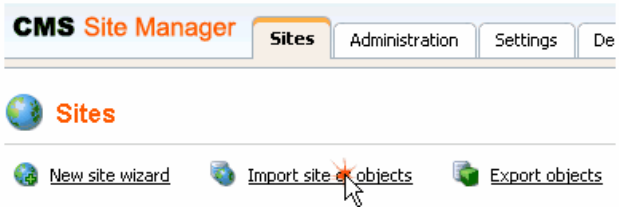
© 2009 Kentico Software

5.5.5 Importing a site or objects

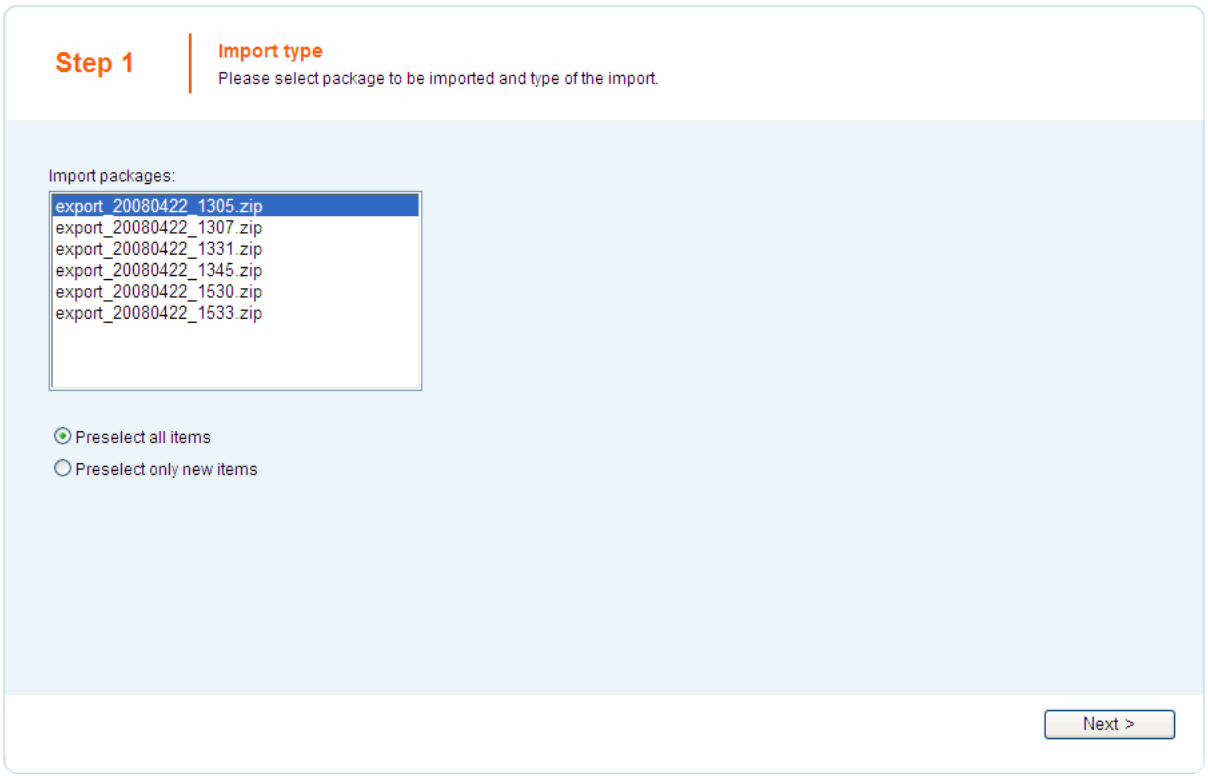
After you export some site or objects using the **Export site wizard** or **Export objects wizard**, you can import it using the **Import site or objects wizard**. Before you start the wizard, you need to copy your exported packages into the **<web project>\CMSSiteUtils\Import** folder.

Importing a site

Go to **Site Manager -> Sites** and click **Import site or objects**.



Choose to import the appropriate package and click the **Next** button. Using the two radio buttons below, you can determine if duplicate items will be preselected or if only new items will be selected for import in the next step.



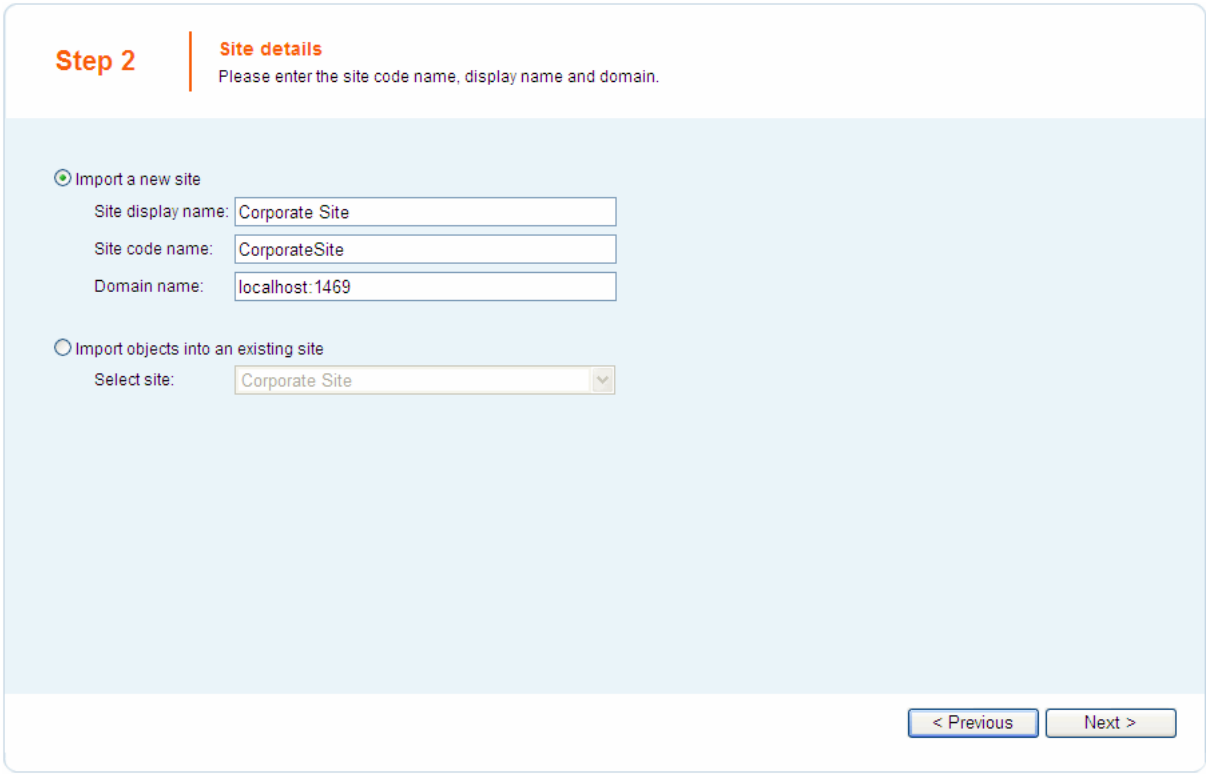
© 2009 Kentico Software

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.



© 2009 Kentico Software

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:

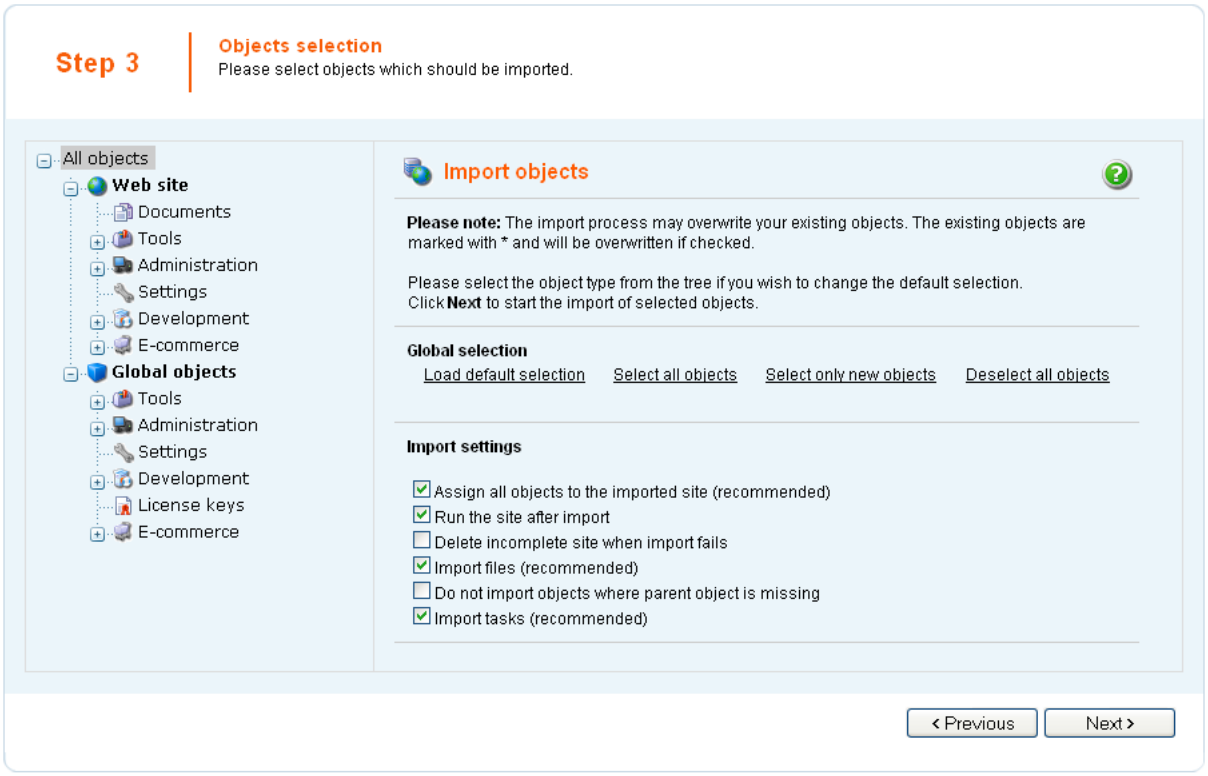
- **Update site definition -** displayed only when importing to an existing site; if enabled, all settings stored as a part of the site object will be updated with those contained in the package; these settings are contained in the **Site\cms_site.xml** file inside the export package
- **Assign all objects 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.

© 2009 Kentico Software



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

© 2009 Kentico Software

Forums

- **Import forum posts** - if checked, forum posts included in the package will be imported together with the forums

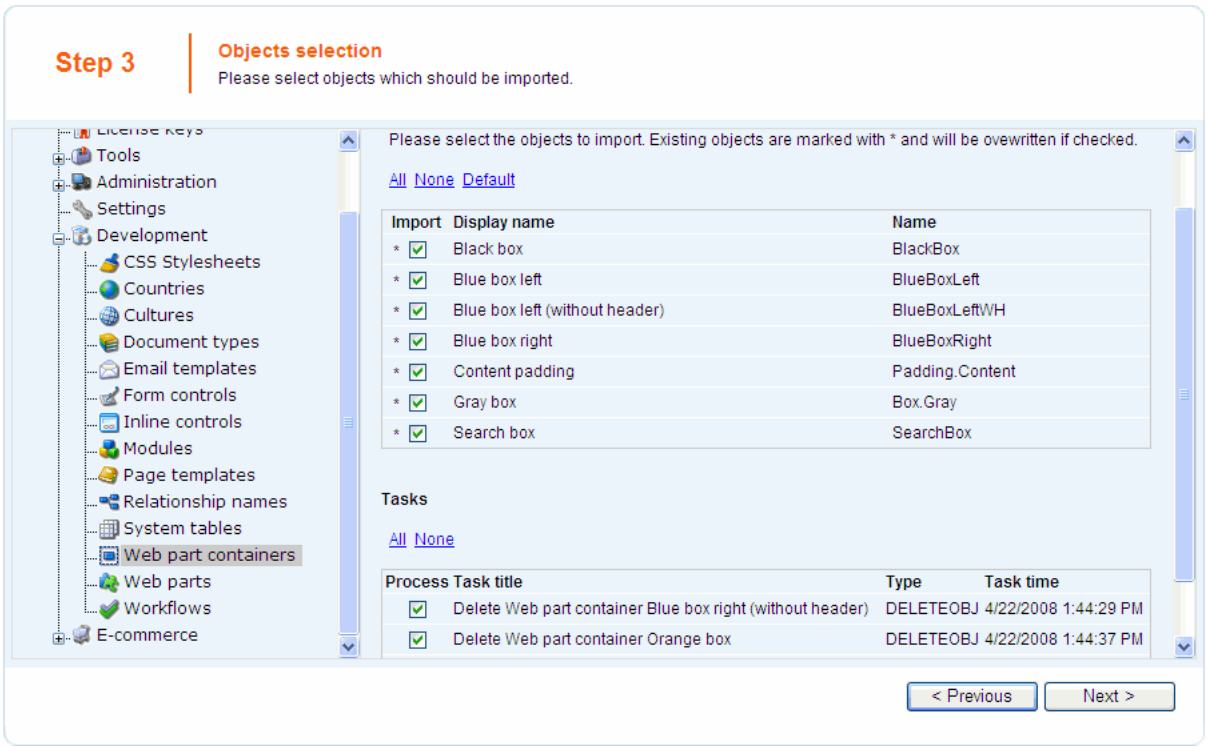
Message boards

- **Import board messages** - if checked, board messages included in the package will be imported together with the message boards

Media libraries

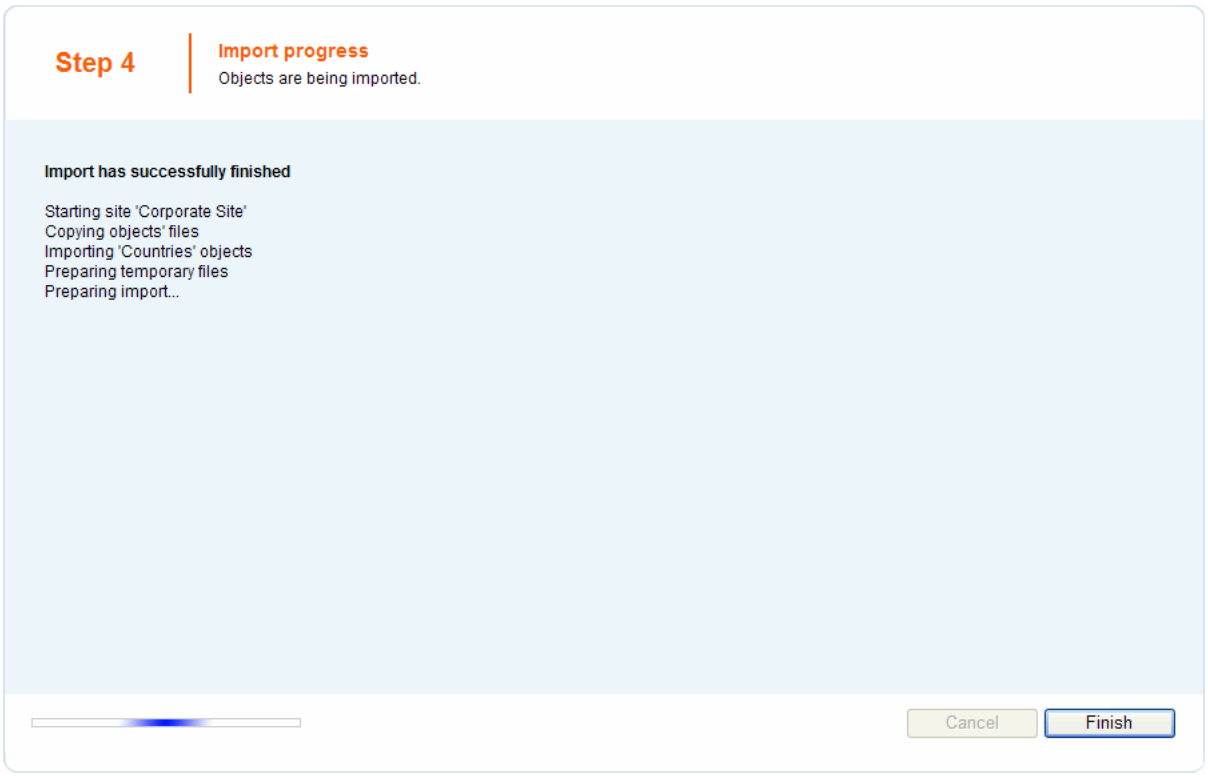
- **Import media files** - if checked, media files (stored in database) included in the package will be imported together with the media libraries
- **Import physical files** - if checked, physical files (stored in the file system) included in the package will be imported together with the media libraries

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.



© 2009 Kentico Software

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.



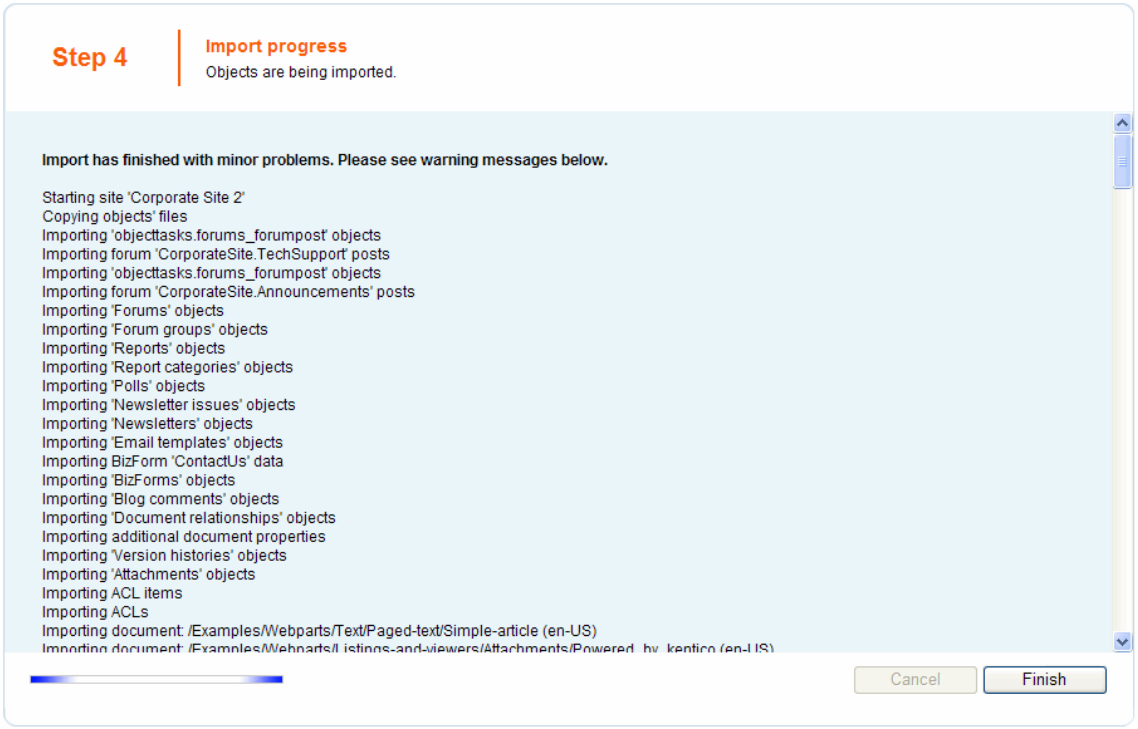
Please note

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.

© 2009 Kentico Software

Conflicts of running sites

If the imported site uses the same domain name or alias as one of the web sites that already run on your server, you may get an error message at the end of the import:



WARNING: Failed starting site 'Corporate Site 2', there is already 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 web site manually using the **Start site** button.

© 2009 Kentico Software



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 web site 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 web sites 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 web site)
- **App_WebReferences**
- **aspnet_client**
- **bin**
- **ClientBin**
- **CMSAdminControls**
- **CMSControlsExamples**

© 2009 Kentico Software

- **CMSDesk**
- **CMSFormControls** (all form controls selected in Step 2 of the export process are exported with any site)
- **CMSGlobalFiles** (exports with any web site, needs to be created manually; folder is exported if the 'Export global folders' option is checked in Step 2 of the export process)
- **CMSImportFiles**
- **CMSInlineControls** (all form controls selected in Step 2 of the export process are exported with any site)
- **CMSInstall**
- **CMSMasterPages**
- **CMSMessages**
- **CMSModules**
  - Forums\Controls\Layouts**Custom** (forum custom layouts; exported with any web site, 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)
- **CMSPages**
- **CMSResources**
- **CMSScripts**
- **CMSSiteManager**
- **CMSSiteUtils**
- **CMSTemplates** (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)
- **CMSWebParts** (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.

© 2009 Kentico Software

.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

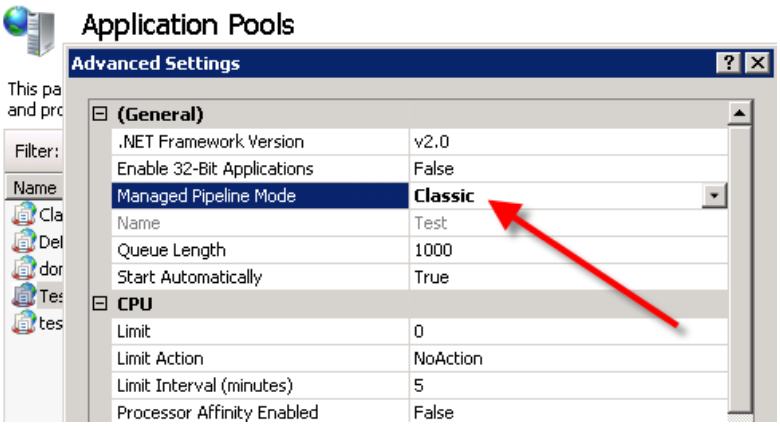
5.5.8.1 Configuration on W2008/IIS7

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 web site.

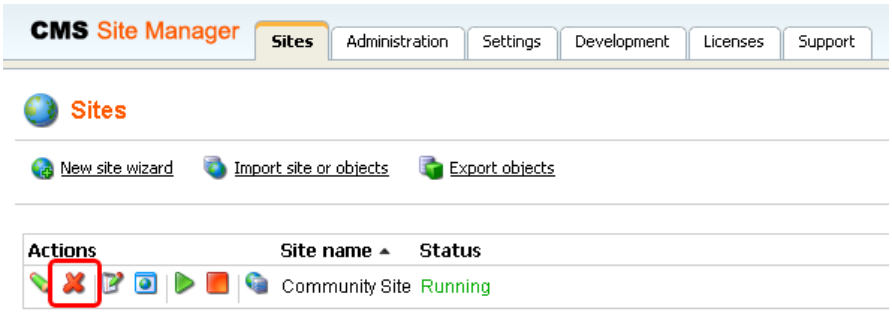


© 2009 Kentico Software

5.6 Deleting sites

You can delete sites in the system in **Site Manager -> Sites**.

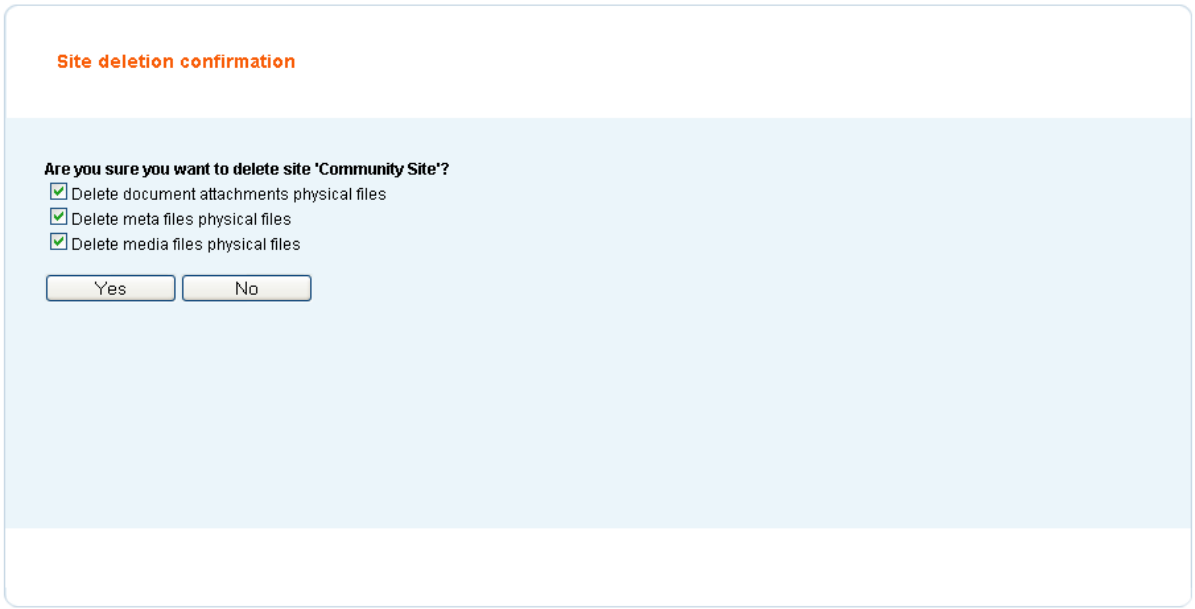
1. Clicking the **Delete** ( ) icon of the site that you want to delete.



2. In the **Site deletion confirmation** dialog, you can select the following options:

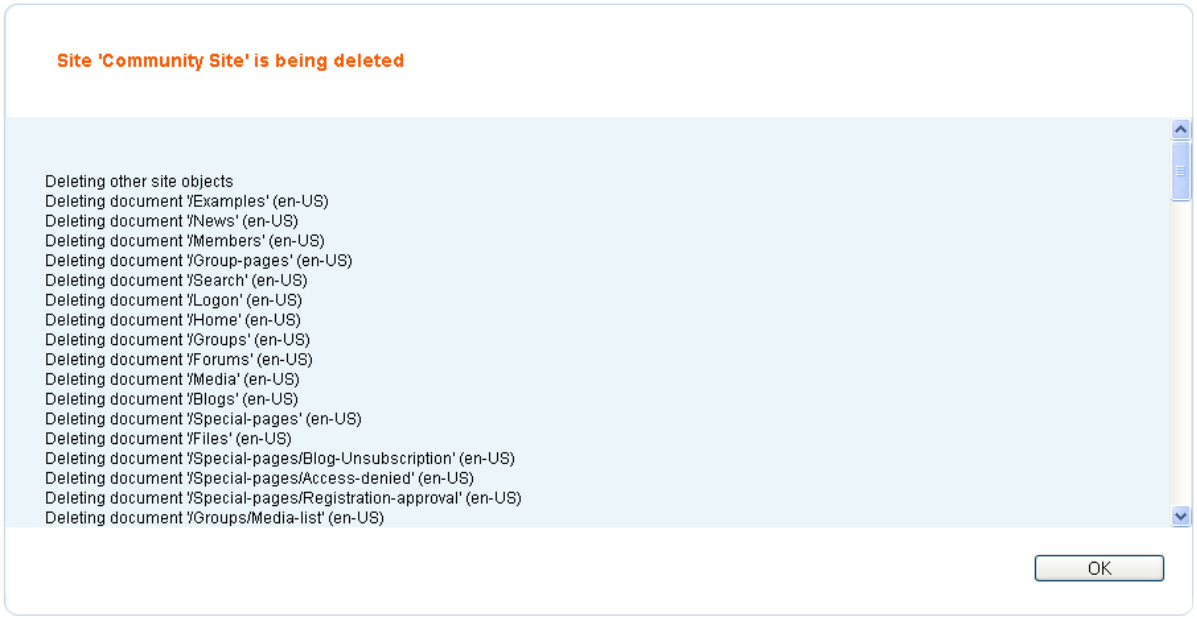
- **Delete document attachments physical files** - if checked, document attachment files stored in the file system will be deleted; these files are stored in the *<web project>\<site name>\files* folder
- **Delete meta files physical files** - if checked, meta files stored in the file system will be 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.



© 2009 Kentico Software

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.



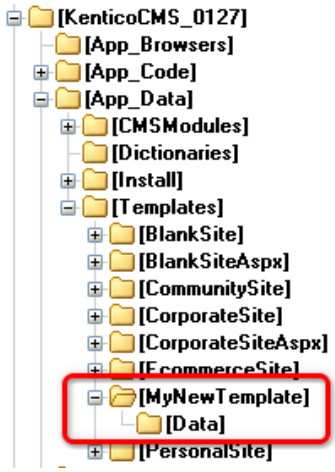
© 2009 Kentico Software

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 a a starting point for developing new sites, you have to take the following steps:

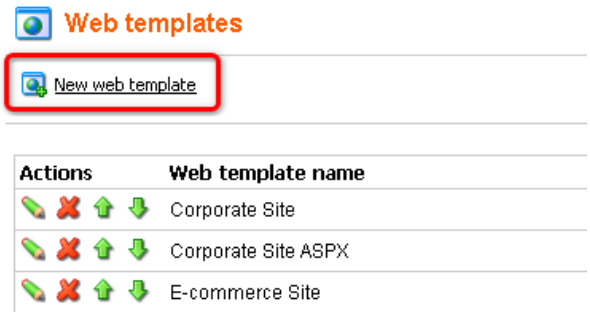
1. Export your site. For a step-by-step tutorial on how to export a site, please refer to the Exporting a site chapter of this guide.

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:

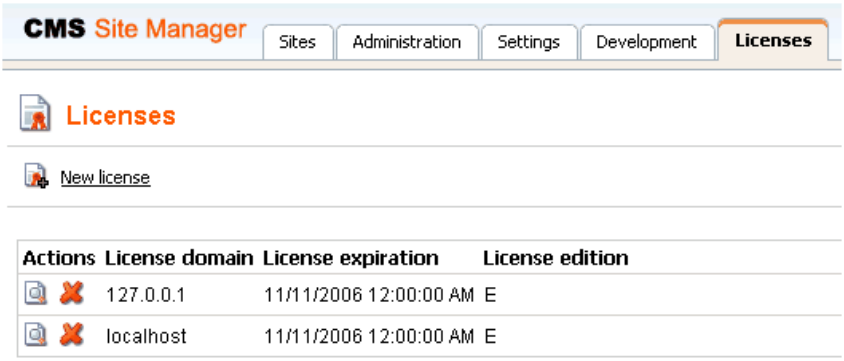
- **Web template display name** - name of the web template displayed in the administration interface
- **Web template code name** - name of the web template used in code
- **Web template folder name** - path to the folder where you have extracted the content of the export package; *~\App_Data\Templates\<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

© 2009 Kentico Software

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**:



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 field.

How licensing works

If you're running web site on domain mydomain.com, you need a single license key that will also work for:

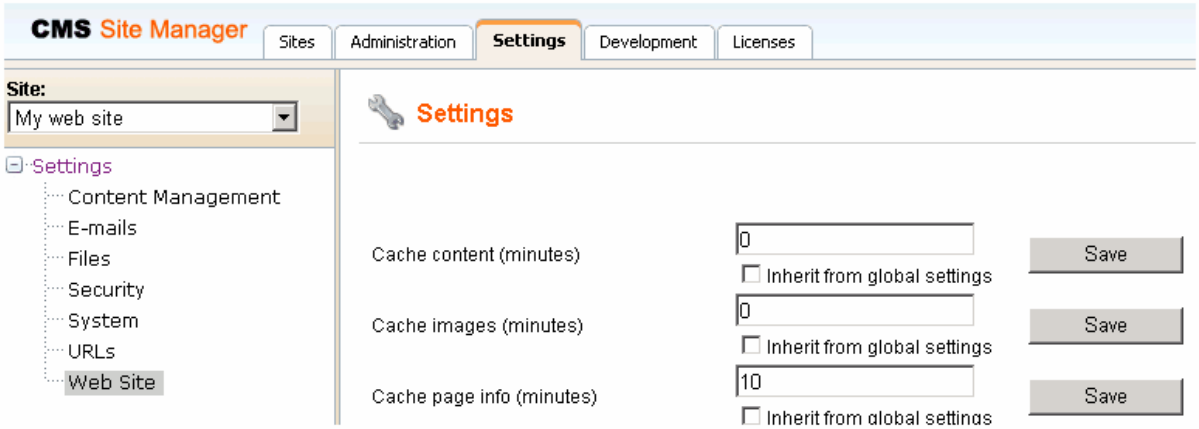
- http://mydomain.com
- https://mydomain.com
- http://www.mydomain.com
- https://www.mydomain.com
- http://localhost
- http://127.0.0.1

If you use a domain alias (domain name that points to the same web site), such as mydomainX.com or mydomain.net, you also need license keys for these domain aliases. You need to ask Kentico support for generating the additional keys (they are free of charge if you already own a license for the main domain).

© 2009 Kentico Software

5.9 Managing site settings

Most of the site settings can be configured in **Site Manager -> Settings** section.



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.

© 2009 Kentico Software

5.10 Configuring multiple web sites

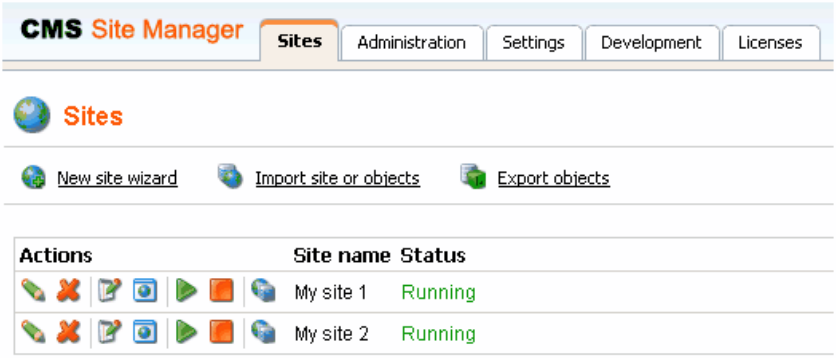
Kentico CMS allows you to run multiple web sites from a single installation (code base) and database. All web sites run as a single web site in IIS. The following tutorial explains how to set up multiple web sites on Windows XP and Windows Server 2000/2003.

We will configure two web sites:
- **mysite.com**
- **mysite2.com**

Configuring multiple sites in Kentico CMS (common for all operating systems)

This part is common for all operating systems.

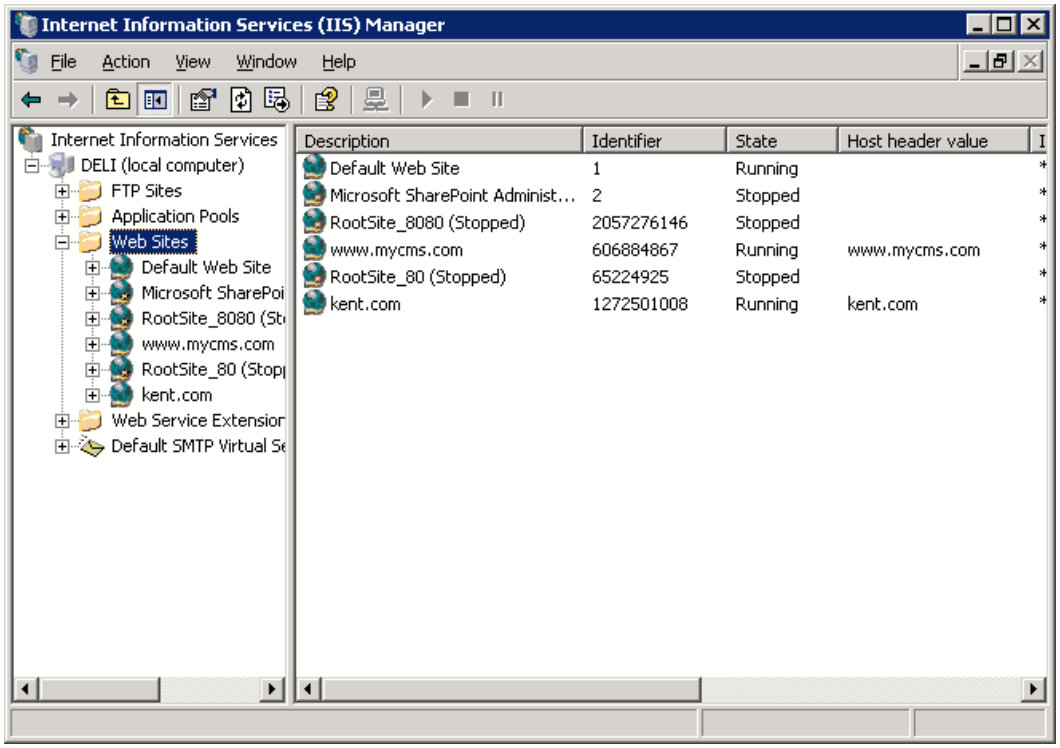
1. Create two web sites in **Site Manager -> Sites** - you can either import your existing web sites or you can create new web sites using the New site wizard.
2. Edit the properties of each web site in **Site Manager -> Sites** and set the **Site domain name** value of the each web site to the appropriate 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**.



© 2009 Kentico Software

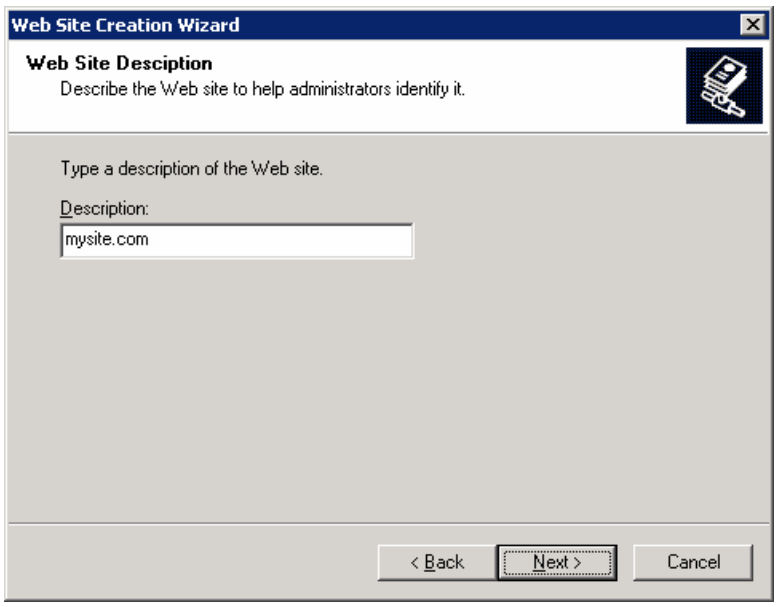
Configuring multiple sites on Windows Server 2000/2003

Open **Start -> Administrative tools -> Microsoft Internet Information Services (IIS) Manager**, go to Web sites section and if the web site does not exist yet, create it.

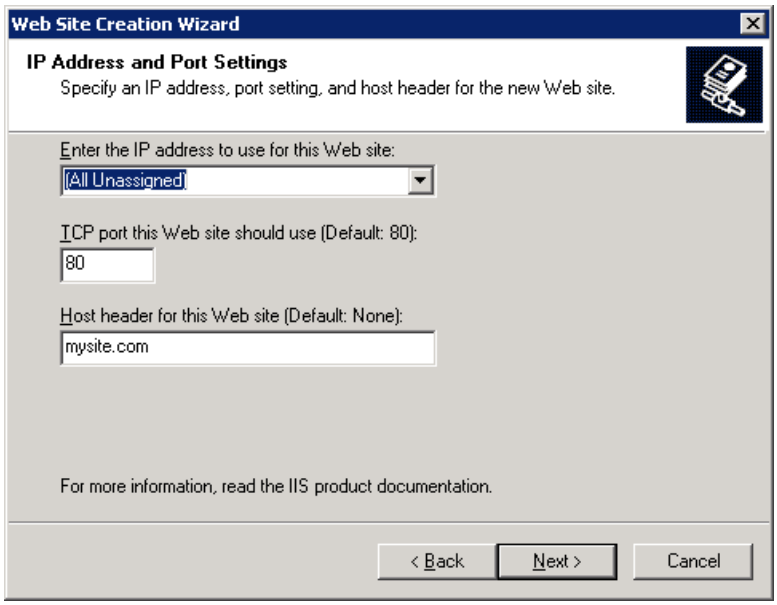


© 2009 Kentico Software

Right-click **Web sites** and choose **New -> Web site...** The Web Site Creation Wizard starts. Enter the site descriptive name, such as **mysite.com**:

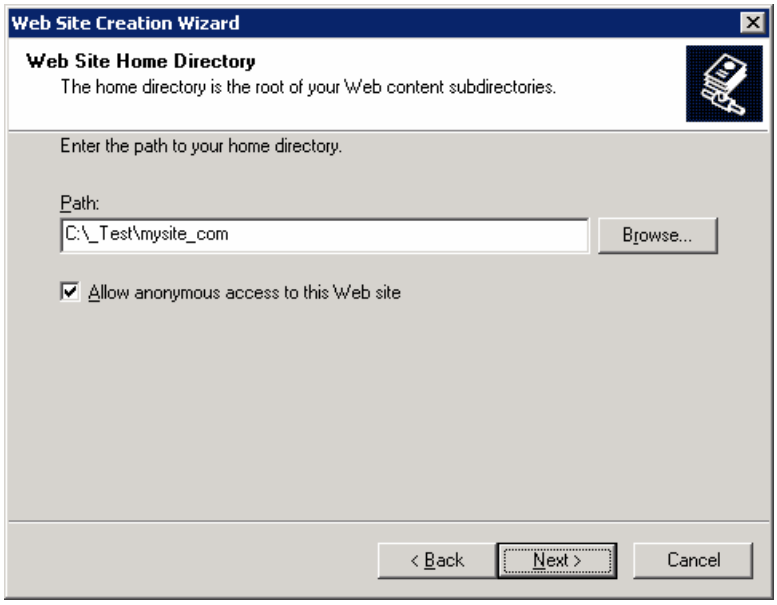


Click **Next**. Enter the **Host header for this web site** as **mysite.com**:

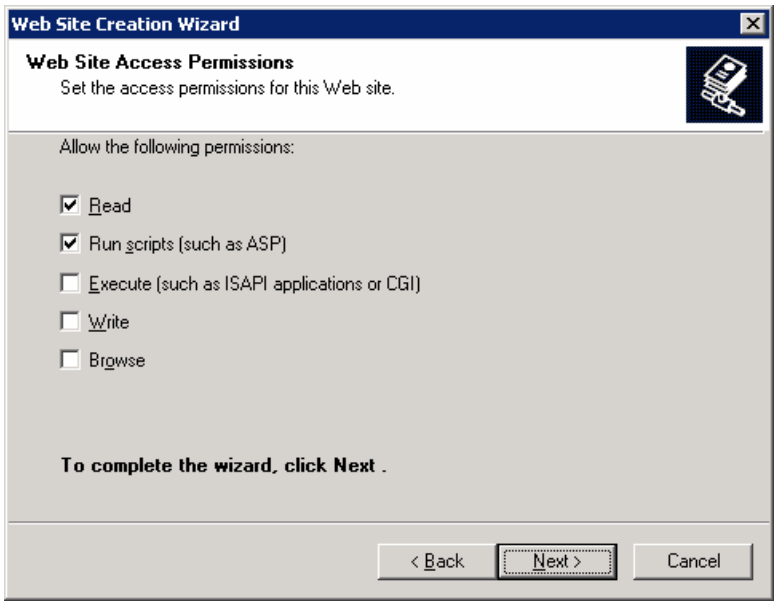


© 2009 Kentico Software

Click **Next**. Select the disk path where the root of your web site is placed. This must be the folder where web.config file is placed.

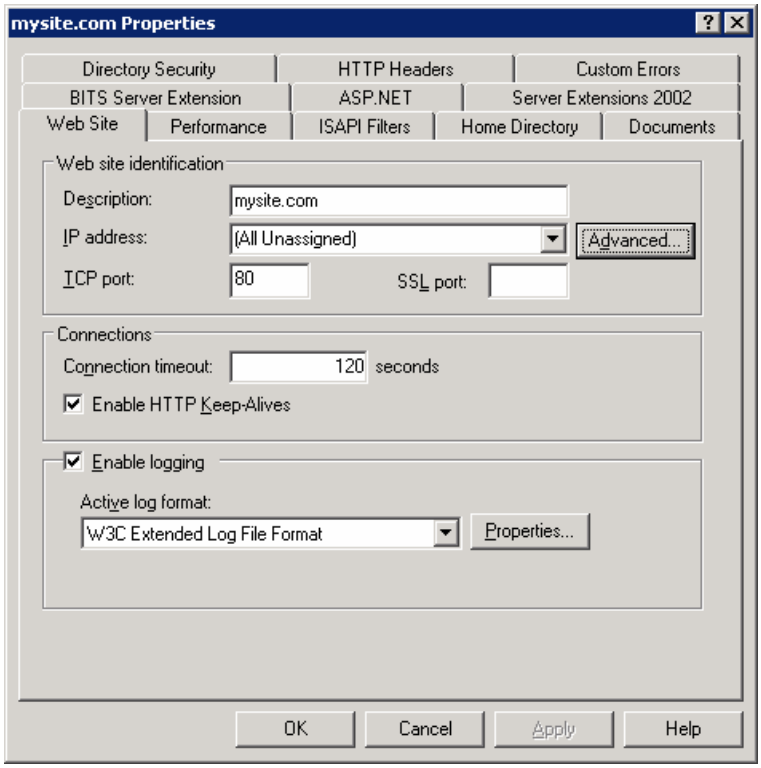


Click **Next**. In the next step, enable the **Read** and **Run scripts** boxes.

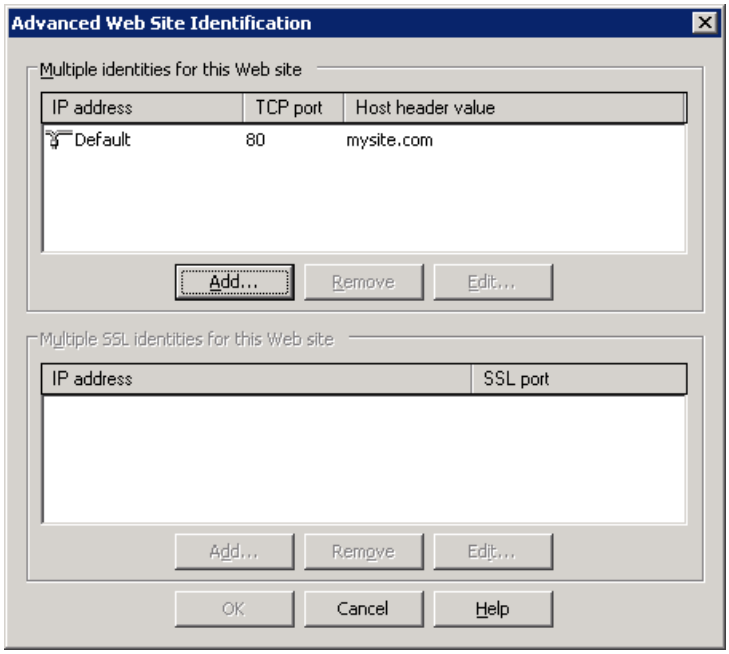


© 2009 Kentico Software

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 web site. Right-click the newly created web site and display web site properties. On the **Web Site** tab, click **Advanced...**

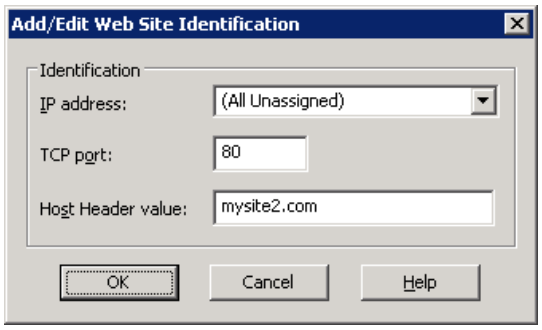


Now you need to add another host header value for your second domain:

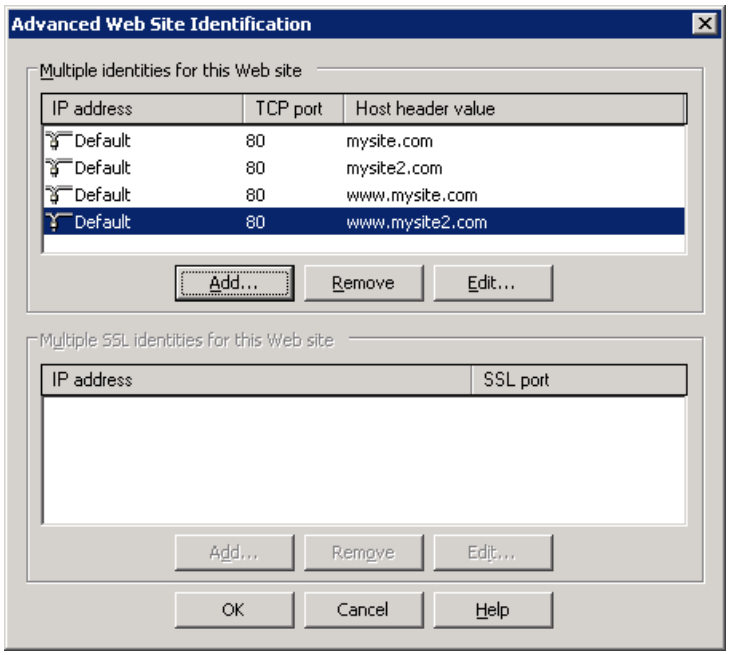


© 2009 Kentico Software

Click the top **Add...** button and enter the appropriate values. The standard HTTP port is 80:



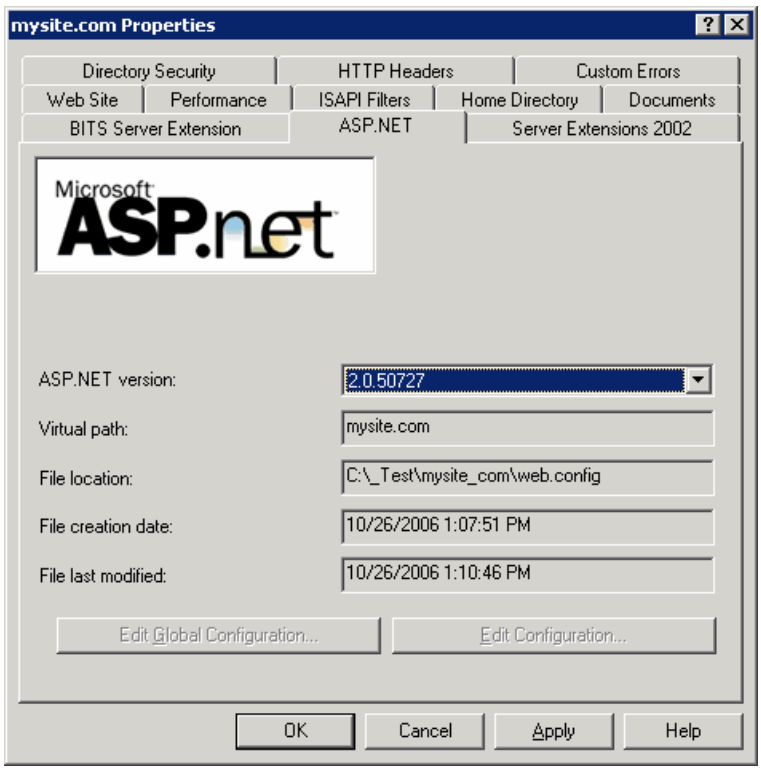
You need to repeat this also for www.* alternatives of your web site:



Click **OK** on all dialogs.

© 2009 Kentico Software

Please note: You may also need to configure the web site for ASP.NET 2.0 in web site Properties, on the **ASP.NET** tab:



Your new web site 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 web site.

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

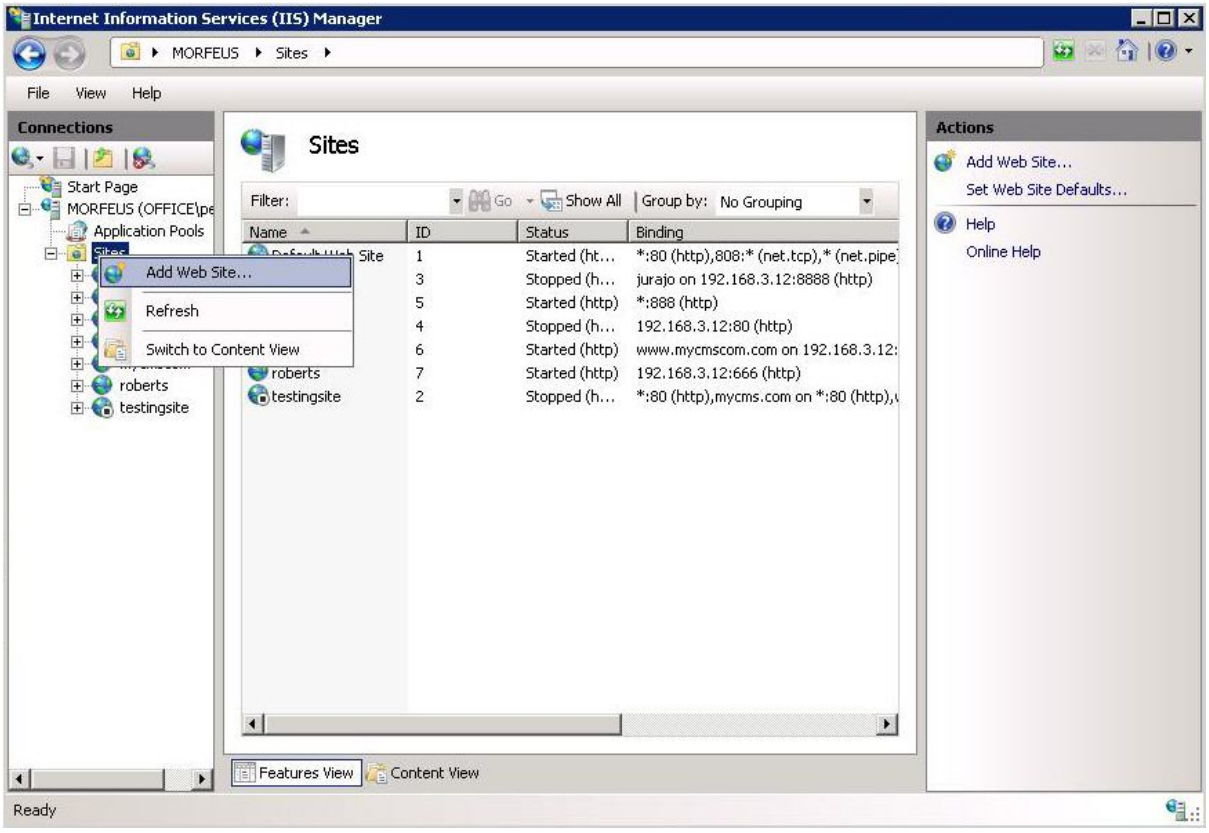
Save the file. Please note: these are client settings, which means they will work only if you use web browser on your server.

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 web sites.

© 2009 Kentico Software

Configuring multiple sites on Windows Vista / Server 2008

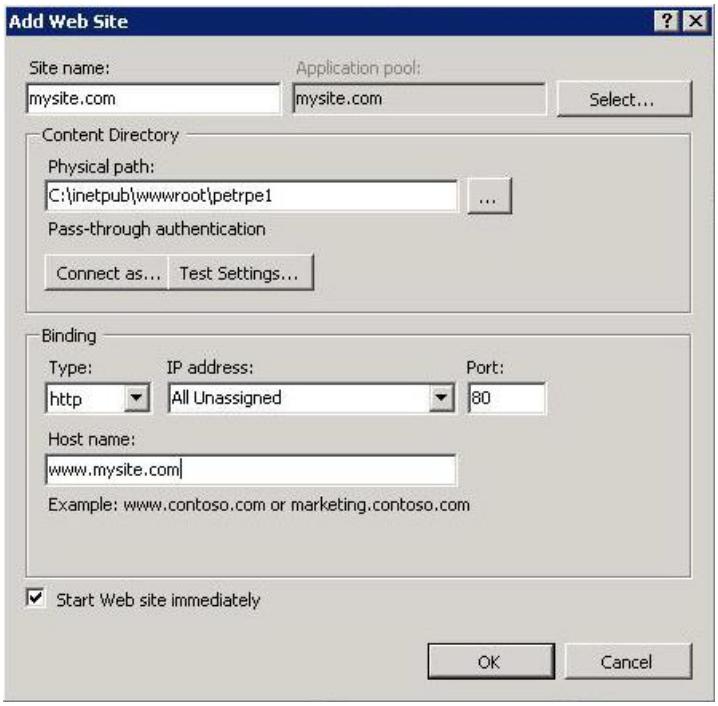
Go to **Start -> Control Panel -> Administrative tools -> Microsoft Internet Information Services (IIS) Manager.** In the tree view, right click **Sites** and choose **Add Web Site...**.



© 2009 Kentico Software

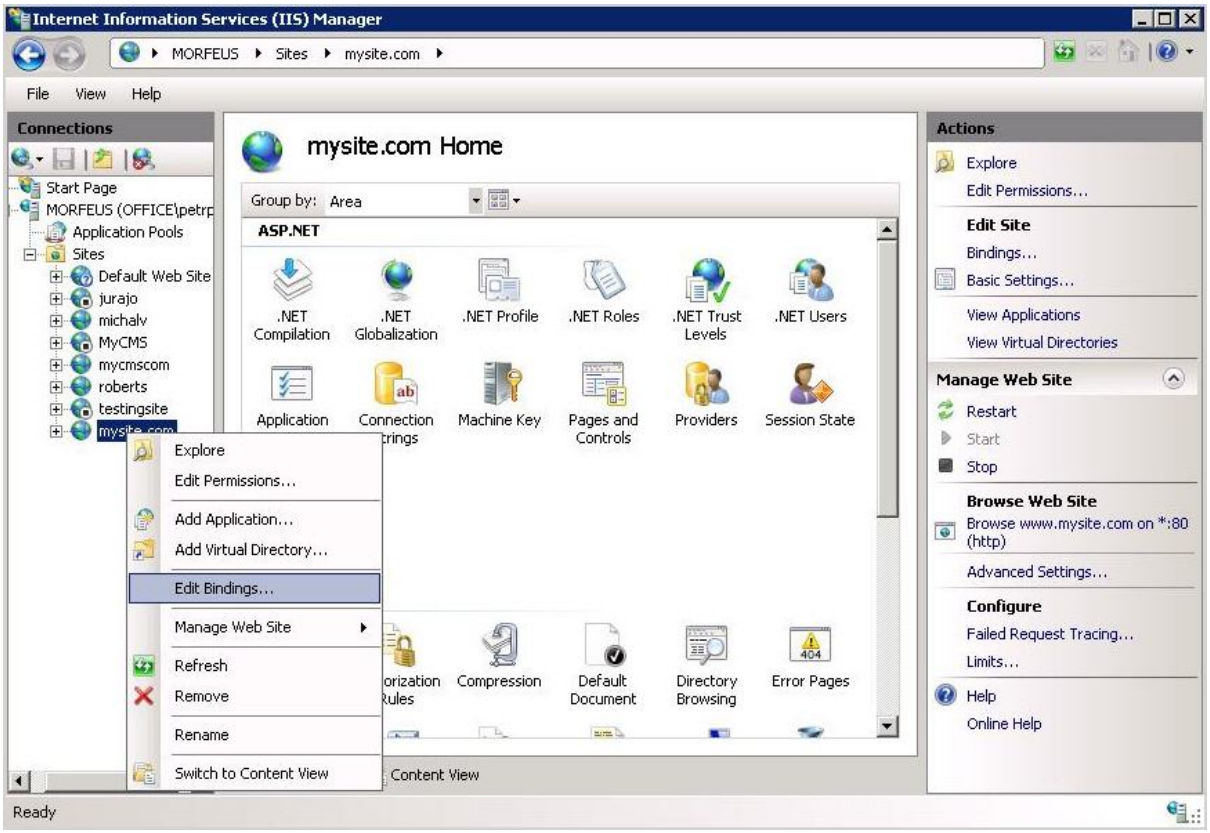
Enter the following details and click **OK**.

- **Site name**: mysite.com
- **Physical path**: disk path to the location where your web site is placed; this must be the location where the *web.config* file is stored
- **Host name**: www.mysite.com

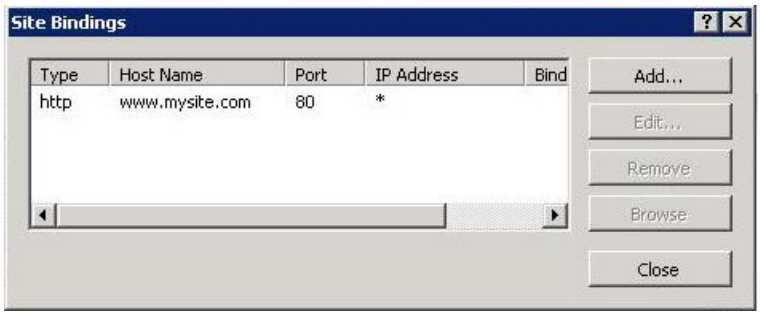


© 2009 Kentico Software

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...**.

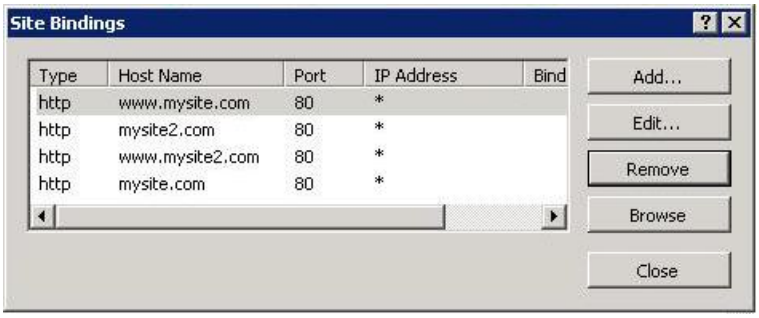


© 2009 Kentico Software

Enter the domain name of your second web site (*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.



Your new web site 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 web site.

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 web sites.

© 2009 Kentico Software

Configuring mulitple 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 web site 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 web site) and to http://www.mysite2.com. You should see two different web sites.



Multiple web sites 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 web sites by subfolder (virtual directory). Read chapter Multiple web sites on a single domain (in subfolders) for more details.



Using multiple web sites on Windows XP

Windows XP allows you to run only one IIS web site at a time. If you need to develop multiple web sites (multiple Kentico CMS instances) in the root folder, you may need to create additional web sites and switch between them using the IISAdmin utility that can be downloaded at http://jetstat.com/iisadmin/download.asp.

© 2009 Kentico Software

5.11 Multiple web sites on a single domain (in subfolders)

In some cases, you may want to run multiple web sites in separate subfolders, without getting a new domain.

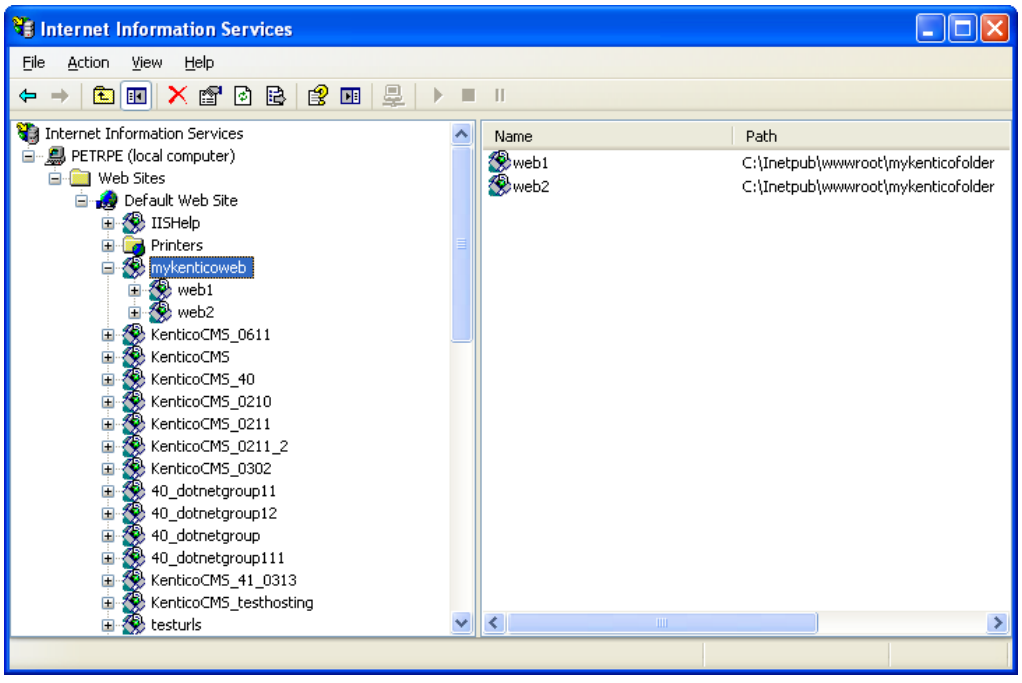
In this case, you can configure the domain names (or domain aliases) of the web sites like in the following example:

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 web site 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 web site 1 domain name as: **localhost/mykenticoweb/web1**

© 2009 Kentico Software

7. Configure web site 2 domain name as: **localhost/mykenticoweb/web2**

Now when you go to **http://localhost/mykenticoweb/web1**, you will see web site 1. If you go to **http://localhost/mykenticoweb/web2**, you will see web site 2.

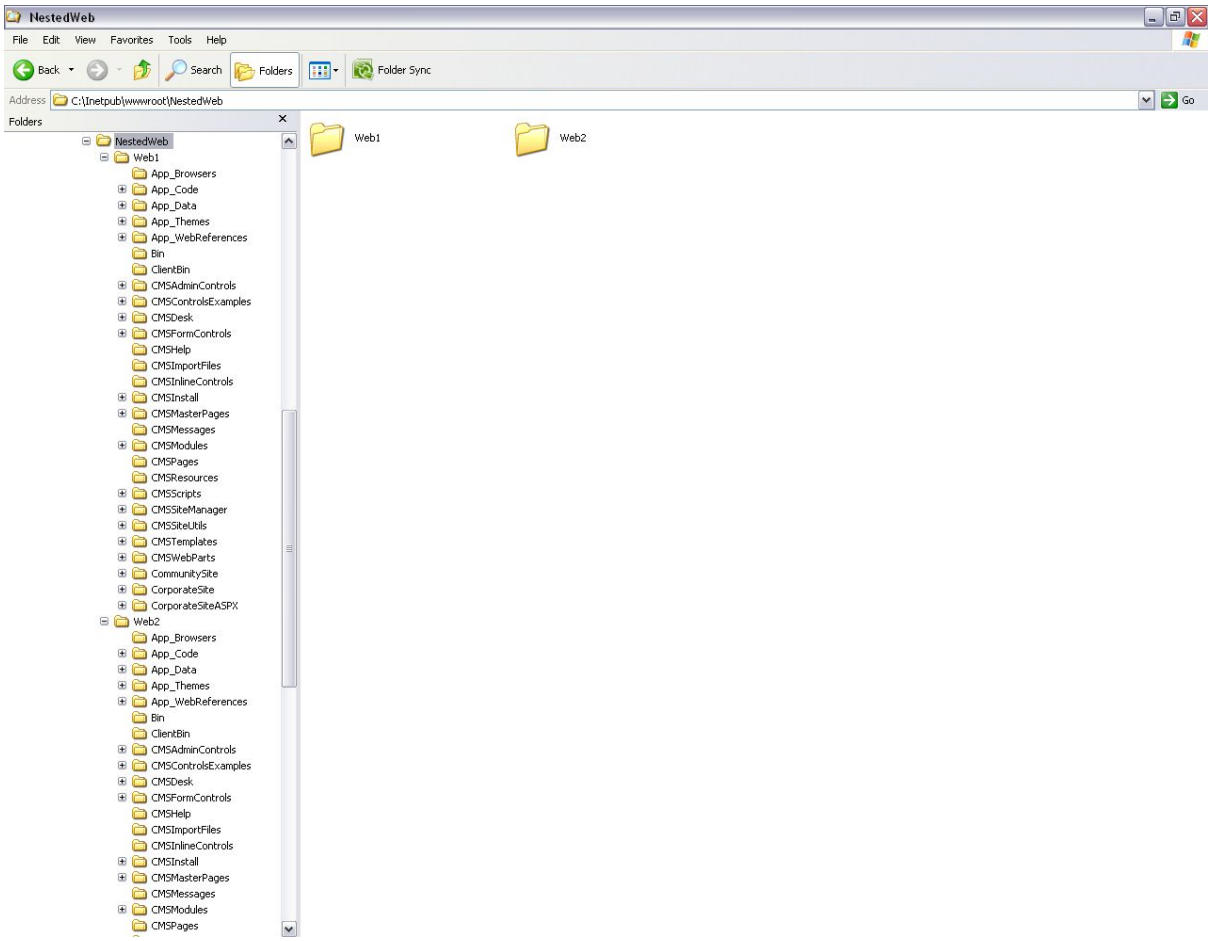
5.12 Configuring nested web sites

In the following example, you will learn how to set up two nested web sites. 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 colision when seting up the IIS. The installation folders may be for example like this:

- **Inetpub/wwwroot/NestedWeb/Web1** (first web site from Web installer)
- **Inetpub/wwwroot/NestedWeb/Web2** (second web site from Web installer)

This means that you have two completely independent projects, as you can see in the screenshot below:

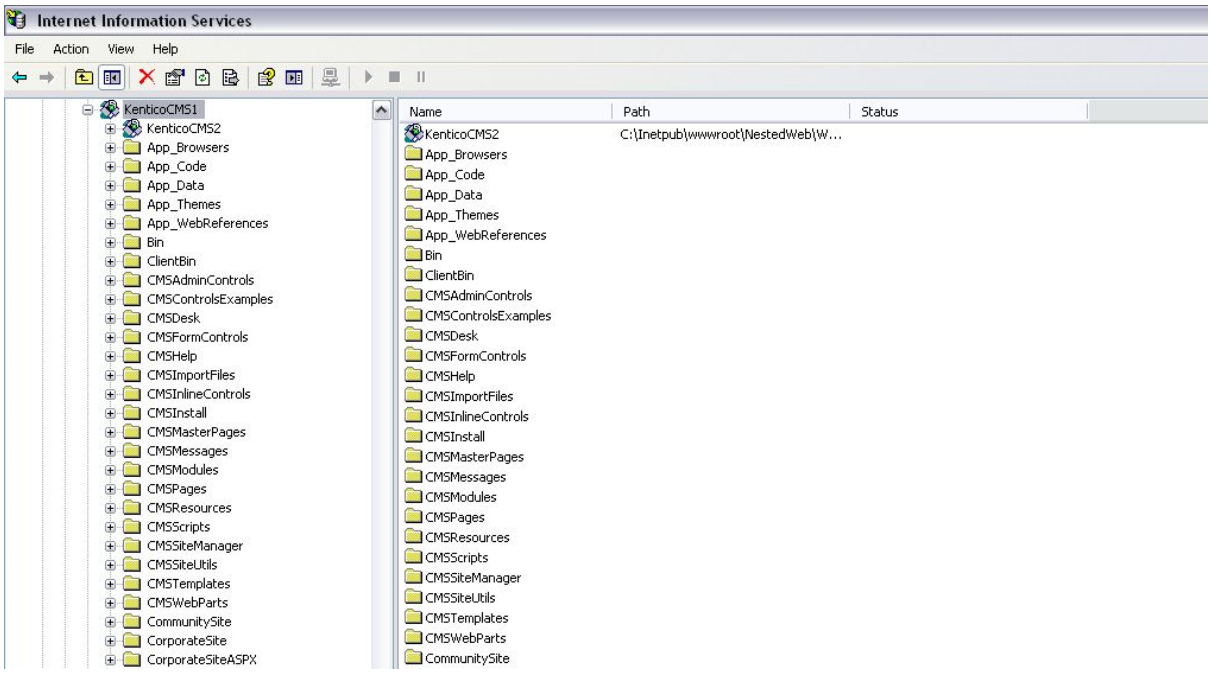


© 2009 Kentico Software

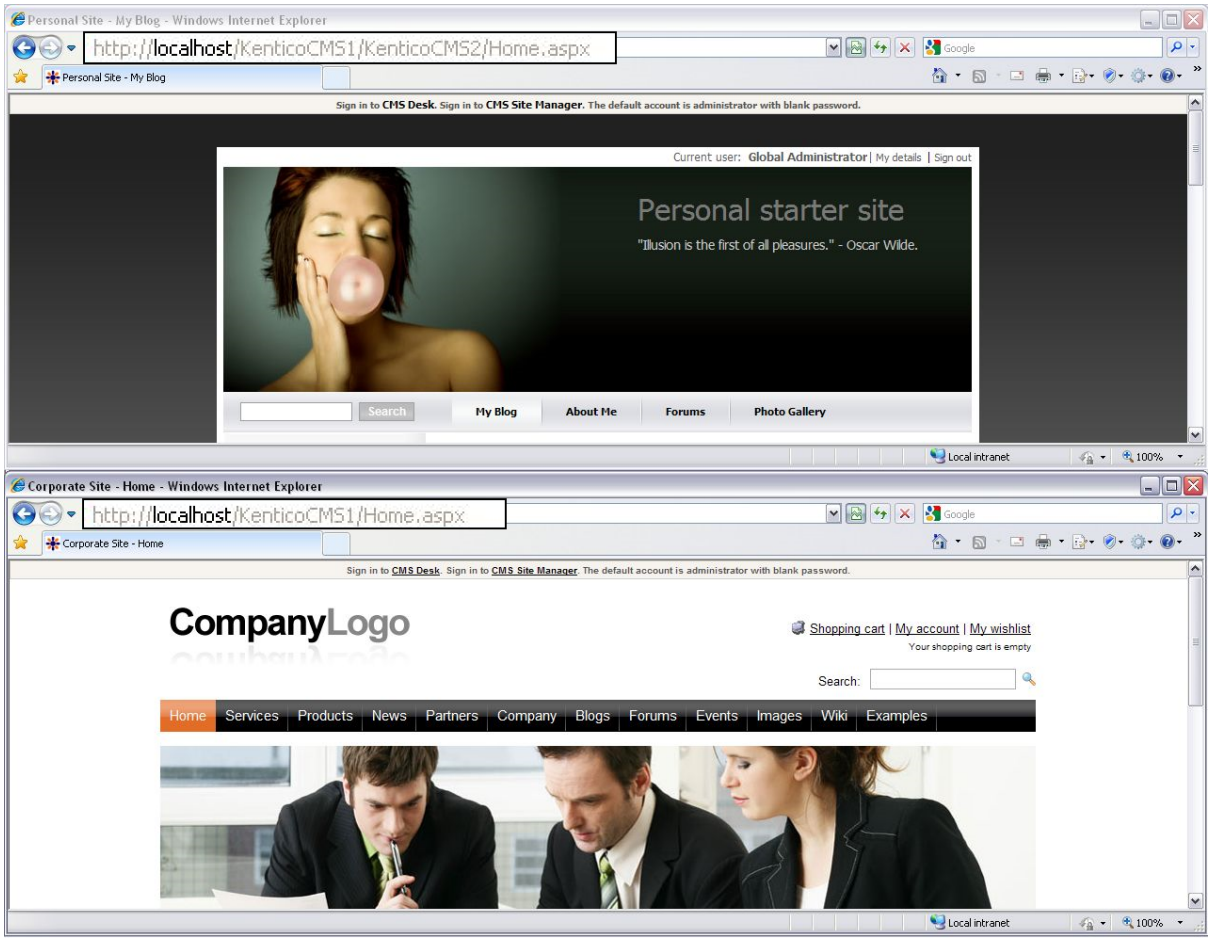
2. Open IIS management console and create two virtual directories:

- **[Default web site]/KenticoCMS1** (pointing to physical directory Web1)
- **[Default web site]/KenticoCMS1/KenticoCMS2** (child directory pointing to physical directory Web2)

Like this, you have two independent projects configured as nested only in the IIS.



3. The web sites are now accessible via nested URLs as you can see in the screenshot below. The web sites can be configured independently without experiencing any issues.

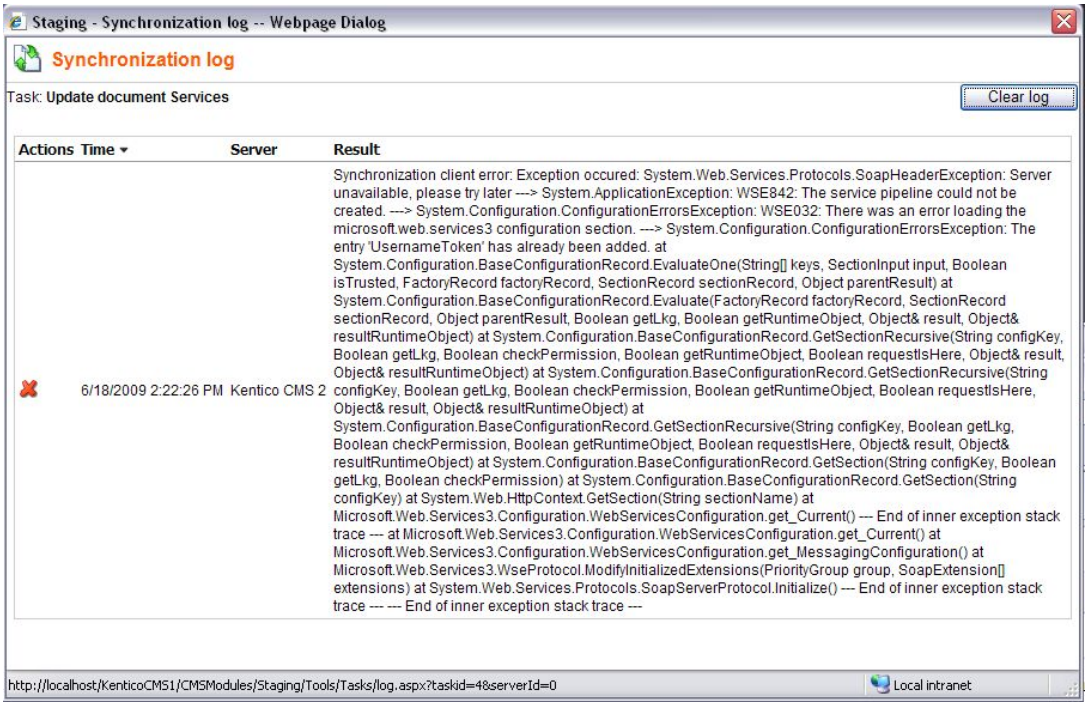


© 2009 Kentico Software

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 imporant 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 web sites. After doing this, Content staging should work flawlessly between the sites.

5.13 API Examples

You can use Kentico CMS API to create new web sites or update and delete existing ones. To create a new web site, you need to import some of the web site templates (typically the Blank web site template stored in folder CMSSiteUtils\Templates\BlankSite.

You can find API examples in chapters Import and export of the web site, Update web site properties and Delete web site.

© 2009 Kentico Software

Part VI

Content management

6 Content management

6.1 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.

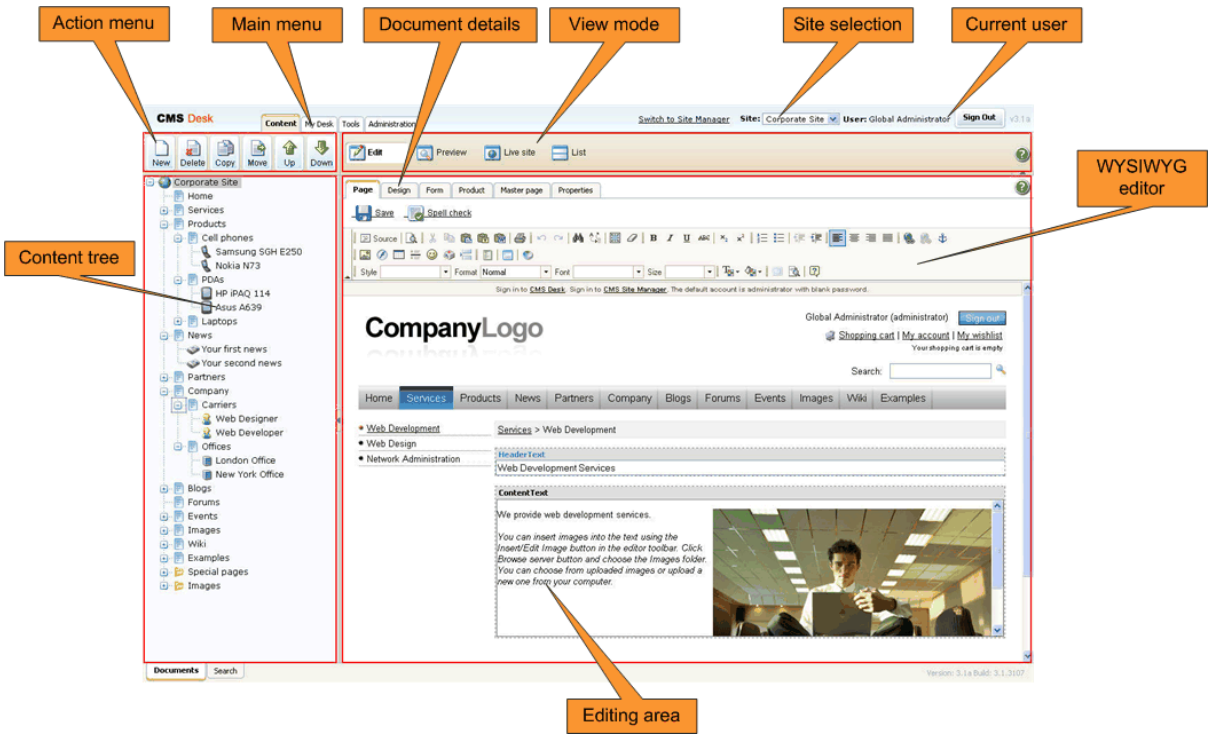
Default user name and password

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.

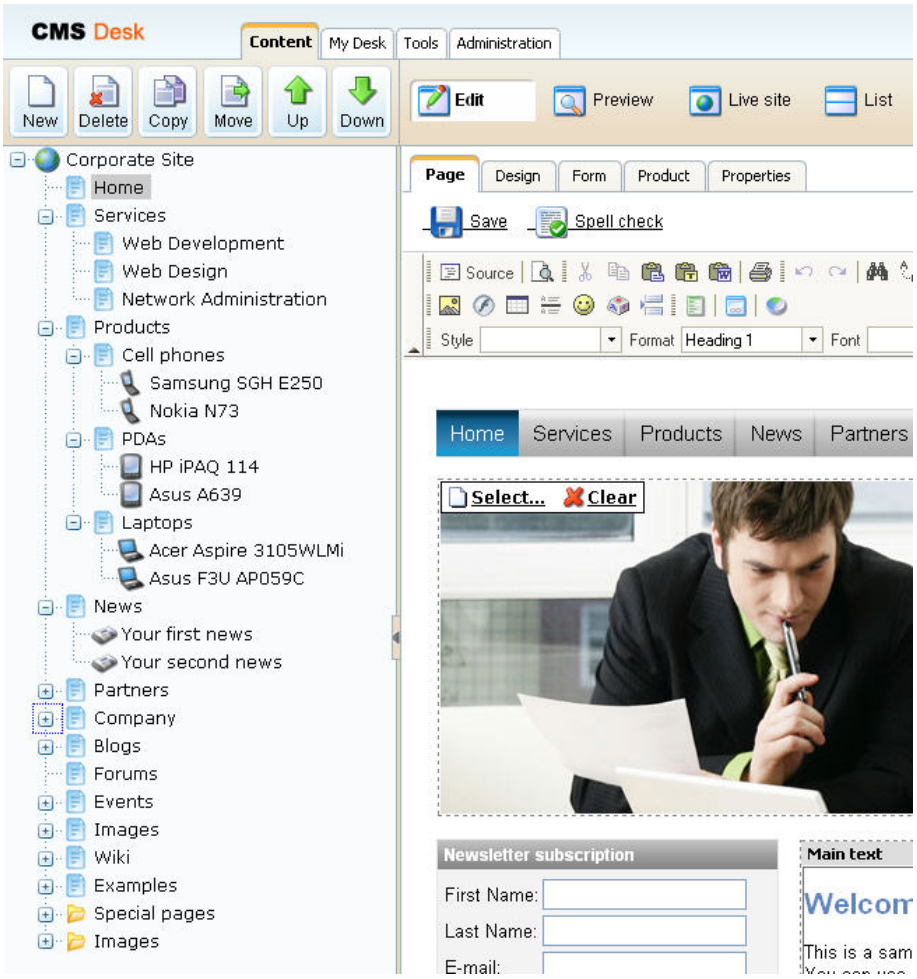
The following figure shows the CMS Desk user interface.



See also: Where is the content stored?, How do I edit content?

6.2 Organizing pages, files and documents

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

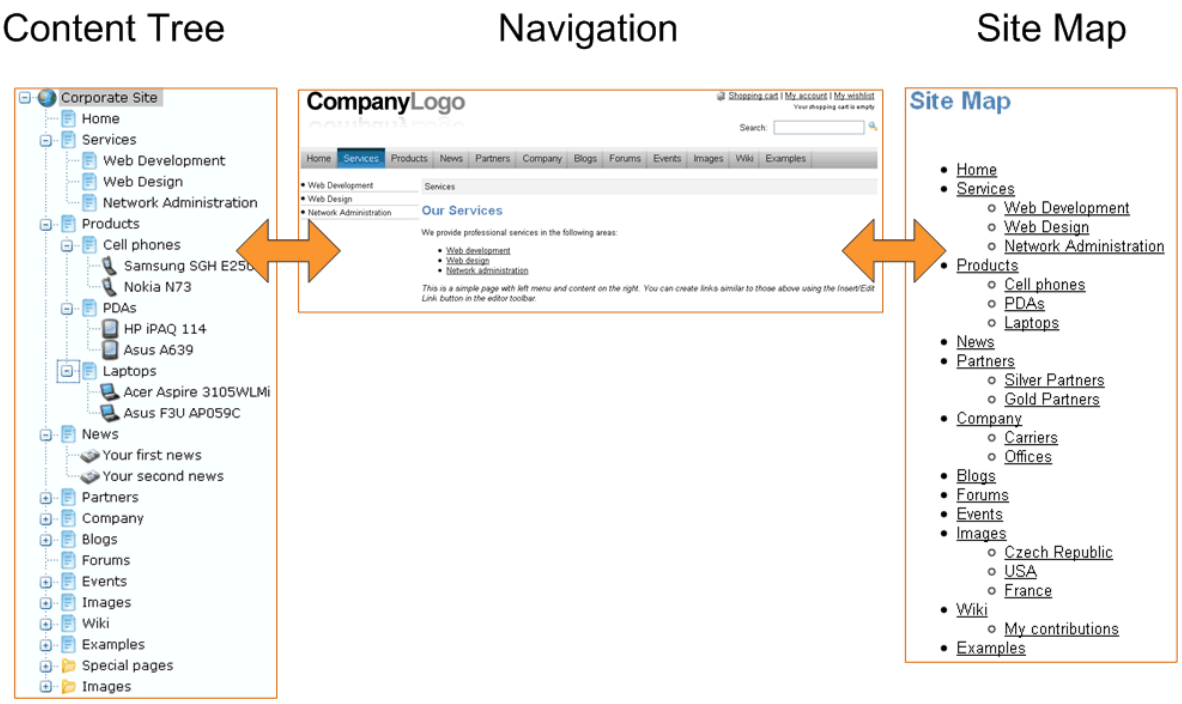


The tree hierarchy provides many advantages:

- 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.

© 2009 Kentico Software

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



Document types

Each document is of some type - it can be a page with unstructured text, news item, article, press release, product specification, etc. The document types can be customized with your own fields.

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.

© 2009 Kentico Software

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 modifies using SQL queries or API.
Examples of use.	Home page, contact page. Generally: pages with simply structured or unstructured, text-only content. The editable regions are usually used only in connection with documents of type **Page (menu item)**.	News, product specification, event details, job opening, etc. Generally: pages with structured content where you need to separate content from design and keep the content in its original data type. The form-based content is usually used in connection with documents of type **News**, **Product, Article,** etc.

Organizing media files

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

- **Web site design files** - Images and Flash files that are used on the web site 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 web site 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?

© 2009 Kentico Software

6.3 Document types

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**.

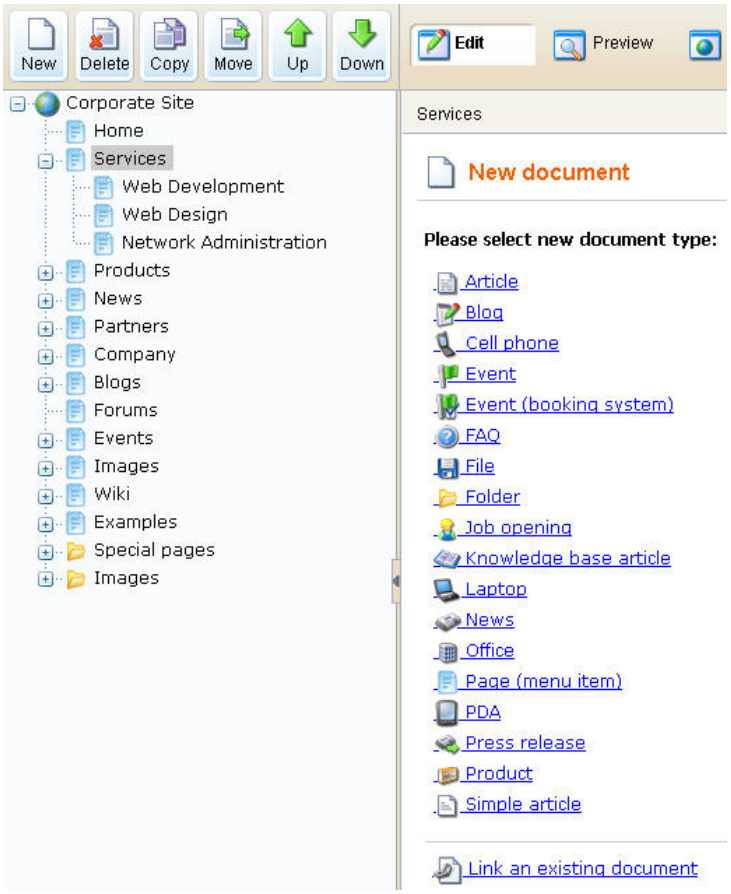
More details can be found in the Document types chapter.

6.4 Editing content

6.4.1 Creating a new page

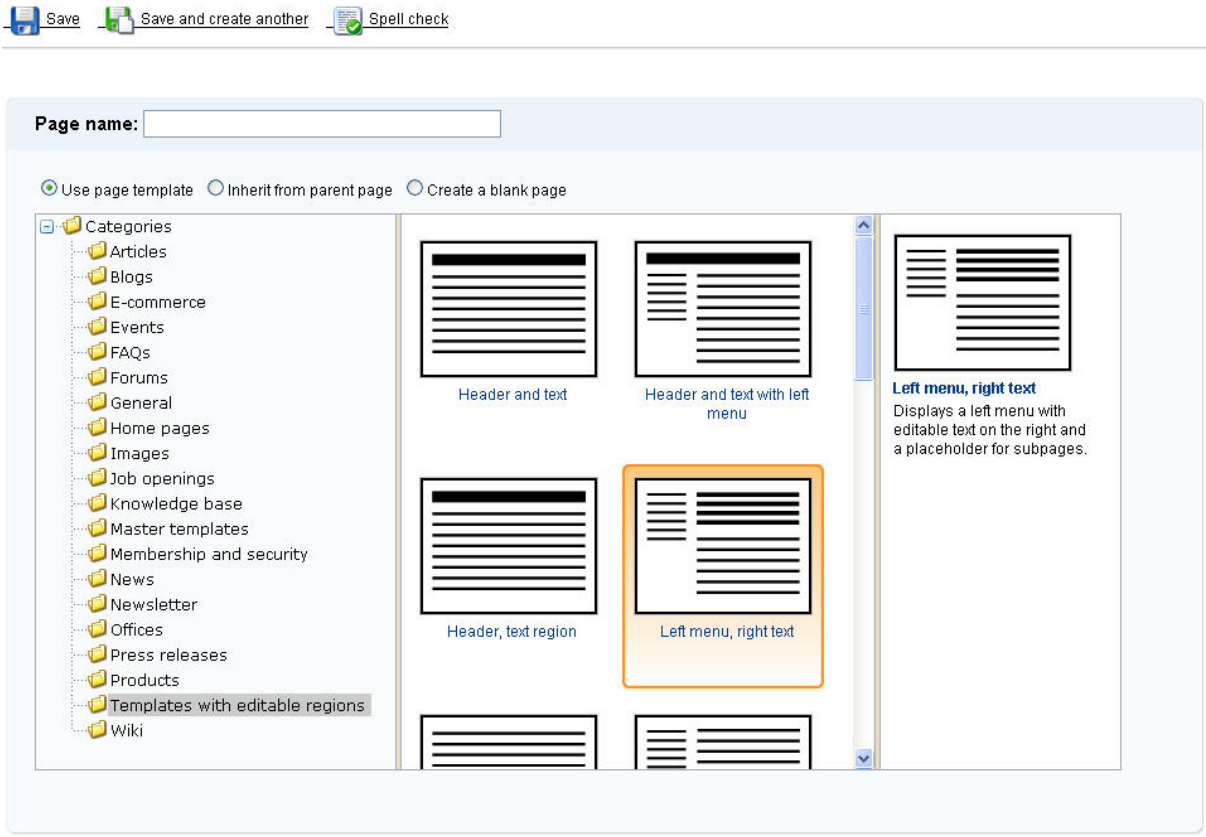
When you're creating a new page, you need to click the **New** button in the main toolbar and choose to create a new document of type Page (menu item):

© 2009 Kentico Software



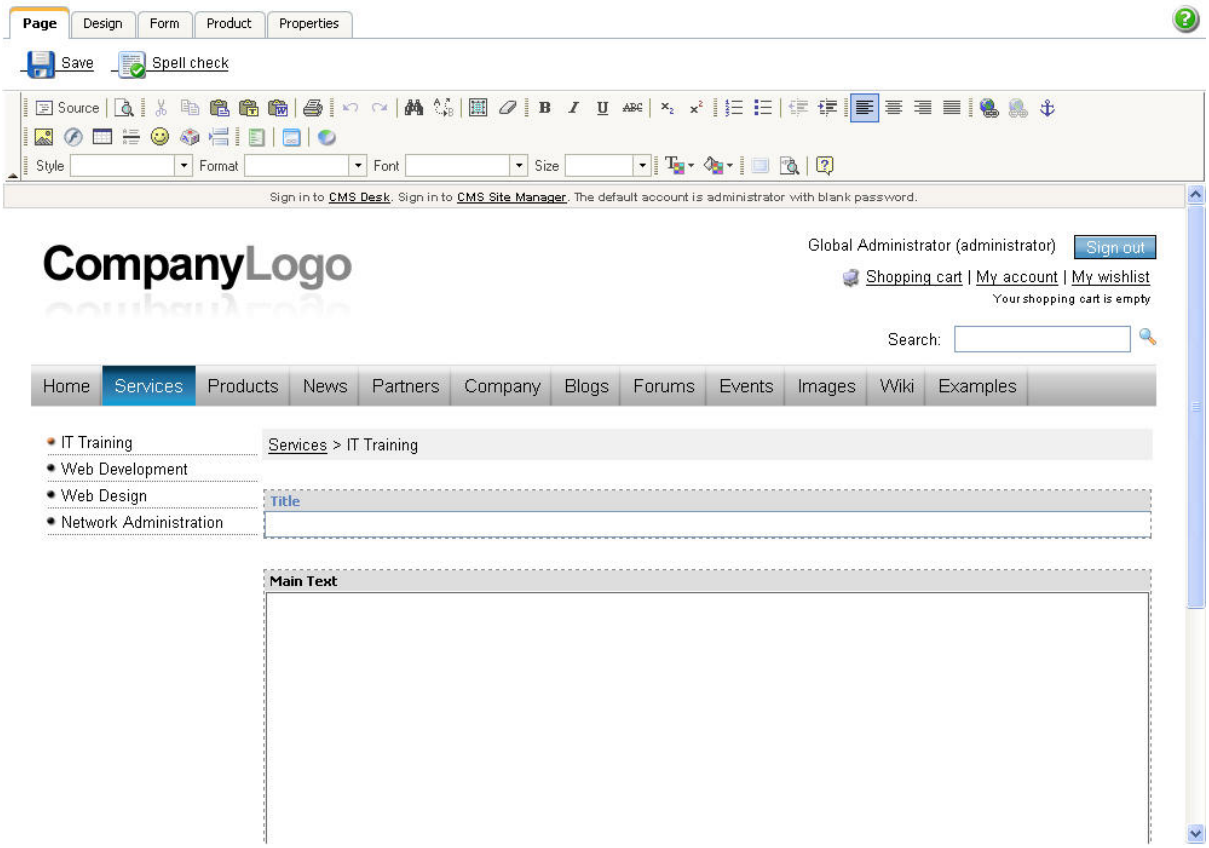
Then, enter the **page name** and select the **page template**. The page template defines the layout and design of the new page:

© 2009 Kentico Software



© 2009 Kentico Software

Click **Save** to create a new page. You're redirected to the Page tab and you can enter some content. Click **Save** to save the changes.



You can alternatively choose one of the following options when creating a new page:

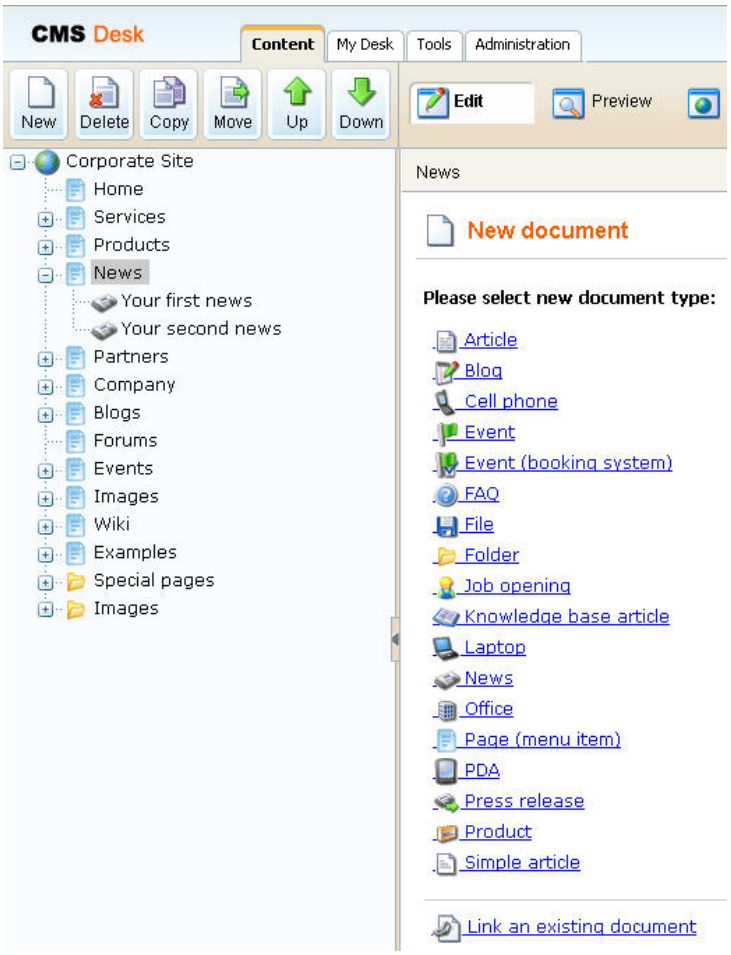
- **Inherit from parent page** - use this option if you want the new page to use the same page template as the parent page.
- **Create a blank page using this layout** - this option is available only to site administrators/ developers who can use it to create a new page that doesn't use any existing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

© 2009 Kentico Software

6.4.2 Creating a new structured document

The following chapters will explain how you can edit the content.

You can create new documents in **CMS Desk -> Content**. Click the document under which the new item should be placed, click **New** and choose the type of the document:



You are then redirected to the appropriate editing form.



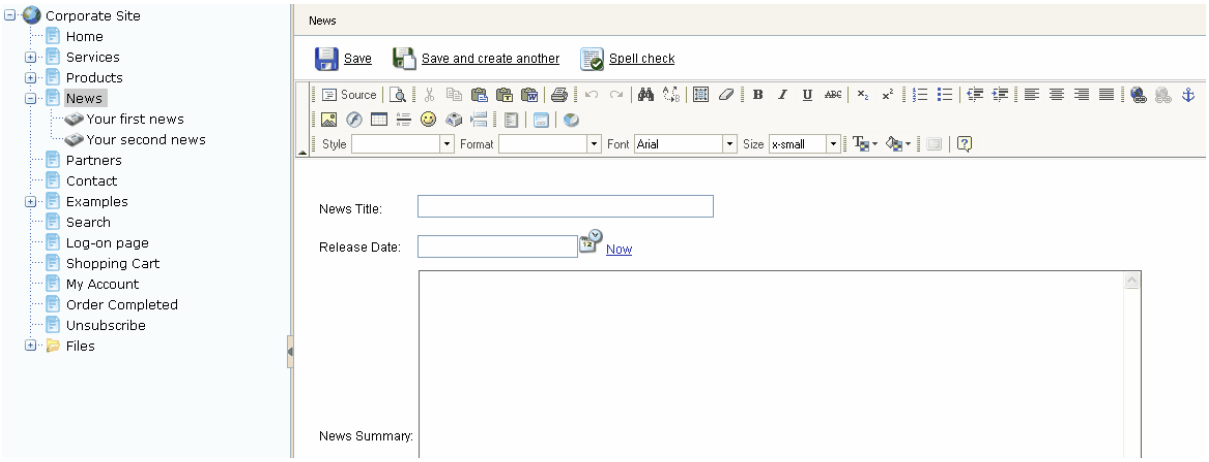
Available document types

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.

© 2009 Kentico Software

Example:

Click **News** in the content tree, click the **New** button and choose to create a new **News** document. You will be displayed with editing form like this:



Enter values like these:

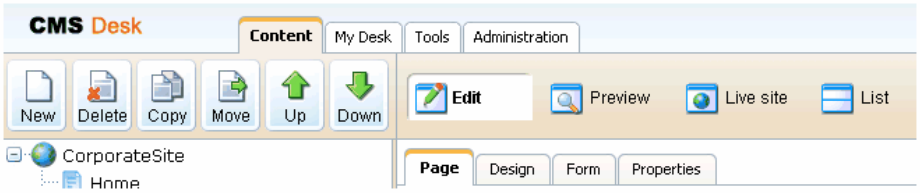
- **News title:** My testing news
- **Released date:** 8/15/2007 (the release date displayed on the web site)
- **News summary:** Some news summary.
- **News text:** Some news text.
- **Publish from:** <leave empty for now, it can be used to specify when the document goes live>
- **Publish to:** <leave 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 or you can 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 enter several documents of the same type in the same location at once.

© 2009 Kentico Software

6.4.3 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.

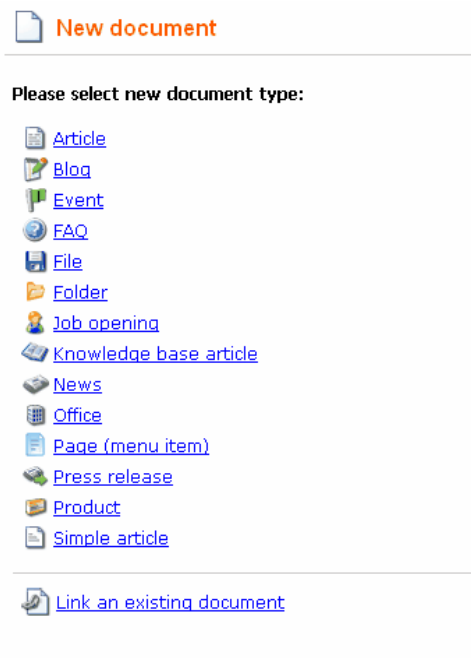
© 2009 Kentico Software

6.4.4 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 web site, but when you edit it, you actually update the original document.

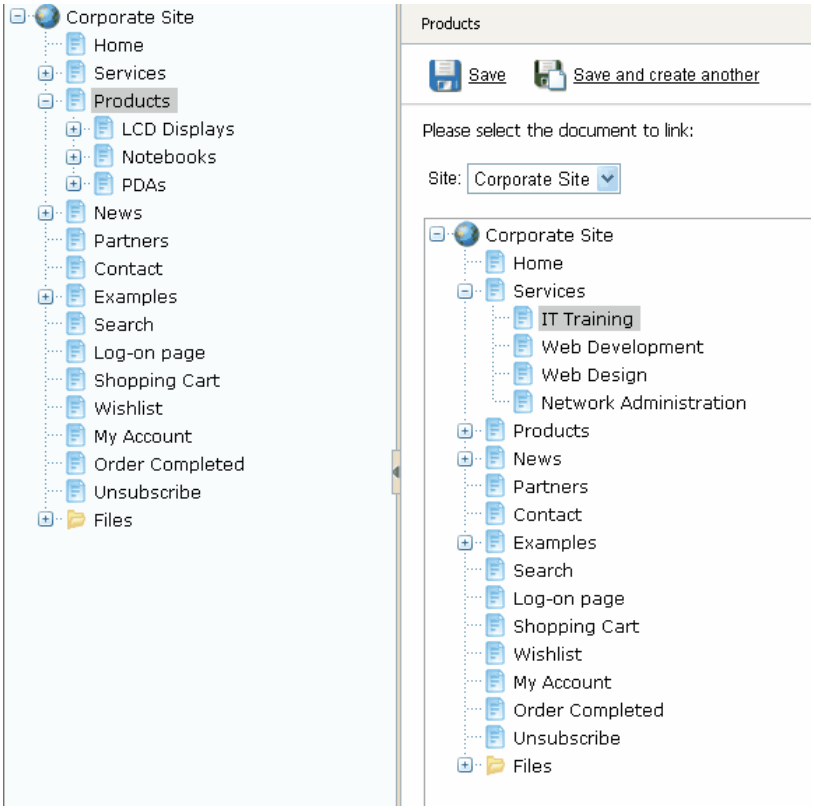
This feature is useful if you need to include a document (product) in multiple site sections (product categories), but keep only one instance of the document.

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

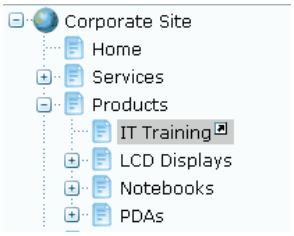


© 2009 Kentico Software

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:



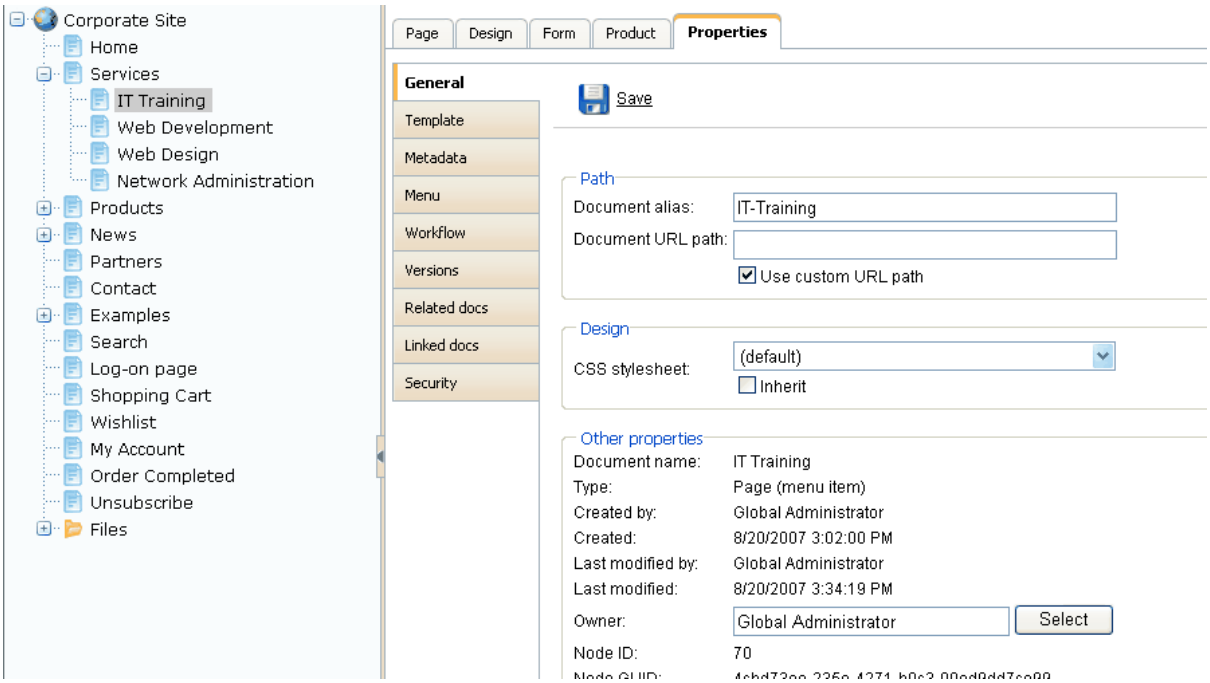
You can see the list of all linked documents for the currently selected document in the Properties -> Linked docs dialog.

© 2009 Kentico Software

6.5 Document properties

6.5.1 Overview

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



Customizing the Properties Dialog

The Properties tab and its sub-sections can be optionally hidden from chosen roles. It allows you to customize and simplify the look of the editing interface.

You need to enable personalization in **Site Manager -> Settings -> Content management -> Personalize user interface by permissions**. Then, you can customize the user interface by configuring permissions for module **CMS User Interface** in **CMS Desk -> Administration -> Permissions**.

© 2009 Kentico Software

6.5.2 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	Document owner is the user responsible for its editing. This feature doesn't imply any special permissions for the owner, but it allows for easier orientation in documents. The owner can see all her documents in **My Desk -> My Documents** section. 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.
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 useful using the Change button to change the group that the document belongs to.
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.

6.5.3 URLs

URLs tab fields:

Document alias	The unique name of the document in the given section of the web site. This name doesn't change when you modify the document name and it's used: 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 www.kentico.com**/products/cms**.aspx where /products/cms is the alias path of the document. **Forbidden characters** 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".

© 2009 Kentico Software

Document URL path	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** 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 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. 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) then when the user comes to /produkt.aspx, the language of the web site is automatically switched to German.
URL extensions	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. In case that the option is disabled, physical file extensions can also be used for **cms.file** documents. Multiple extensions can be entered divided by a semicolon. If you enter a semicolon without any extension, extensionless URLs will be allowed. Example: 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. For this to work, you also need to to set up your IIS for handling the 404 and 405 errors the same way as described here.
Track campaign	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.
Document aliases	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.

© 2009 Kentico Software

6.5.4 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 the parent document.
Do not inherit any content	Document does not inherit any content from the parent page.
Select inherited levels	Using this option, you can specify from which particular levels should the content be inherited.

6.5.5 Metadata

Here your 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 web site.
Page keywords	Keywords used for meta tags of the page and for searching content of the web site.
Page tag group	Tag group that will be used for tagging this document using the Page tags parameter below.
Page tags	Enter the tags that you want to tag the document with.

© 2009 Kentico Software

	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.

© 2009 Kentico Software



Global Settings

You can configure prefix of the page title, description and keywords for all documents on the web site using the Site Manager -> Settings -> Web Site 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.

6.5.6 Categories

Categories are topic-realted groups of documents. On this page, you can assign the selected document to an ulimited 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.
Code name	Code name of 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.

© 2009 Kentico Software

6.5.7 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	Indicates if the document should be displayed in the navigation (in the menus). **Please note:** the document is displayed in the navigation if all of the following conditions are met: 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	Indicates if the document should be displayed by the Site map web part (in the dynamic site map). **Please note:** the document is displayed in the navigation if all of the following conditions are met: 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.

© 2009 Kentico Software

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: *alert('hello')*;*return false*;
URL redirection	The user is redirected to the target location when the menu item of this document is clicked. Example: *http://www.domain.com* or *~/products.aspx*

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. Sample value: *color: orange; font-size: 140%*
Menu item CSS class	CSS class defined in the web site's stylesheet. Sample value: *h1*
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. Sample values: *http://www.domain.com/image.gif* *~/Images-(1)/icon.aspx*
Menu item right image	Image that will be displayed next to the menu caption on the right side. Sample values as above.

© 2009 Kentico Software

6.5.8 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.

6.5.9 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.

6.5.10 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

© 2009 Kentico Software



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.

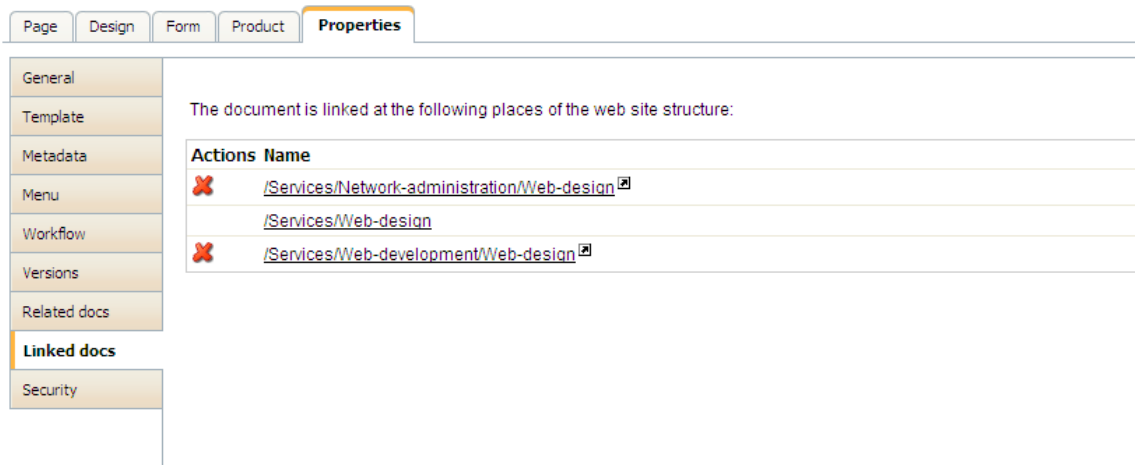
The relationship names need to be defined in **Site Manager -> Development -> Relationship names**. Only relationship names enabled for the current web site are available in the drop-down list.

© 2009 Kentico Software

6.5.11 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:



6.5.12 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 web site areas chapter for more details.

You can also specify if the give page or web site section **requires SSL** (HTTPS) protocol. If you set it to Yes, the CMS automatically redirects the user to the URL with https:// protocol.

© 2009 Kentico Software

© 2009 Kentico Software

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 comming (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

6.5.13 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.

© 2009 Kentico Software

6.5.14 Languages

This tab is displayed only 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.

© 2009 Kentico Software

6.6 File Management

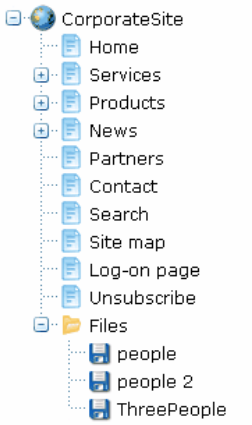
6.6.1 File management overview

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 web site 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.

© 2009 Kentico Software

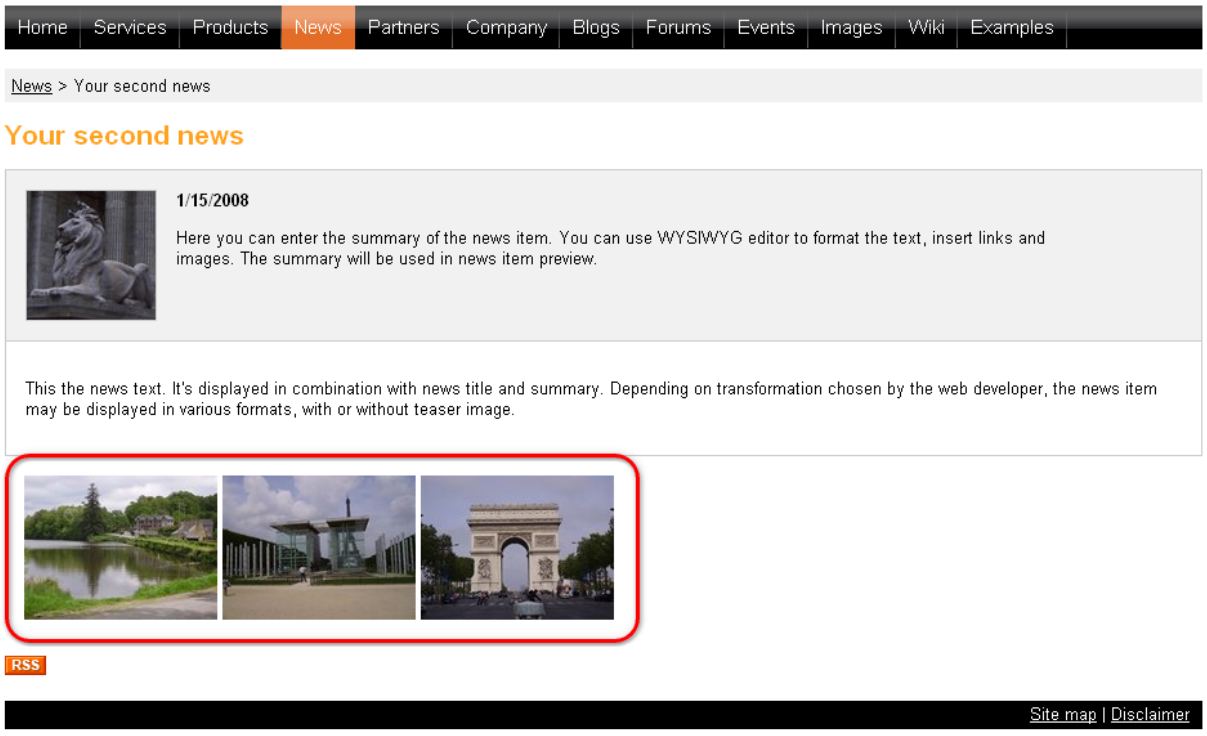
6.6.2 Document Attachments

6.6.2.1 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.



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 ca be uploaded into one File field

The attachments can be displayed with the document using one of the following web parts:

© 2009 Kentico Software

- **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.

© 2009 Kentico Software

6.6.2.2 Example: Unsorted attachments

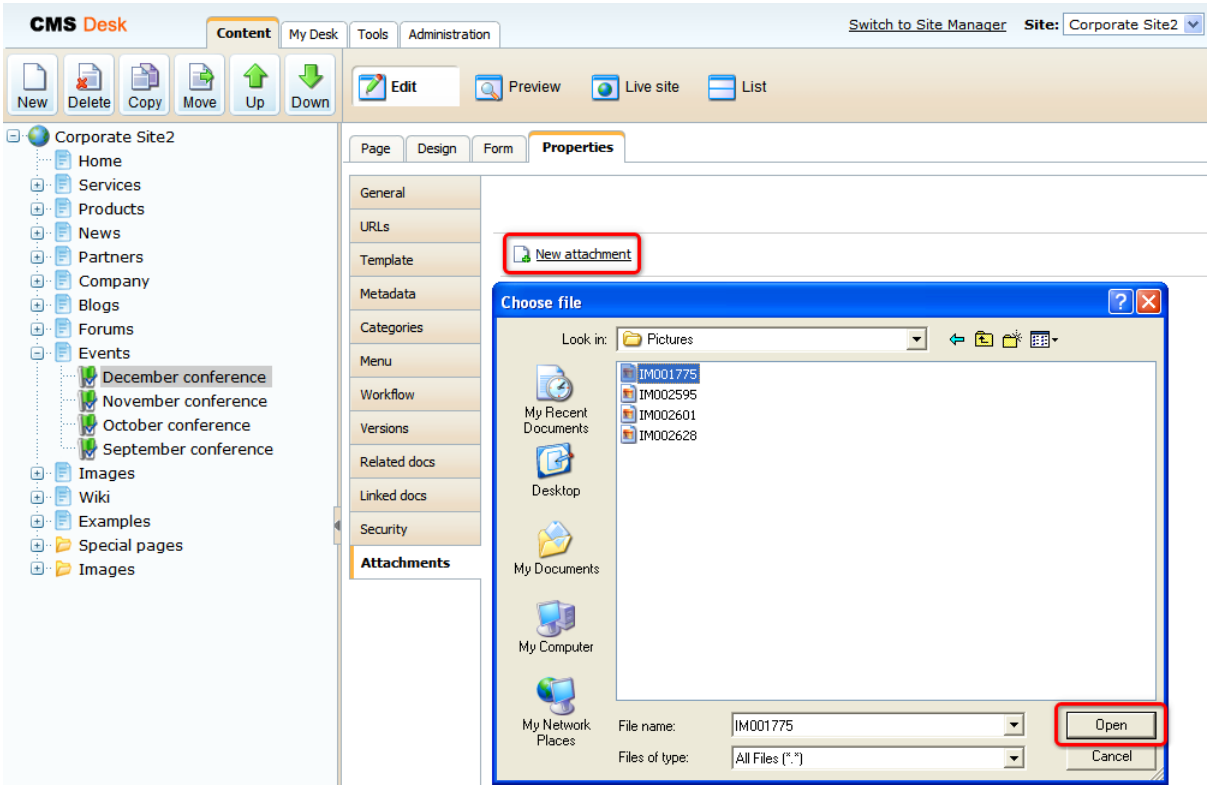
In the following example, you will learn how to add attachments to a document via the **Properties -> Attachments** tab and display them on the live site. We will use the **Events** section of the sample **Corporate Site**. First, we will upload the attachments to some of the events in the section. Then 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.



© 2009 Kentico Software

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:

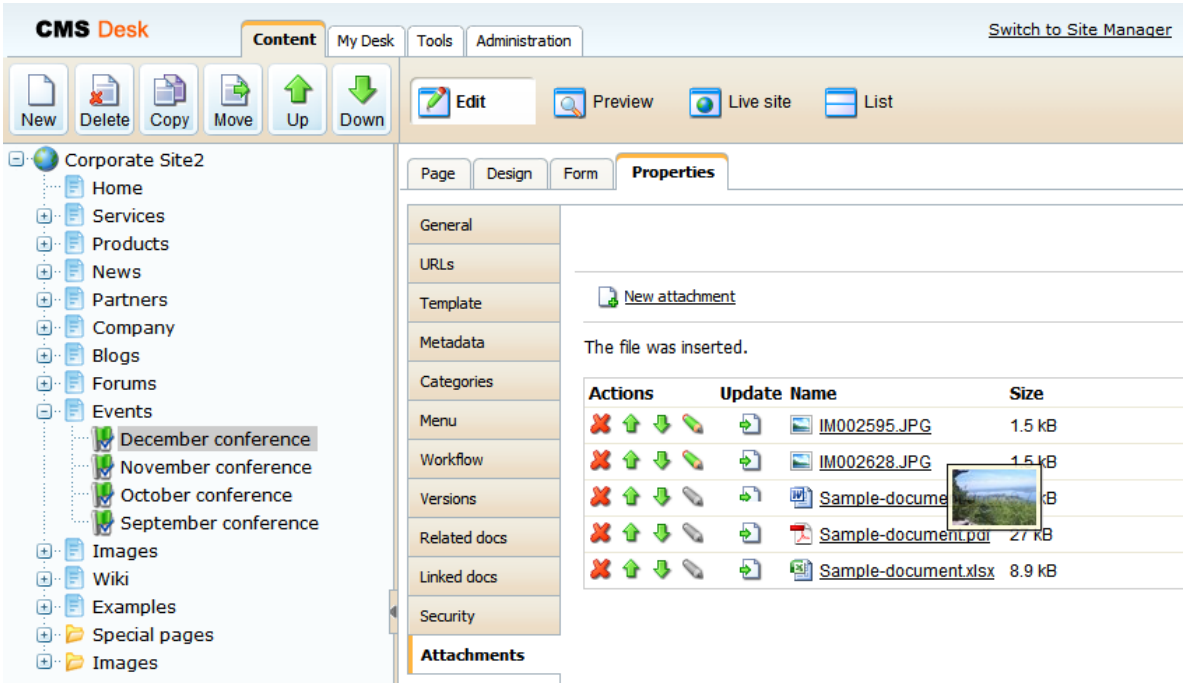
- Using the **Delete** ( ) icon, you can remove the attachment from the document.
- Using the **Move up** ( ) and **Move down** ( ) icons, you can re-order the attachments. The order is stored in the **AttachmentOrder** property of each attachment. You can enter AttachmentOrder into the ORDER BY expression 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.



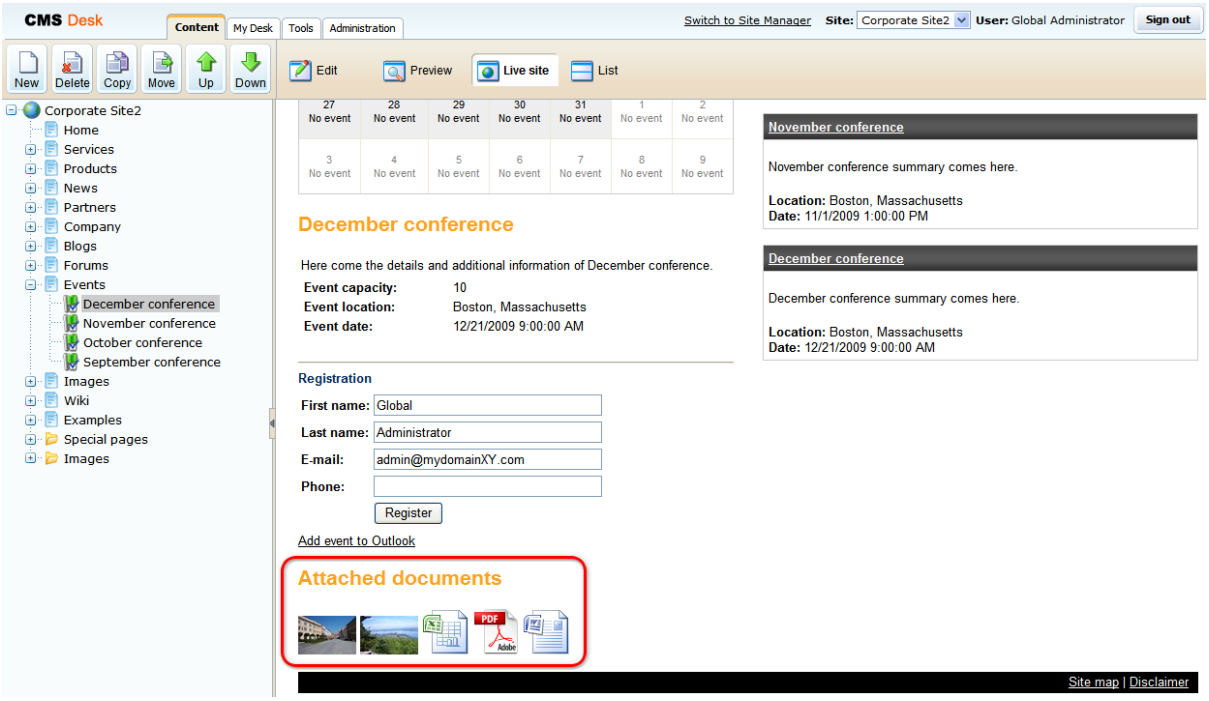
© 2009 Kentico Software

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.



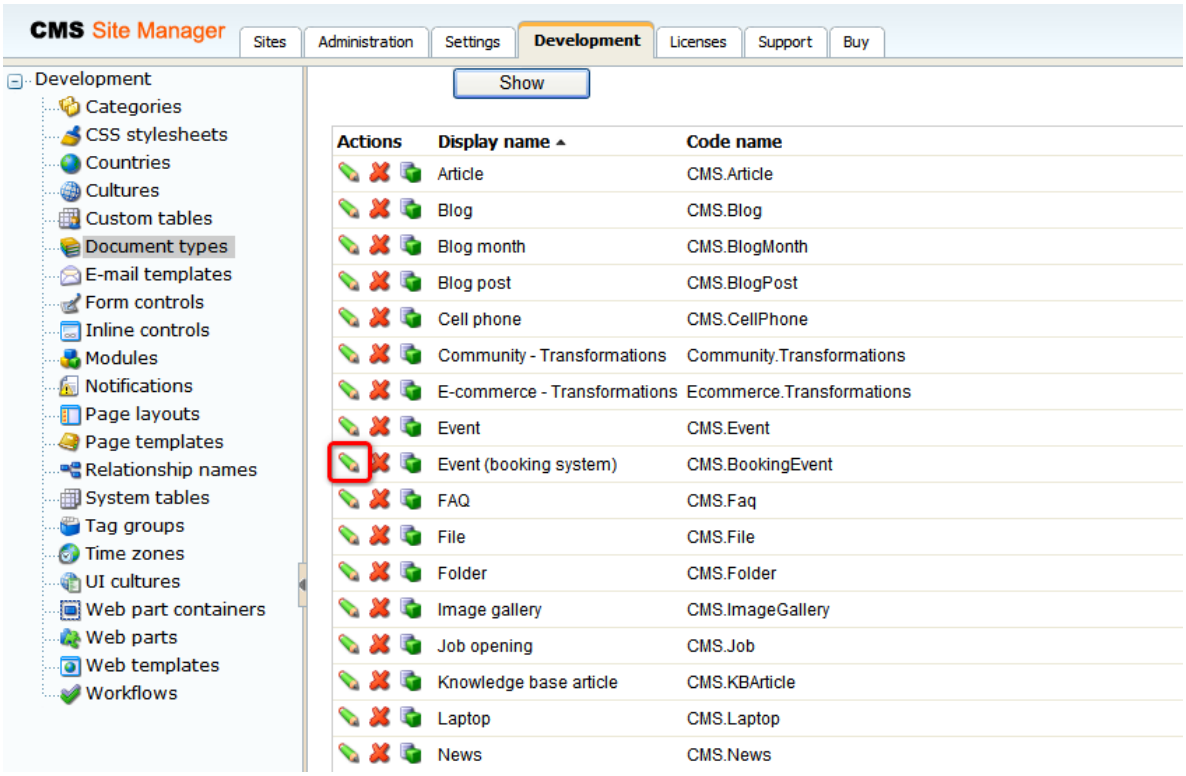
© 2009 Kentico Software

6.6.2.3 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** docuement type.



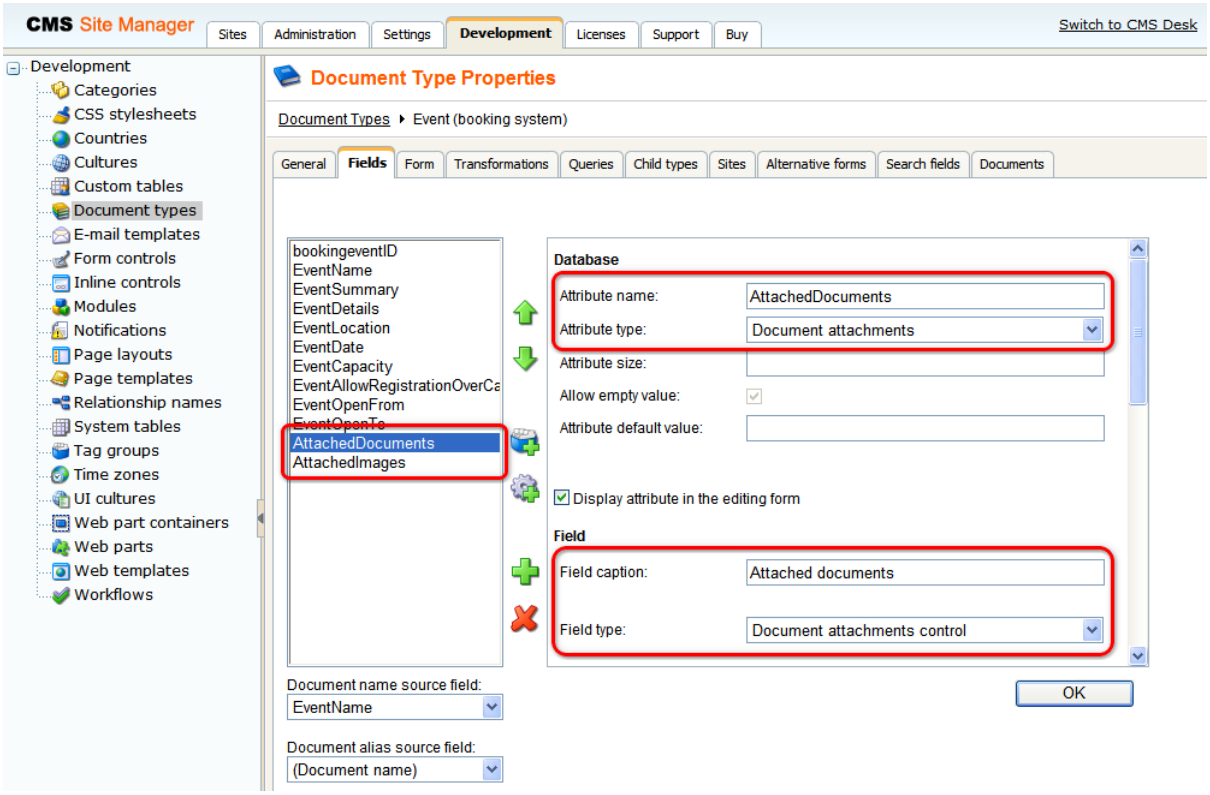
© 2009 Kentico Software

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.



© 2009 Kentico Software

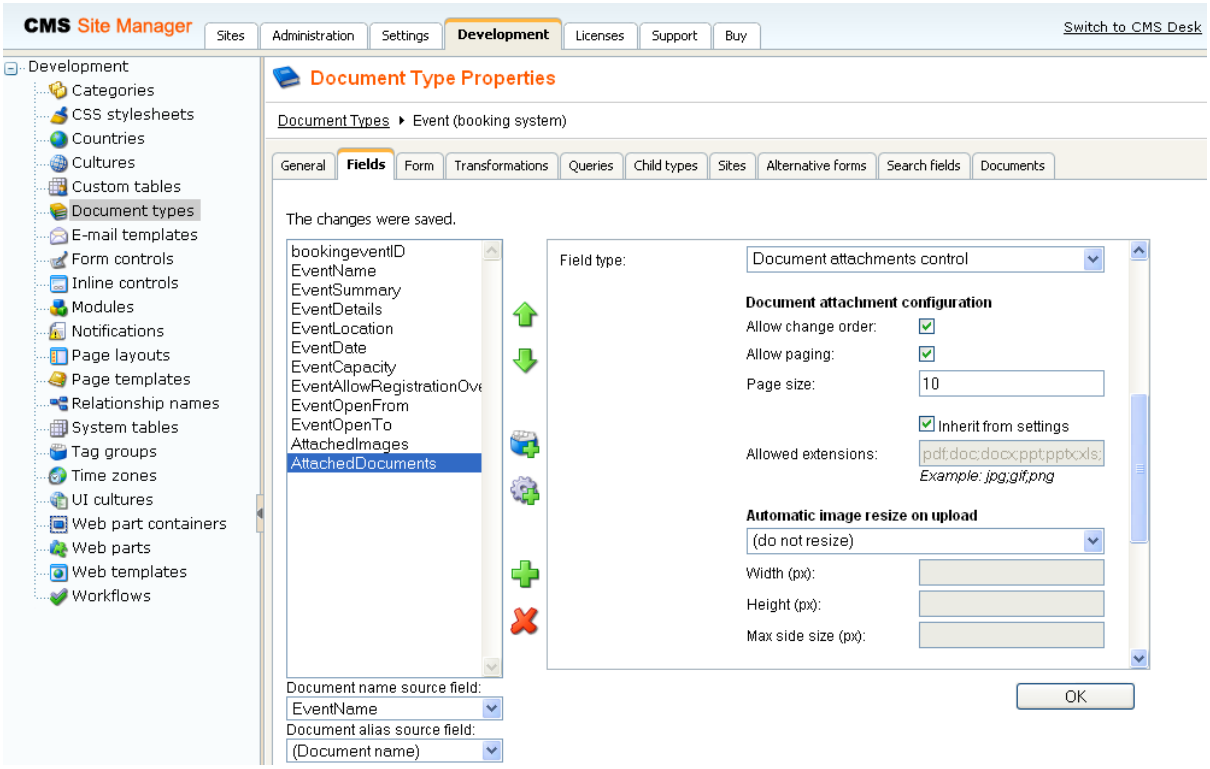
3. Optionally, you can set the following specific properties of the field:

- **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

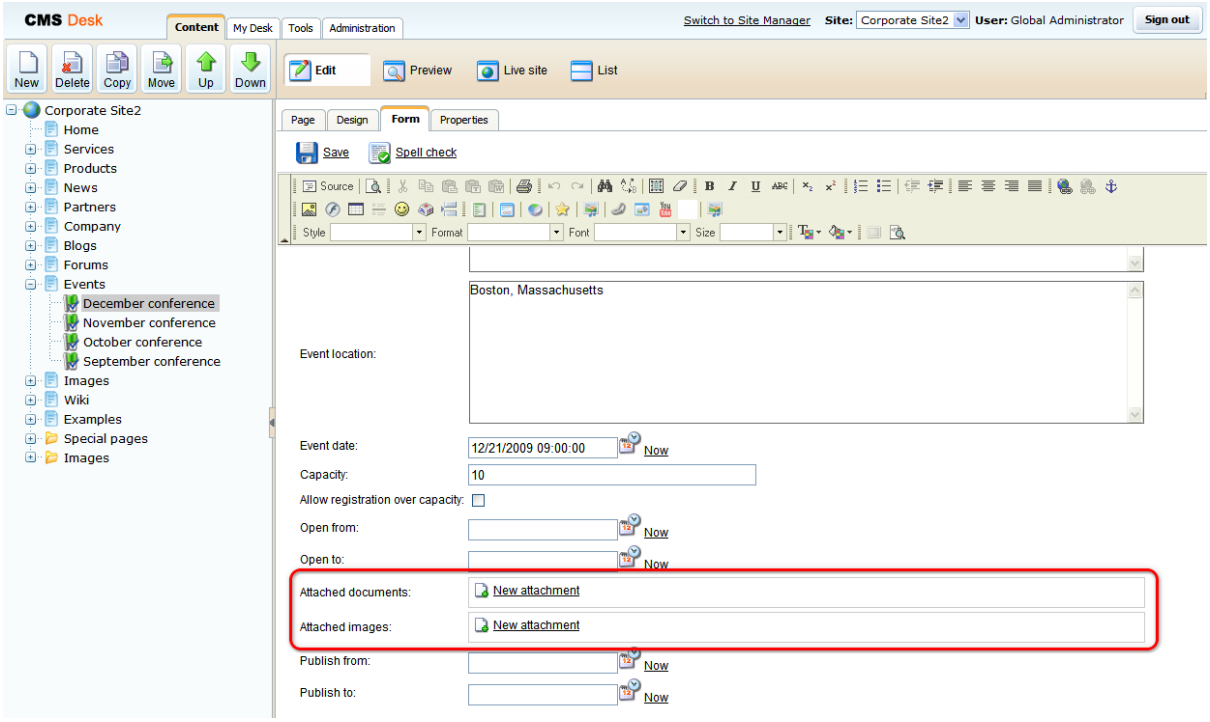
  Depending on which values you fill in the **Width**, **Height** and **Max side size** fields, the functionality is the following:

  - **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 ration 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



© 2009 Kentico Software

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.



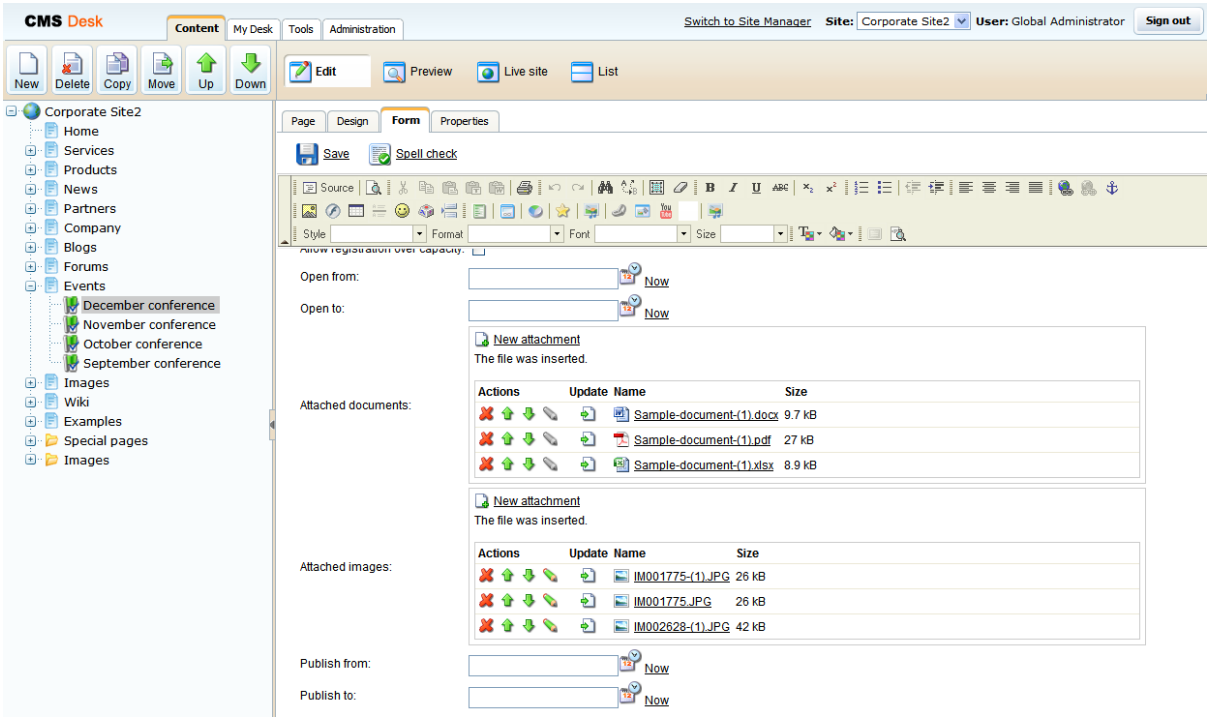
5. Use the **New attachment** ( ) link to add attachments into both fields. According to the name of the field, upload some documents into the first one and some images into the second one.

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.



© 2009 Kentico Software

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>

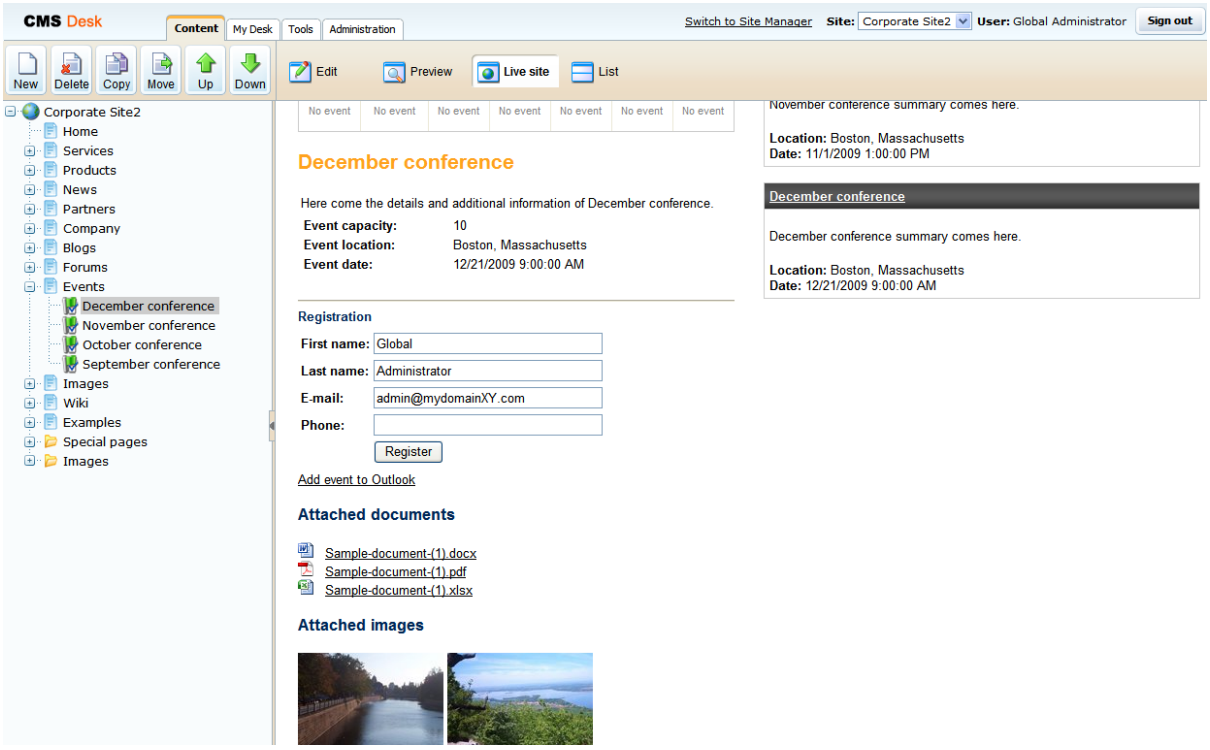
Click **OK**.

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**.

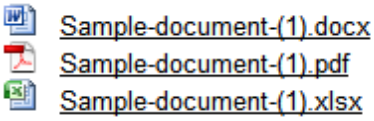
8. If you switch to the live site now, you should see the two web parts displaying the attachments, each web part one group defined earlier in this example. If you add attachments to any other event, they would be displayed with the event too.



6.6.2.4 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*

© 2009 Kentico Software

- **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.

© 2009 Kentico Software

6.6.2.5 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

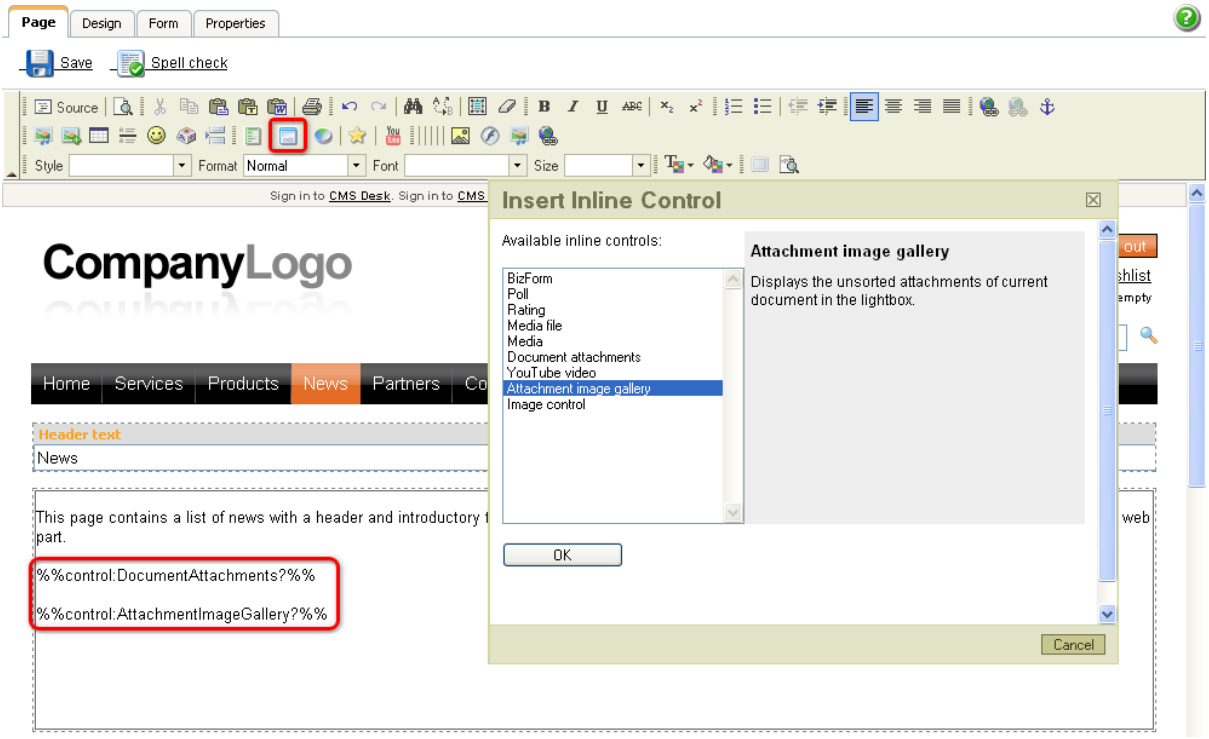
Displays the document's unsorted attachments' thumbnails based on the **cms.root.attachmentLightbox** transformation. After clicking the thumbnail, the attachment is displayed in a lightbox based on the **cms.root.attachmentLightboxDetail** transformation.

In the Editable text's text area, the control is reperesented 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 reperesented by the following string: *%%control: DocumentAttachments?%%*



© 2009 Kentico Software

6.6.2.6 Handling attachments in transformations

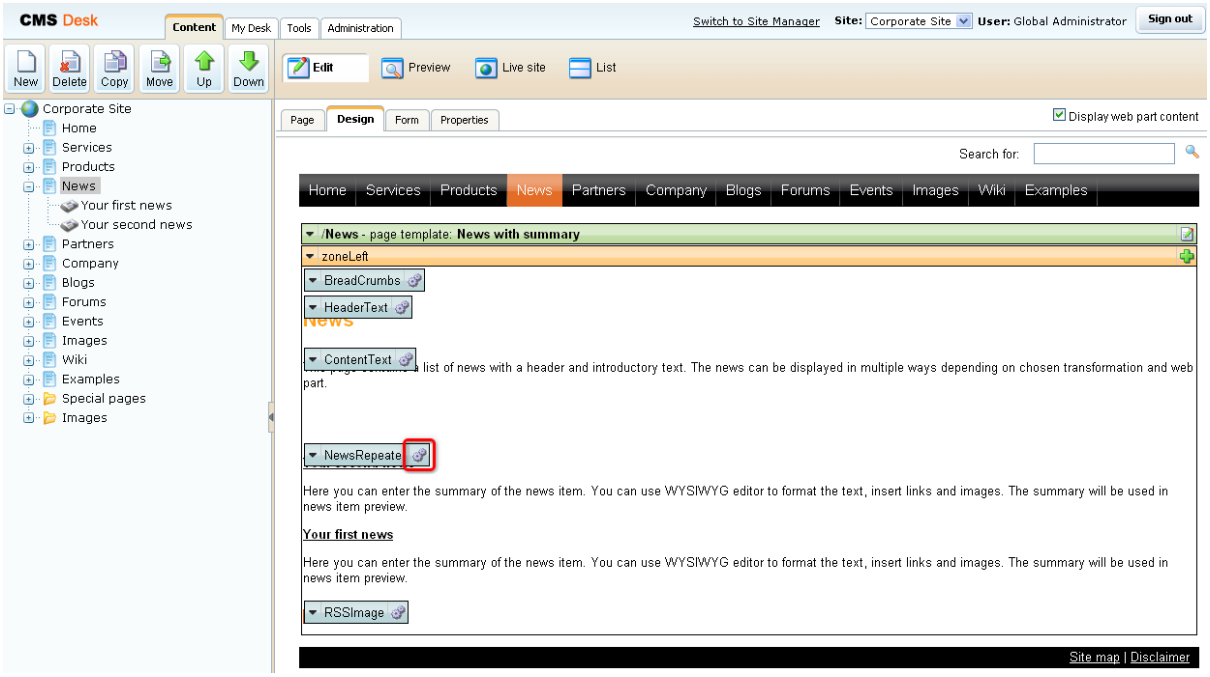
You can display document's unsorted attachments by adding one of the following two controls directly into the transformations:

- **~/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.

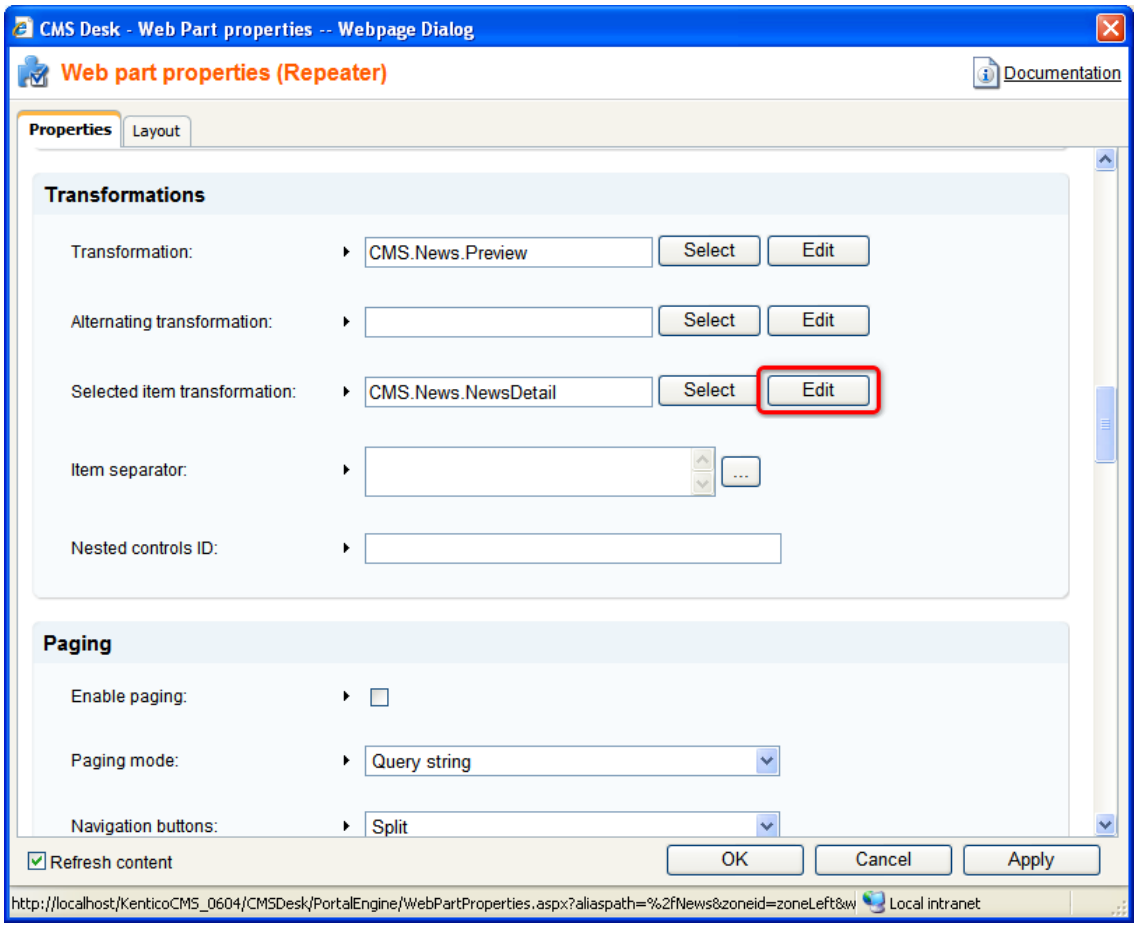
The news are displayed on the News page using a **Repeater**. Detail view of each news item is displayed using the **CMS.News.NewsDetail** transformation. We will modify this transformation so that it displays the attachments along with the news summary and text.

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.



© 2009 Kentico Software

2. In the web part properties window, choose to **Edit** the **Selected item transformation**.



© 2009 Kentico Software

3. Replace the original transformation with the following code, which is the original transformation with the highlighted parts added.

```
<%@ Register Src="~/CMSAdminControls/Attachments/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"> </div>
</div>
<div class="NewsBody">
  <%# Eval("NewsText") %>
</div>

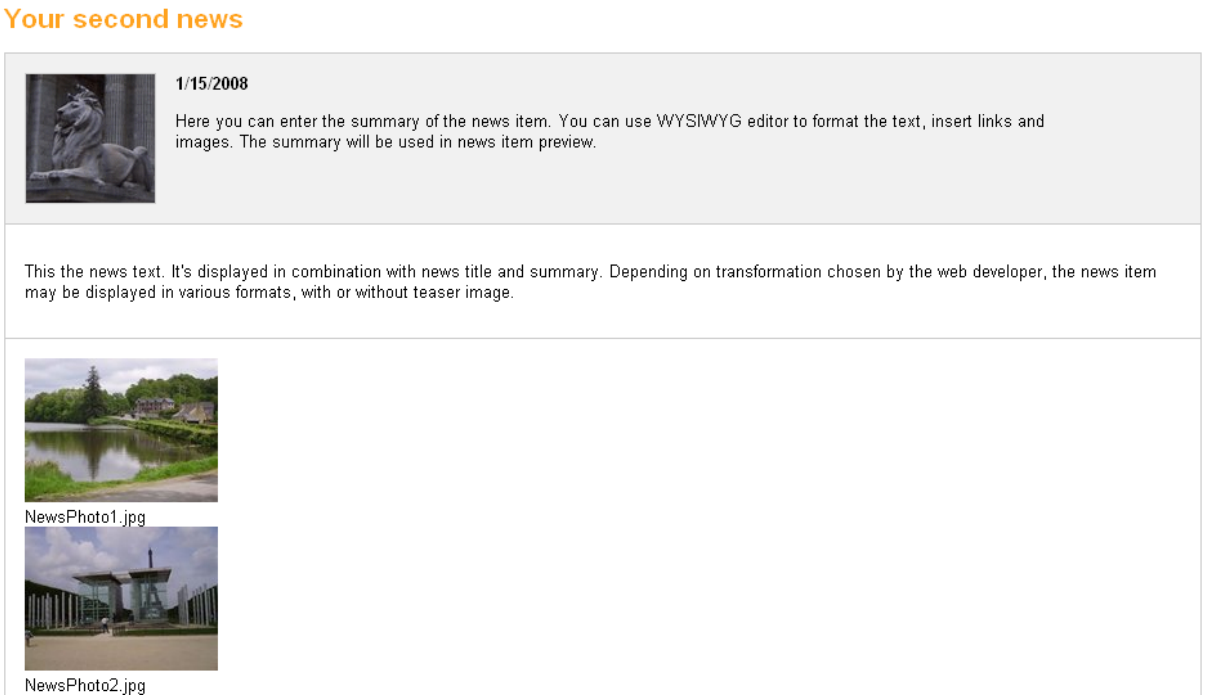
<div class="NewsBody">
<cms:DocumentAttachments ID="ucDocAttachments" runat="server"
TransformationName="cms.root.attachment" Path='<%# Eval("NodeAliasPath") %>' />
</div>

</div>
```

Click **Save**. Click **OK** in the web part properties window.

© 2009 Kentico Software

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.



© 2009 Kentico Software

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="~/CMSAdminControls/Attachments/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"> </div>
</div>
<div class="NewsBody">
  <%# Eval("NewsText") %>
</div>

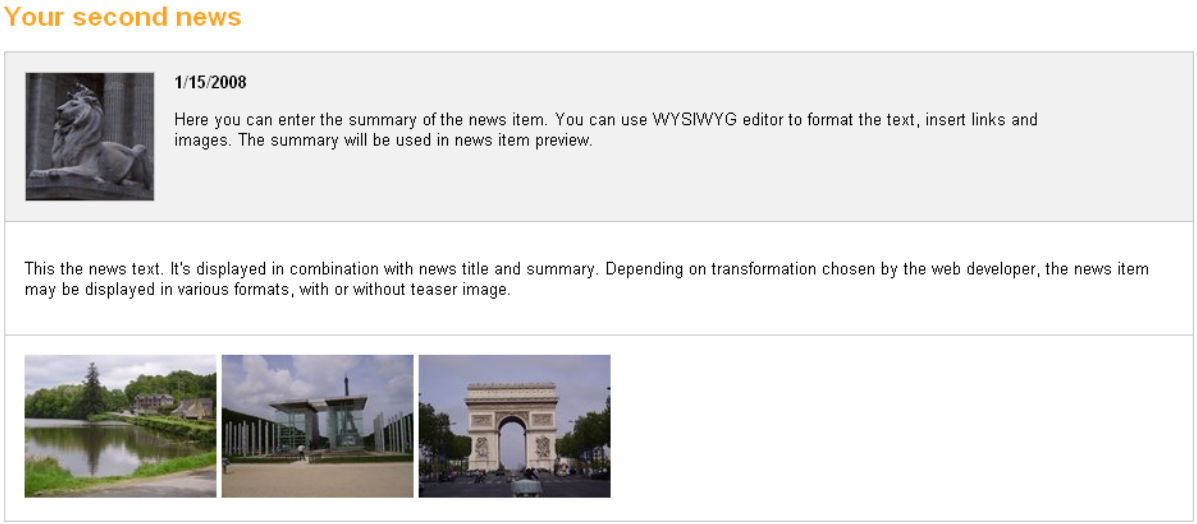
<div class="NewsBody">
<cms:AttachmentLightboxGallery ID="ucDocAttachments" runat="server"
TransformationName="cms.root.attachmentLightbox"
SelectedItemTransformationName="cms.root.attachmentLightboxDetail" Path='<%# Eval
("NodeAliasPath") %>' />
</div>

</div>
```

Click **Save**. Click **OK** in the web part properties window.

© 2009 Kentico Software

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.



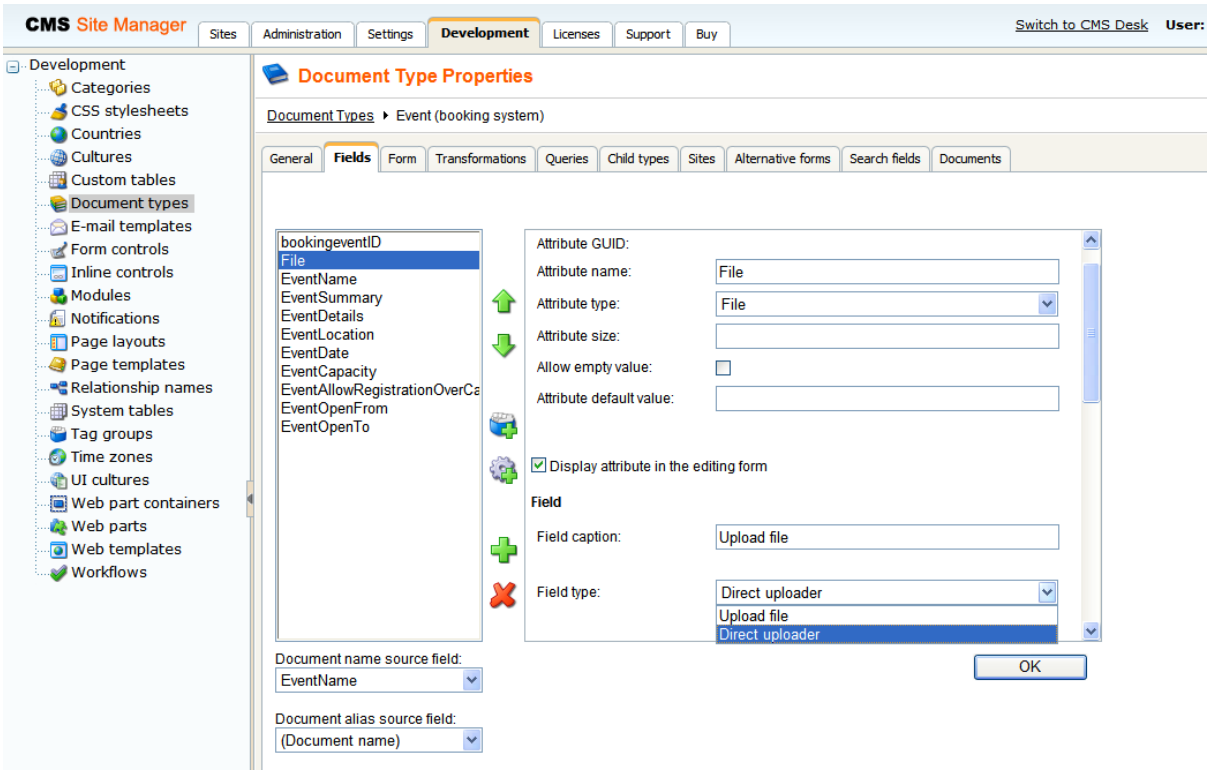
Please note: the appearance shown in this example is based on the controls' default transformations. You can fully customize the appearance by modifying the default transformations or creating your own transformations and specifying them in the **TransformationName** and **SelectedItemTransformationName** properties of the controls.

© 2009 Kentico Software

6.6.2.7 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.



© 2009 Kentico Software

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**

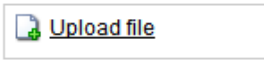
  This is the original control which was used in the previous versions.



- **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:



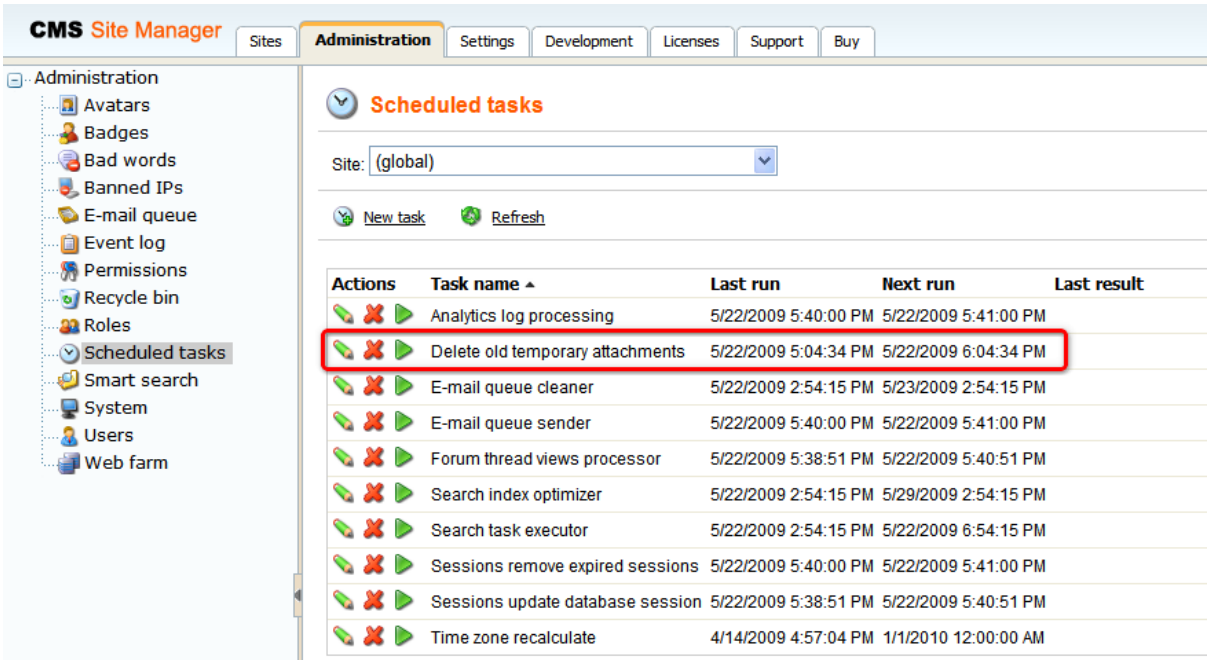
© 2009 Kentico Software

6.6.2.8 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.



© 2009 Kentico Software

6.6.2.9 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:

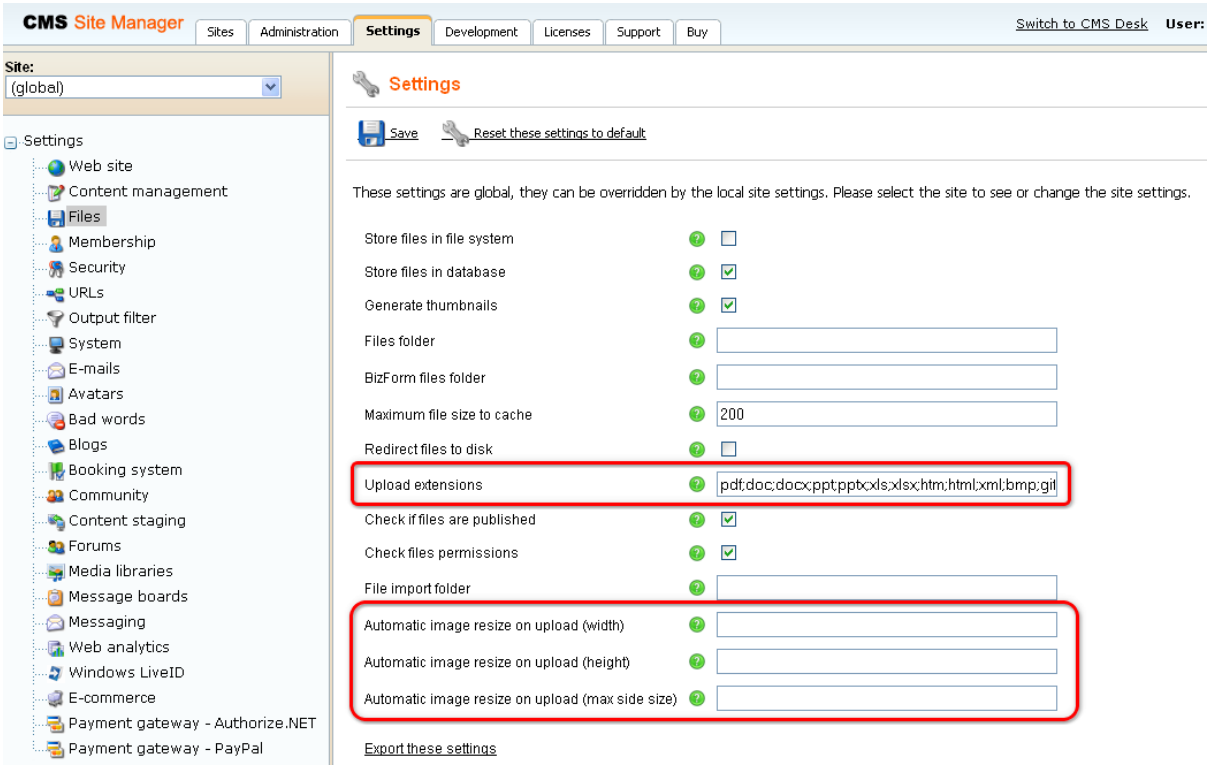
- **~/getattachment/<node_alias_path>/<safe_filename>.<extension>**

6.6.2.10 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



© 2009 Kentico Software

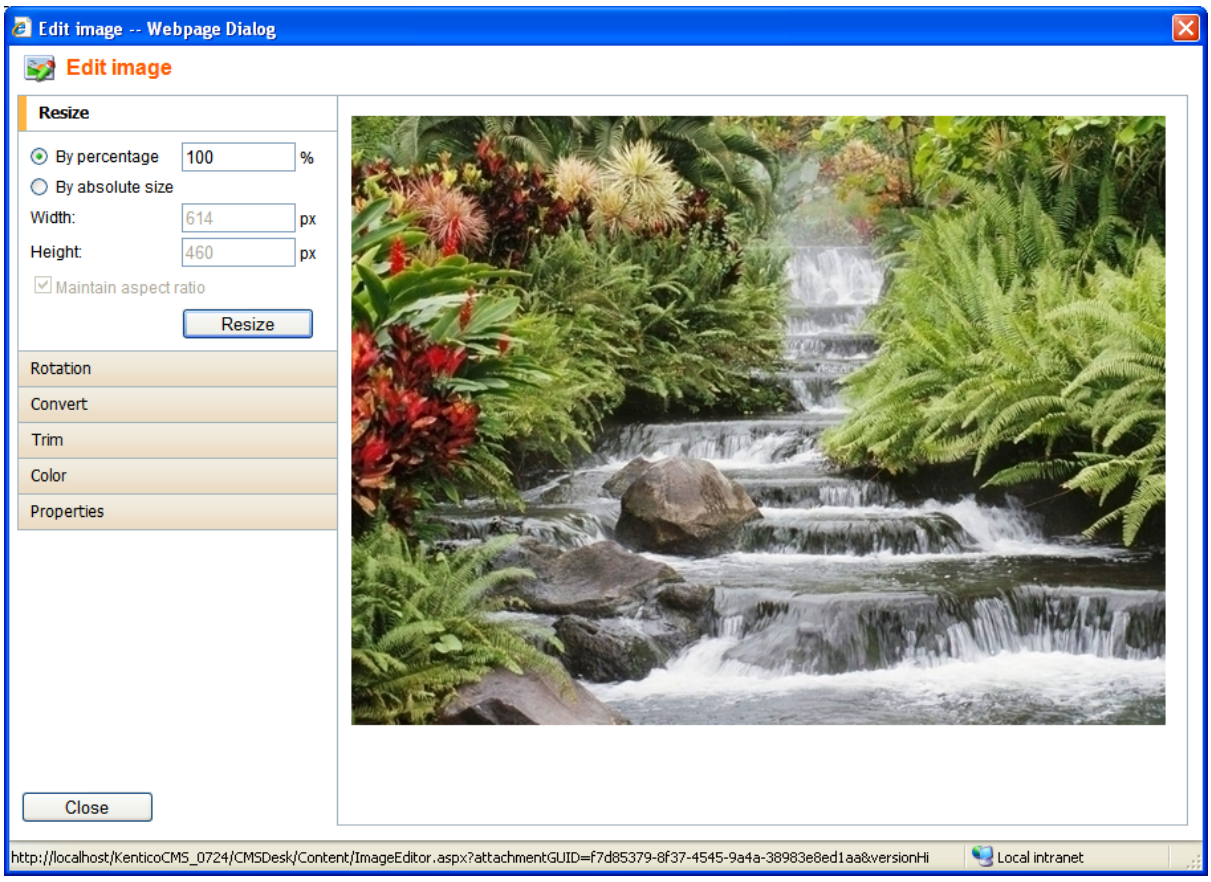
6.6.3 Handling images

6.6.3.1 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

© 2009 Kentico Software

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

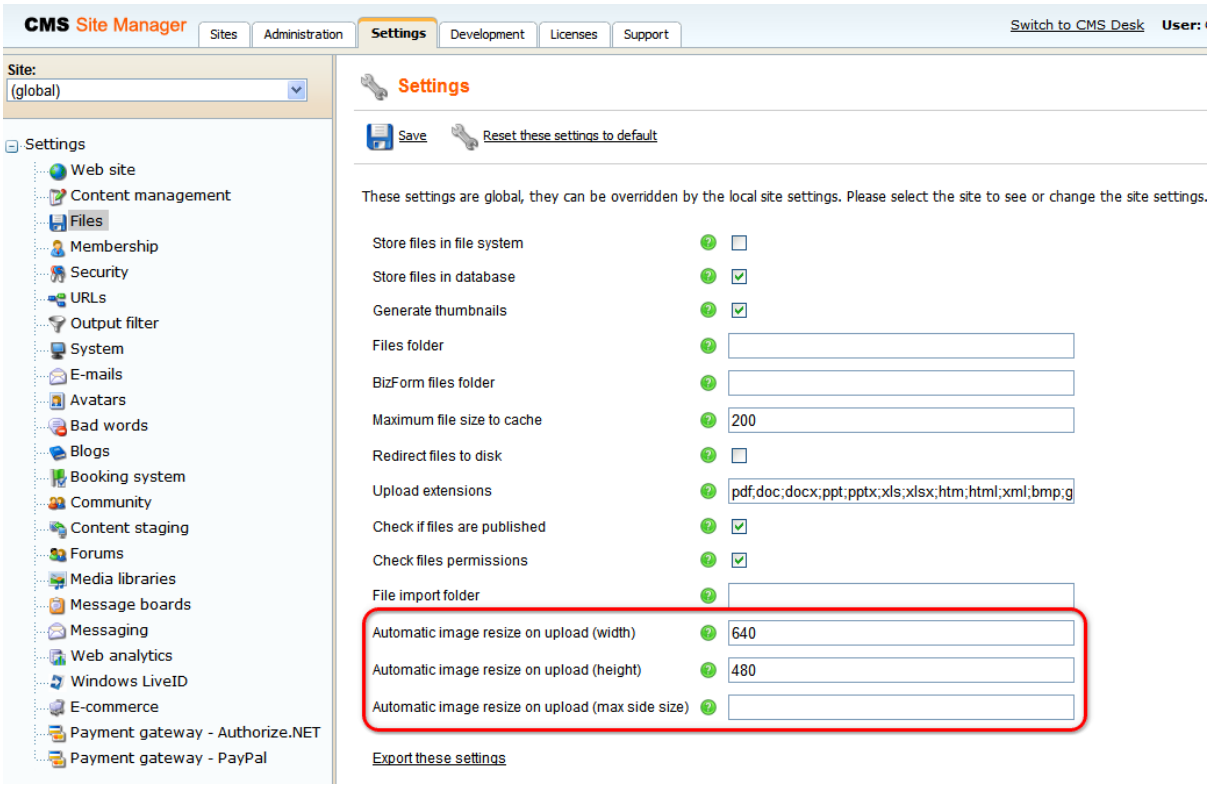
You can rename the file using the **File name** field and see the file's **Extension**, **Size**, **Width** and **Height** on this tab.

© 2009 Kentico Software

6.6.3.2 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** - 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



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.

© 2009 Kentico Software

- **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

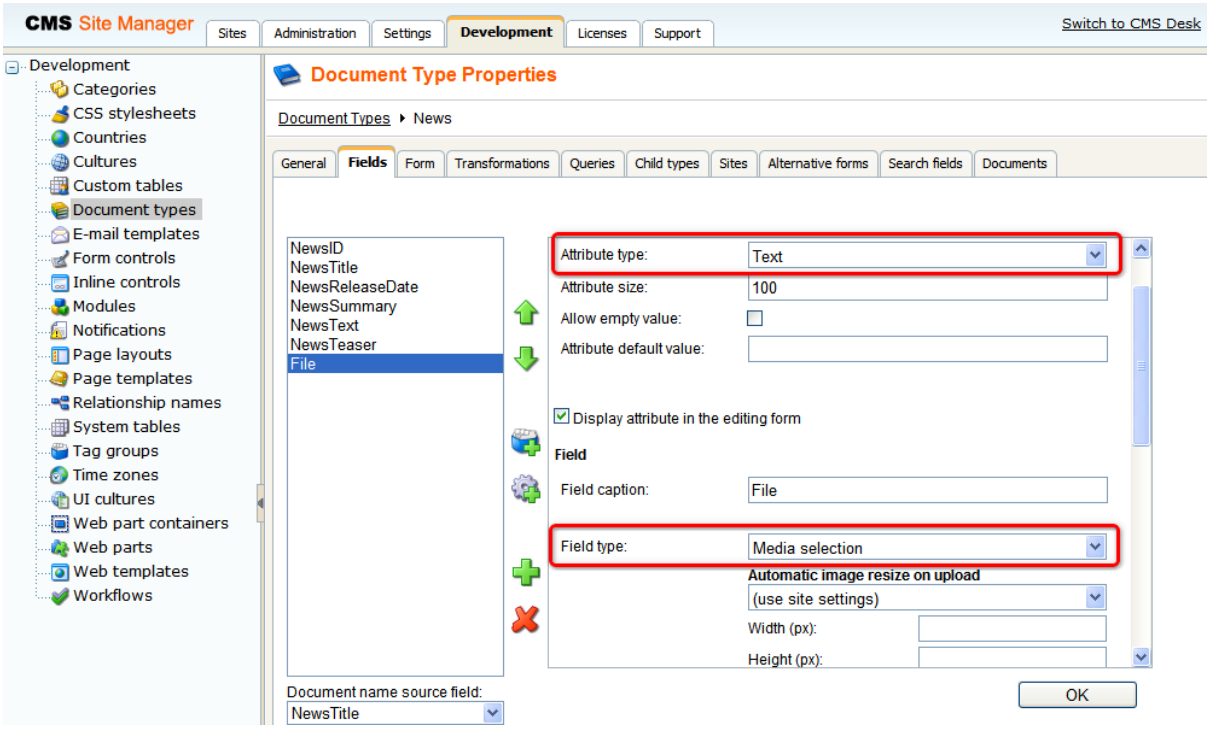
The default settings defined here can be **overridden by local settings** in the particular parts of the user interface (e.g. web part properties, field editor, WYSIWYG editor dialogs, etc.).

6.6.4 Using the Media selection control

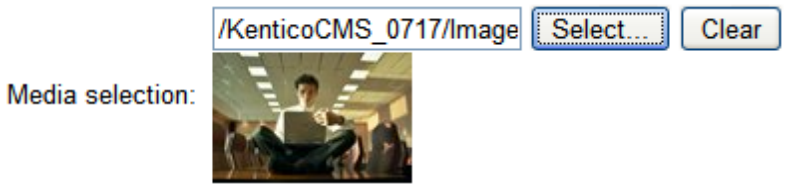
The Media selection form control can be used to enable users to select any types of files on a document's **Form** tab.

When defining the filed in field editor, you need to choose:

- **Attribute type**: Text
- **Field type**: Media selection



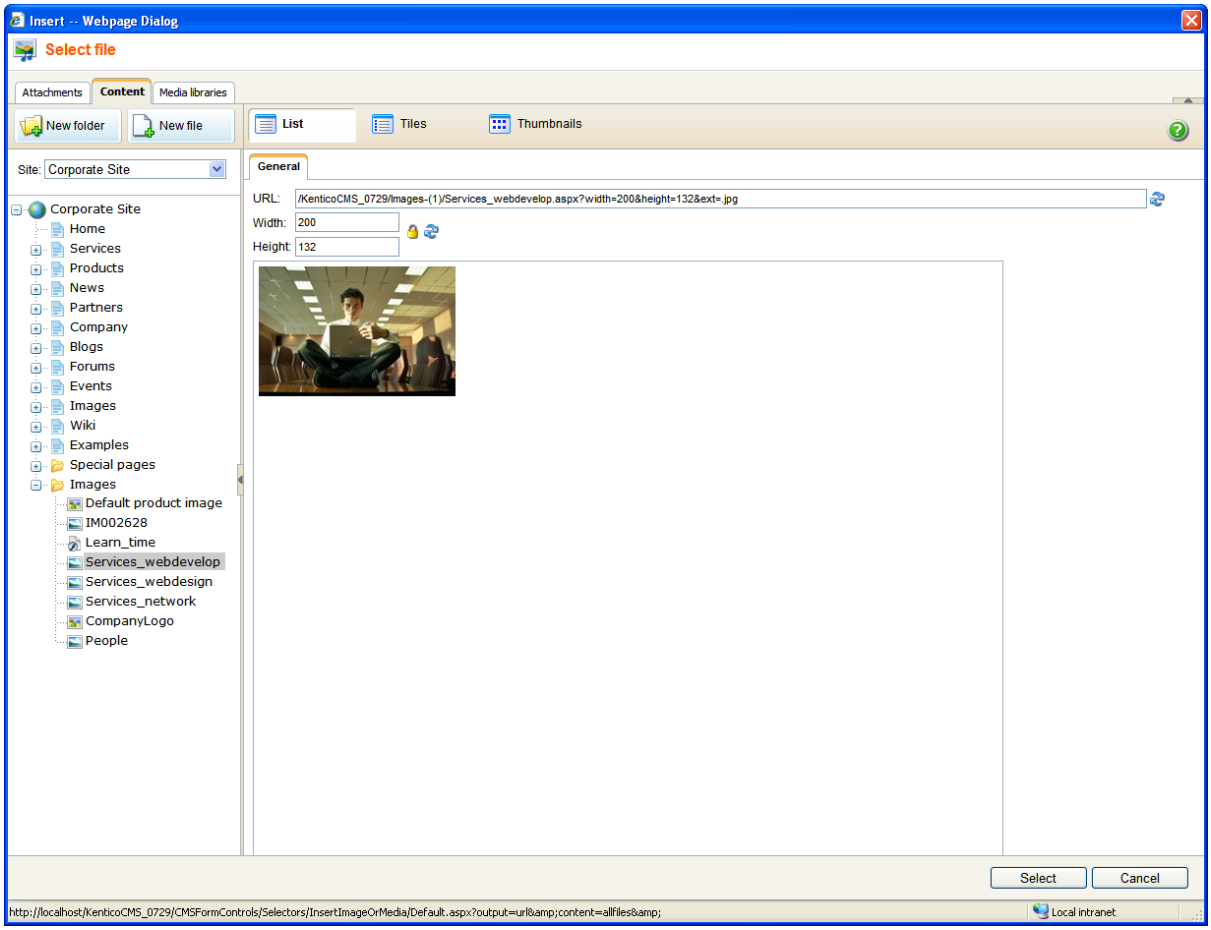
In the screenshot below, you can see the default appearance of the control on the **Form** tab. Notice that a preview of the currently selected image is displayed below the selection controls:



When the **Select...** button is clicked, the **Select file** dialog opens.

© 2009 Kentico Software

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
```

© 2009 Kentico Software

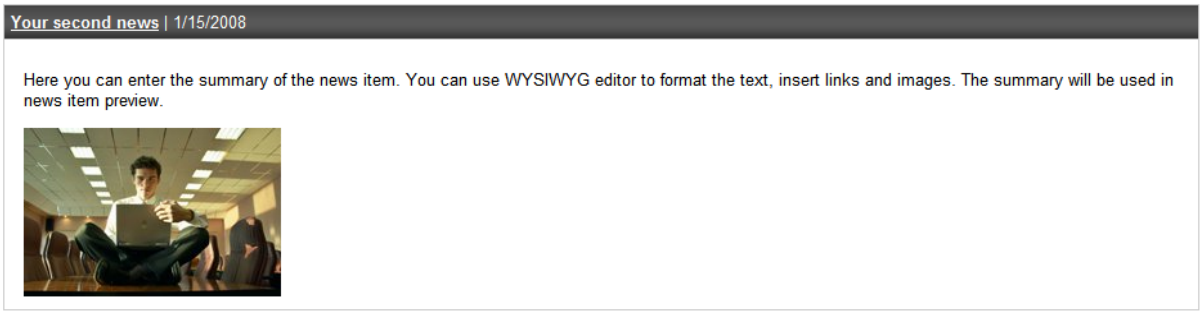
Displaying selected items in transformations

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> | <%# GetDateTime("NewsReleaseDate", "d")
%>
</div>
<div class="NewsPBody">
  <%# Eval("NewsSummary") %>
  <cms:Media id="mediaElem1" runat="server" Url='<%# Eval<string>("File")%>' />
</div>
```

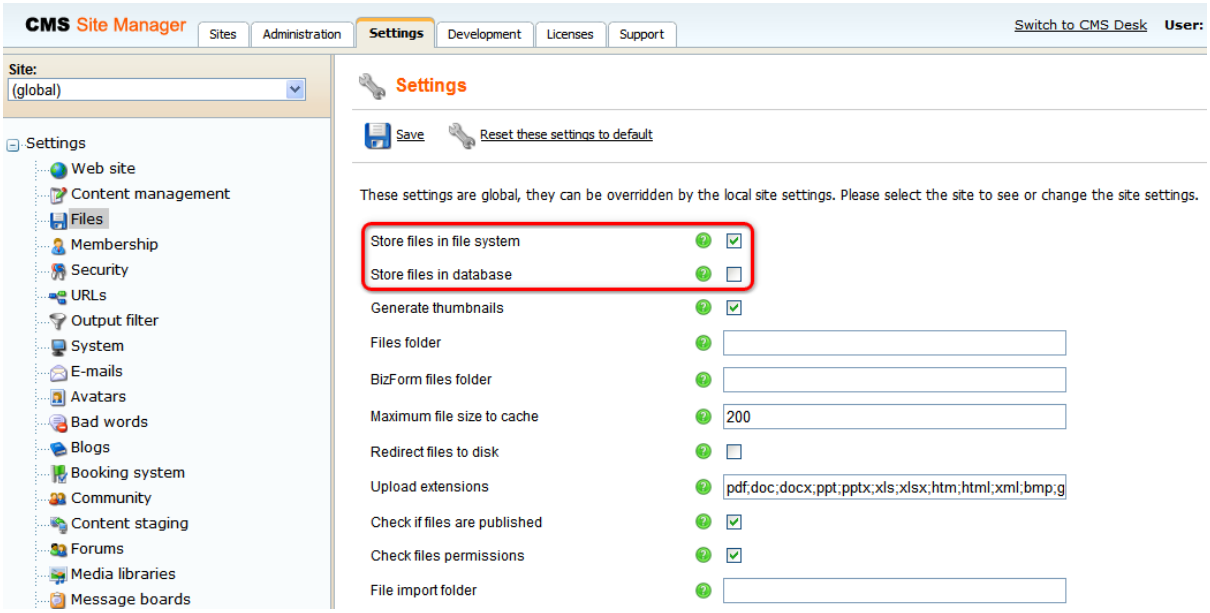
And this is the result rendered on the live site:



© 2009 Kentico Software

6.6.5 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 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.

© 2009 Kentico Software

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

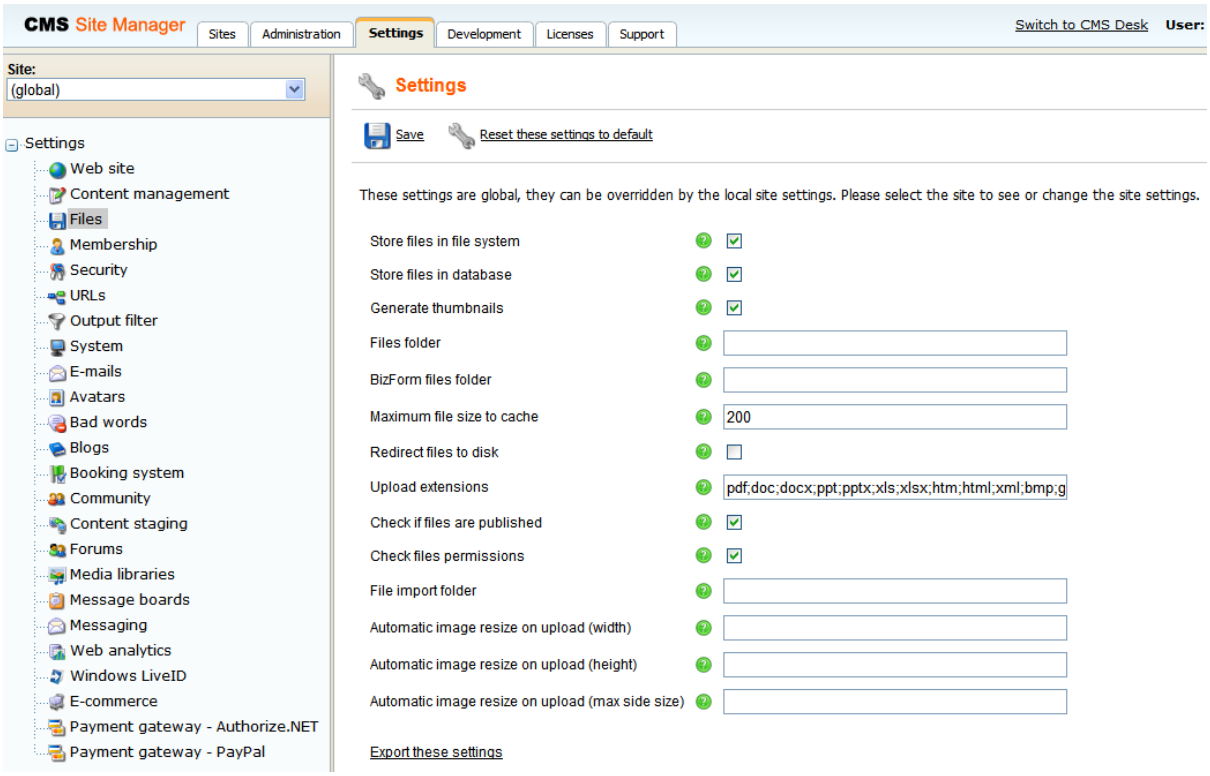
Files uploaded by site users into BizForms are always stored in the file system. The default location is *~/<site code name>/BizFormFiles*. You can customize the location in **Site Manager -> Settings -> Files -> BizForm files folder**.

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.

6.6.6 Files-related settings

You can configure the file storage in **Site Manager -> Settings -> Files**.



© 2009 Kentico Software

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 • **physical disk path** - e.g. c:\myfiles\mysite • **virtual path** - ~/UploadedFiles If you do not specify any value, the files are stored in folder ~/<site code name>/files.
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.

© 2009 Kentico Software

6.7 WYSIWYG editor

6.7.1 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.

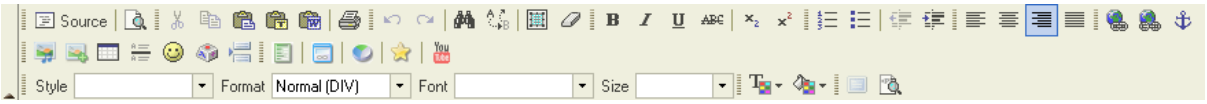
Where is the editor displayed

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 web site 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

© 2009 Kentico Software

	chapter.

© 2009 Kentico Software

6.7.2 Insert image or media

6.7.2.1 Overview

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

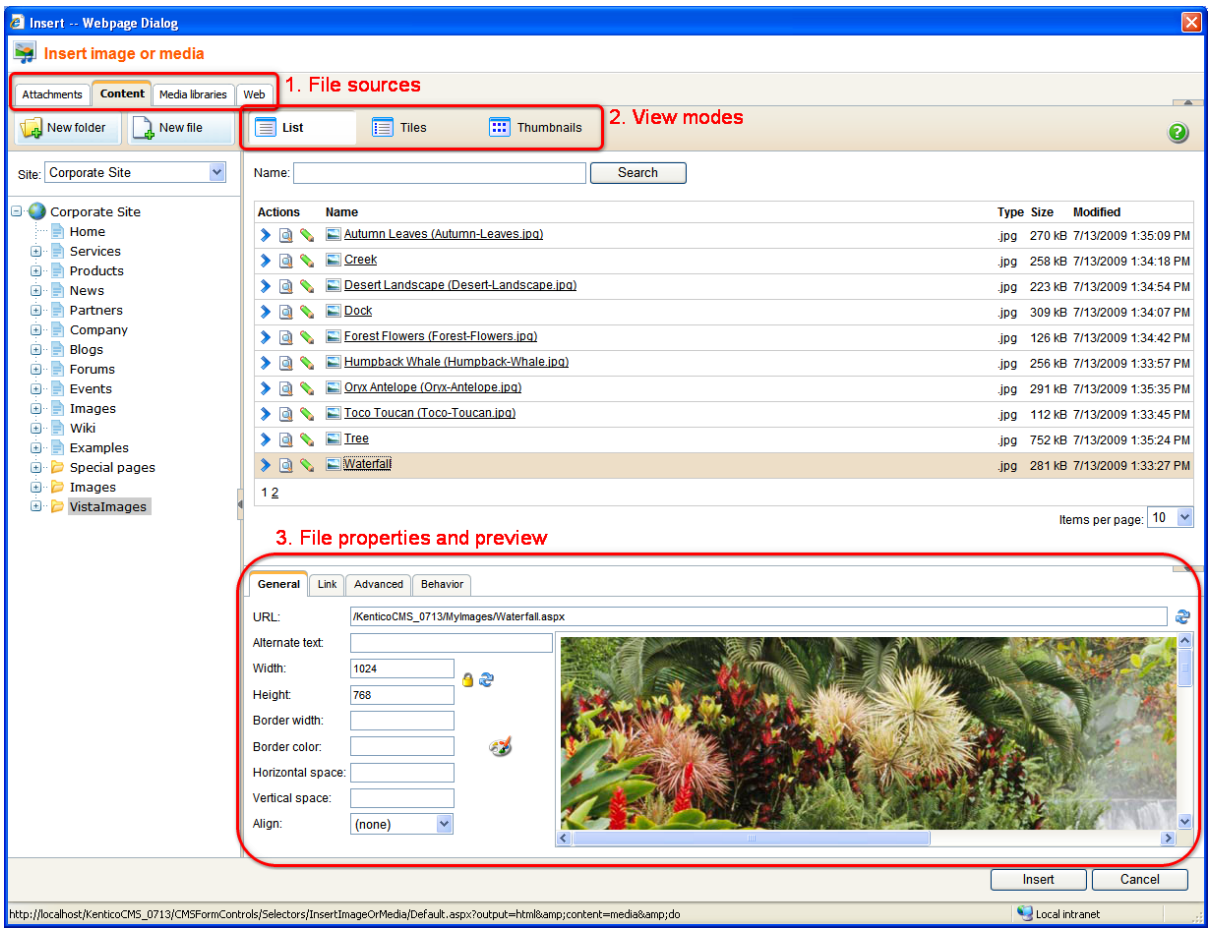
- **Images**: bmp, gif, ico, png, wmf, jpg, jpeg, tiff, tif
- **Audio**: wav, wma, mp2, mp3, mid, midi, mpga
- **Video**: avi, mp4, mpg, mpeg, wmv, qt, mov, rm
- **Flash**: swf

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:



© 2009 Kentico Software

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.

6.7.2.2 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.

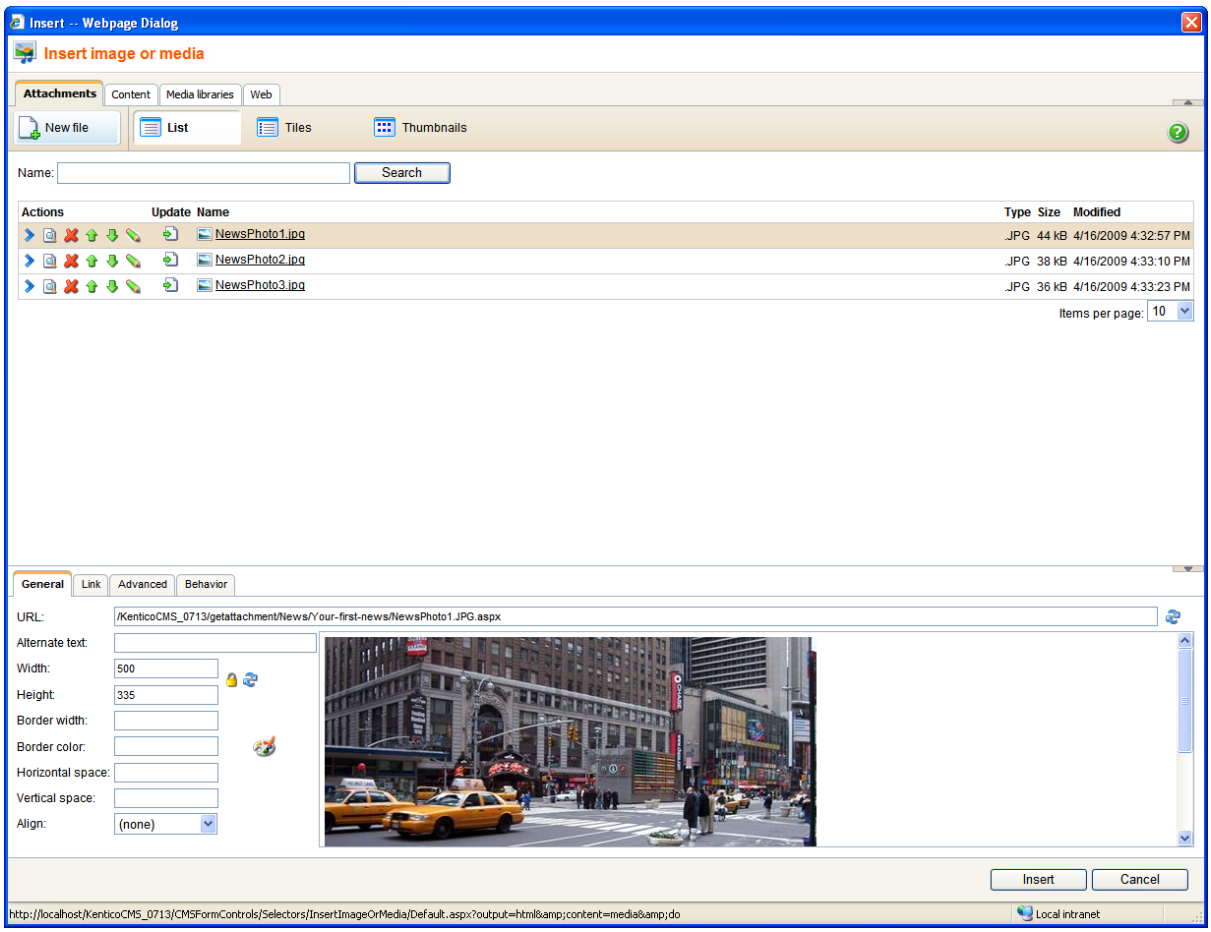
You can insert the document's unsorted attachments into the text from this tab. You can filter the listed attachments by **Name** using the filter above the list. For more information about document attachments, please refer to the Document attachments chapter of this guide.

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

© 2009 Kentico Software

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.



© 2009 Kentico Software

Content

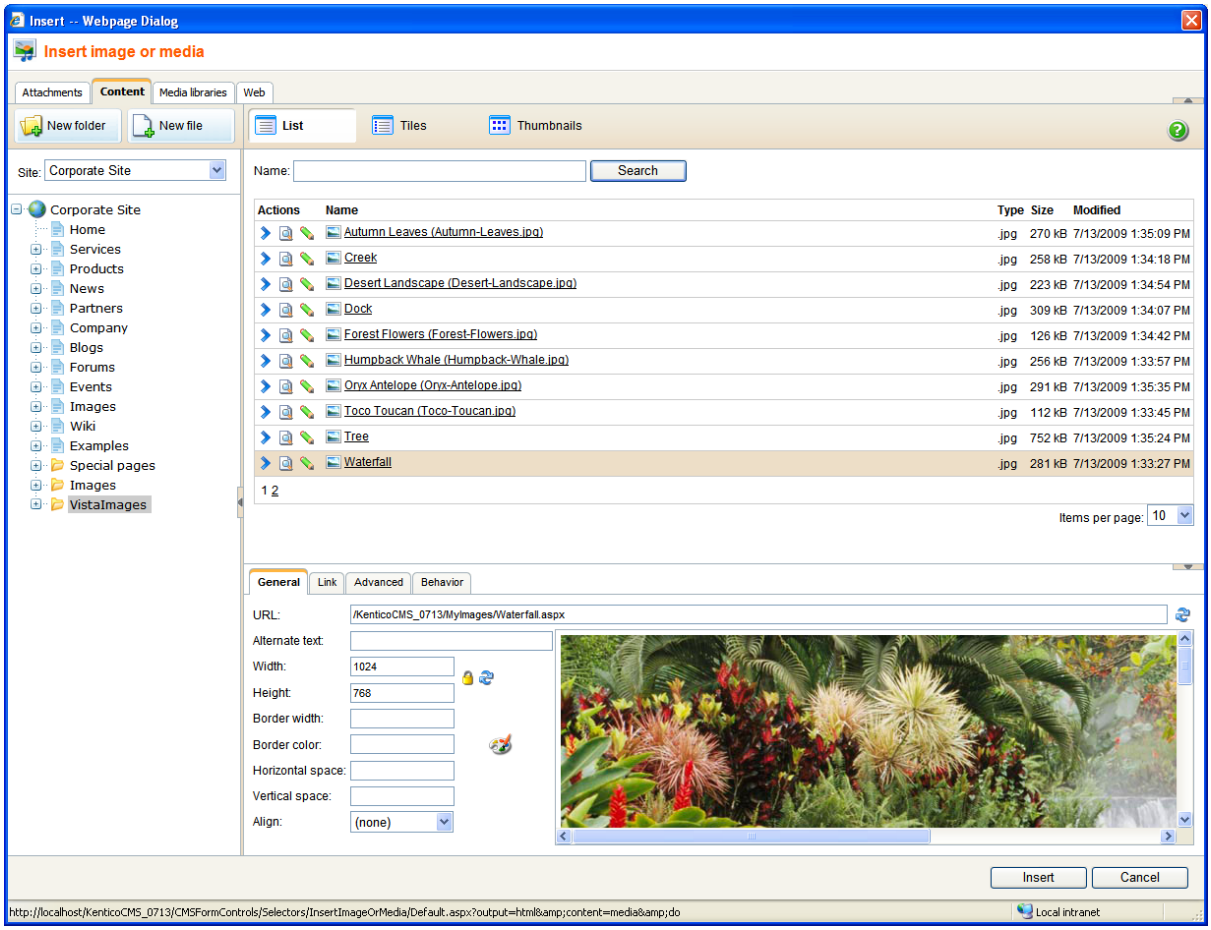
From this tab, you can insert files stored in the content tree of any of the sites running in the system. The site to insert from can be selected using the **Site** drop-down list, while its content tree will be displayed below. You can define which sites will be available and the starting alias path 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/ thumbnail 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.



© 2009 Kentico Software

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.

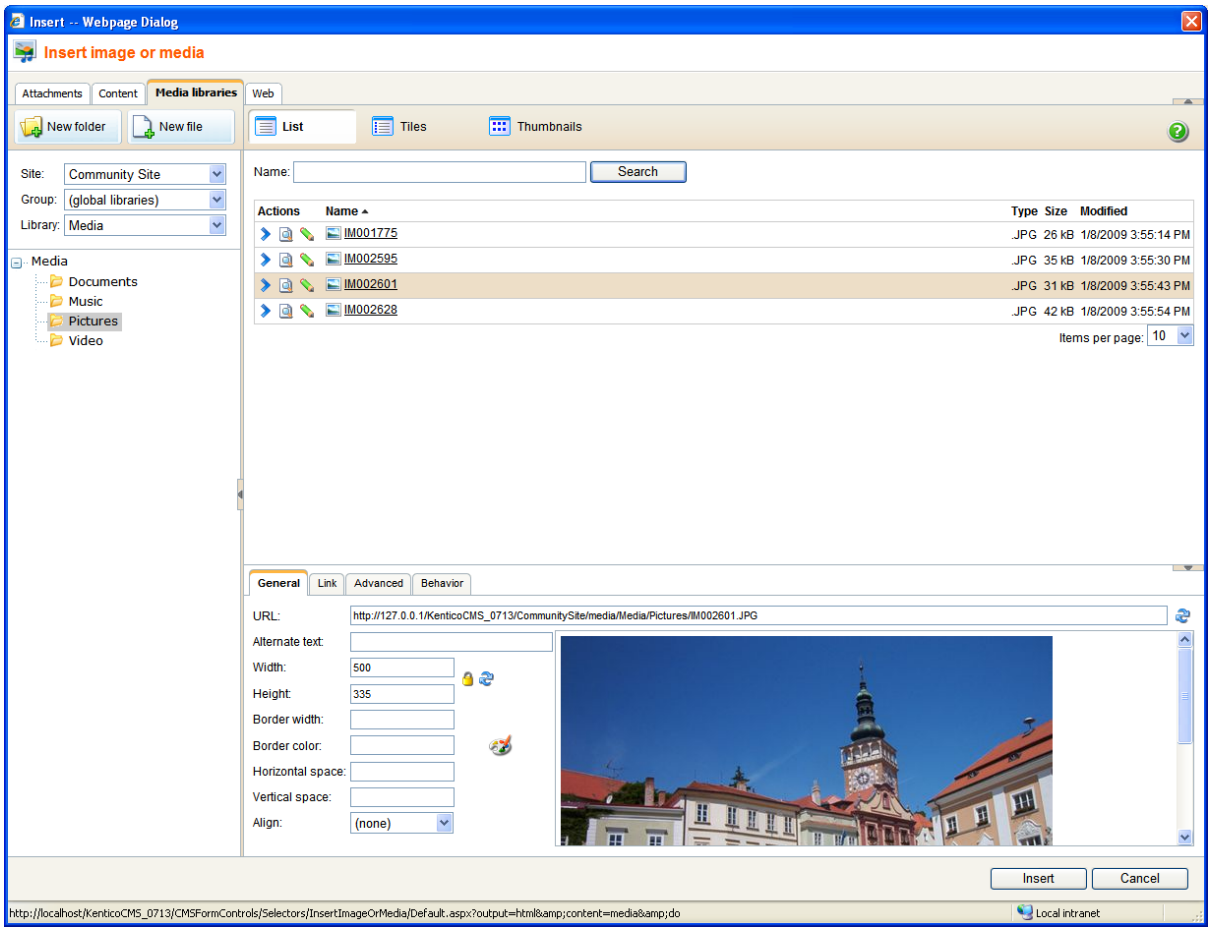
More information about Kentico CMS Media libraries can be found in this chapter.

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/ thumbnail in the other view modes).

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

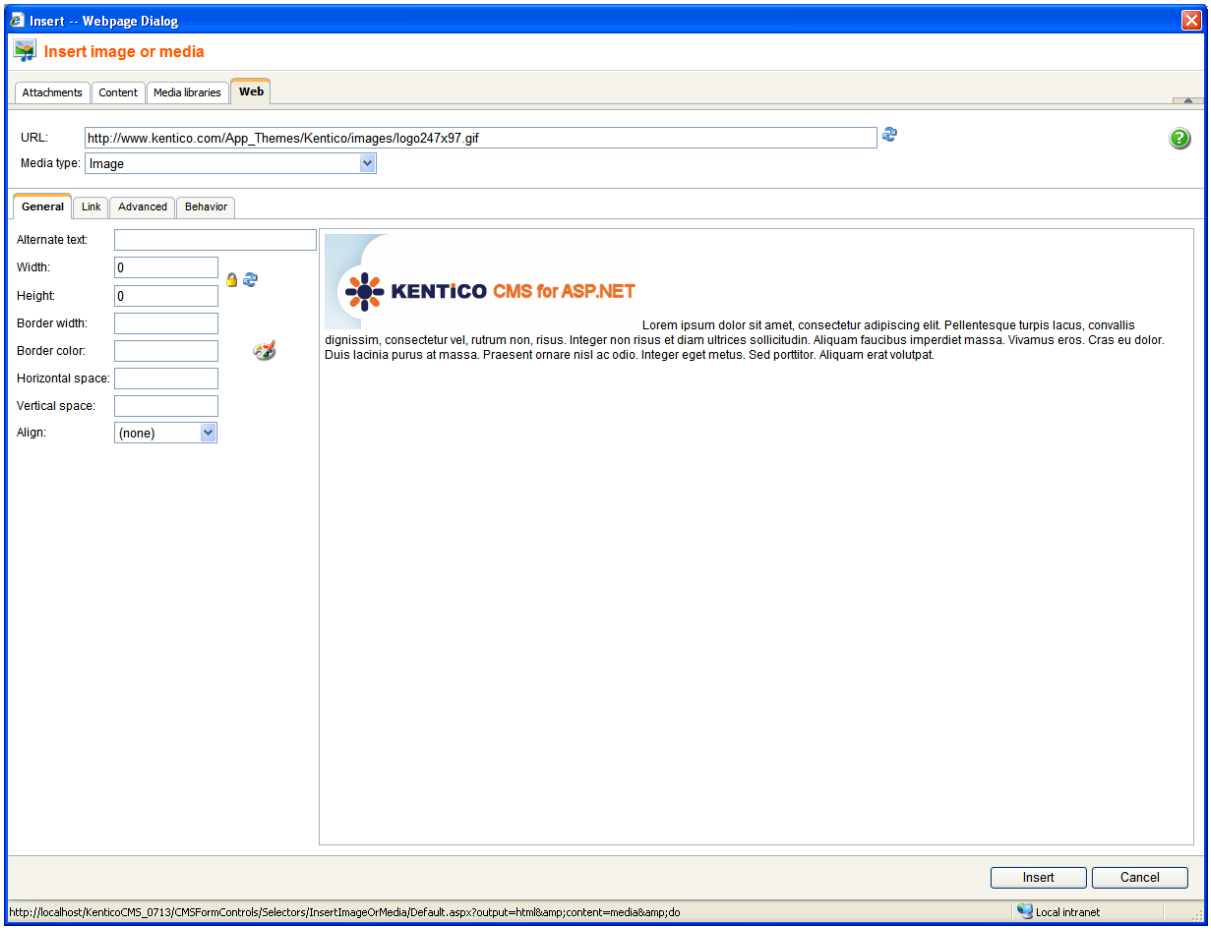
- After clicking the **View** ( ) icon, the file will be opened in a new window.
- Images have also the **Edit** ( ) icon available. Clicking this icon opens the image in the built-in image editor.



© 2009 Kentico Software

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.

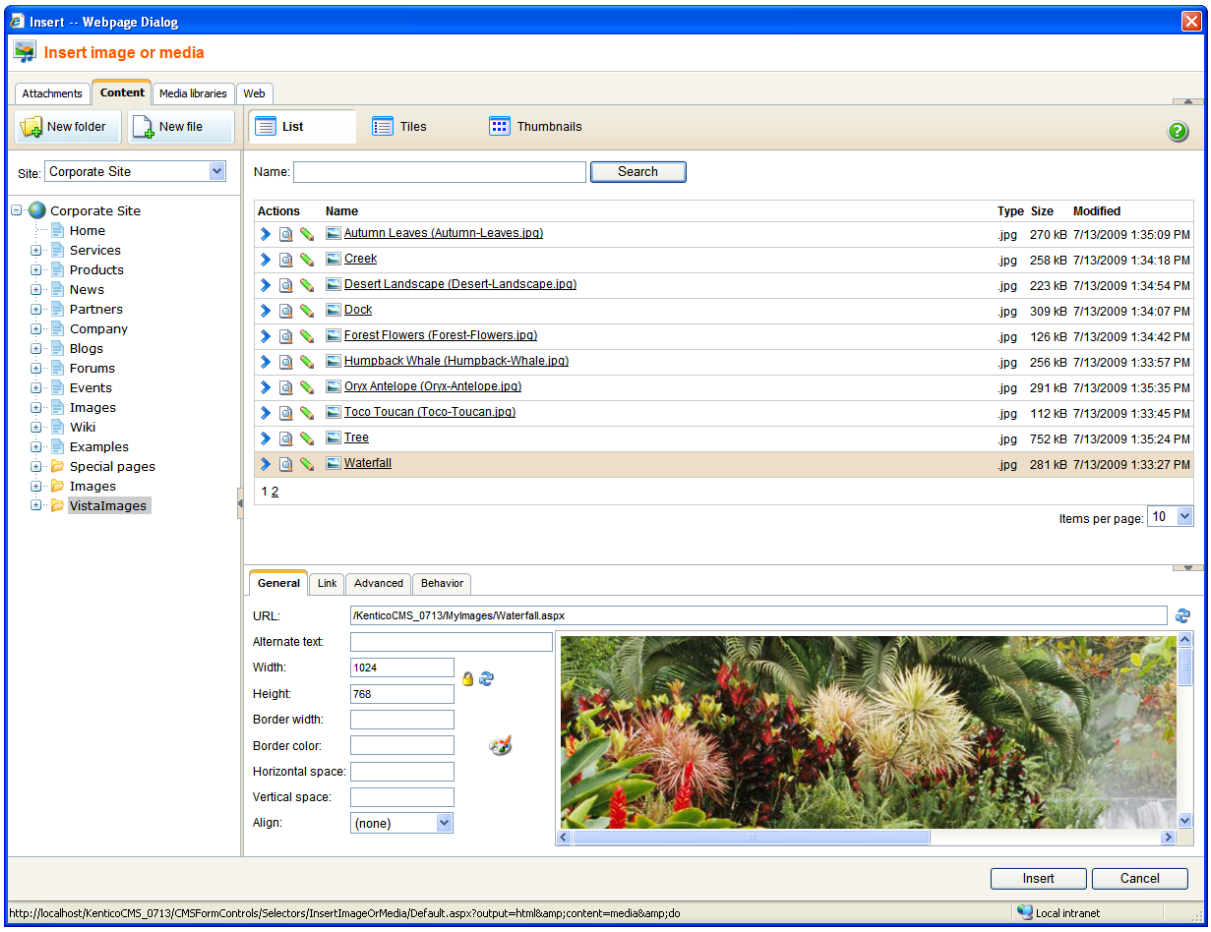


© 2009 Kentico Software

6.7.2.3 View modes

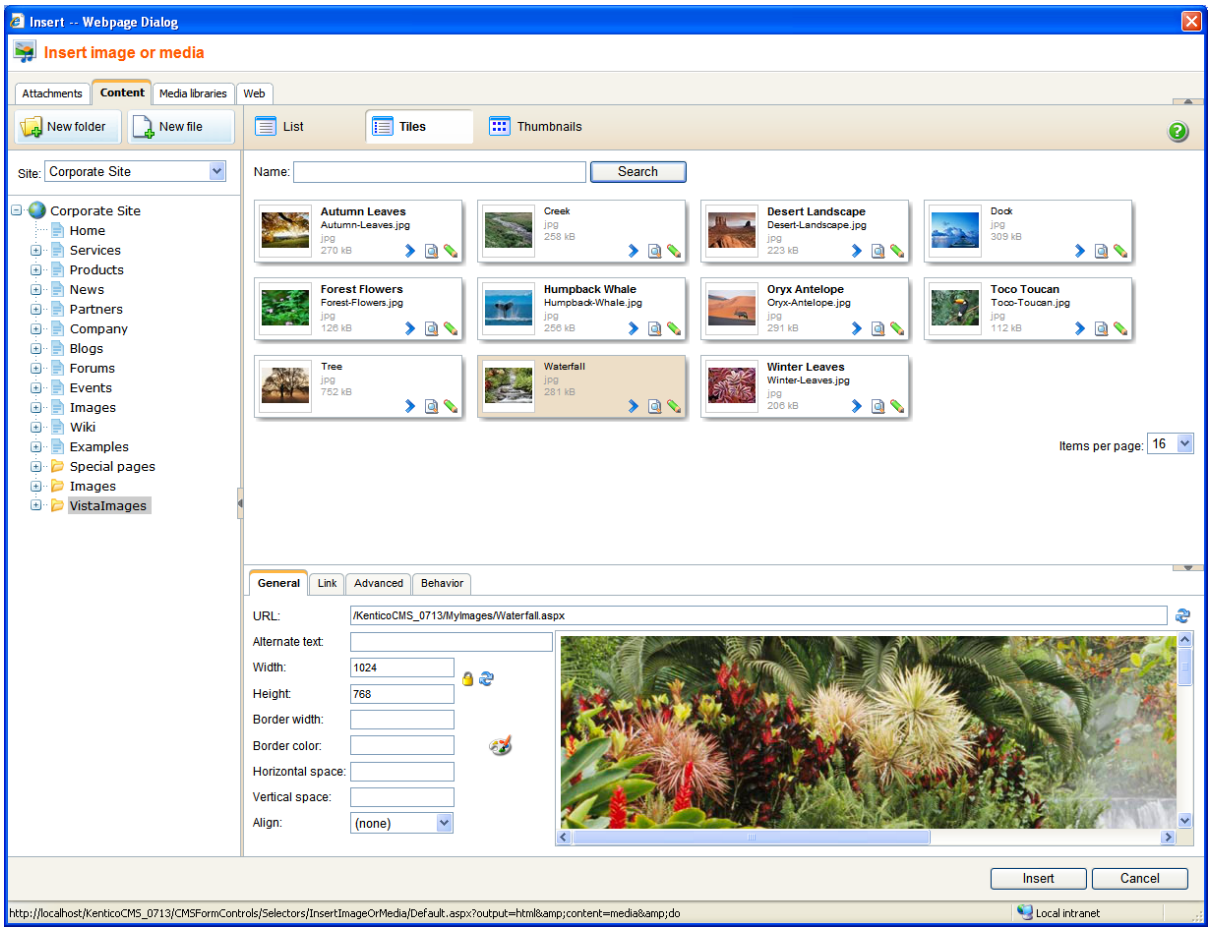
The following three view modes are available on the **Attachments**, **Content** and **Media libraries** tabs:

List



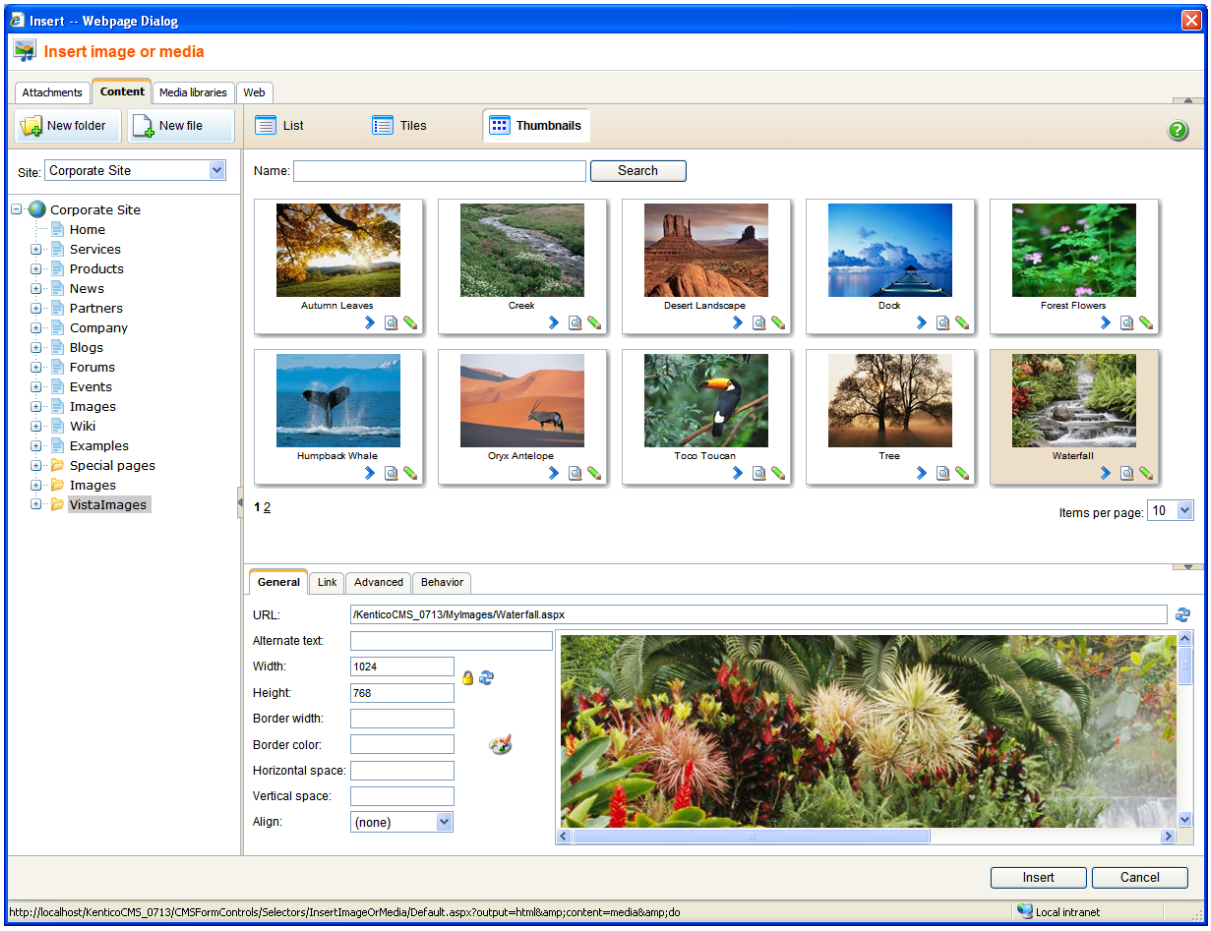
© 2009 Kentico Software

Tiles



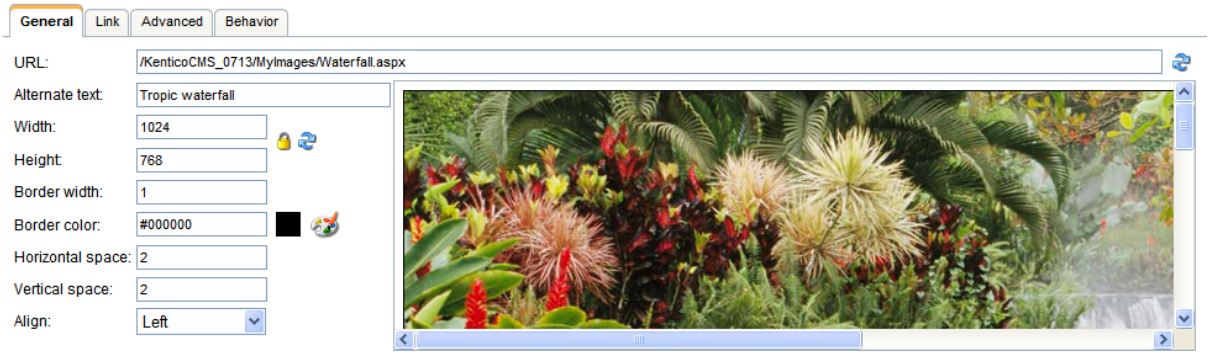
© 2009 Kentico Software

Thumbnails



© 2009 Kentico Software

6.7.2.4 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

© 2009 Kentico Software

- **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:

```
<img style="width: 320px; height: 240px" alt="" src="/KenticoCMS41/MyImages/
Waterfall.aspx" />
```

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"><img style="width: 320px; height: 240px" alt="" src="/
KenticoCMS41/MyImages/Waterfall.aspx" /></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:

© 2009 Kentico Software

```
<a target="_self" href="/KenticoCMS41/MyImages/Waterfall.aspx"><img style="width:
320px; height: 240px" alt="" src="/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"><img style="width:
320px; height: 240px" alt="" src="/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&amp;height=150|
(width)200|(height)150|(mouseoverwidth)400|(mouseoverheight)300^}
```



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

© 2009 Kentico Software

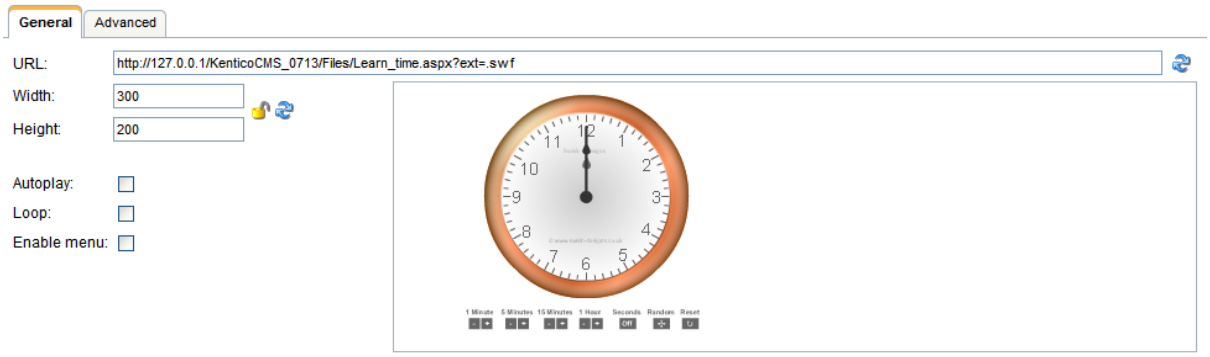
- **Behavior tab**: Show larger size on mouse-over; Height = xx; Width = yy
- **Link tab -> URL**: some URL is specified

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&amp;height=150|(width)200|(height)150|(mouseoverwidth)400|
(mouseoverheight)300^}</a>
```

6.7.2.5 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

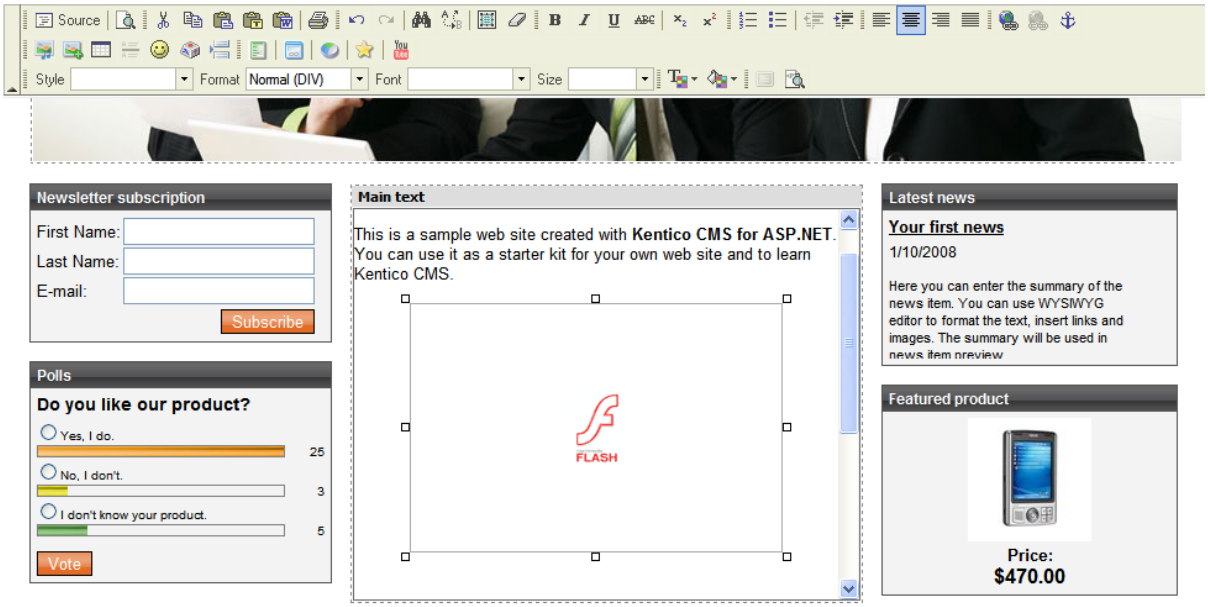
© 2009 Kentico Software

© 2009 Kentico Software

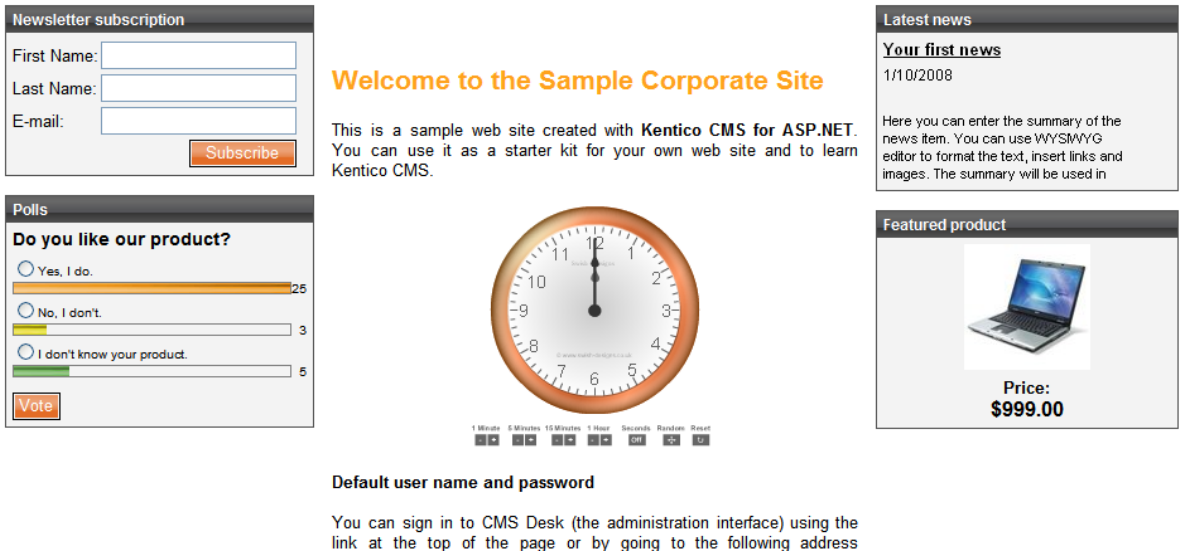
Flash is inserted into the output code as the **Media** inline control. The following code sample shows what the output code looks like:

```
{^Media|(type)swf|(url)http://127.0.0.1/KenticoCMS41/Files/Learn_time.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:

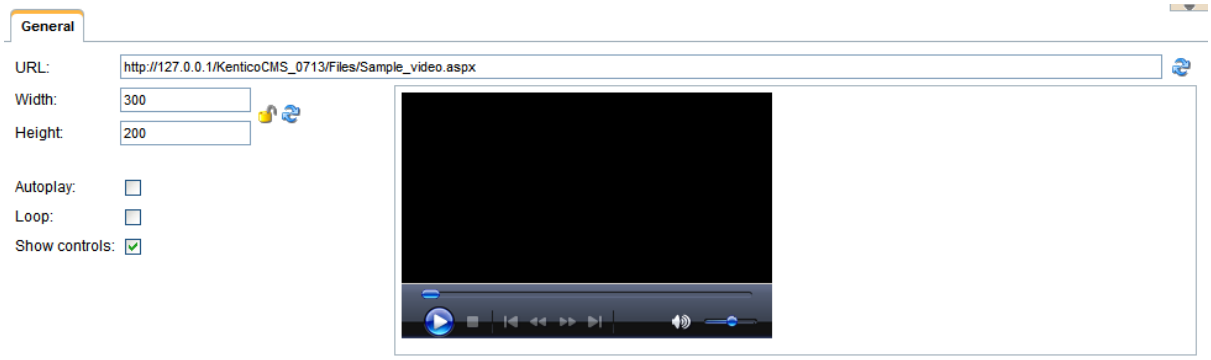


And this is the result on the live site:



© 2009 Kentico Software

6.7.2.6 Inserting audio/video



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

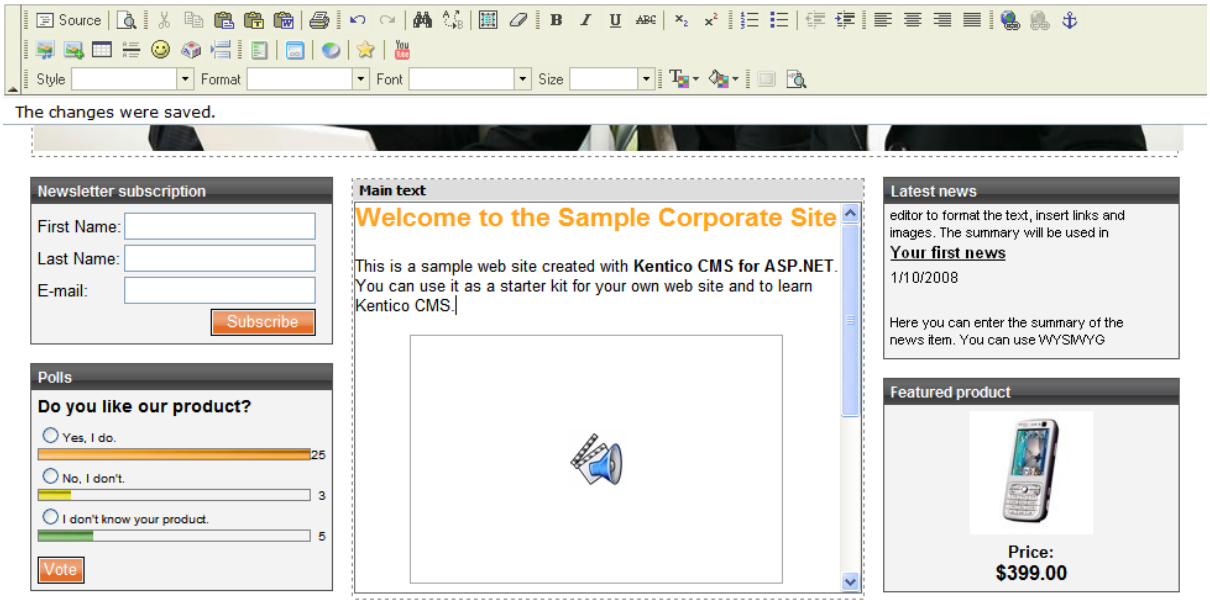
- **Width**, **Height**: width and height of the media player; 300x200px is used by default
  - aspect ratio can be locked (), which makes the second dimension recalculated automatically when you change one dimension, while the ratio between the two dimensions is kept
  - if it is unlocked (), dimensions 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:

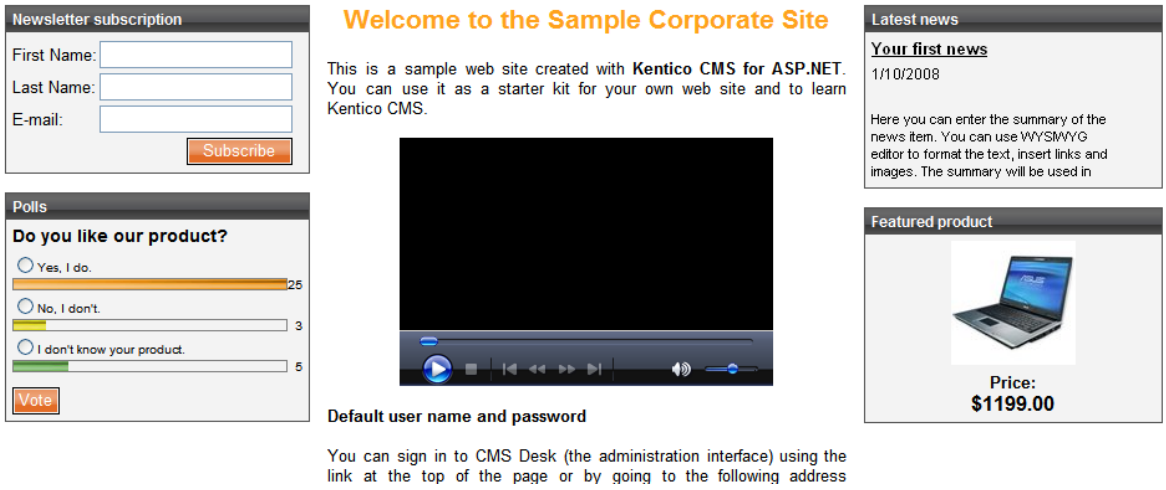
```
{^Media|(type)avi|(url)http://127.0.0.1/KenticoCMS_0713/Files/Sample_video.aspx|
(width)300|(height)200|(controls)1^}
```

© 2009 Kentico Software

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:

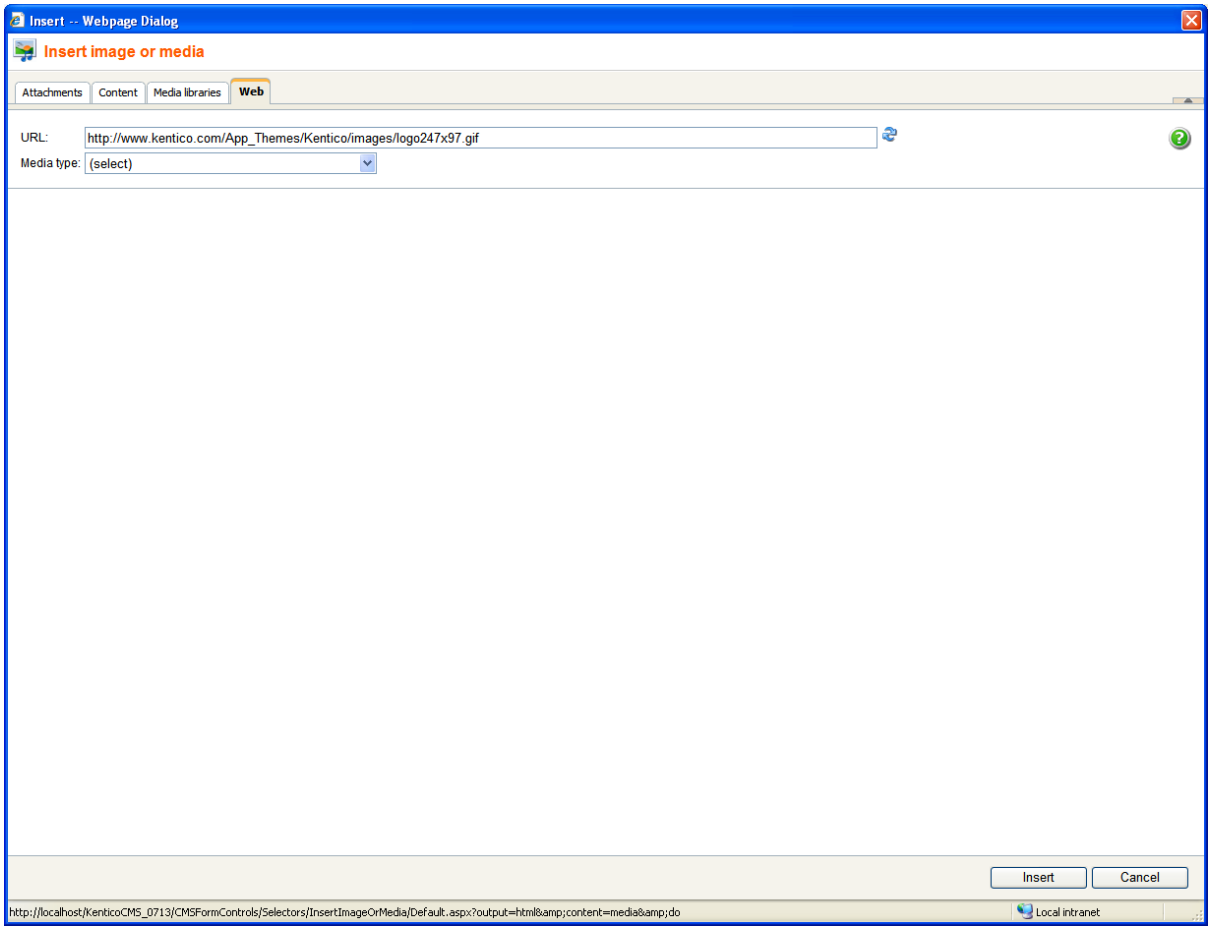


© 2009 Kentico Software

6.7.2.7 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.

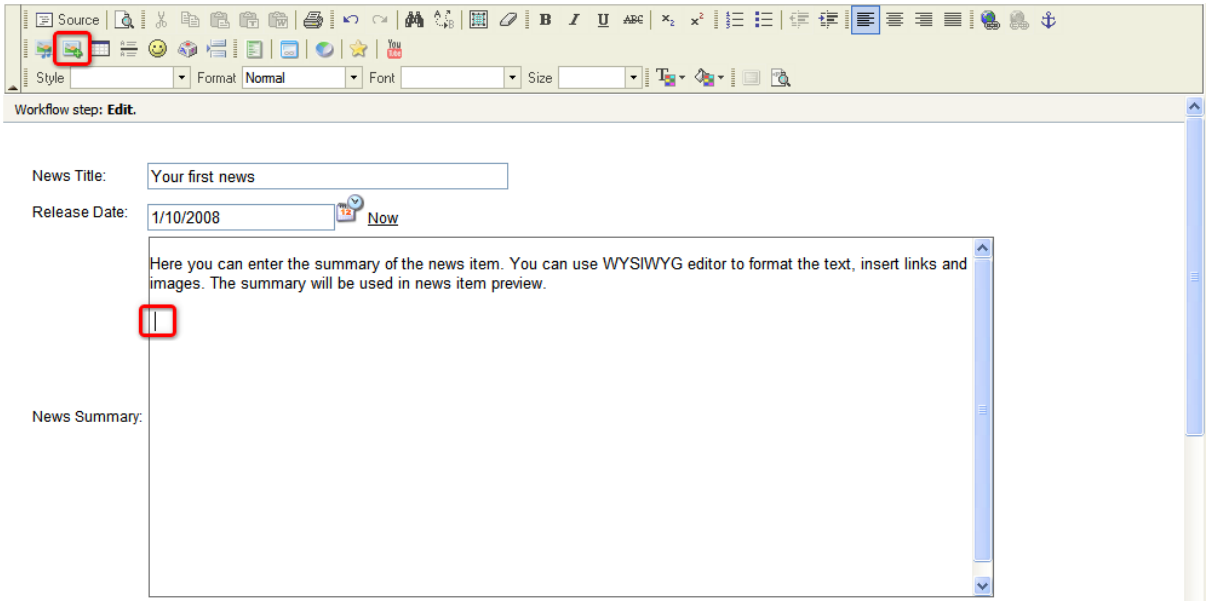
4. Enter the properties and click the **Insert** button. The image or media file is inserted into the text.

© 2009 Kentico Software

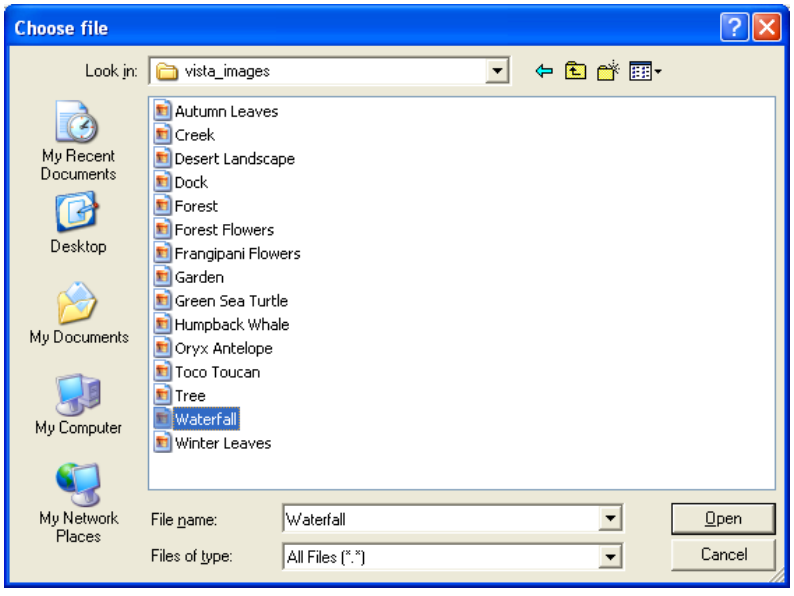
6.7.3 Quickly insert image

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.

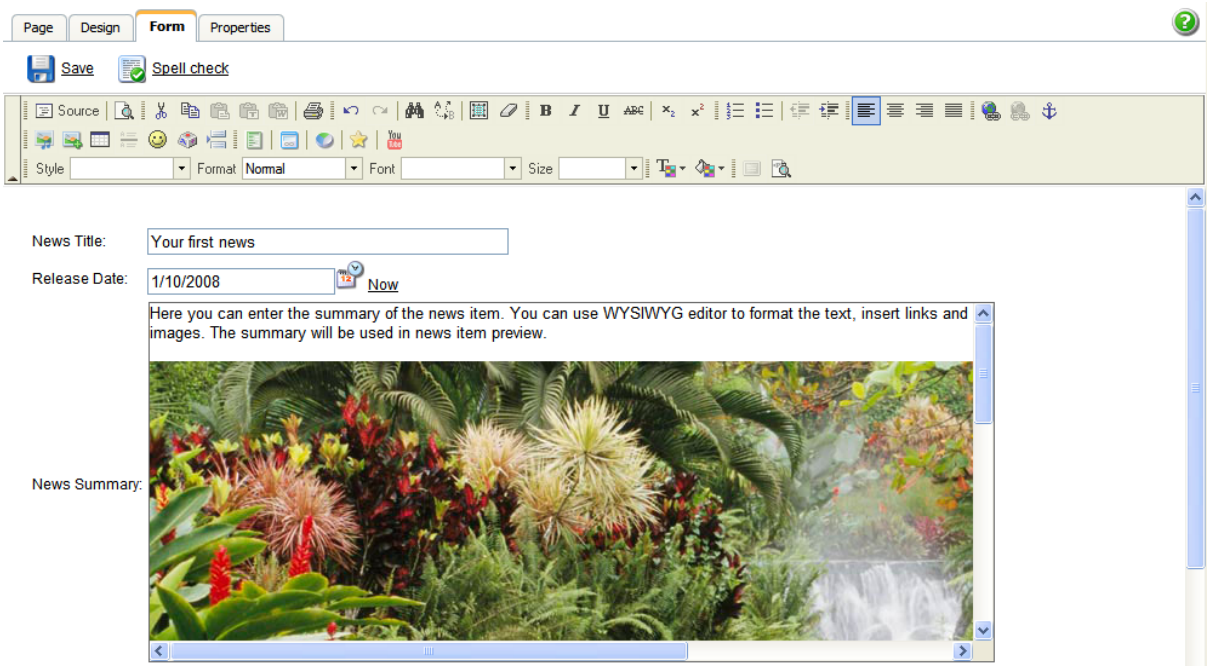


2. Your browser's **Choose file** dialog opens. Locate the file on your disk and click **Open**.



© 2009 Kentico Software

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.



6.7.4 Insert link

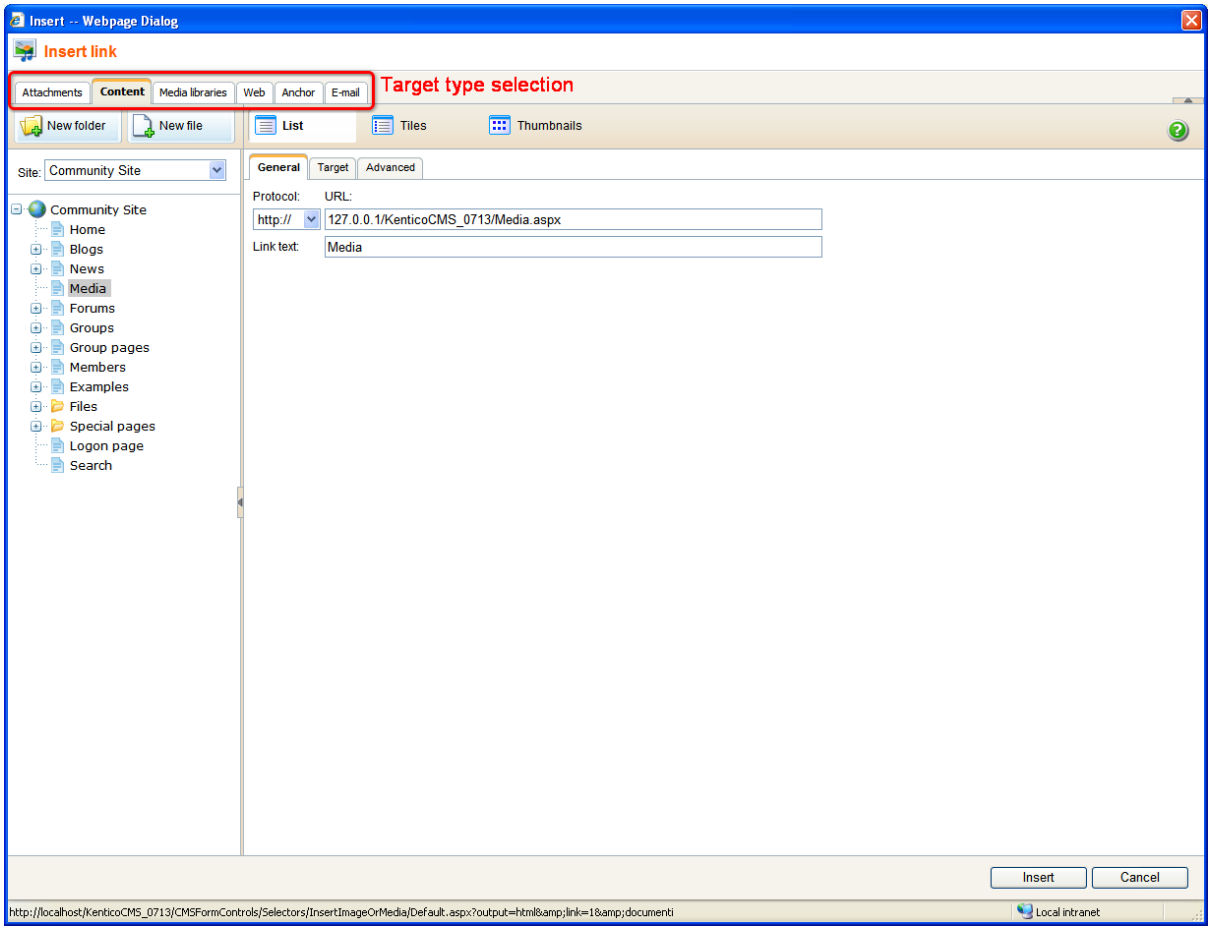
6.7.4.1 Overview

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

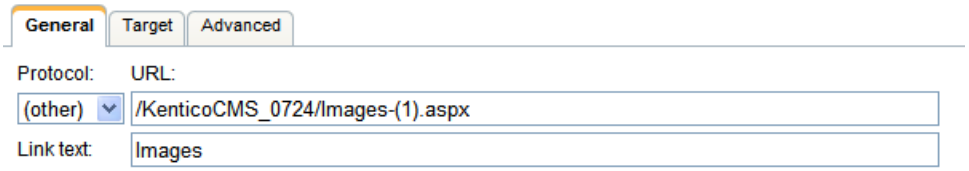
1. Select the text that should become a link or place the cursor to the position where the link text should be inserted.
2. Click the **Insert link** ( ) icon on the WYSIWYG editor toolbar.

© 2009 Kentico Software

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.

6.7.4.2 Link properties

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



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

© 2009 Kentico Software

6.7.4.3 Links to content within the CMS

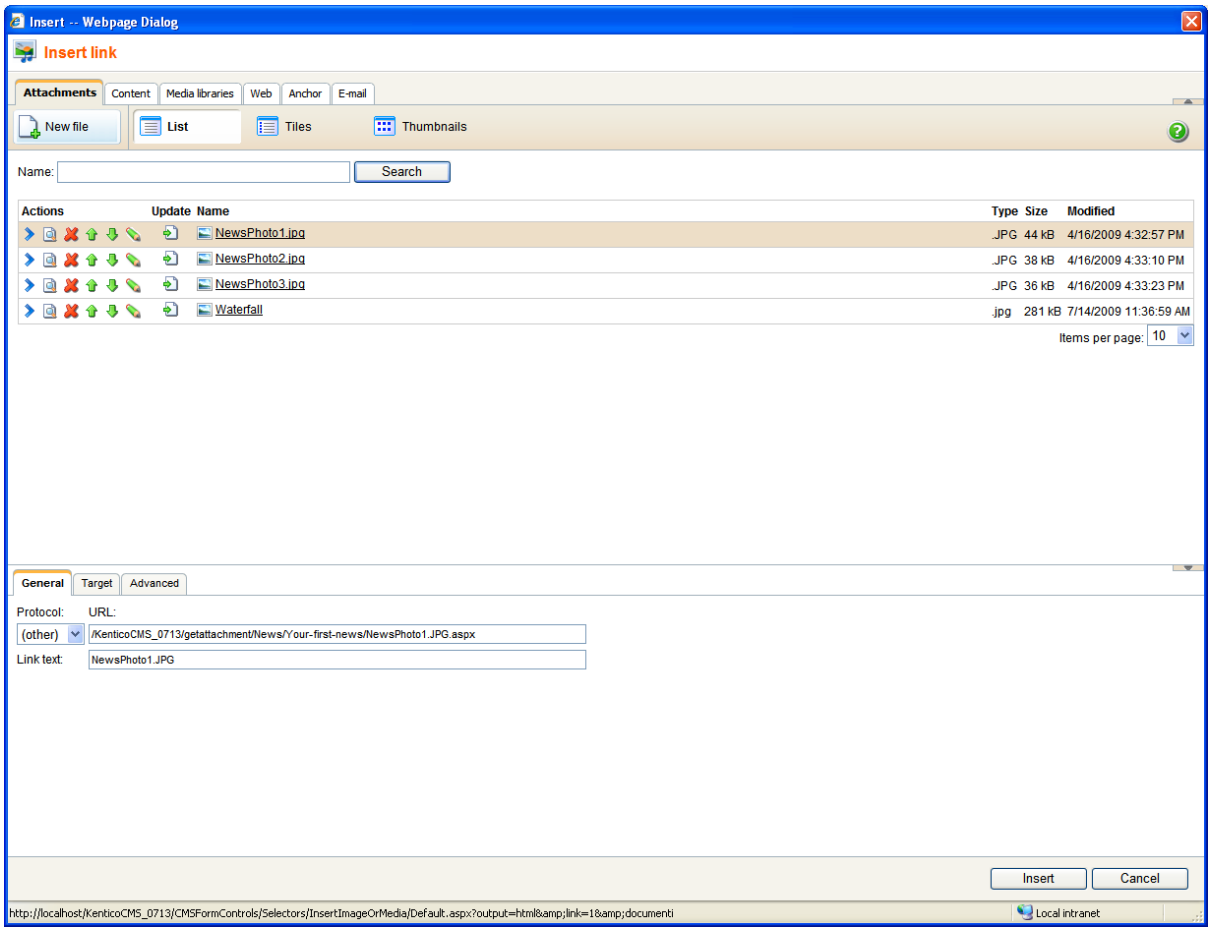
Links to content within the CMS can be inserted via the **Attachments**, **Content** and **Media libraries** tabs. Detailed descriptions of all possible actions that can be performed on the tabs can be found on this page of the **Inserting image or media** section.

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="/KenticoCMS41/getattachment/News/Your-first-news/NewsPhoto2.JPG.
aspx">NewsPhoto1.JPG</a>
```



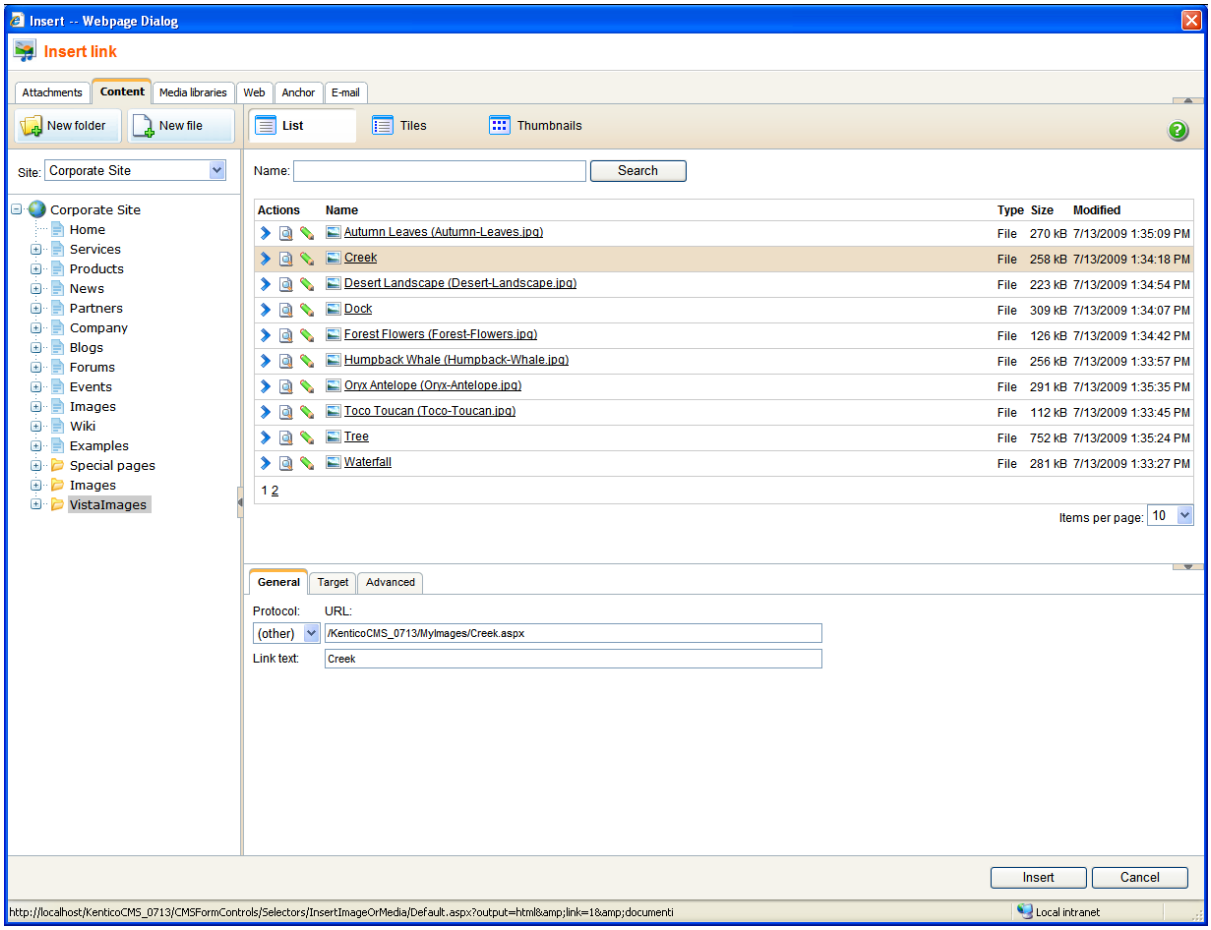
© 2009 Kentico Software

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="/KenticoCMS41/VistaImages/Creek.aspx">Creek</a>
```



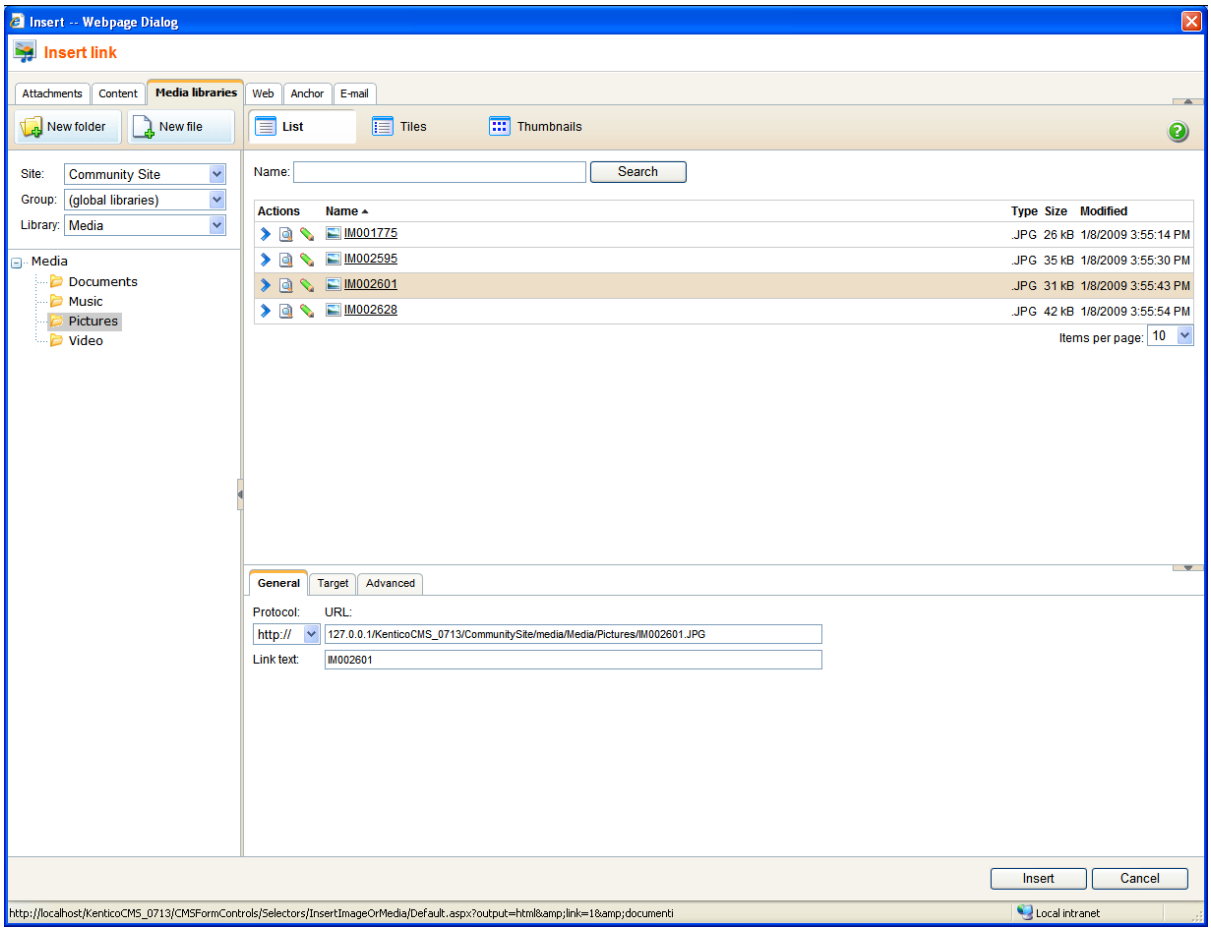
© 2009 Kentico Software

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="/KenticoCMS41/CommunitySite/media/Media/Pictures/IM002601.JPG">IM002601</
a>
```



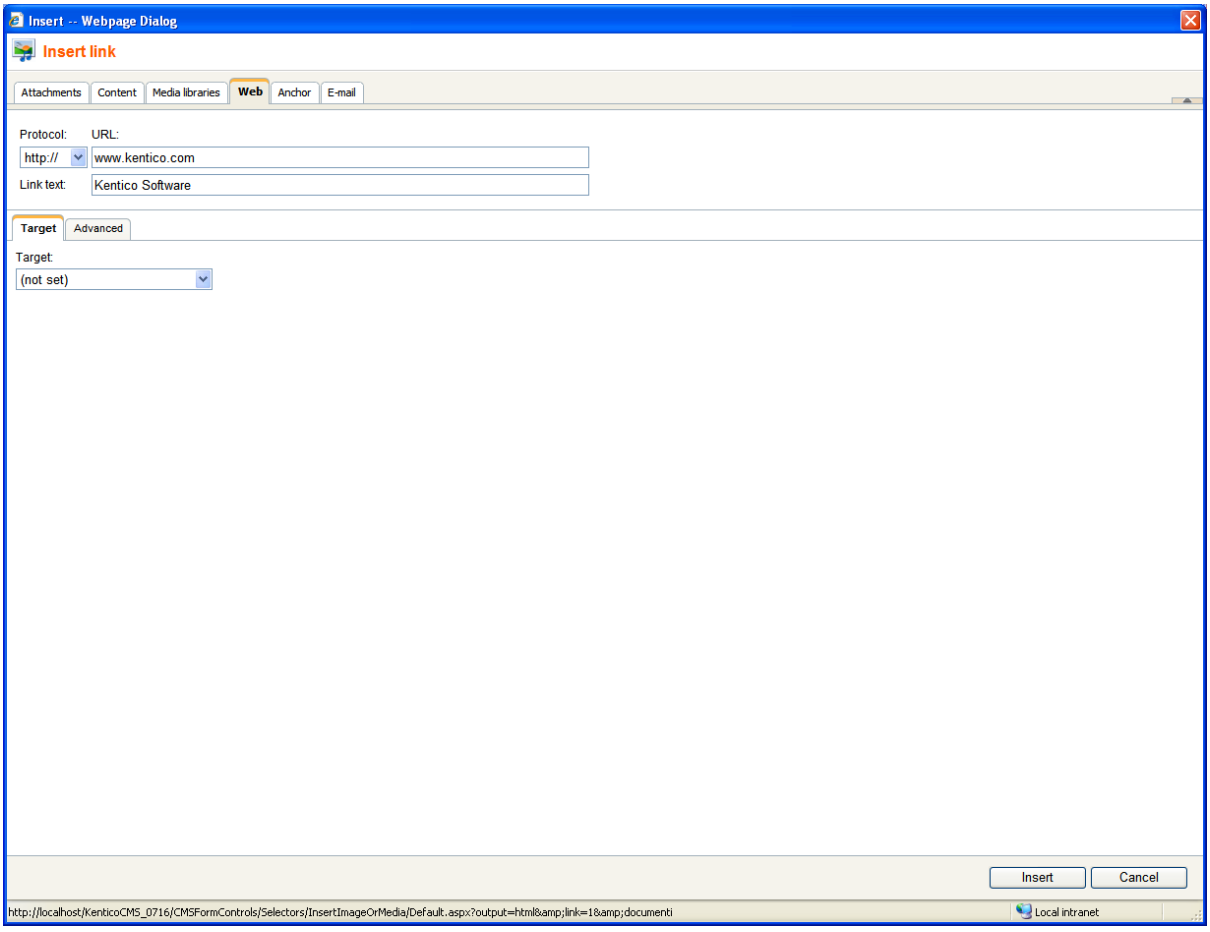
© 2009 Kentico Software

6.7.4.4 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.



6.7.4.5 Links to anchors

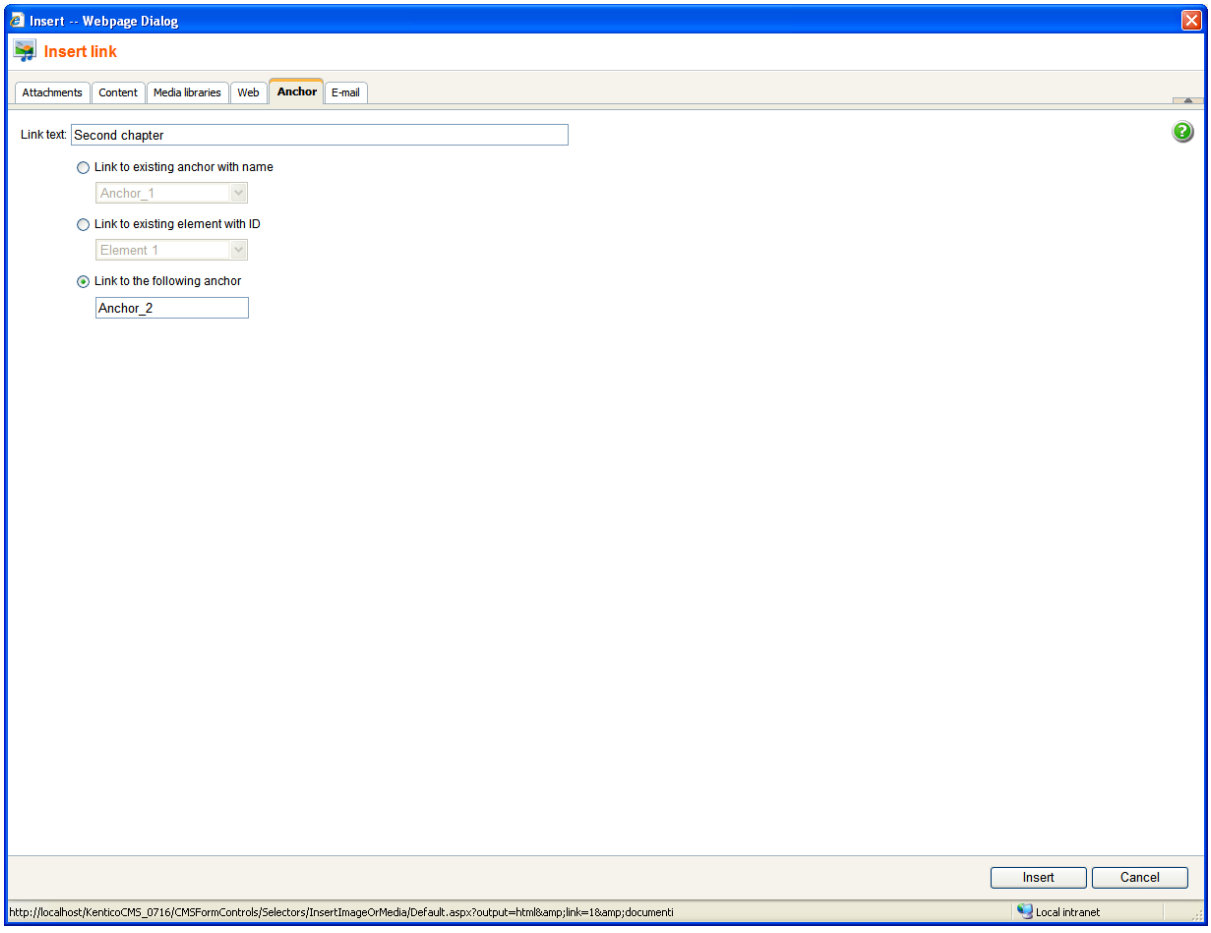
Via the Anchor tab, users can insert links to any anchor or any HTML element with specified ID attribute on the current page. Anchors are the <a> html elements with the **name** attribute specified. They can be inserted using the icon on the WYSIWYG editor toolbar. If you link to an anchor, the page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



© 2009 Kentico Software

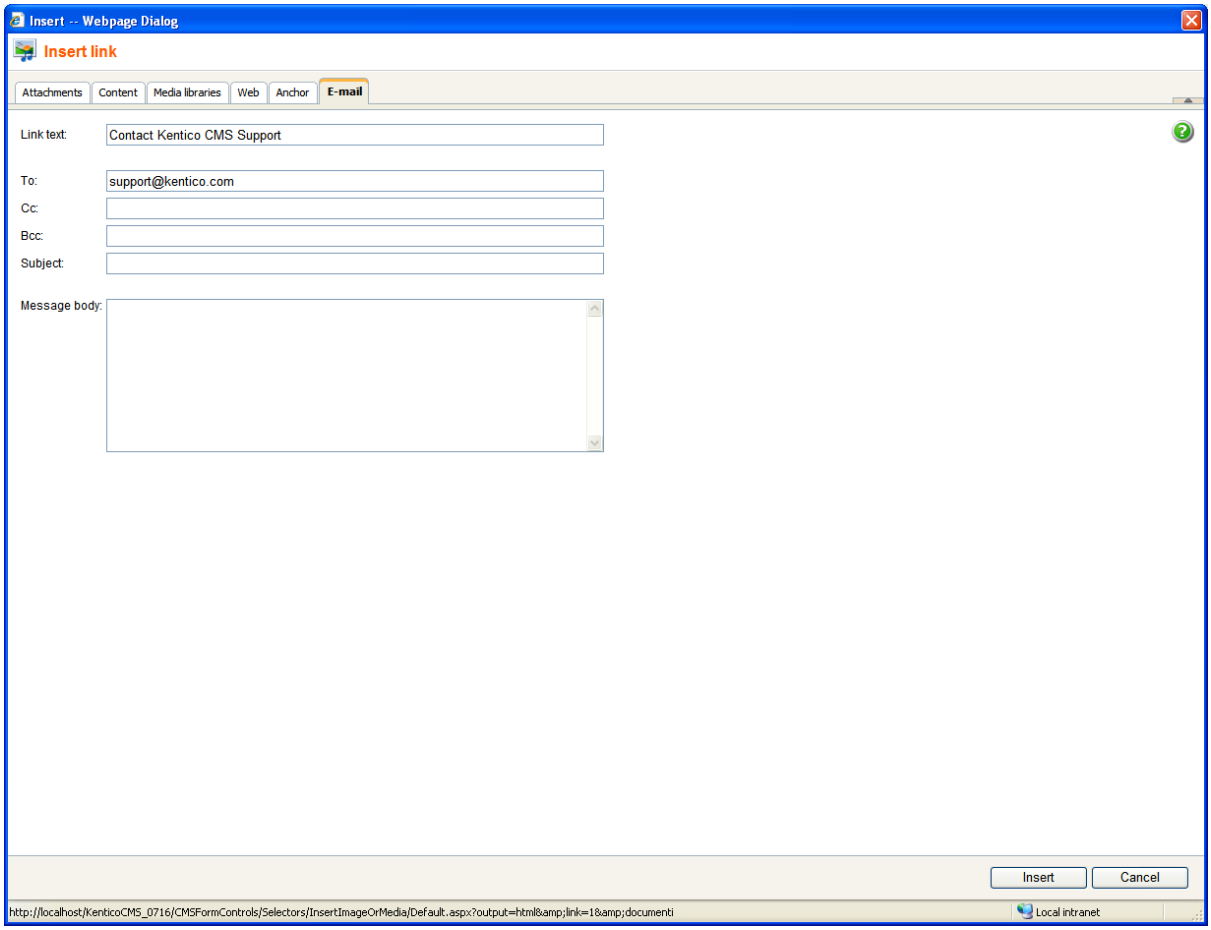
6.7.4.6 Mailto links

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>
```



© 2009 Kentico Software

6.7.5 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

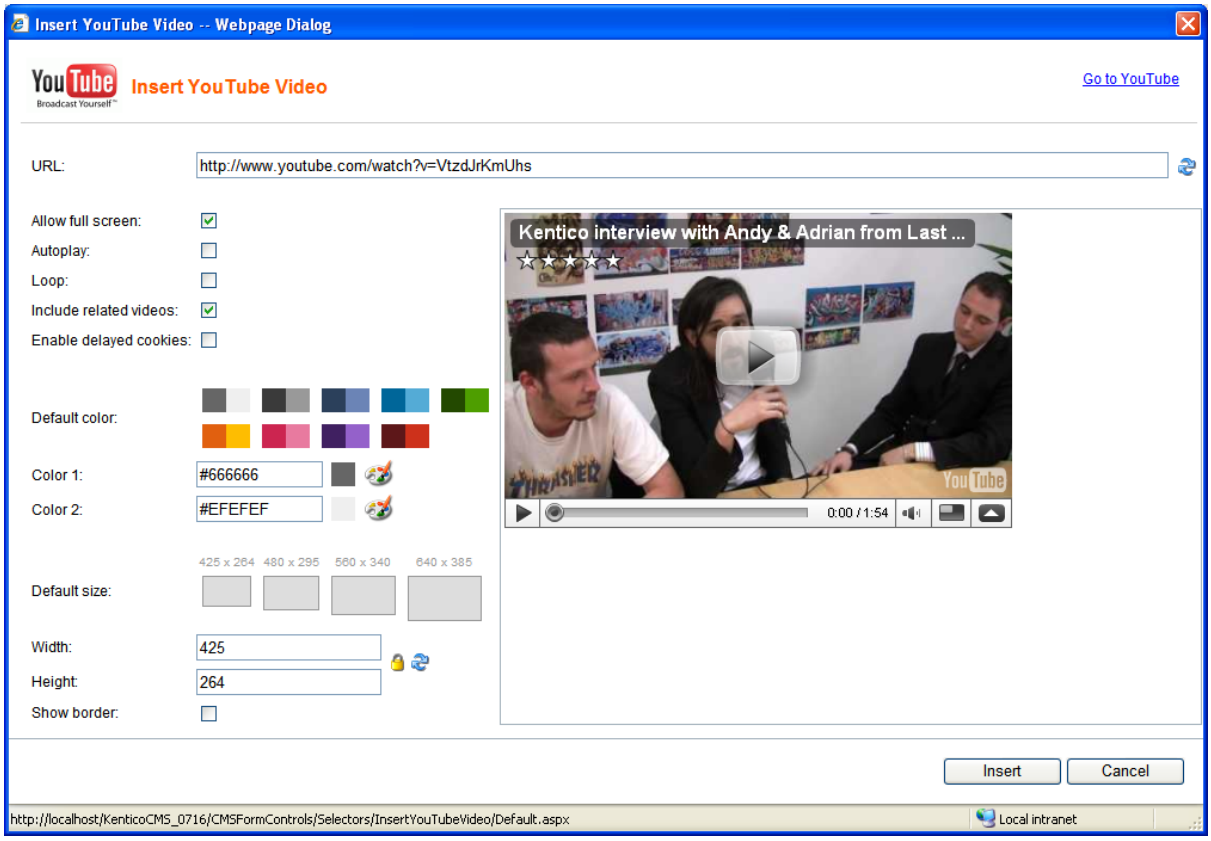
- **Default color**: you can choose one of the default color combinations which will be filled in the **Color 1** and **Color 2** properties
- **Color 1**: color of the border around the player, relevant only if the Show border property is enabled
- **Color 2**: color of the player toolbar

- **Default size**: you can choose one of the default sizes of the video player which will be filled in the **Widht** 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

© 2009 Kentico Software

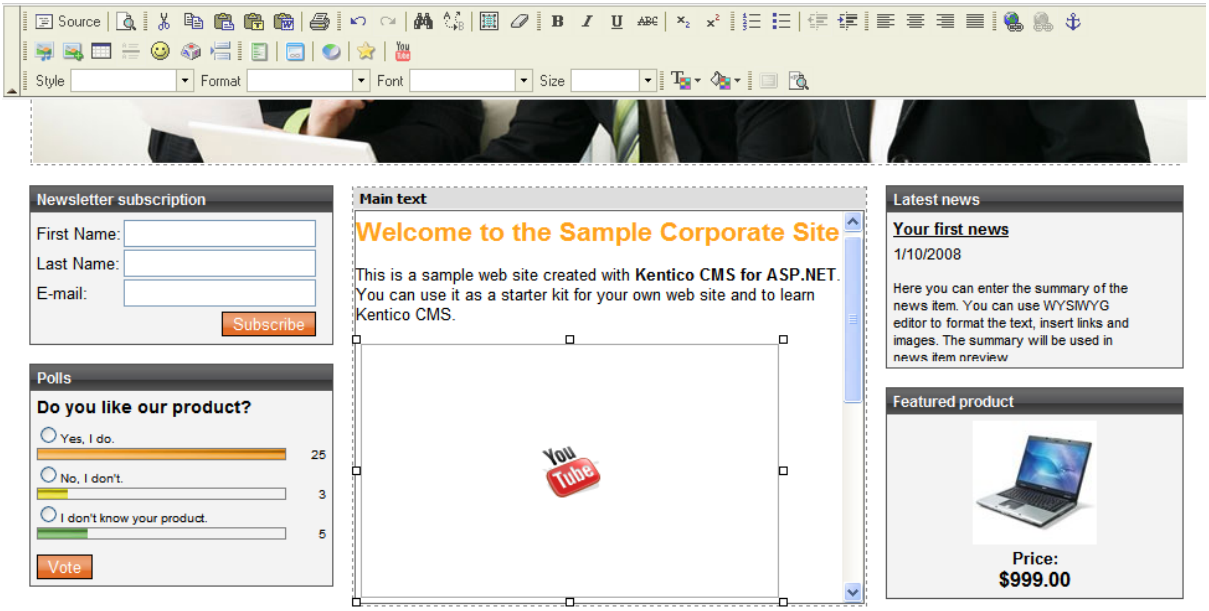
to both width and height of the player

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:

© 2009 Kentico Software



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:

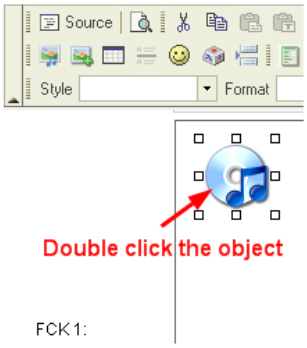


6.7.6 Editing inserted items

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:

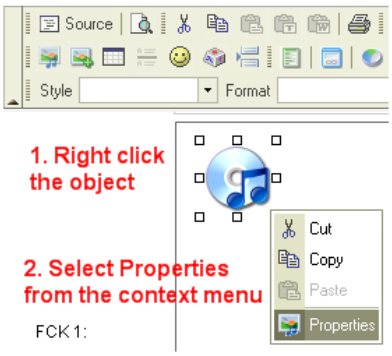
© 2009 Kentico Software

1. Double-click the item

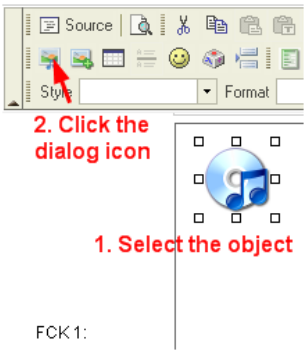


© 2009 Kentico Software

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

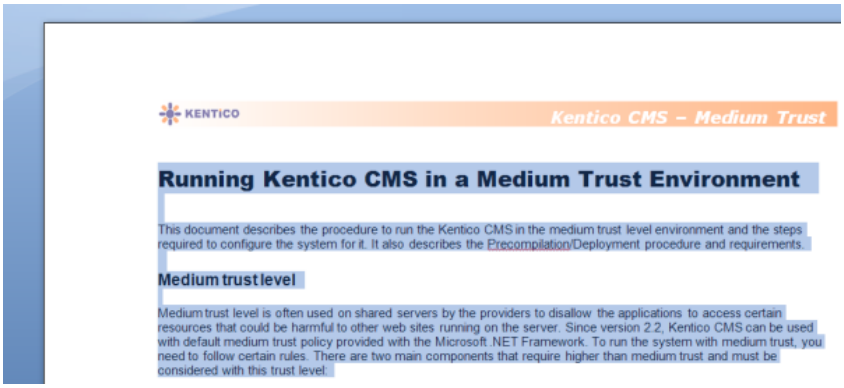


© 2009 Kentico Software

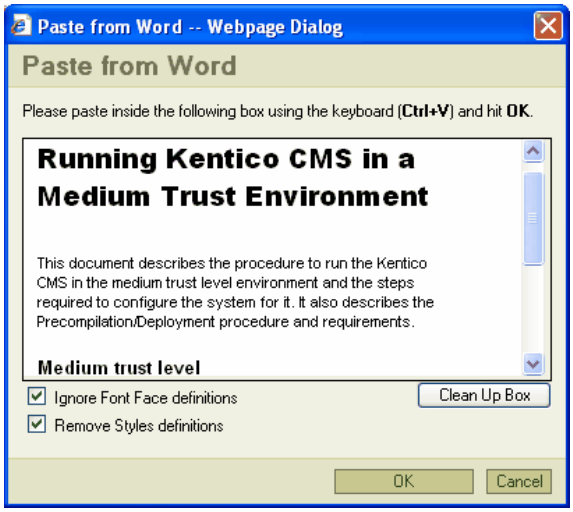
6.7.7 Copy & Paste from Microsoft Word

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.

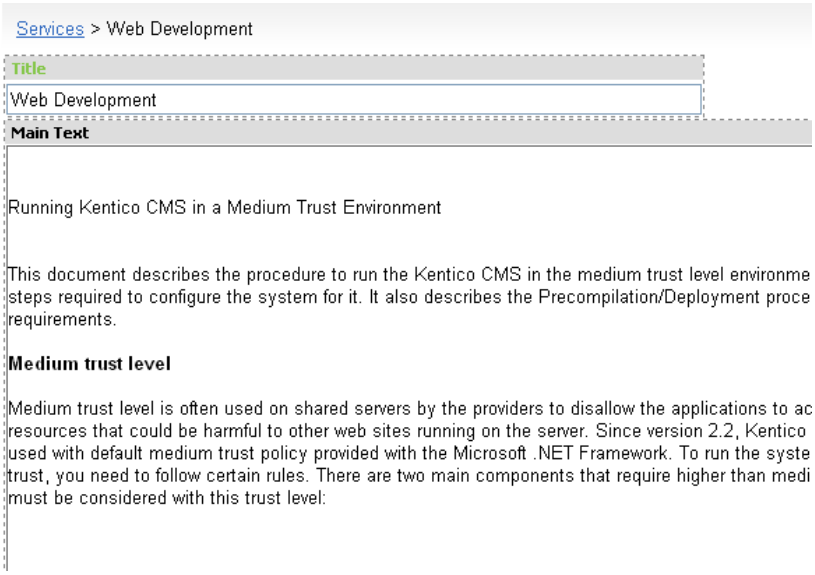
Select the text in Microsoft Word document and copy it to the clipboard (**CTRL+C**):



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 web site 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.

© 2009 Kentico Software

6.7.8 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 web site 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.

© 2009 Kentico Software



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

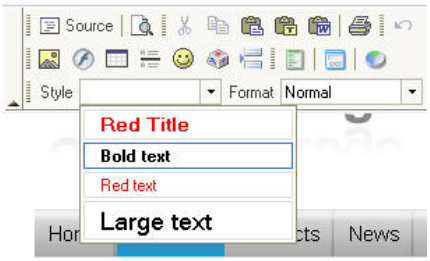
Kentico CMS uses some standard toolbar sets that are used by Kentico CMS modules:

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

© 2009 Kentico Software

6.7.9 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.

© 2009 Kentico Software

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...**

© 2009 Kentico Software

6.7.10 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

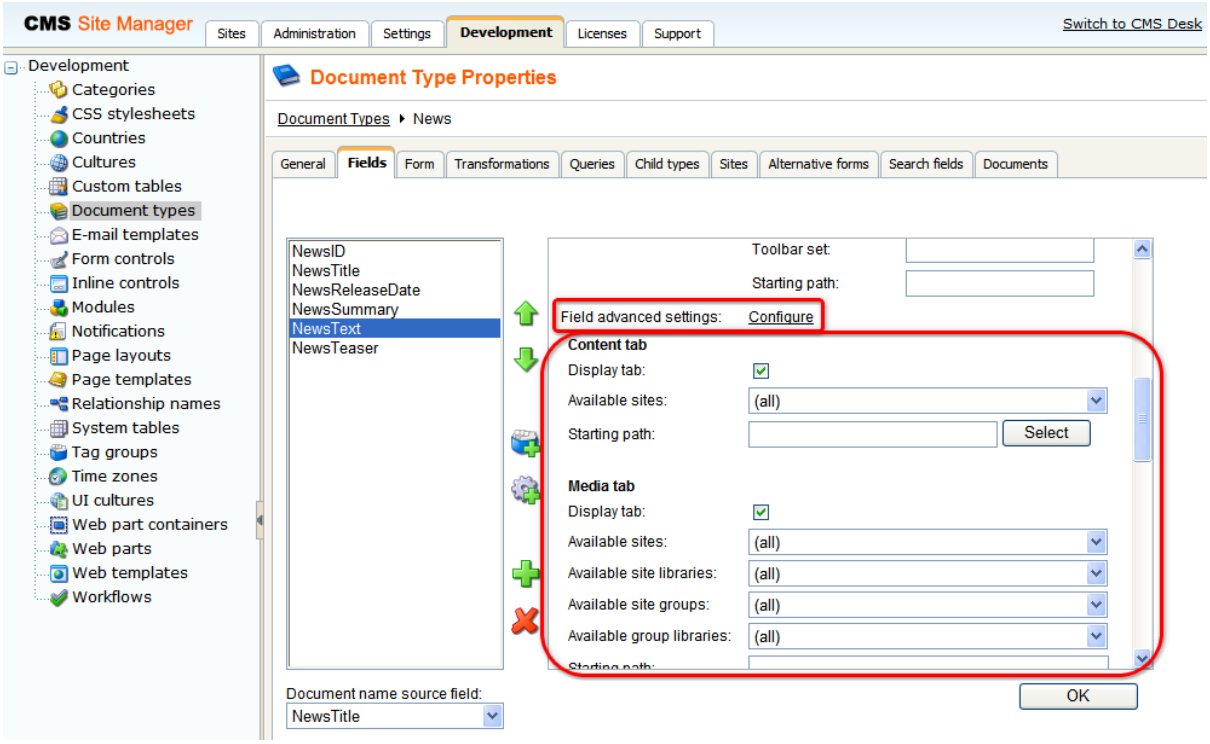
- **Display Attachments tab**: indicates if the Attachments tab should be displayed in the **Insert image or media** and **Insert link** dialogs
- **Display E-mail tab**: indicates if the E-mail tab should be displayed in the **Insert link** dialog
- **Display Anchor tab**: indicates if the Anchor tab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

© 2009 Kentico Software

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

© 2009 Kentico Software

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

© 2009 Kentico Software

6.7.11 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						
						File			Folder			See content
	Read	Manage	Read	Manage		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												
See media library content in dialogs												
Group admin in **group** media library												
Creating new media file	No permissions are required											
Creating new media folder												
See media library content in dialogs												
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

© 2009 Kentico Software

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 persmissions			
	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 persmissions			
	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 persmissions					
	Browse tree	Create Manage	Modify	Delete	CMS. File is allowed	CMS. Folder is allowed
Creating new cms.file		X			X	

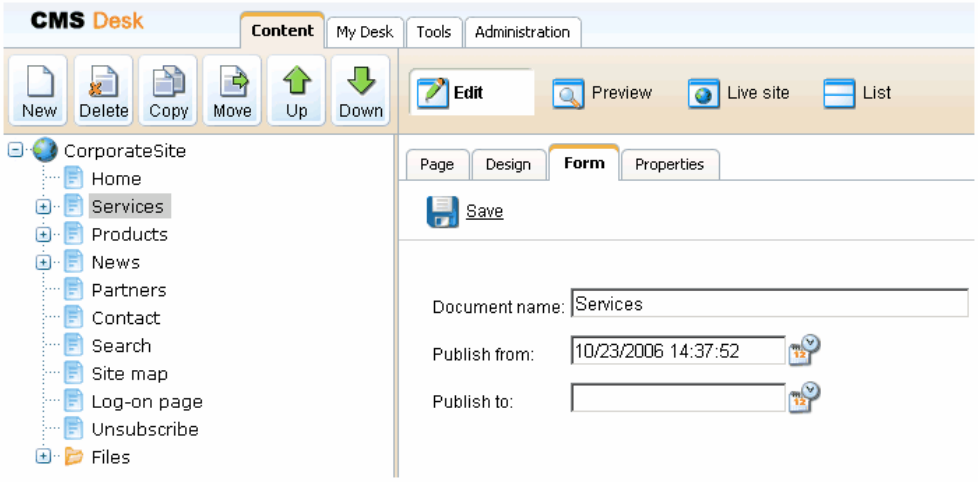
© 2009 Kentico Software

Creating new folder		X				X
See child documents of the specified document	X					

© 2009 Kentico Software

6.8 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:



When you set these values, the document will be displayed on the web site 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.

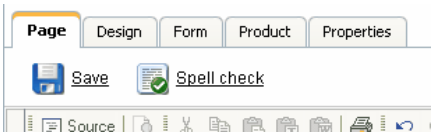
Content scheduling and workflow/versioning

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 web site and search for the **Content scheduling** task.

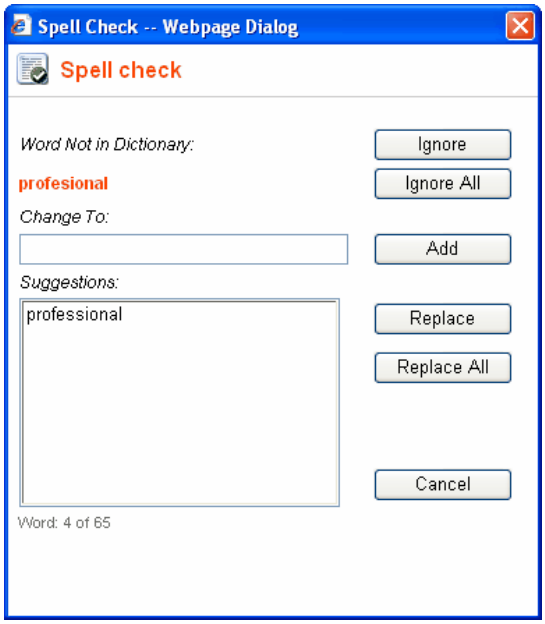
© 2009 Kentico Software

6.9 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 addtional 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

© 2009 Kentico Software

- 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 web site 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.

6.10 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.

6.11 Permissions and security

Kentico CMS allows you to configure permissions for particular site sections or even particular documents. You can find more details in chapter Security and administration.

© 2009 Kentico Software

6.12 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 web site 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 web site immediately.
2. **Workflow** - if you use workflow, the changes are published on the live web site 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.

© 2009 Kentico Software

Part



Workflow and versioning

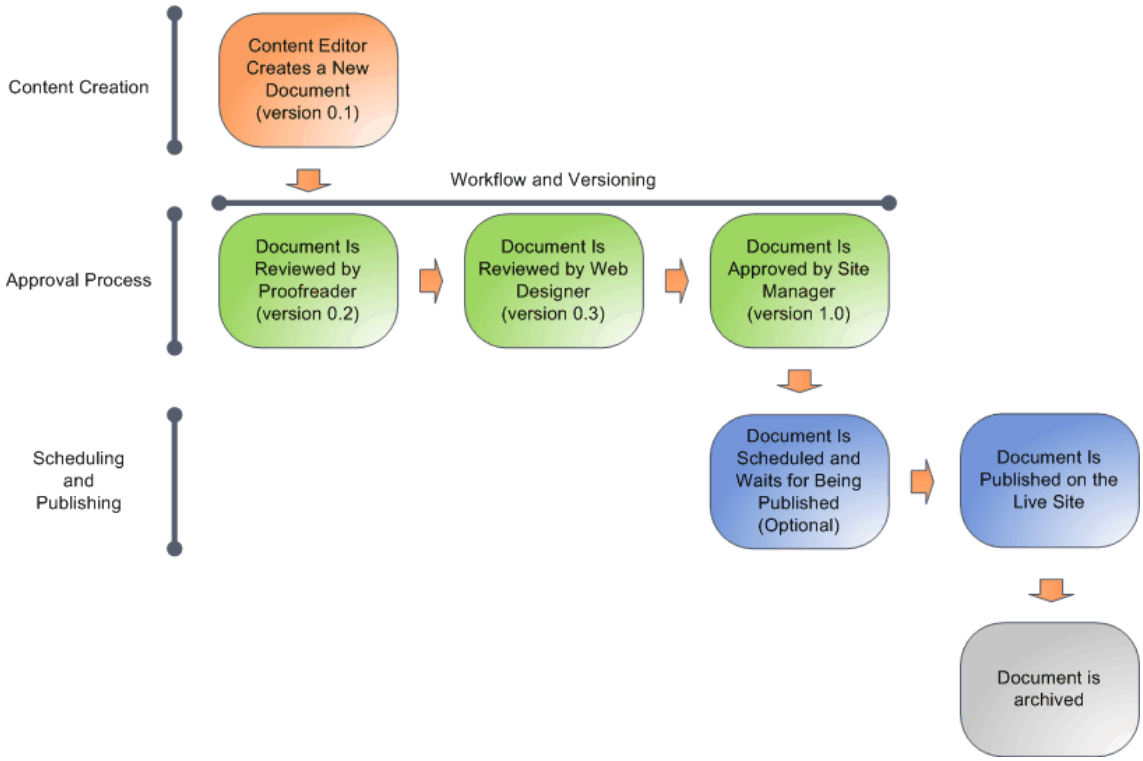
7 Workflow and versioning

7.1 Workflow 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 web site.
- 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 web site, 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-sequent 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.

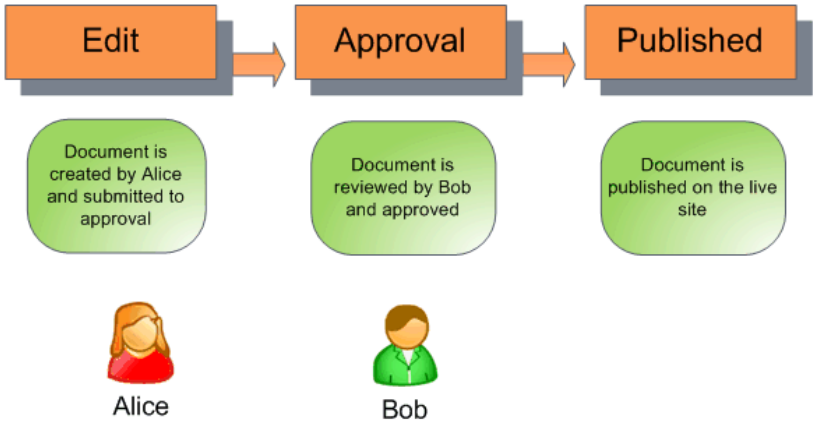
© 2009 Kentico Software

7.2 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 web site.
- 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 web site.



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 web site.
Go to the **Roles** tab and assign the user to the **CMS Editors** role of the given web site.

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 web site.

© 2009 Kentico Software

Go to the **Roles** tab and assign the user to the **CMS Editors** role of the given web site.

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, she 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

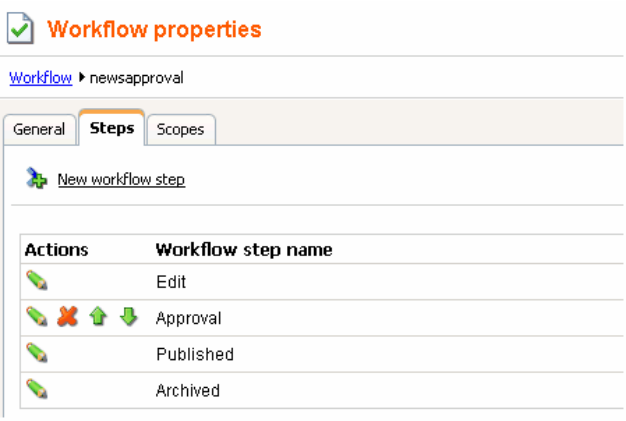
Choose the **Steps** tab and create a new workflow step:

- Display name: Approval
- Code name: Approval

Click **OK** and choose the **Roles** tab in the Workflow properties dialog. Choose the appropriate web site 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.

© 2009 Kentico Software

When you see the list of workflow steps now, it looks like this:



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 web site from the drop-down list and click **New workflow scope**. Enter the following details:

- Starting alias path: /news (this is the section of the web site for which the workflow will be applied)
- Document type: News
- Culture: (all)

Click **OK**.

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.

© 2009 Kentico Software

7.3 Using workflow

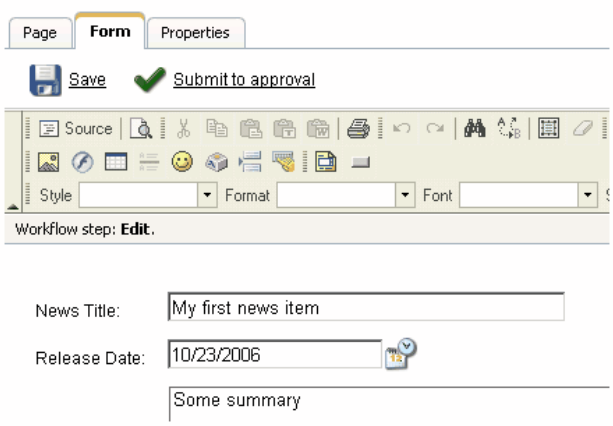
This example explains how the workflow process works from the perspective of content editors. It requires the system to be configured as described in the previous chapter.

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:



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.

© 2009 Kentico Software

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 send 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 his/her approval in dialog **My Desk -> Documents waiting for my approval**.

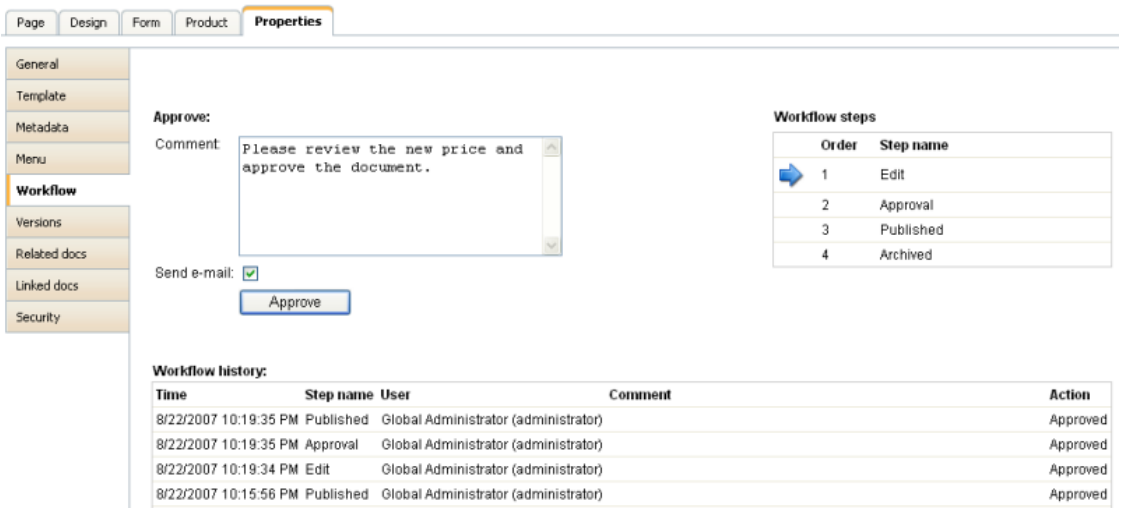
Similarly, the user who submitted the document can see the document status in dialog **My Desk -> Recent documents**.

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**:



Here you can also track the workflow history of the document and see the current workflow step in the workflow.

© 2009 Kentico Software

© 2009 Kentico Software



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 he/she is 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**.

7.4 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 when the document status changes.

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

© 2009 Kentico Software

7.5 Versioning and rollback

Versioning allows you to store all versions of the document that uses workflow. You can view the previous versions of the document in **CMS Desk -> Content -> Properties -> Versions**.



This dialog allows you to **view, rollback and delete** the old versions. If you **rollback** some of the previous versions, it's added to the top of the version history, but it needs to be approved again so that it's published.

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

© 2009 Kentico Software

7.6 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

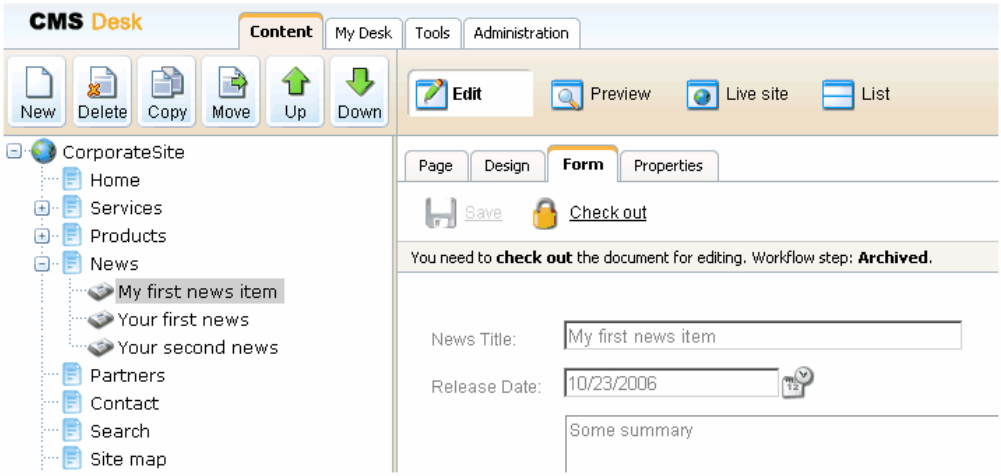
You can enable content locking for all versioned documents in **Site Manager -> Settings -> Content management -> Use check-in/check out**.

Example

Here's an example of operations in the document life cycle:

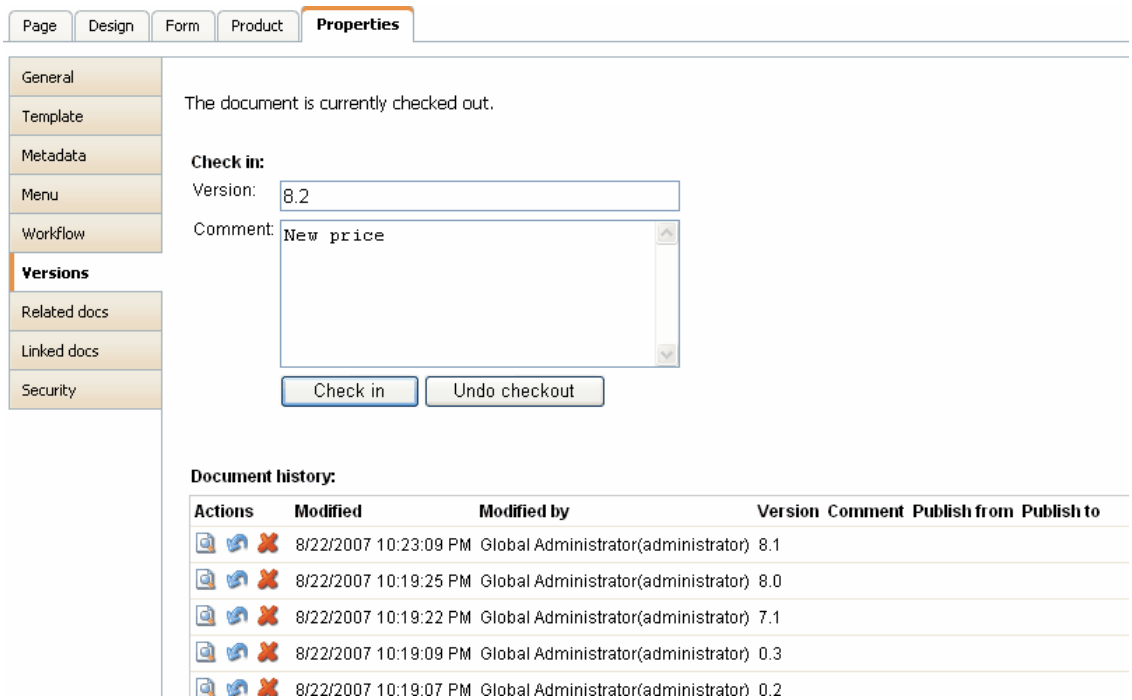
1. User Alice creates a news item. The news item is automatically checked out (locked) for her. The other users cannot edit it.
2. User Alice finishes the changes and checks-in the document.
3. Now the other users can modify the document as well. As the document is checked in, Alice can also submit it to approval.

When you try to edit a checked-in document, you will get a disabled editing form with **Check out** button:



© 2009 Kentico Software

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:





Checking-in any document

Users who are granted with permission "Check-in any document" can check-in any document even if he/she hasn'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.

7.7 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.

© 2009 Kentico Software

Part VIII

Security, permissions and personalization

8 Security, permissions and personalization

8.1 Security model

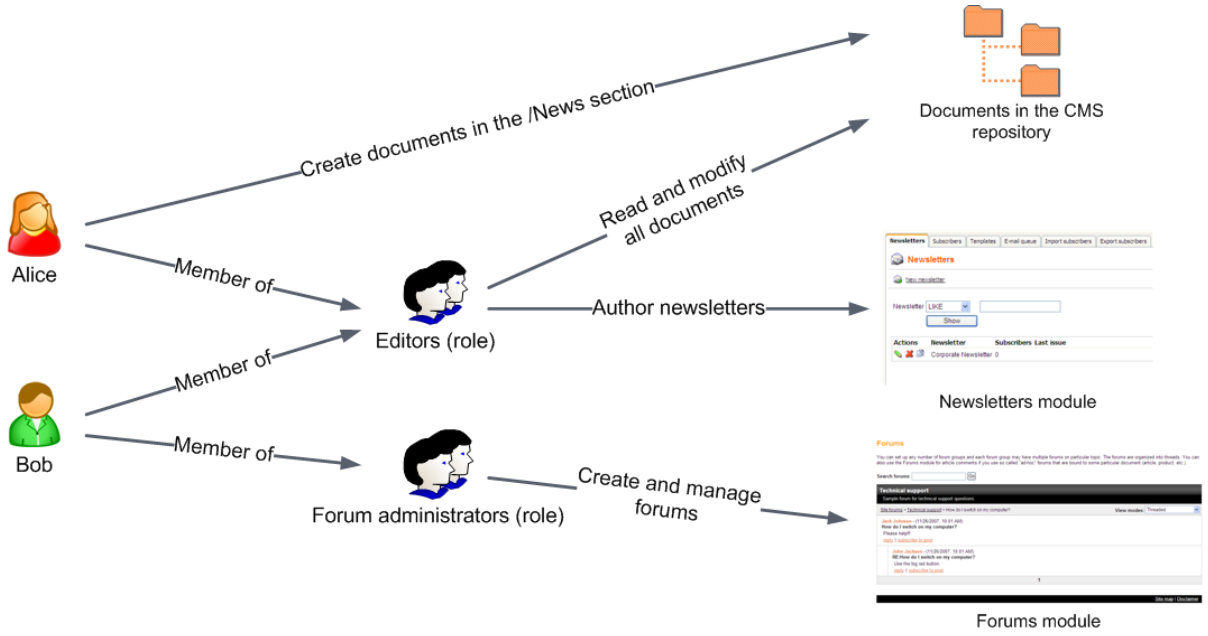
Kentico CMS provides a flexible security model that allows you to configure granular permissions to content and modules. The security model consists of:

- users (shared among web sites)
- roles (specific for web sites)
- module permissions
- document permissions

The users, roles 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 web site (the current web site 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 member 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 set of permissions.

If the user is member of multiple roles, her **permissions for modules** are calculated as a sum of all permissions granted to all roles.

© 2009 Kentico Software

If the **permissions for documents** in the CMS repository are granted to both user and her roles, the document permissions are calculated as a sum of all permissions granted to the user and to all roles. If the user or some of her roles is **denied to make some action** (such as modify document), then the result is always "denied" for the given permission even if the remaining roles are allowed to make the action.

8.2 User management

The user can be a member of any number of roles and can be assigned to any number of web sites.

There are two important attributes of the user account:

- **Is editor** – it specifies if the user is allowed to sign in to Kentico CMS Desk.
- **Is global administrator** – it specifies if the user is allowed to sign in to Kentico CMS Site Manager and the Design tab in the CMS Desk.



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

Go to **Site manager -> Administration -> Users** or **CMS Desk -> Administration -> Users** and click **New user**. Now you can enter the following properties:

User name	User name (login). It must be unique over all web sites.
Full name	User full name (first name, middle name and last name).
E-mail	User e-mail.
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 Kentico CMS Desk. It's used to differentiate users who are only allowed to visit member areas of the web site from content editors who can use Kentico CMS Desk user interface. It provides an extra security layer.
Password	User password.

© 2009 Kentico Software

Confirm password	User password again for confirmation.

© 2009 Kentico Software

Editing user properties

You can edit user properties in **Site manager -> Administration -> Users** -> click the **Edit** button of the chosen the user (or in **CMS Desk -> Administration -> Users**).

General properties

User name	User name (login). It must be unique over all web sites.
Full name	User full name (first name, middle name and last name).
First name	First name.
Middle name	Middle name.
Last name	Last name.
E-mail	User e-mail.
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 Kentico CMS Desk. It's used to differentiate users who are only allowed to visit member areas of the web site from content editors who can use Kentico CMS Desk user interface. It provides an extra security layer.
Is global administrator	Indicates if the user is global administrator with full permissions for all features and data.
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 form Active Directory.
Is hidden	If true, the user is not visible on the site (e.g. on-line users monitoring, repeaters displaying users, etc.).
Description	Optional text describing the user.
Preferred content culture	Preferred culture in which the users wants to see the content.
Preferred user interface culture	Preferred culture in which the users wants to see the user interface (CMS Desk and Site Manager).
Created	The date and time when the user account was created or when the user registered on the web site.
Last logon	The date and time when the user last logged in.
Campaign	The campaign from which the user came to your web site before she registered. See Tracking marketing campaigns for details.
Starting alias path	The alias path of the site section that opens in CMS Desk. If you specify this value, the user is not allowed to browse other sections of the web site 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 the given user, grant him with appropriate document permissions (Properties -> Security).

© 2009 Kentico Software

© 2009 Kentico Software

Password

Here you can change the user's password:

Password	User's new password.
Confirm password	Repeat user's new password for confirmation.

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 her 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 web sites.

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 web site) 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.

Deleting a user

You can delete users in **Site manager -> Administration -> Users** -> click the **Delete** button of the chosen the user.

8.3 Role management

Roles are assigned to a particular (single) web site. 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.

© 2009 Kentico Software

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.

8.4 Authentication

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.

```
// getting user name
string userName = CMS.CMSHelper.CMSContext.CurrentUser.UserName;
```

© 2009 Kentico Software

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.

© 2009 Kentico Software

8.5 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 her 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:** yes
   Click **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 web site in a

© 2009 Kentico Software

new browser. Try to go to **<web project>\cmssitemanager** to make sure you are recognized as a global administrator.

From now on, when an authenticated user comes to the site, her user account is created in Kentico CMS database automatically and her 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 web site.



Forbidden characters replacement on AD import

When importing user and role names, forbidden characters in the source names are replaced by the character defined in Site Manager -> Settings -> URLs -> Forbidden characters replacement.

Alternatively, 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 one character that will be used as the replacement character:

- <add key="CMSForbiddenUserNameCharactersReplacement" value="-" />
- <add key="CMSForbiddenRoleNameCharactersReplacement" value="-" />

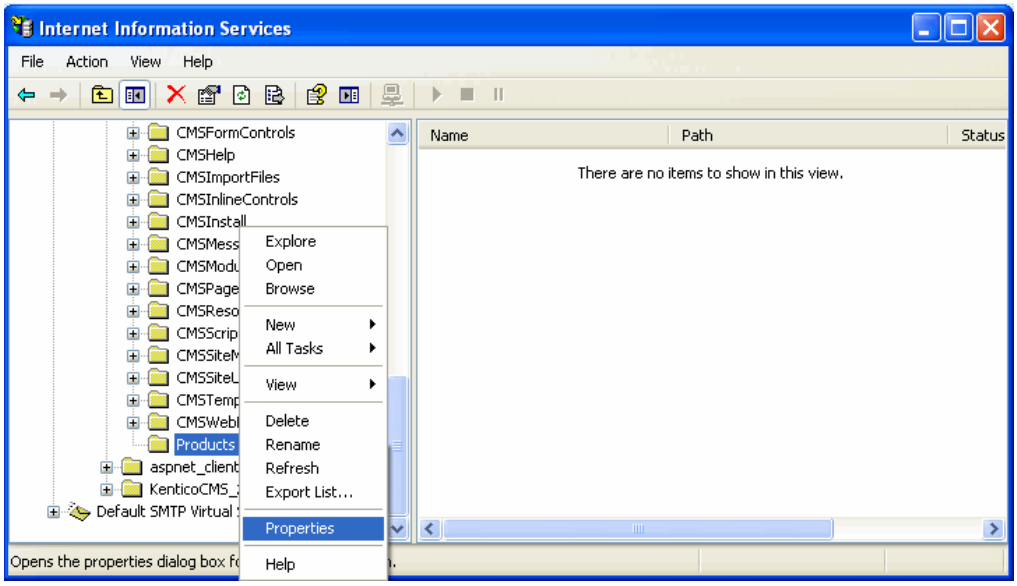
Securing a web site section using Windows authentication

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:

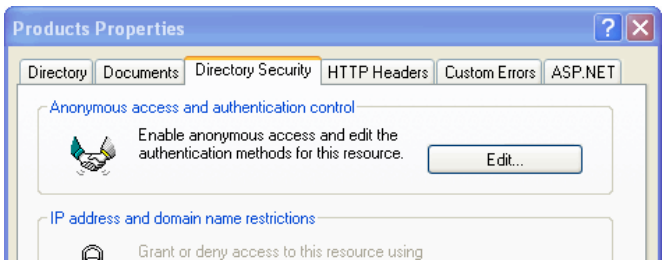
1. Locate your web project on the disk (typically *c:\Inetpub\wwwroot\<web project>*). Create a new directory in your web project's folder and give it the same name as the filename in the document's URL. In this case, the filename is *Products.aspx*, so we will create a folder named **Products**.

2. Open the IIS and locate the directory in the tree. Right click it and choose **Properties**.

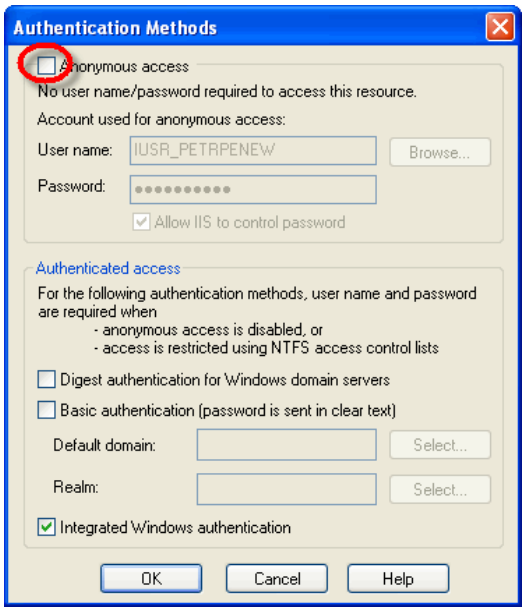
© 2009 Kentico Software


Internet Information Services
File
Action
View
Help
CMSFormControls
CMSHelp
CMSImportFiles
CMSInlineControls
CMSInstall
Products
aspnet_client
Default SMTP Virtual
Explore
Open
Browse
New
All Tasks
View
Delete
Rename
Refresh
Export List...
Properties
Help
Name
Path
Status
There are no items to show in this view.

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.



© 2009 Kentico Software

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:

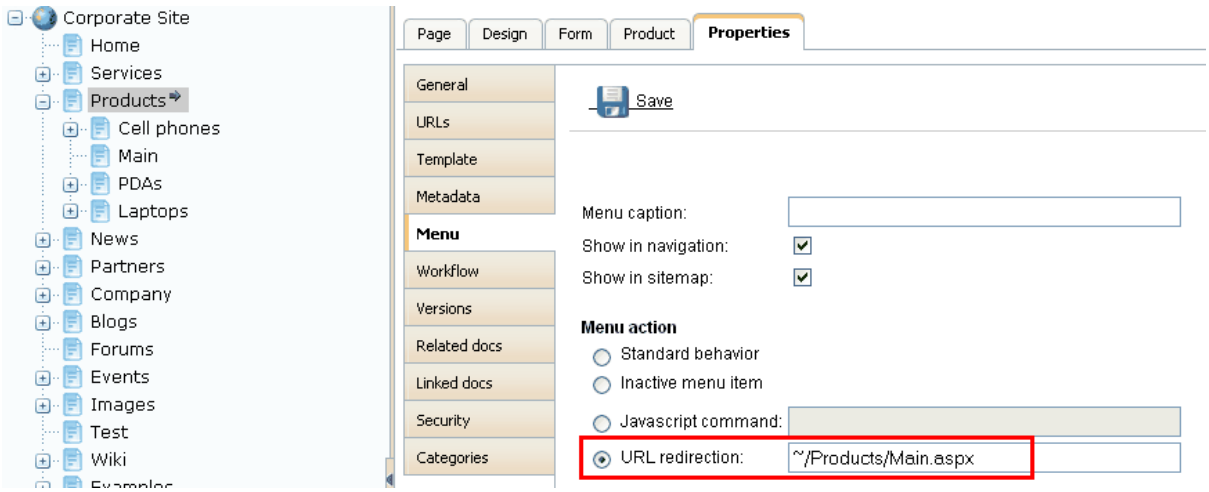
```
...
<authentication mode="Windows">

...

<!-- 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.



© 2009 Kentico Software

8.6 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.mydomainxy.com/DC=mydomain,DC=mydomainxy,DC=com
```

© 2009 Kentico Software

User name and password need to be entered only on Windows XP, in the following format:

- **Username**: mydomain\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.mycompanyxy.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" />
```

8.7 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).

© 2009 Kentico Software

8.8 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.

© 2009 Kentico Software

8.9 Permissions for modules and documents

The system recognizes the following permissions:

- User is a **global administrator** - she is authorized for all operations and her access cannot be denied or otherwise limited. The global administrators are the only persons who can use the Site Manager user interface.

- User is an **editor** – she can access the CMS Desk interface. This attribute doesn't implicate any particular permissions. This attribute differentiates the site editors and "registered users" who only access the front-end web site and secured site areas.

- Roles have **permissions for chosen modules** – role members can take specified actions in specified modules. These permissions are set in the **Site Manager -> Administration -> Permissions** section, in the appropriate permission matrix. You can find more details on permissions in the documentation of appropriate modules.

- Roles have **global permissions for all content** - these permissions can be set in the **Site Manager -> Administration -> Permissions** section, in the permission matrix called **Module: CMS Content**. Here you can set the following permissions:
  - Read - read all documents
  - Create - create any document
  - Modify - modify any document
  - Delete - delete any document
  - Destroy - destroy any document (delete without undo option)
  - Browse tree - browse content tree
  - Modify permissions - manage local permissions of any document
  - Manage workflow - approve/reject any document at any workflow step
  - Check in any document - authorizes user to perform the Check in or Undo checkout actions on the Properties -> Versions tab of a document
  - Design web site - this permissions allows user to edit page templates on the Design tab. Please note: although the user can make the changes only for his web site, the changes may affect other web sites if he modifies a page template shared among multiple web sites.

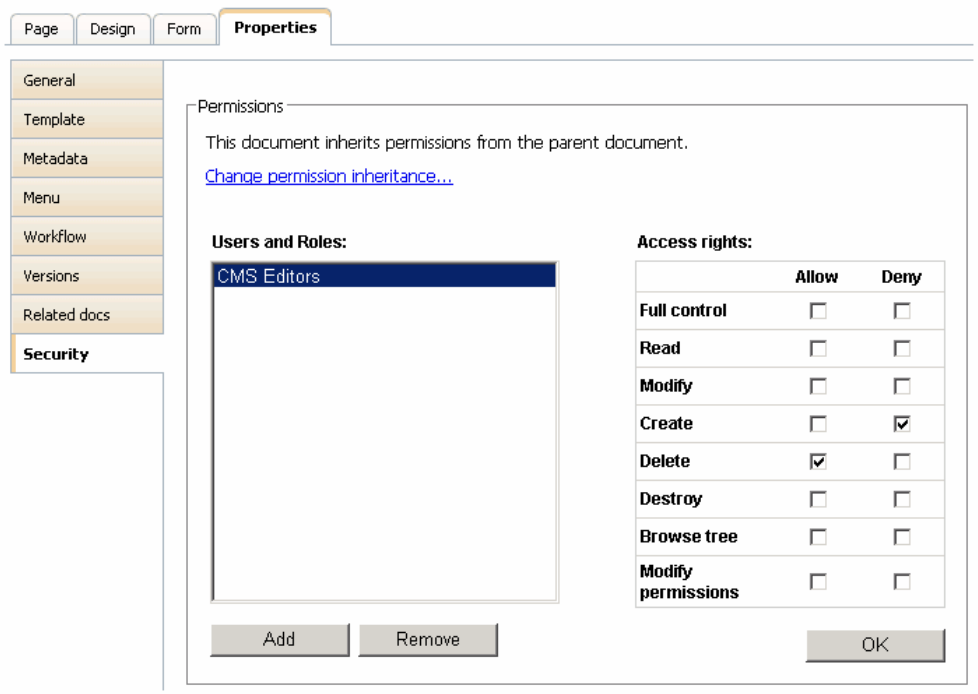
- Roles have **global permissions for particular document type** – role members can take specified actions with particular types of documents. These permissions can be set in the Administration -> Permissions section, in the appropriate permission matrix prefixed with "Document type:".
  - Read - read 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

- Users or roles have **local permissions for particular content tree section or particular document**. These permissions are combined with global permissions for all content and global permissions for document types. If some permission is "denied" in the local permissions, the "deny" attribute overrides both local and global permissions. Local permissions are described in detail in the following paragraph.

© 2009 Kentico Software

Managing local document permissions

You can manage local permissions (i.e. permissions for particular site section or particular document) in **CMS Desk -> Content -> select some document in the content tree -> click Properties -> choose the Security tab**.



Setting the permissions

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** button on the right. Now you can choose if the permissions should be "allowed" or "denied". You can configure the following permissions:

- **Full control** - perform all operations with 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

© 2009 Kentico Software

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 he 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.

© 2009 Kentico Software

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**.

Multiple Sites and Security

The user accounts can be shared over several web sites that are served by a single installation of Kentico CMS. You can specify which web sites an editor can edit. This applies only to the CMS Desk access. The logons to live web site (to the member sections) are not affected by assigned web sites.

Every web site has its own set of roles (there are no shared or global roles). The global permissions are assigned to these roles, which means every web site can use a different configuration of role permissions.

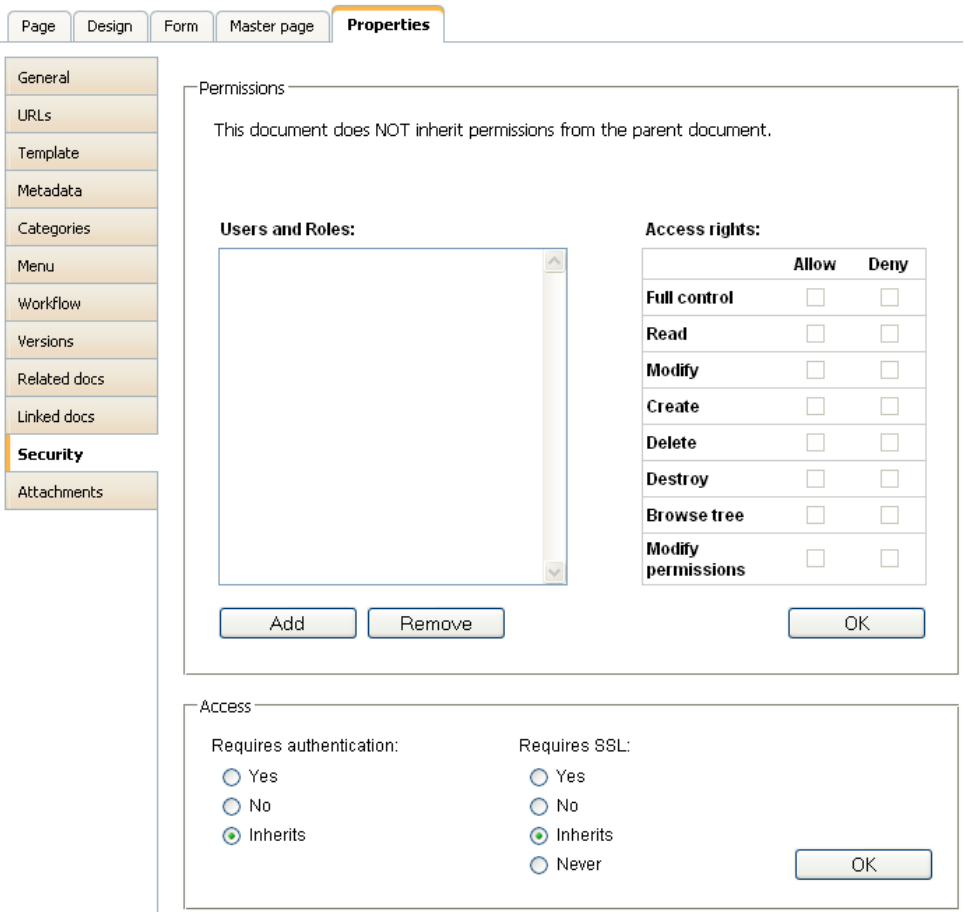
© 2009 Kentico Software

8.10 Secured web site areas

Kentico CMS allows you to easily create secured web site areas that are accessible only by authenticated users. When an non-authenticated (public) user comes to the secured section, she is 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 web site 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



© 2009 Kentico Software

Configuration of a secured site area

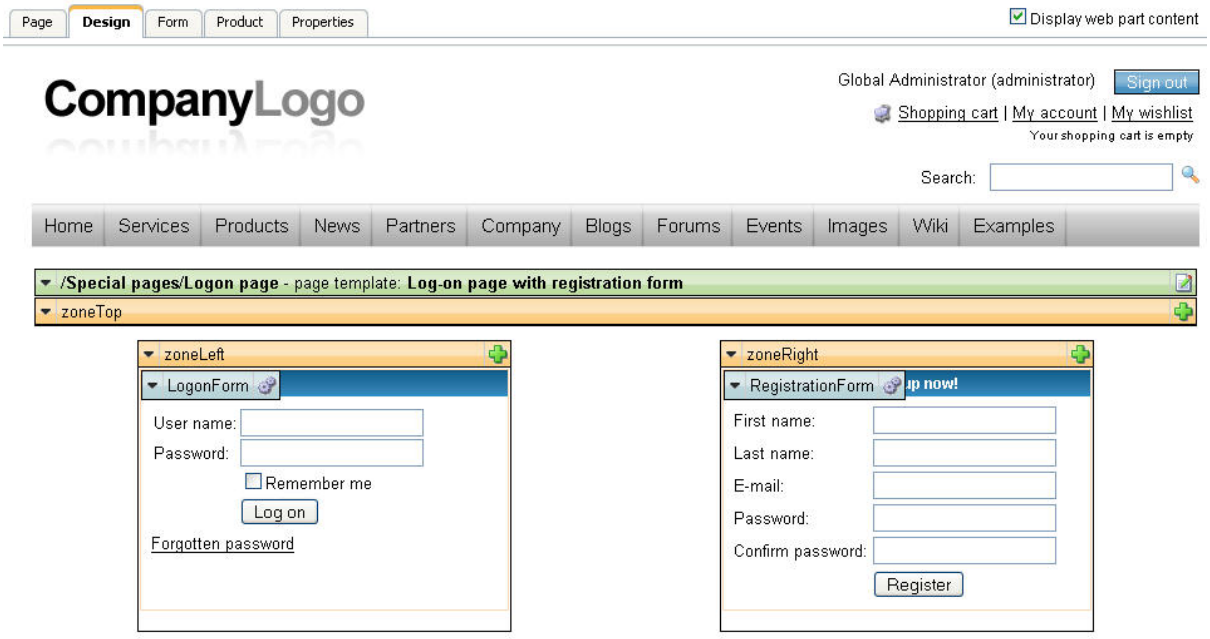
This example explains how to secure the Products section in the sample Corporate Site.

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**.

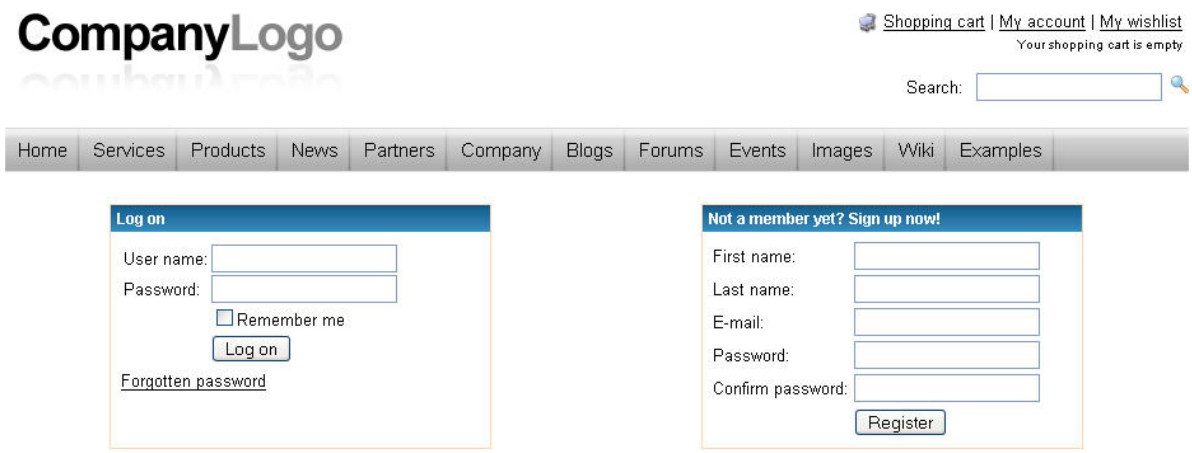
3. Go to **Site Manager -> Settings -> Security** and choose the *Corporate Site* site in the drop-down list. Make sure the **Secured areas logon page** is set to *~/logon.aspx*. This is the URL of the logon page. You can either use the system logon page *~/cmspages/logon.aspx* or you can define your 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.



© 2009 Kentico Software

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 for all pages within a secured area.

When the user is not authorized to read the page, she is displayed with Access denied page. You can configure custom access denied page URL in the **Site Manager -> Settings -> Security -> Access denied page URL** property.

© 2009 Kentico Software

8.11 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 **Anonymous User (public)**.

Example: Personalizing the Products menu

In the previous chapter, we have configured secured area for the Products section of the web site. 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 **Roles** tab in the **User properties** dialog and add the user to the **Customers** role.

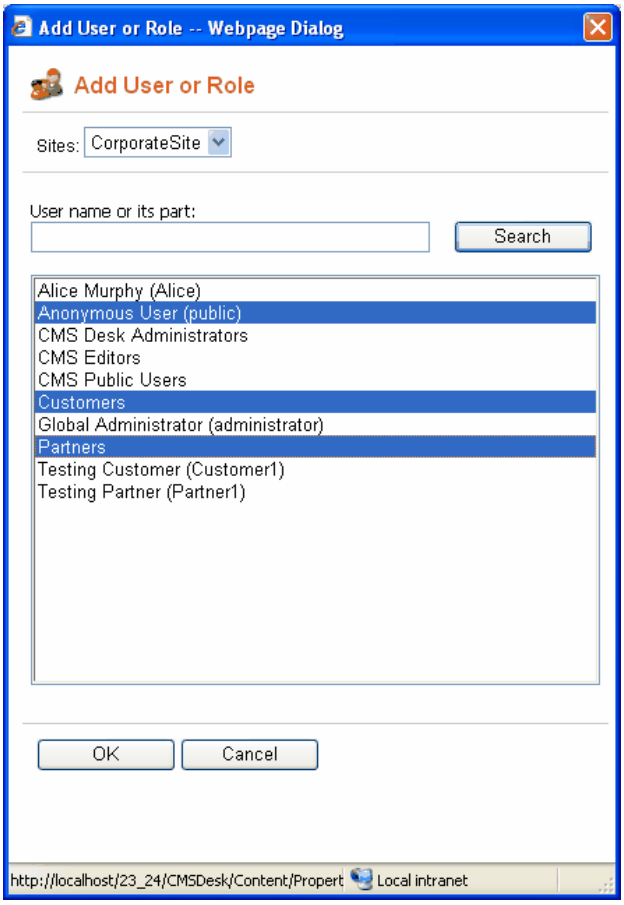
4. Create another user **Partner1** with following values:
   - User name: Partner1
   - Full name: Testing Partner
   - Enabled: true
   - Is editor: no

   Click **OK**.
   Go to the **Roles** tab in the **User properties** dialog and add the user to the **Partners** role.

5. Go to **Content** and click the root. Click **Properties -> Security**.

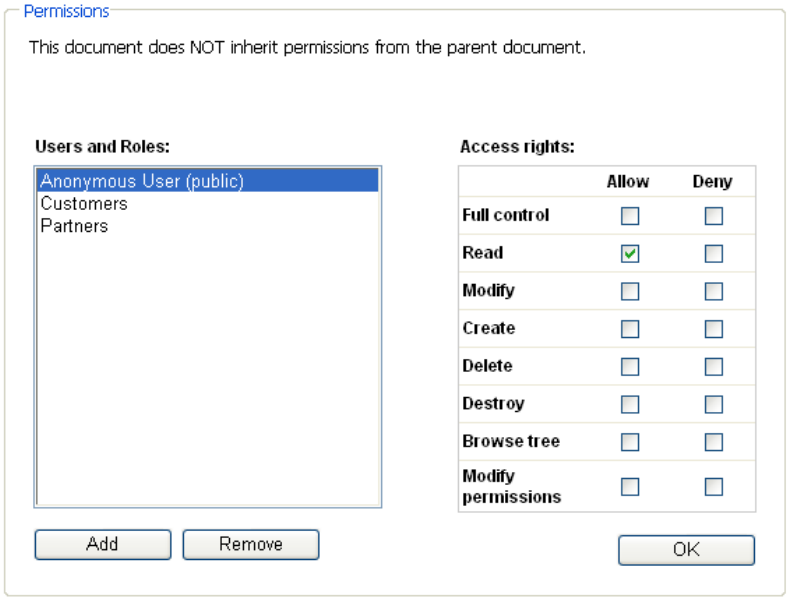
© 2009 Kentico Software

6. First, we need to grant the **Anonymous user (public)** and **Customers and Partners** roles with Read permission for the whole web site. Click **Add**, click **Search**, select **Anonymous user (public), Customers and Partners** and click **OK**.



© 2009 Kentico Software

7. Now grant all newly added users/roles with Read permission. You need to click each user/role, check the box next to **Read** and click **OK**.



8. Now we hide the product categories from public users. In the content tree, click **/Products/Cell Phones**. Click **Properties -> Security**, choose the **Anonymous User** and **deny the Read permission**. Click **OK**. Repeat the same for categories **Laptops** and **PDAs**.

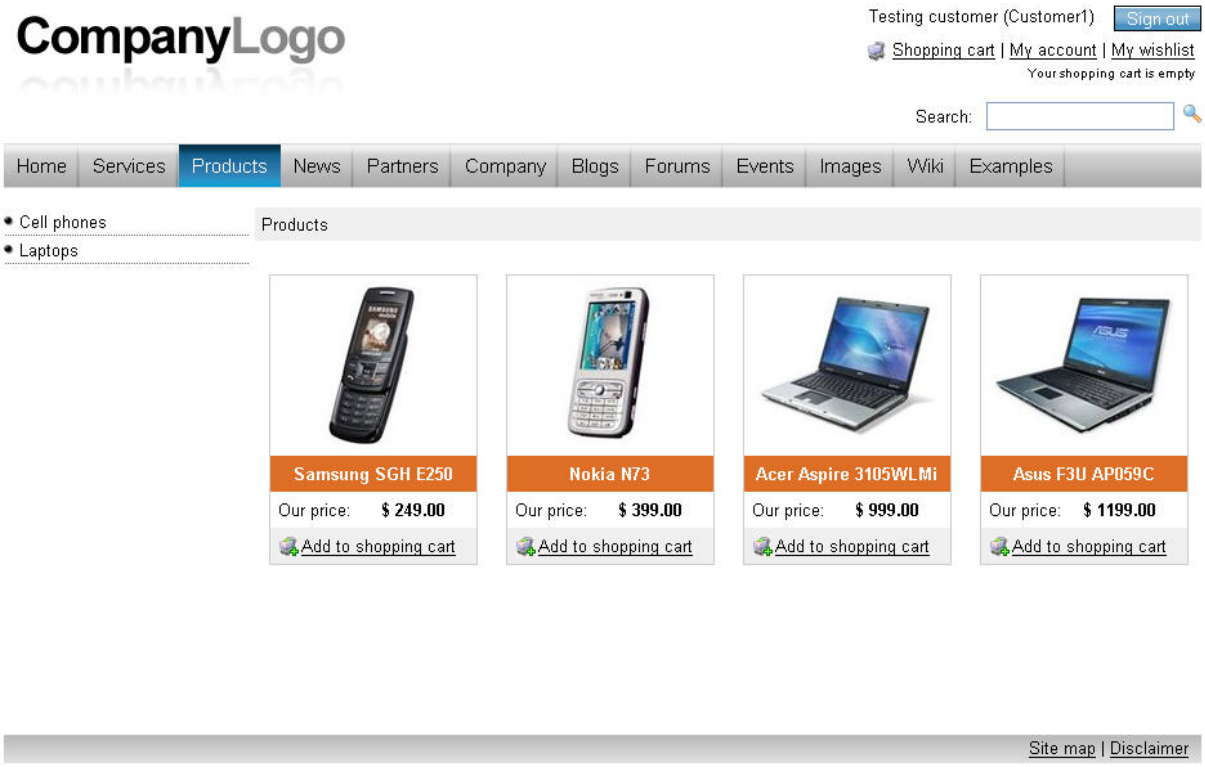
9. Now we will hide the PDAs category from the **Customers** role members. Display the **Security** dialog for the **/Products/PDAs** document and **deny the Read permission** to the **Customers** role. Click **OK**.

10. 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 (checked). Click **OK**. Repeat the same for the **LeftTreeMenu** and **ProductDataList** web parts on the **/Products** page.

11. Sign out. If you mouse-over the **Products** menu item, you will see that the sub-categories are no longer displayed.

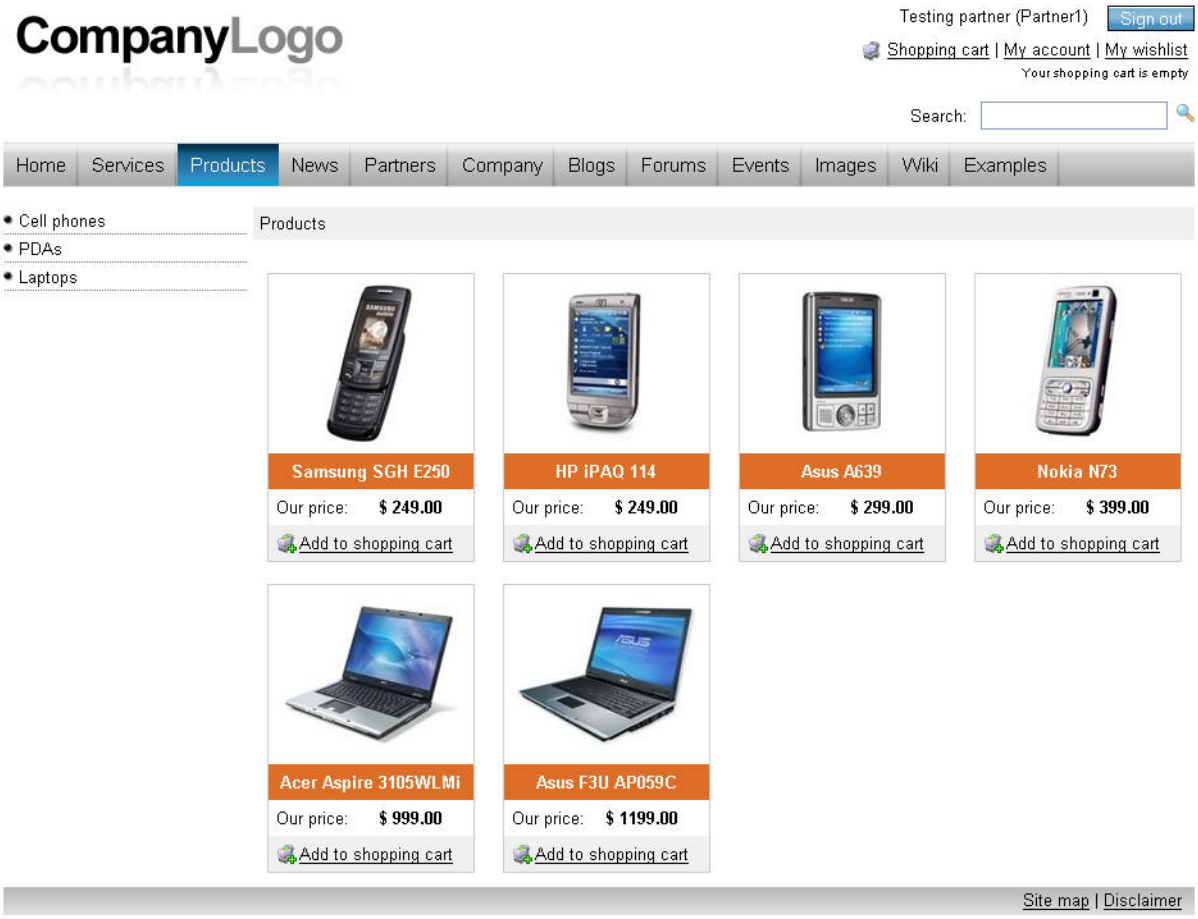
© 2009 Kentico Software

12. Click **Products** and sign in as user **Customer1**. You will see a page like the one below. As you can see, the PDAs section and PDA products are not displayed to this user.



© 2009 Kentico Software

13. Now sign out and sign in again as user **Partner1**. You will all categories and products:



You have learned how to personalize the content displayed to users based on their permissions.

© 2009 Kentico Software

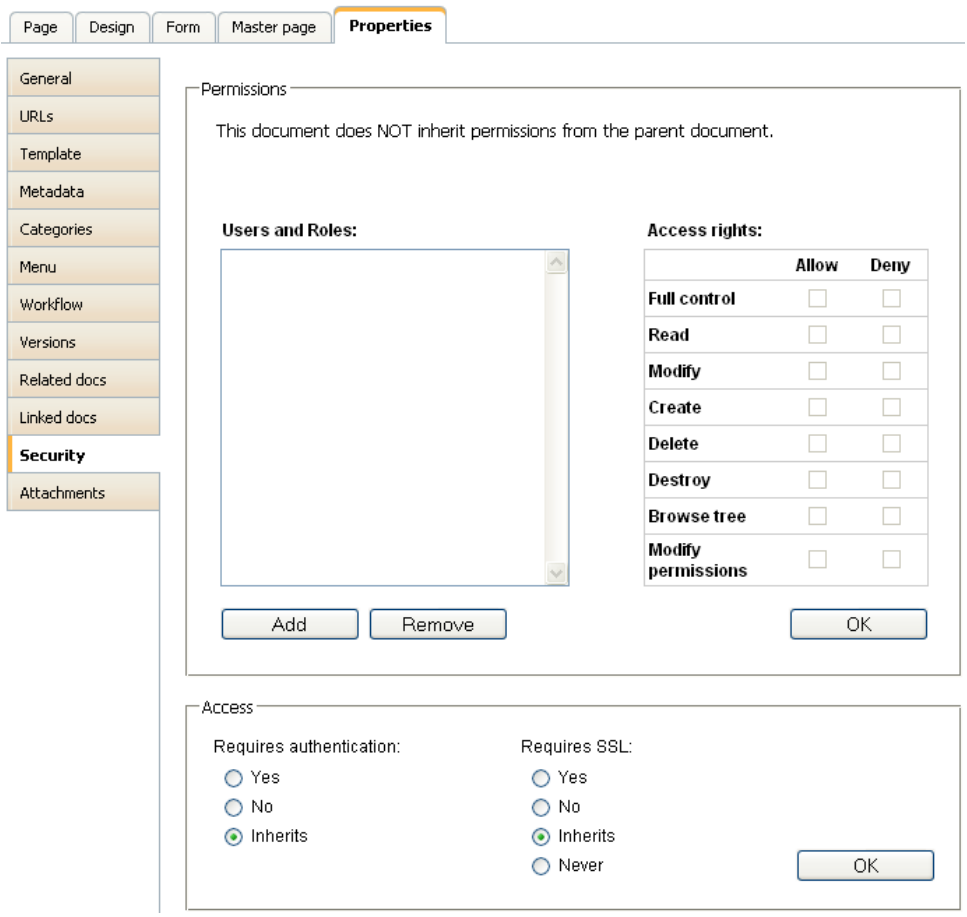
8.12 SSL (HTTPS) support

Kentico CMS allows you to specify which pages of the web site can be displayed only over the secured SSL (HTTPS) protocol. When a user tries to open such a page with standard HTTP protocol, she is redirected to the secured (HTTPS) URL of the same page.

Please note: Kentico CMS doesn't configure your web site 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

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 comming (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



© 2009 Kentico Software

8.13 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.

8.14 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 web site 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 web site, 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 web site:

```
<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

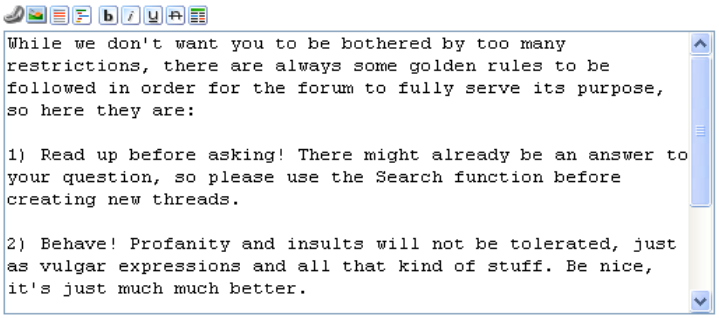
The common parameters of ASP.NET web forms and URL parameters **aliaspath** and **lang** are allowed by default.

© 2009 Kentico Software

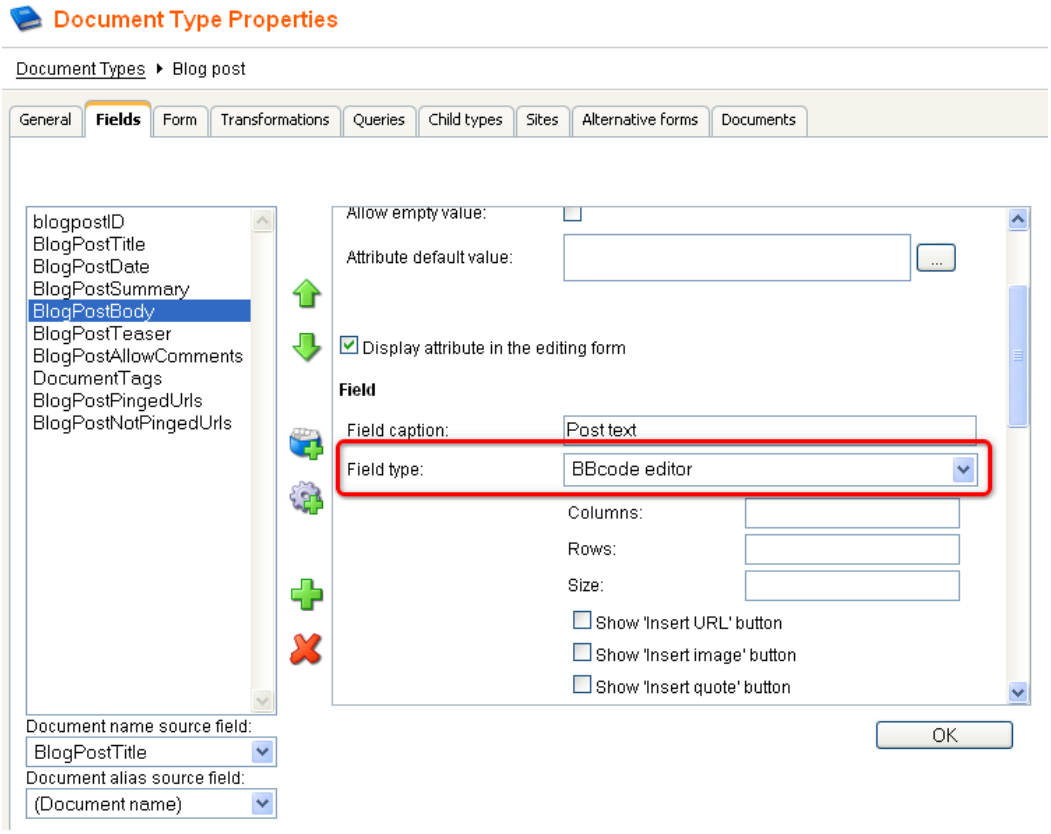
8.15 Cross site scripting (XSS)

For your web sites 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**.



This editor is displayed by selecting **BBcode editor** as the value of the Field type attribute when defining document type fields:



© 2009 Kentico Software

2. When writing your transformations, use the following method to resolve text entered via the BBcode editor:

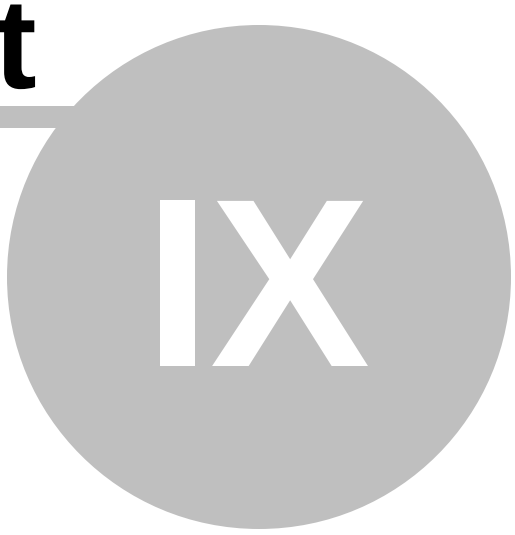
```
CMSHelper.CMSContext.ResolveDiscussionMacros(string inputText)
```

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) %>
```

© 2009 Kentico Software

Part

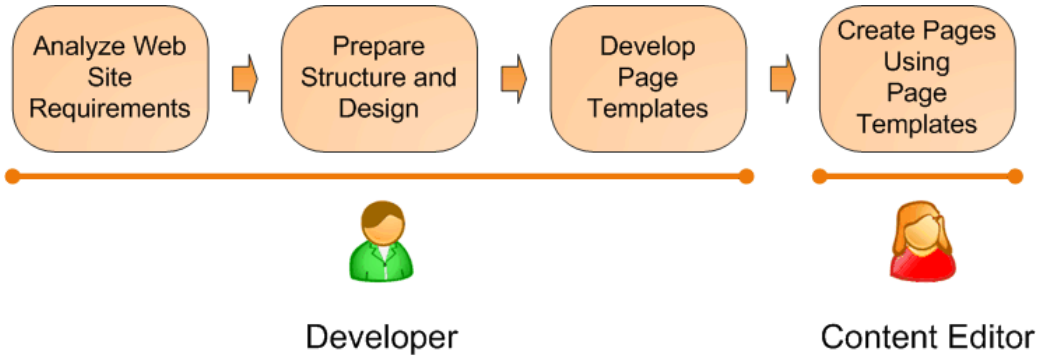


Web development overview

9 Web development overview

9.1 The role of web developer

The role of web developer is described on the following figure:



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

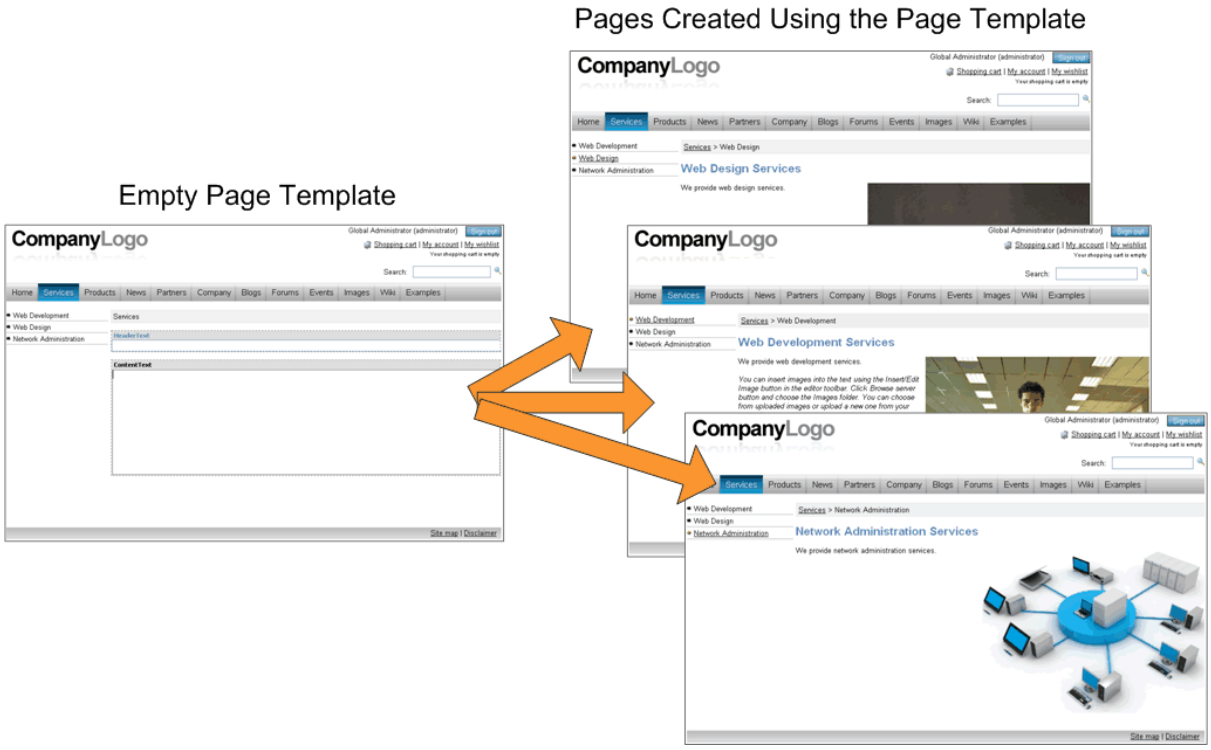
1. The developer analyzes the client requirements.
2. The developer prepares the site structure (site map) and web design.
3. The developer creates **page templates** for every type of the page (home page, solutions, products, news, etc.)
4. The content editor creates new pages - she enters text and images into the page templates defined by developer.

© 2009 Kentico Software

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



The next chapter describes two development models of creating such page templates.

9.3 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 web site 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 web site 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 the web site 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 a hard-core .NET developer and do not trust portal engines, you may want to use ASPX templates.

© 2009 Kentico Software

The following table compares portal engine and ASPX templates:

	Portal Engine	ASPX Template
How you work	You build web site 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 web site 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 web site.	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	• Easier and faster to build a web site. • ASP.NET programming knowledge is not required for common tasks. • You can build the whole web site very quickly, only using	• Standard ASP.NET architecture. • You can use your favorite development tools, such as Visual Studio for all changes.

© 2009 Kentico Software

	the web browser.	
Disadvantages	• Proprietary architecture and development.	• 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 a full control over:
- site structure
- site navigation
- page layout
- design
- content structure

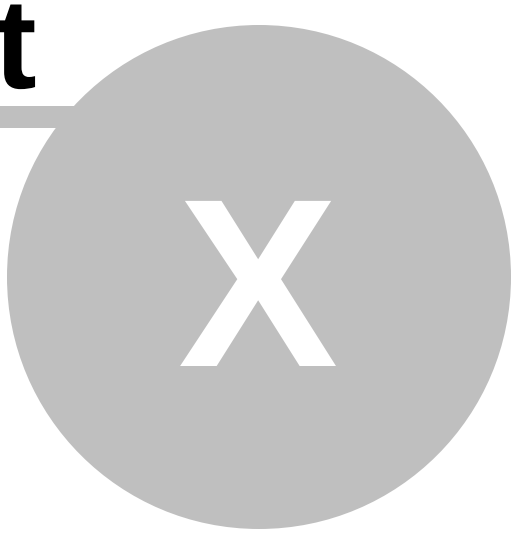
Also, it's important to explain that Kentico CMS is a **content management system**, not only a portal engine. It means it provides features of advanced CMS systems, such as:
- content repository using a logical tree hierarchy for all types of content - see Where is the content stored? for details
- 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 a complete documentation and support.

© 2009 Kentico Software

Part



Development with Portal engine

10 Development with Portal engine

10.1 Portal engine overview

Every page in Kentico CMS web sites uses some page template. **Page template** consists of 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.

The design of the page is defined by **page layout**, which is a standard HTML code. The HTML code is used to define two-column, three-column or 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 some 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.

The following figures show an example of simple page, its page template, layout, web part zones and web parts:

1) The sample page on the live site

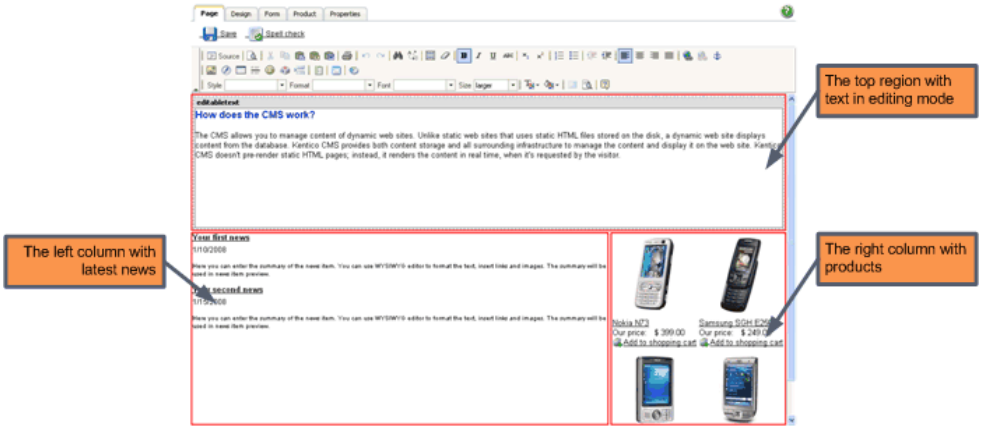
This image shows our sample page on the live site. It displays the text on the top, news in the left column and products on right.



© 2009 Kentico Software

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

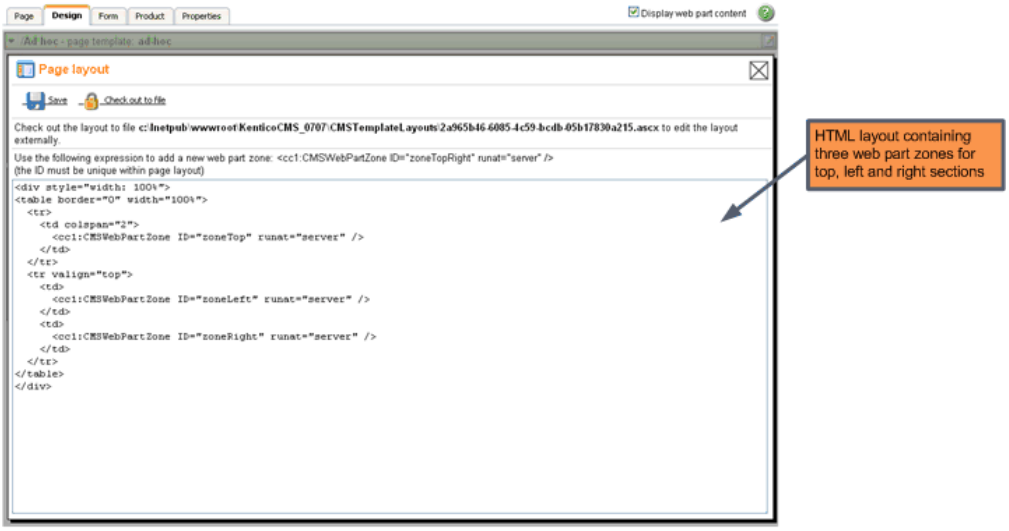
This the design mode of the page template used for our sample page. As you can see, it consists of three web part zones - zoneTop, zoneLeft and zoneRight. The web part zones contain the web parts.



© 2009 Kentico Software

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.



10.2 Creating a new page template

There are two ways how to create a new page template:

1. Creating a blank page with ad-hoc template.
2. Cloning an existing page template.

We will start with the first option.



What is an ad-hoc template?

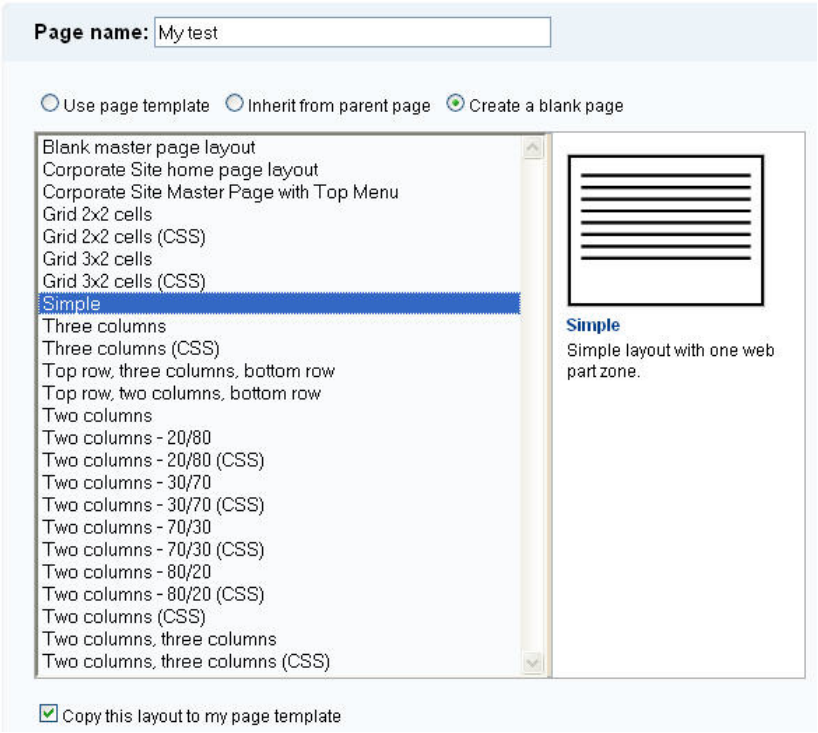
An ad-hoc template is a page template that is used by only one page. An ad-hoc template doesn't have any name. If you want to re-use the template for multiple pages, you need to save it as a named template first.

Creating a blank page with ad-hoc template

Please note: It's recommended that you use the **Corporate Site** sample web site for this example.

© 2009 Kentico Software

Go to **Kentico CMS Desk -> Content**, click **New** and choose to create a new **Page (menu item)** under the web site root. 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.



© 2009 Kentico Software

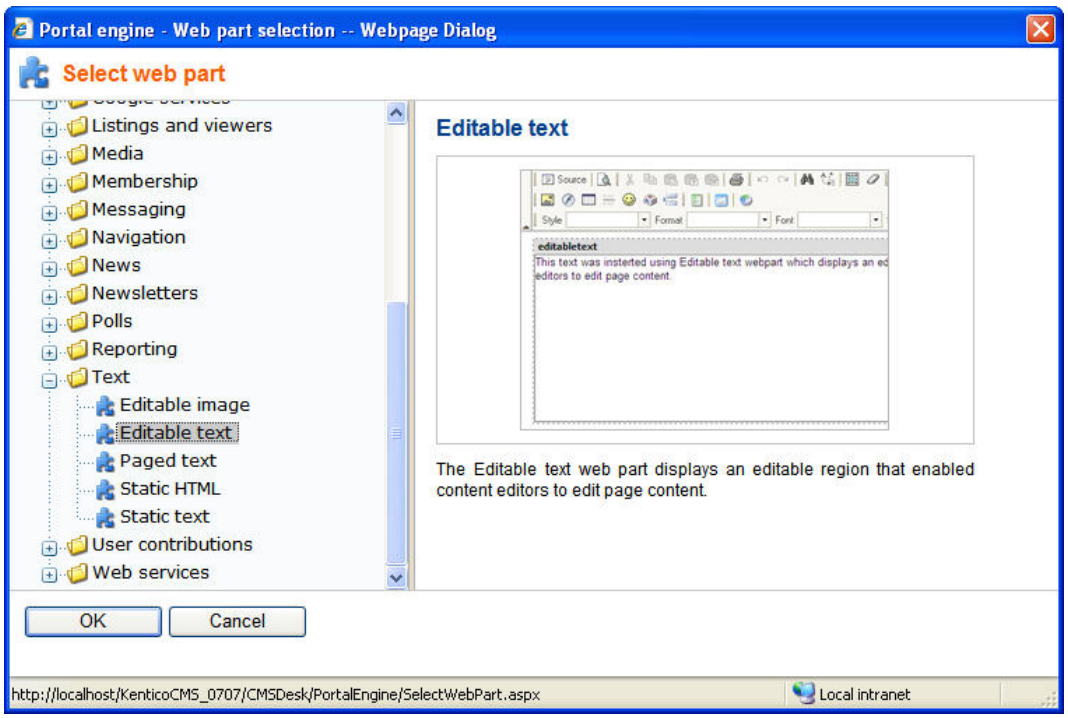
Click **Save**. The page is now displayed in the tree view and selected. Click the **Design** tab. You will see a page like this:



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.

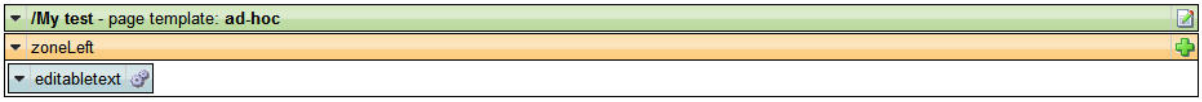
The yellow box with **zoneLeft** title displays the web part zone, where web parts can be placed.

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 on the page where content editors can put content.

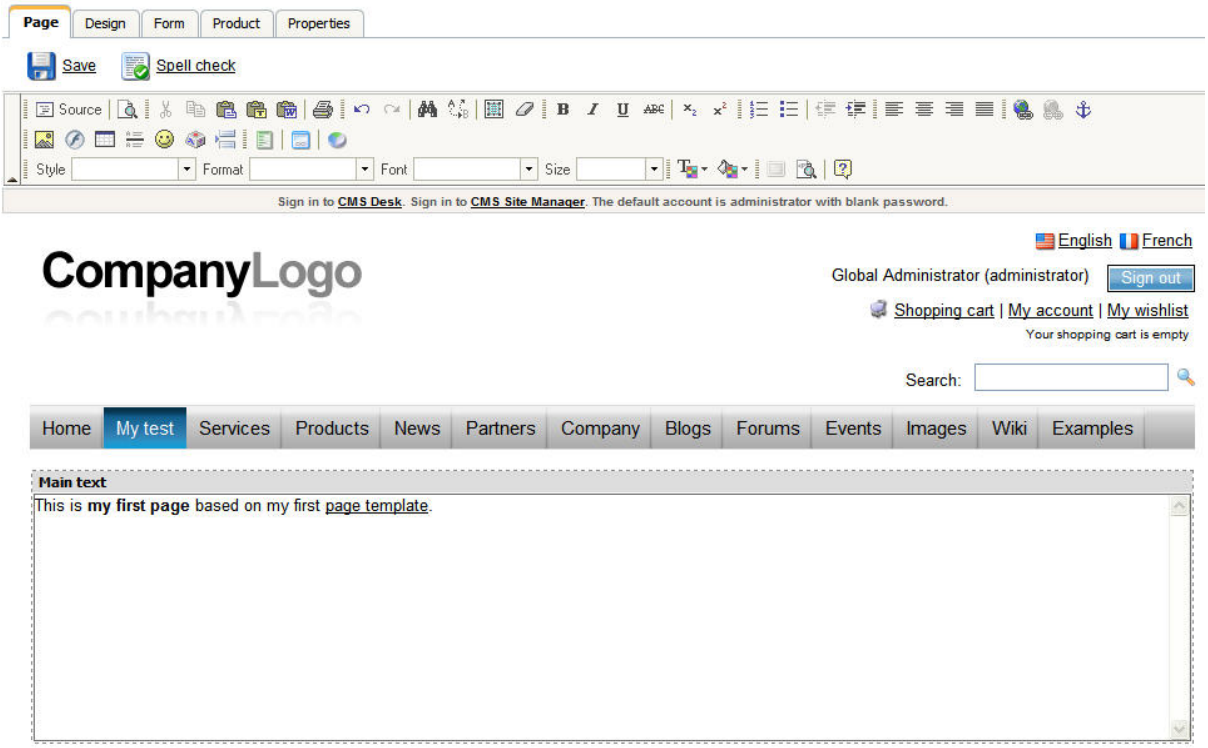


© 2009 Kentico Software

The **Web part properties** dialog opens. Set the **Editable region title** to *Main text.* Click **OK**. The web part is now added to the web part zone:

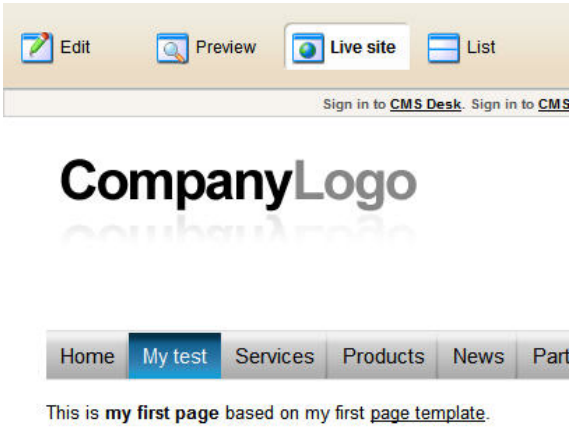


Now click the **Page** tab. You will see the page in editing mode. The page now contains your web part that displays the editable region. Enter some text into the region and click **Save**.



© 2009 Kentico Software

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

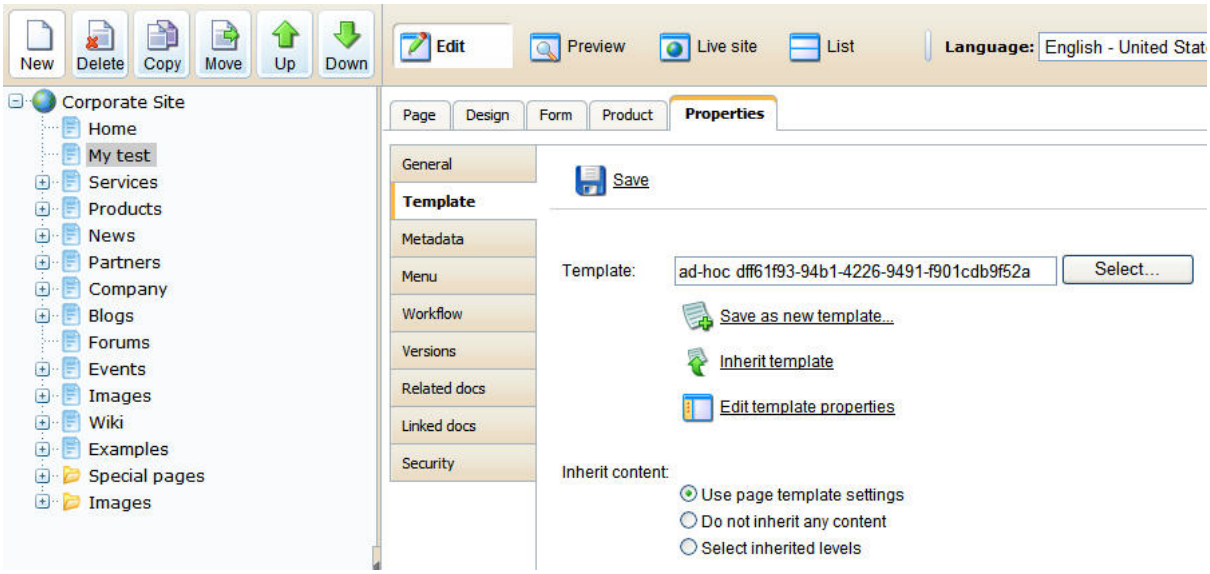
You have created a new page based on an ad-hoc page template. The page template defines the page structure and contains the editable text web part that enables content editors to enter text into the page.

© 2009 Kentico Software

10.3 Re-using an ad-hoc page template

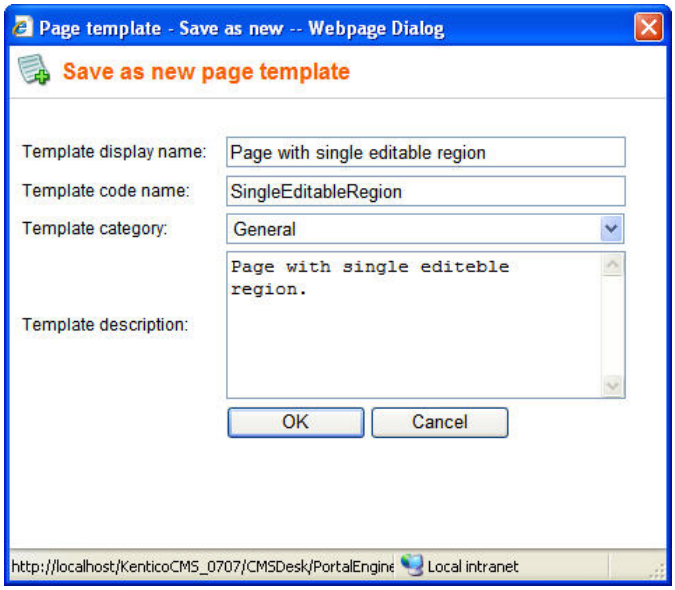
In many cases, you may want to re-use the ad-hoc page template for other pages. In this case, you need to **save the ad-hoc template as a new re-usable template**.

Go to **Content** -> select your new page created in the previous step -> click **Properties** and click **Template**. You will see a page like this:



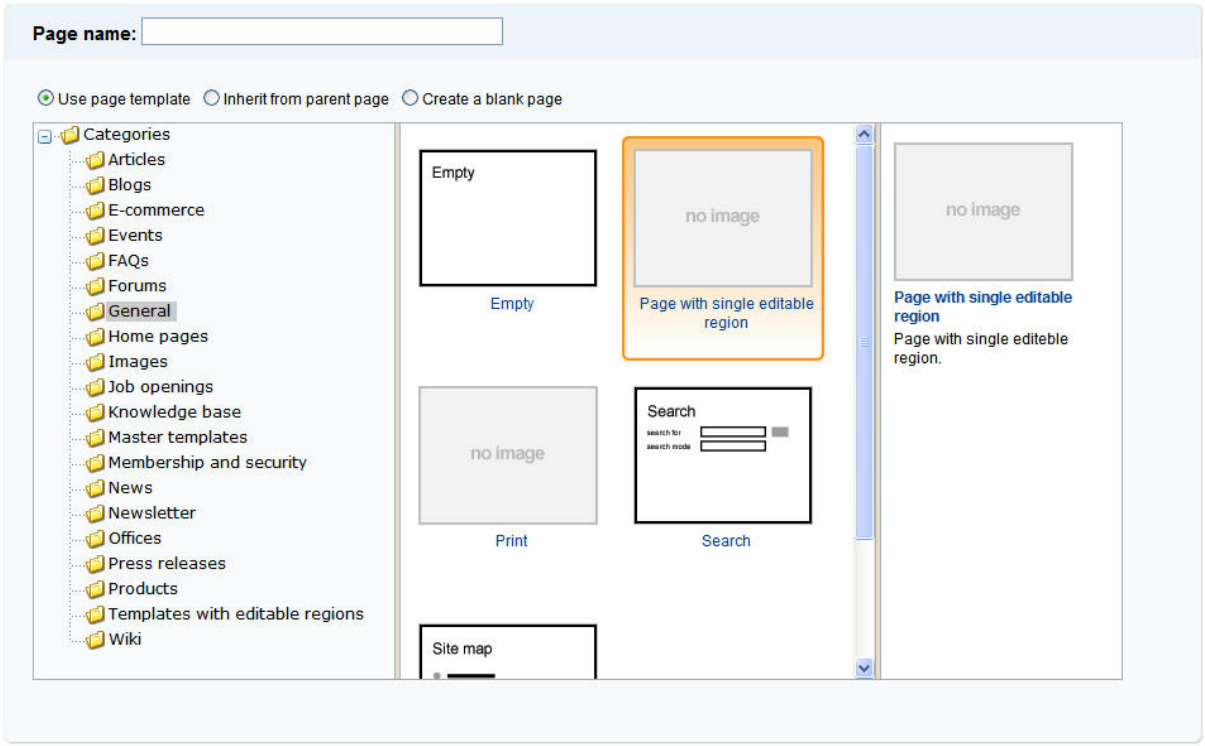
© 2009 Kentico Software

As you can see the current page is based on an ad-hoc template with some unique identifier. 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.



© 2009 Kentico Software

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

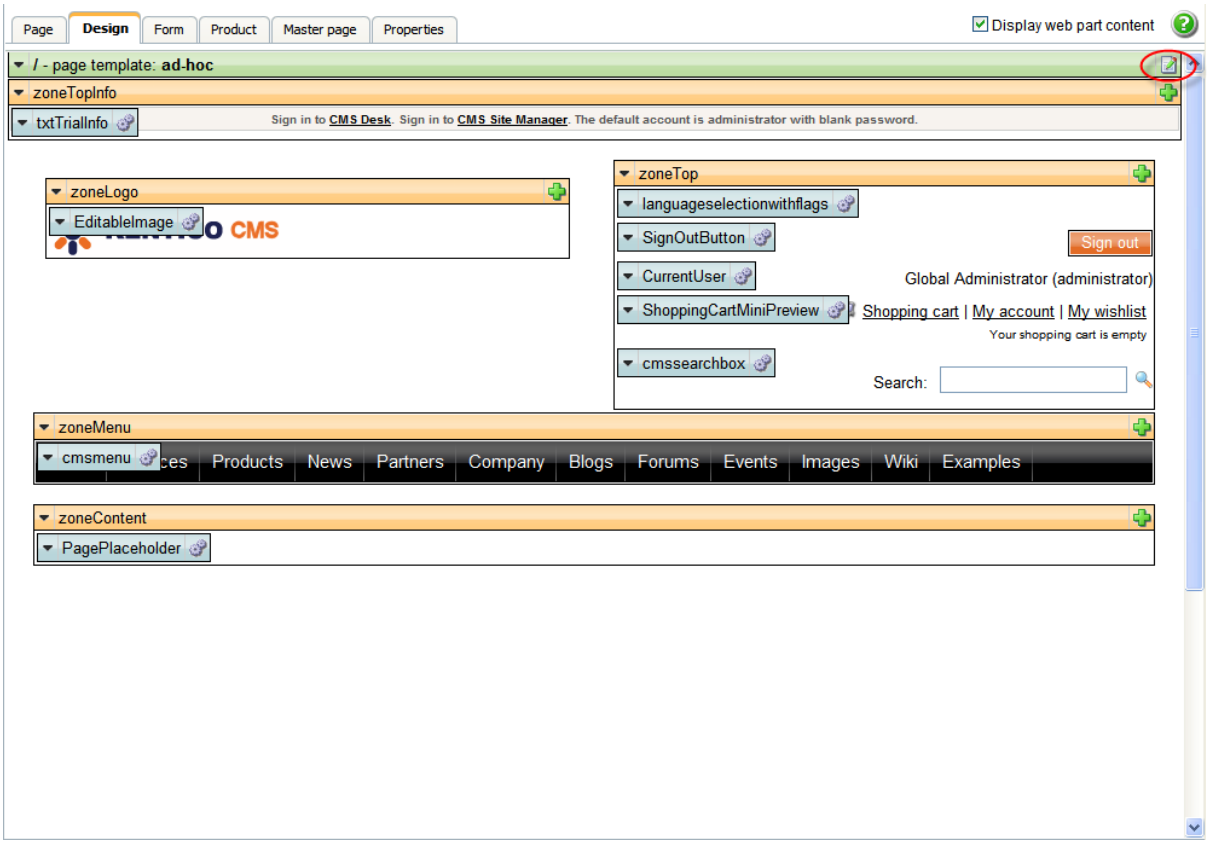
You have converted the previously created ad-hoc page template that was specific only for a single page into a re-usable page template that can be used for many pages.

© 2009 Kentico Software

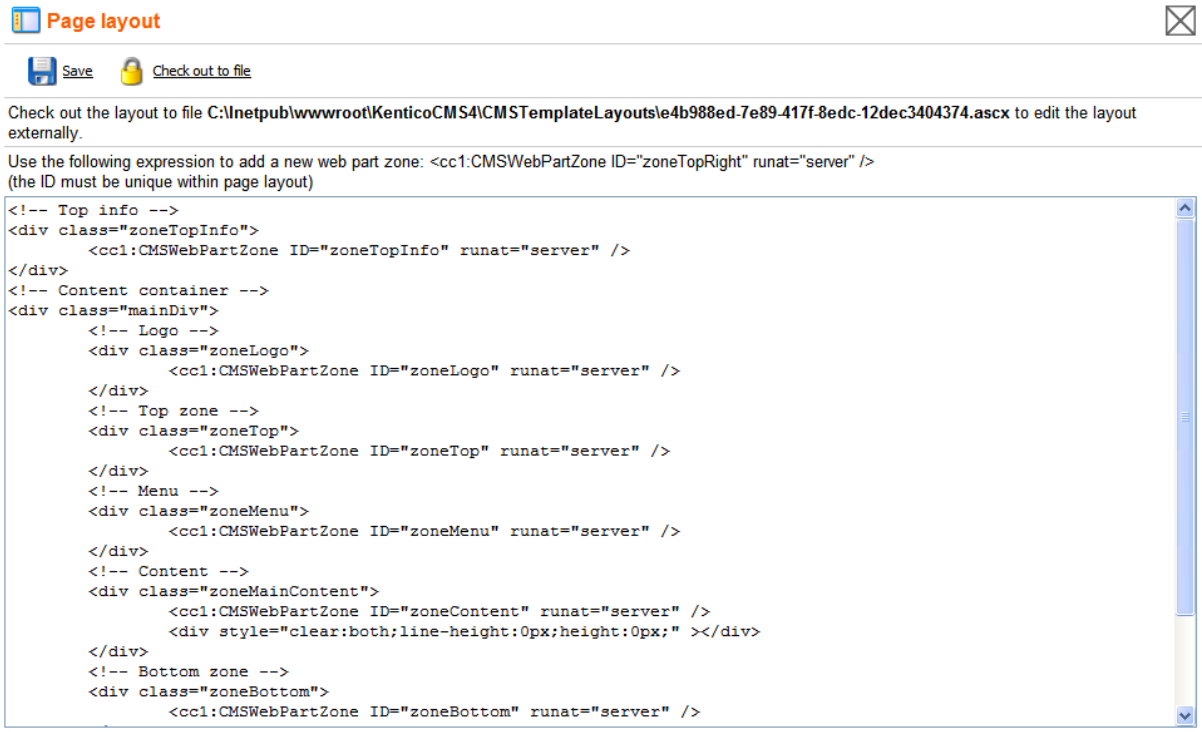
10.4 Page layouts

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:



© 2009 Kentico Software



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

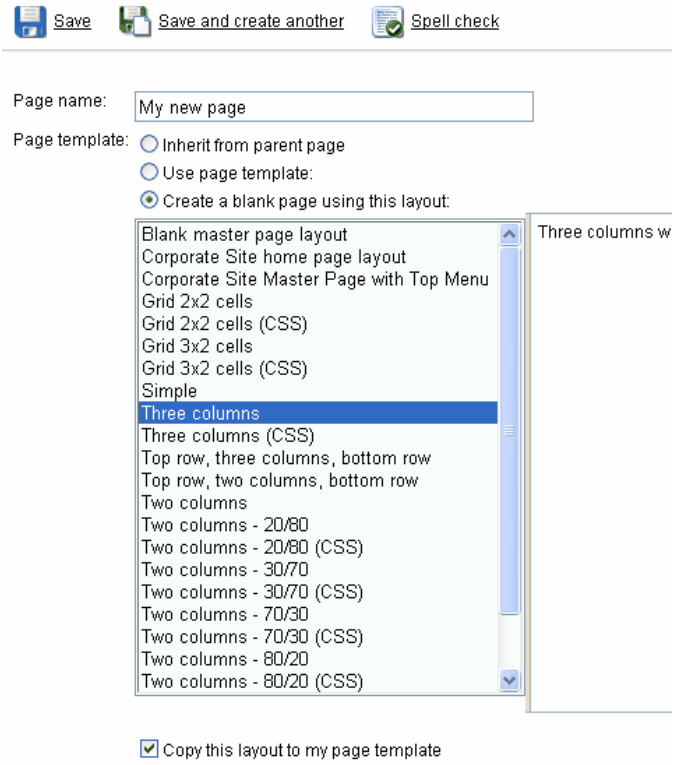
Editing of HTML code in plain text area may not be very comfortable. However, you can use the button **Check out to file** to save the layout code to the disk and open it in your favorite HTML editor.

Please note: The file is saved on the disk where the web application is running.

© 2009 Kentico Software

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.

© 2009 Kentico Software

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:

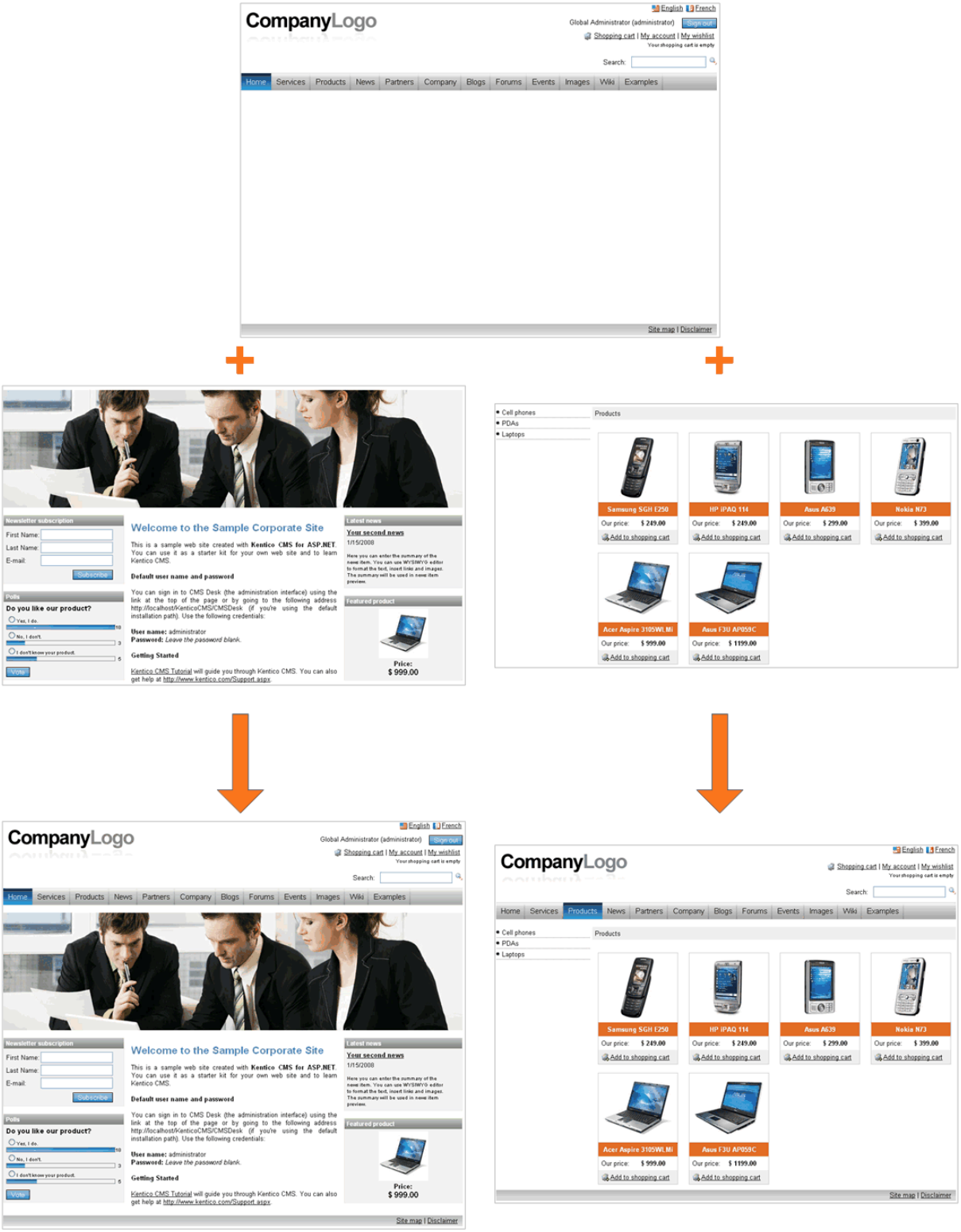
```
<div style="width: 50%;">
  <div style="width: 80%; float: left;">
    <cc1:CMSWebPartZone ID="zoneLeft" runat="server" />
  </div>
  <div style="width: 50%; float: right;">
    <cc1:CMSWebPartZone ID="zoneRight" runat="server" />
  </div>
</div>
```

10.5 The master page concept

Master pages represent a powerful concept of sharing the same header and footer for all pages on the web site. It allows you to manage repeated items, such as site logo, main menu and footer content on a single place.

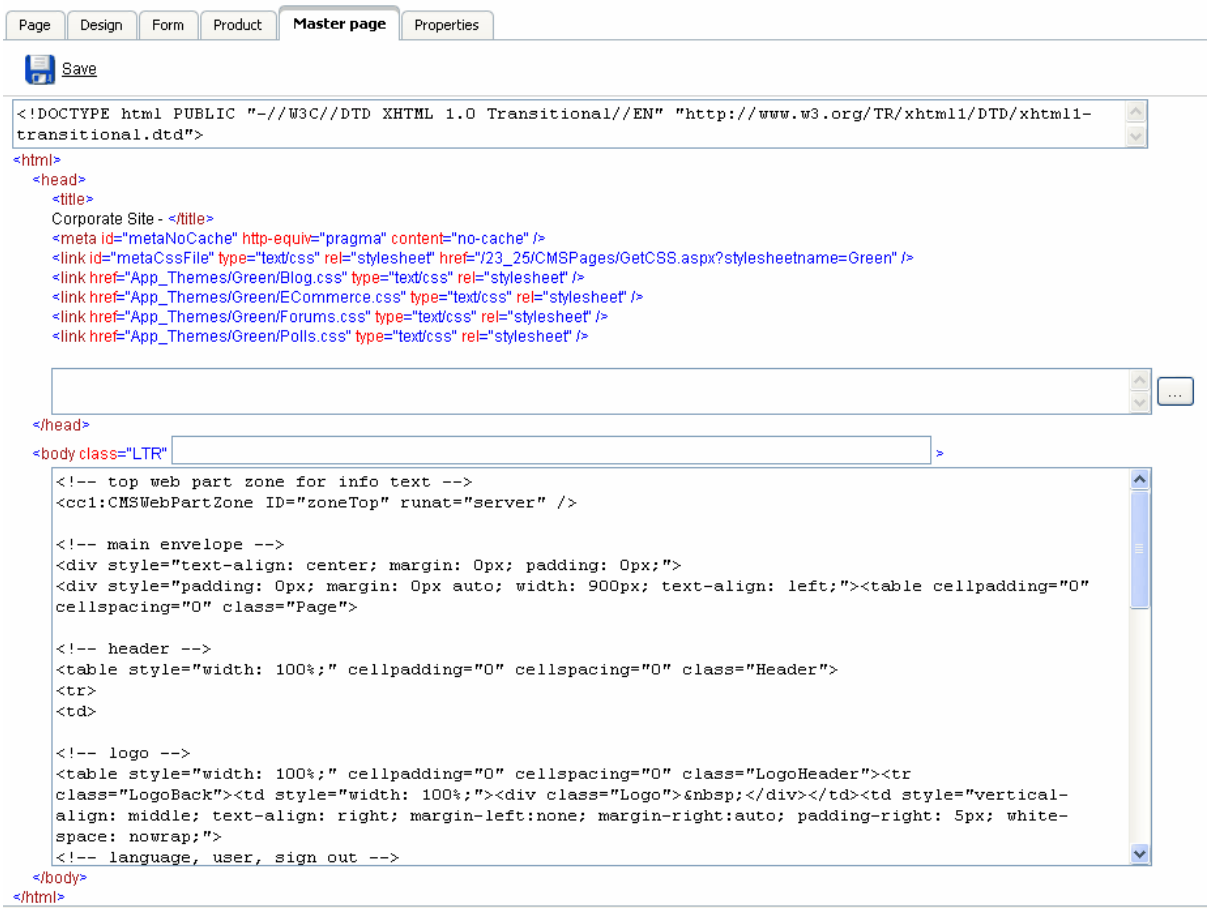
© 2009 Kentico Software

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:



10.6 Editing the master page

The master page is represented by the root document of the tree structure. It 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 page:



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 web site:

- **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.

© 2009 Kentico Software

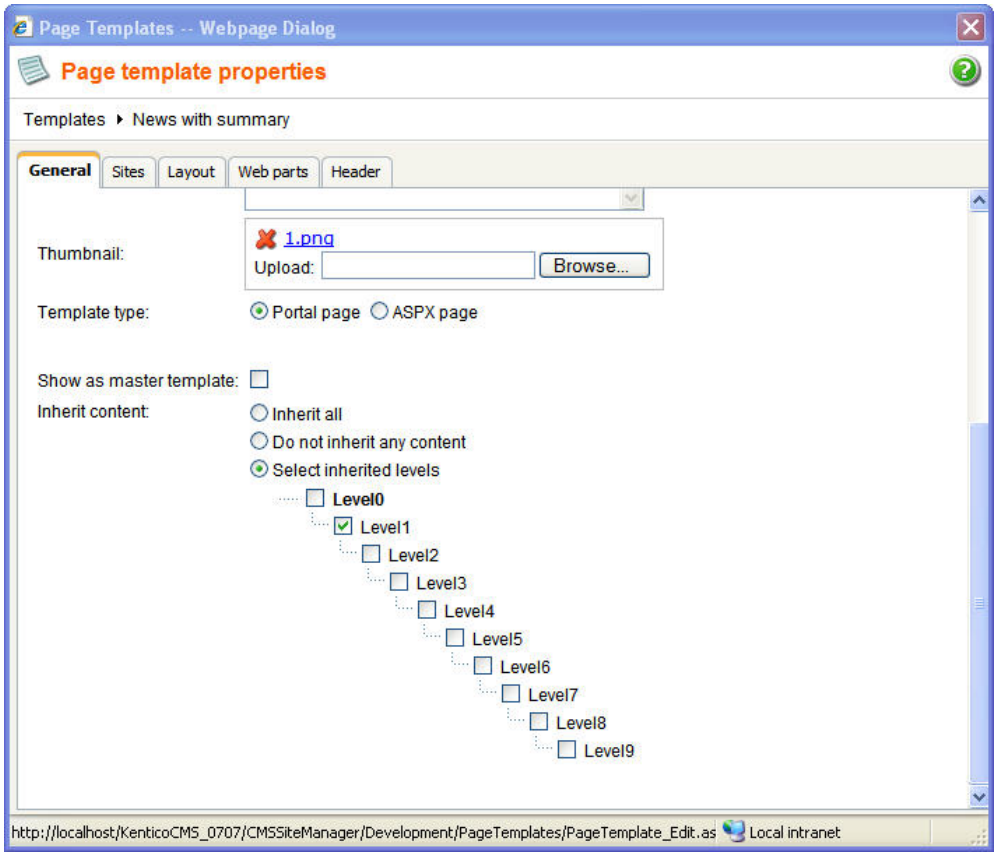
10.7 Visual inheritance

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:

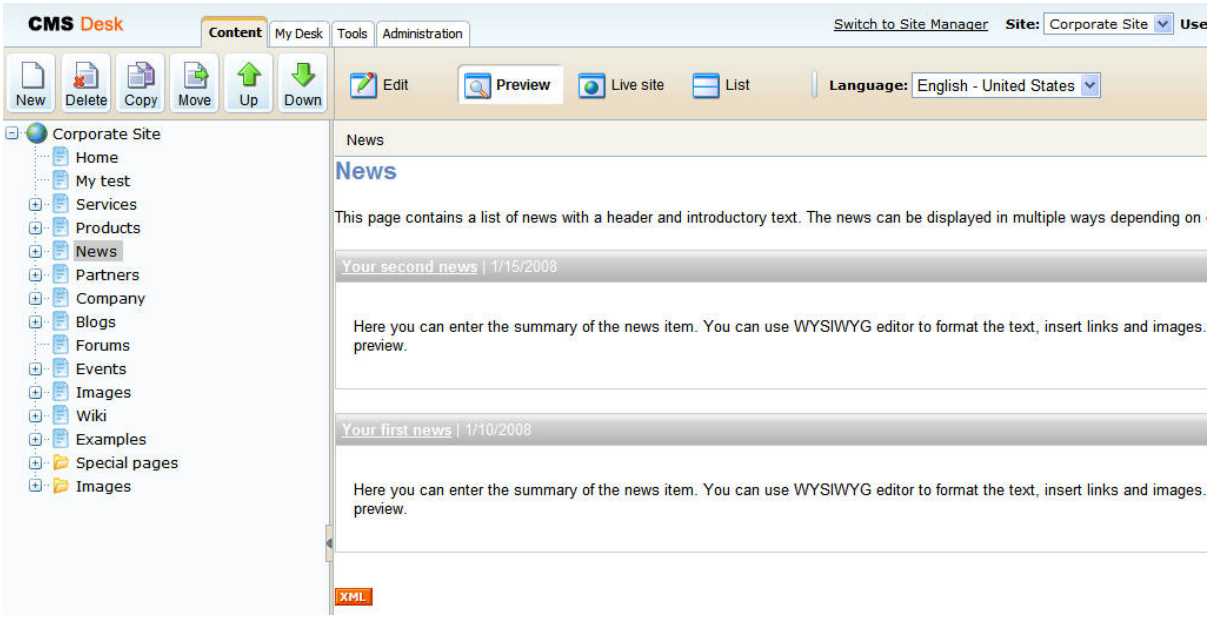
Using the "Inherit content" property of the page template

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.



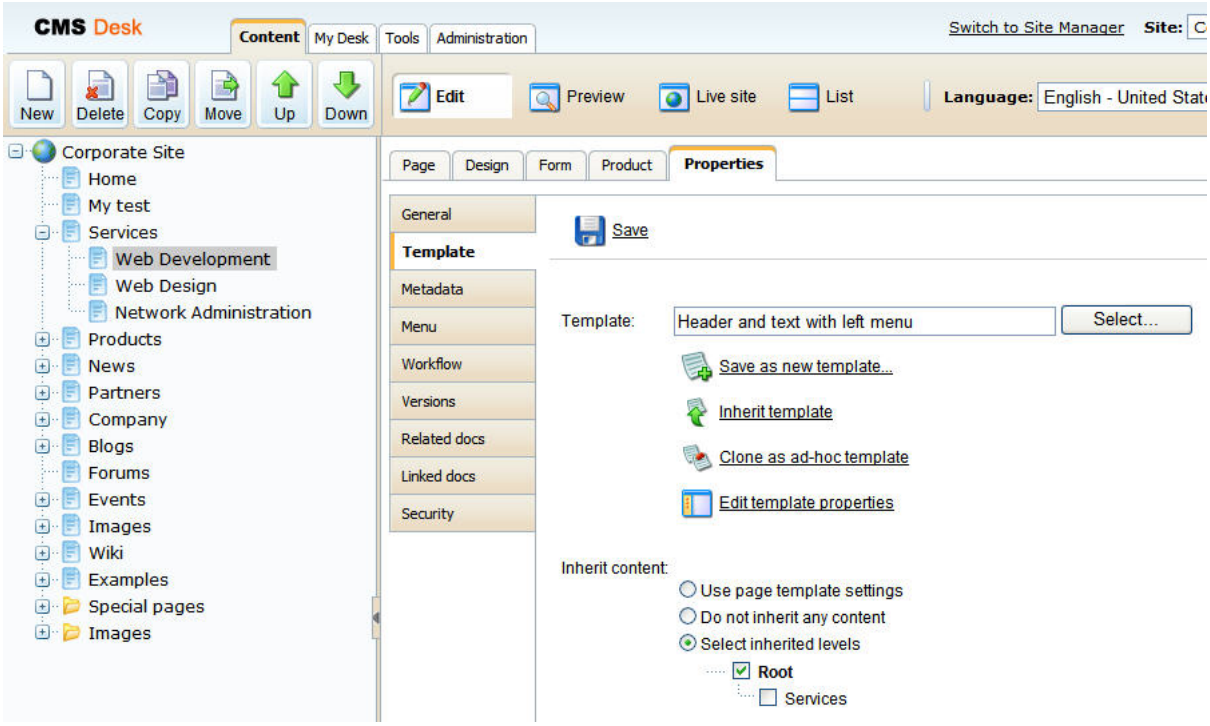
© 2009 Kentico Software

The page will look like this:



Set the value back to empty value for now.

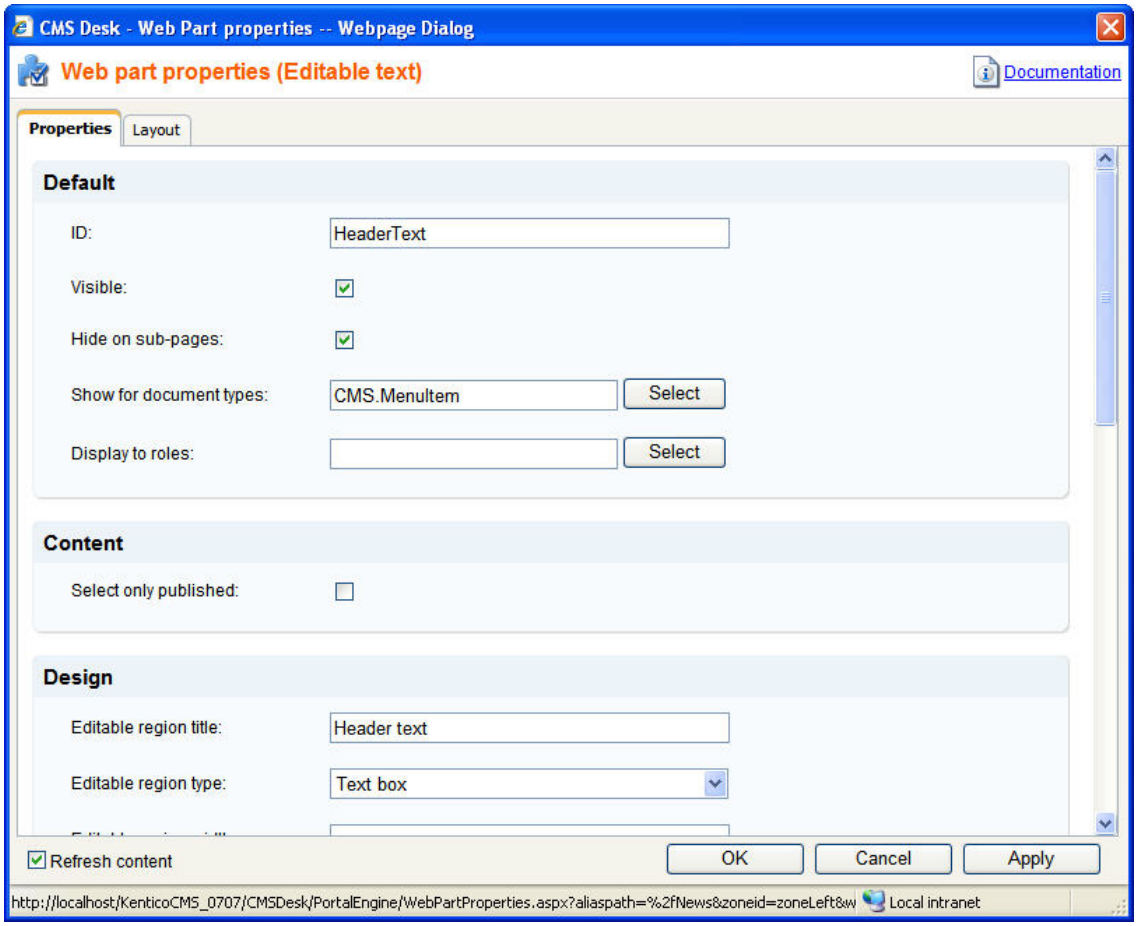
Similarly, you can set the content inheritance on **page level** using the **Properties -> Template** dialog. The content inheritance settings you configure for the page override the page template settings:



© 2009 Kentico Software

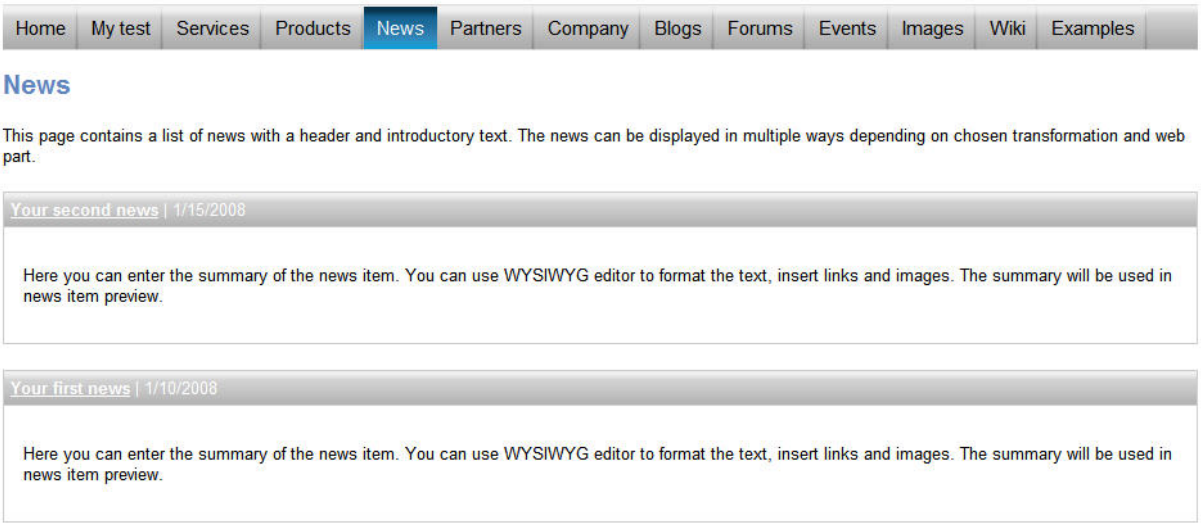
Using the "Hide on sub-pages" web part property

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:

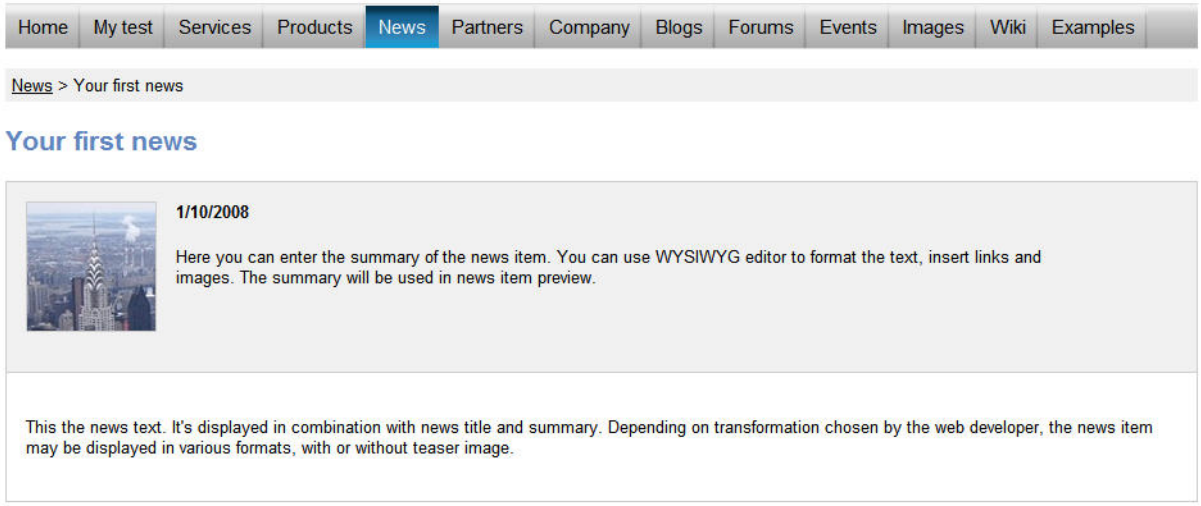


© 2009 Kentico Software

Click **Cancel** and click **Live site**. Please note that when you display the list of news, the title **News** is displayed:



If you go to some particular news item, the title is hidden:

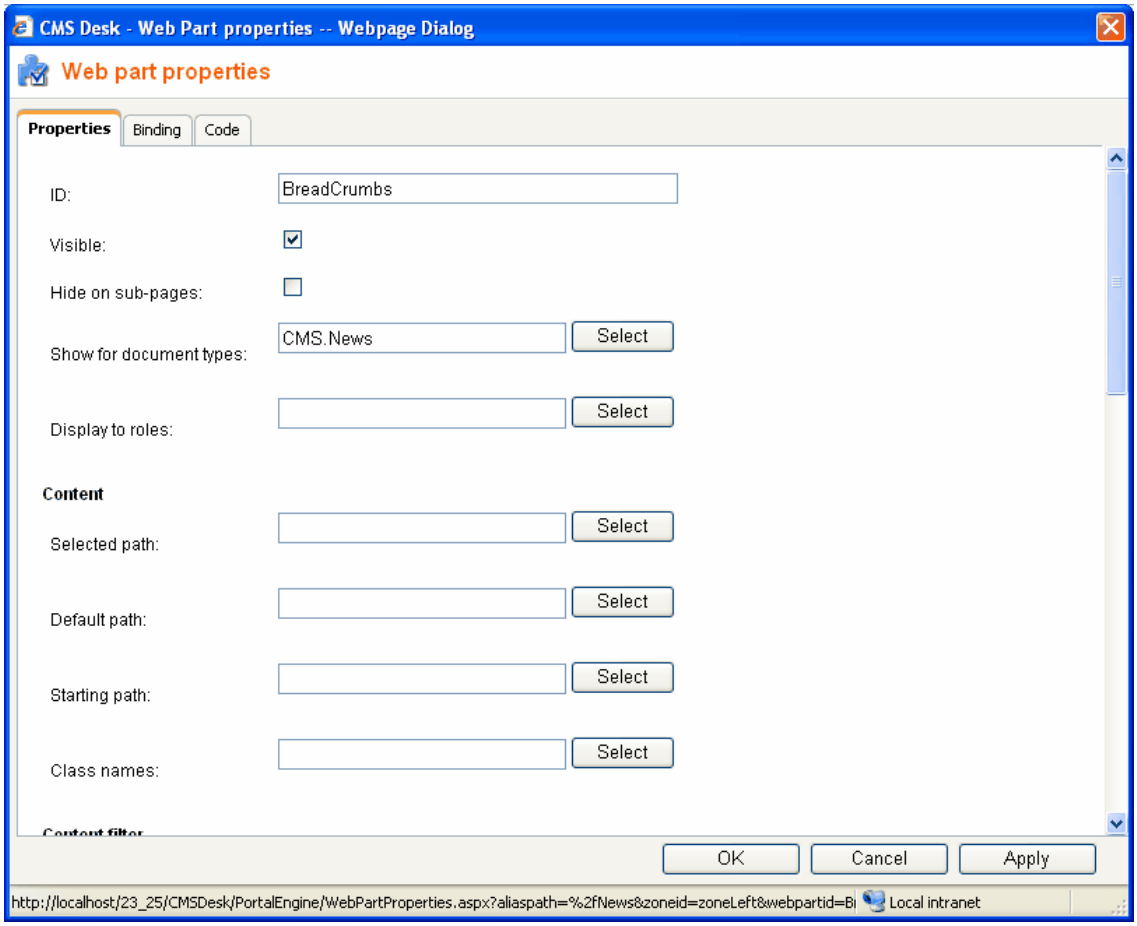


This is ensured by the **Hide on sub-pages** property that hides the web part displaying the **News** title.

© 2009 Kentico Software

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**.

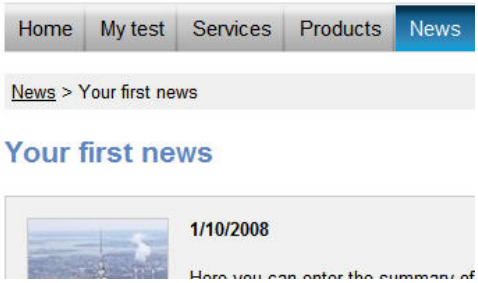


Go to the live site, to the **/News** page. The breadcrumb navigation is hidden since the currently selected document type is a page:



© 2009 Kentico Software

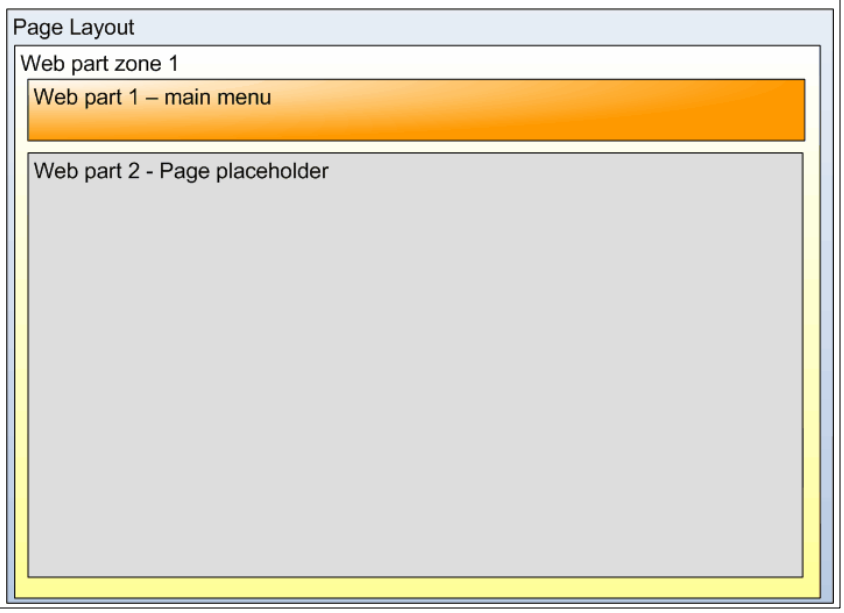
When you go to some particular news item, the currently selected document is a news item and the breadcrumb navigation is displayed:

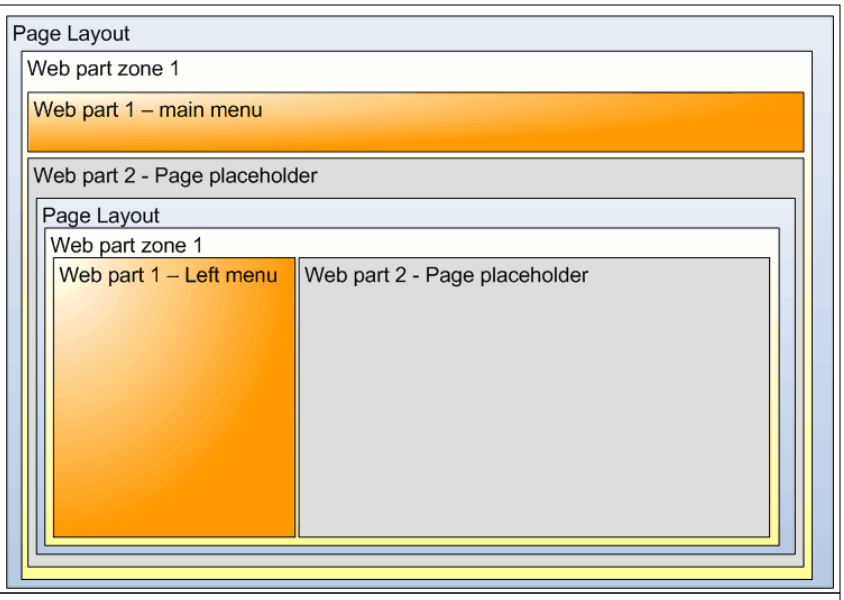
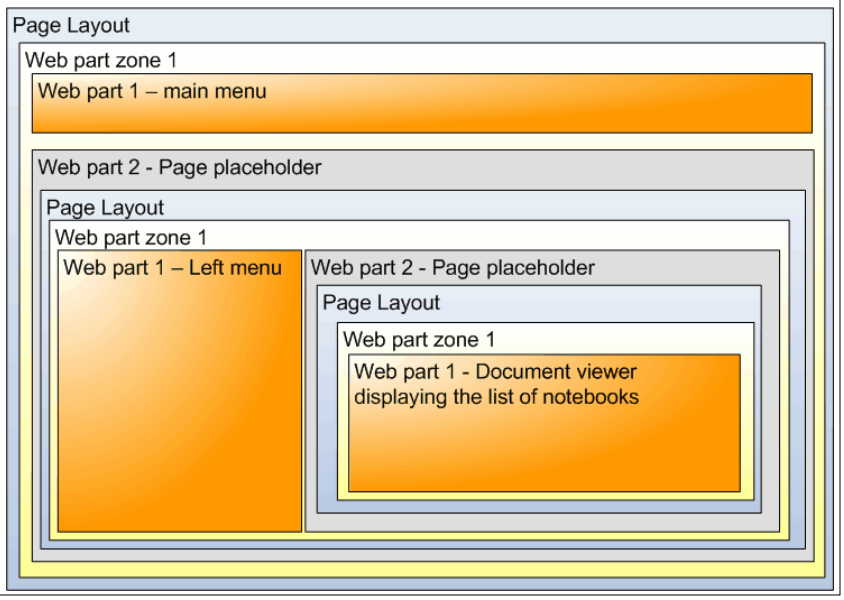


You have learned how to break inheritance of content or how to display content based on the current document type.

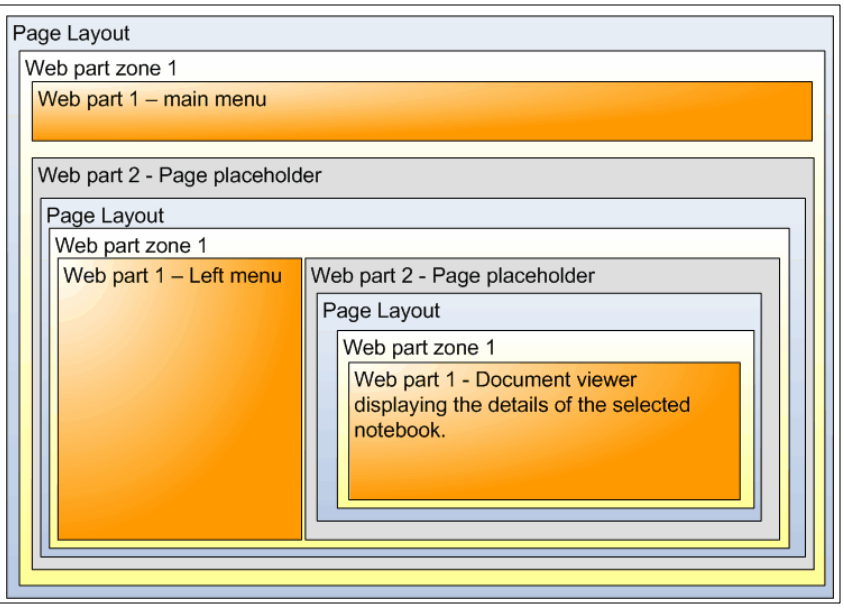
10.8 Content tree and page templates

The content tree defines not only the site map of your web site, but it also defines how the pages are nested. When you request a page `/products/notebooks/dell800`, the portal engine works loads the content in the following order:

Processed path	Page template	Rendered page
/ (root)	Main menu page template	

/products	Products page template	
/products/ notebooks	Notebooks page template	

© 2009 Kentico Software

/products/notebooks/dell800	*Inherits page template from parent page. The product detail is displayed automatically instead of the listing by the document viewer.*	

© 2009 Kentico Software

10.9 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 display name	The name of the template displayed to the users.
Template code name	The name of the template used in the code.
Category	Here you can choose the category of the page template.
Template description	Description.
Template type	Indicates if the page template is a portal page template or ASPX page (the later option is used for backward compatibility with CMS 1.x).
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 web site.
Inherit content	Configures the visual inheritance as explained in the Visual inheritance chapter. You can choose from the following options: • **Inherit all** - inherits the content of all parent pages • **Do not inherit any content** - displays only the current page without any parent content • **Select inherited levels** - displays only content from the chosen content tree levels.

Sites tab

On the Sites tab, you can choose which web sites 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

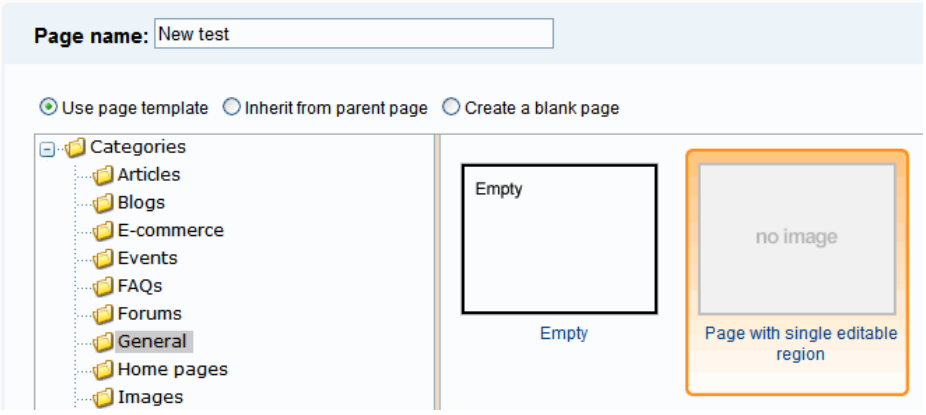
Here you can specify custom HTML code that will be added to the <head> element of the page for all pages that use this page template. It's useful if you need to link some additional CSS or JavaScript files.

© 2009 Kentico Software

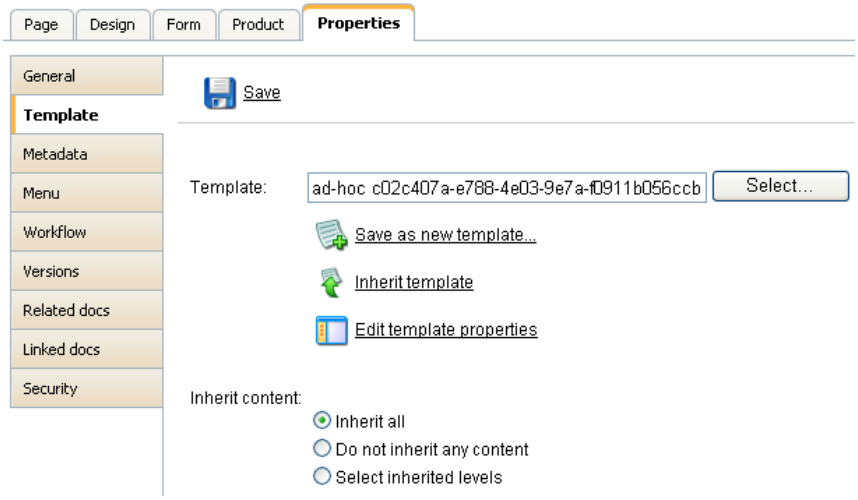
10.10 Cloning and modifying a page template

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.

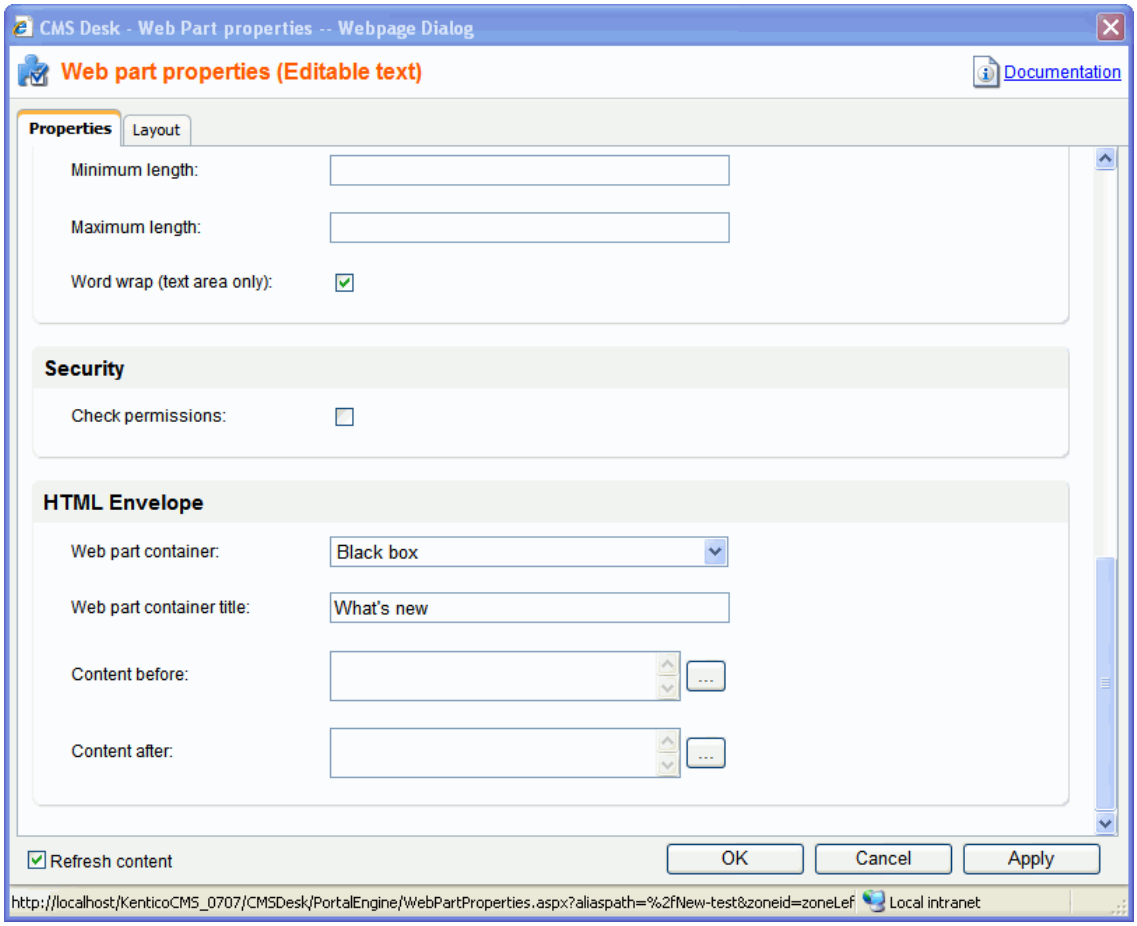


Then, choose the page and click **Properties -> Template** and click **Clone as ad-hoc template** and click **Save**. A new ad-hoc template is created now and you can edit it without modifying the existing pages based on the original template:

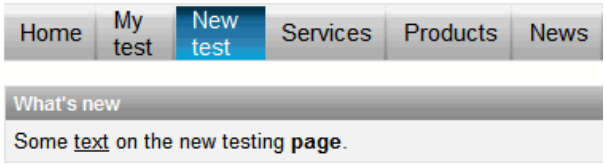


© 2009 Kentico Software

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:



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.

© 2009 Kentico Software

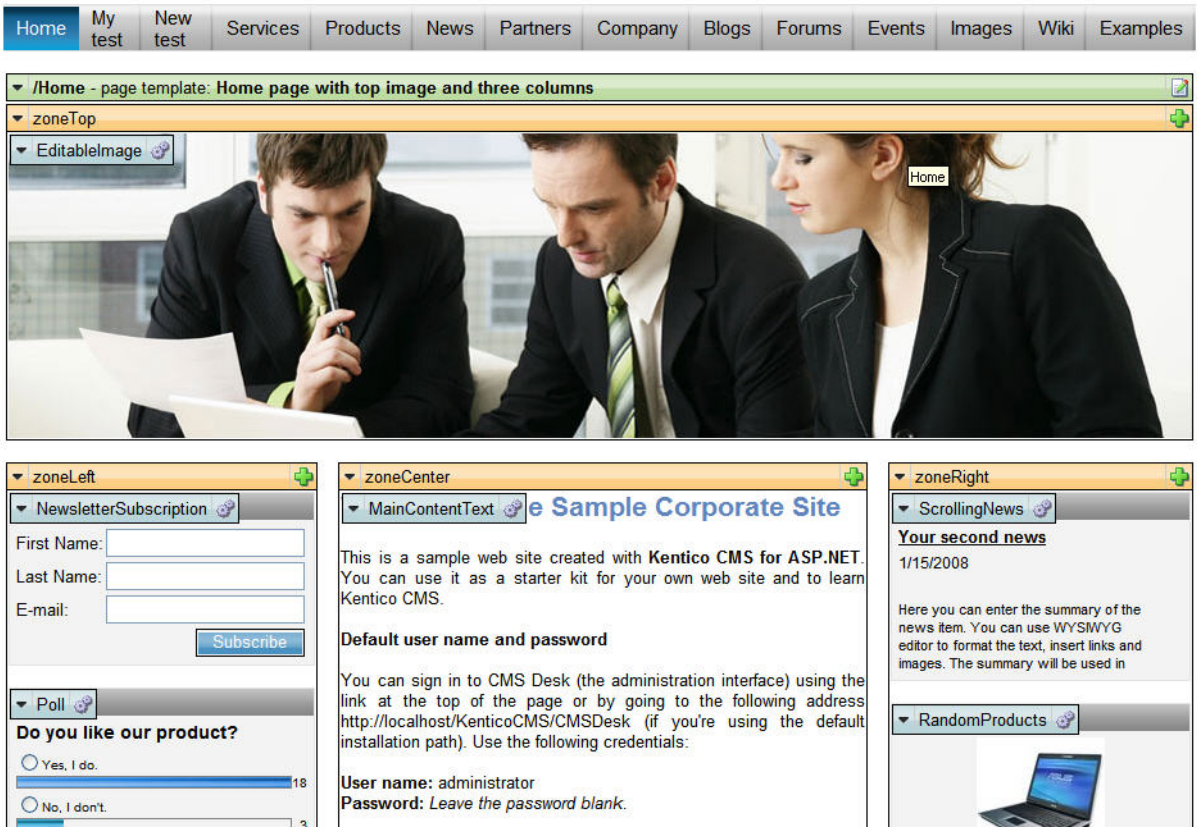
Re-using the adjusted template again

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.

10.11 Using and configuring web parts

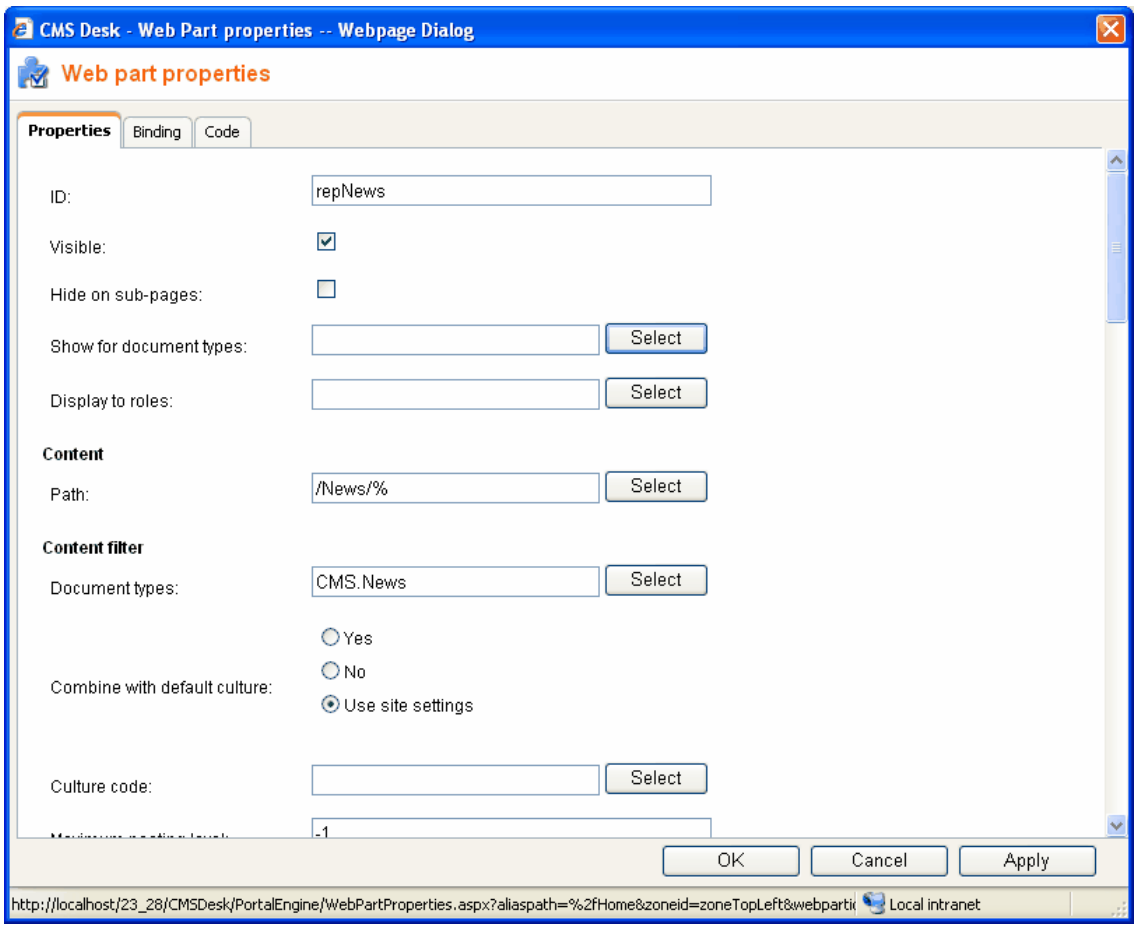
Web parts can be used on both portal page templates and ASPX page templates. However, with ASPX page templates, you're loosing the friendly user interface and you need to set the properties in Visual Studio.

Go to **CMS Desk -> Content**, click some page and choose **Design** in the toolbar. You will see the page template structure like this:



© 2009 Kentico Software

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:



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.

© 2009 Kentico Software

10.12 Web part binding (obsolete)

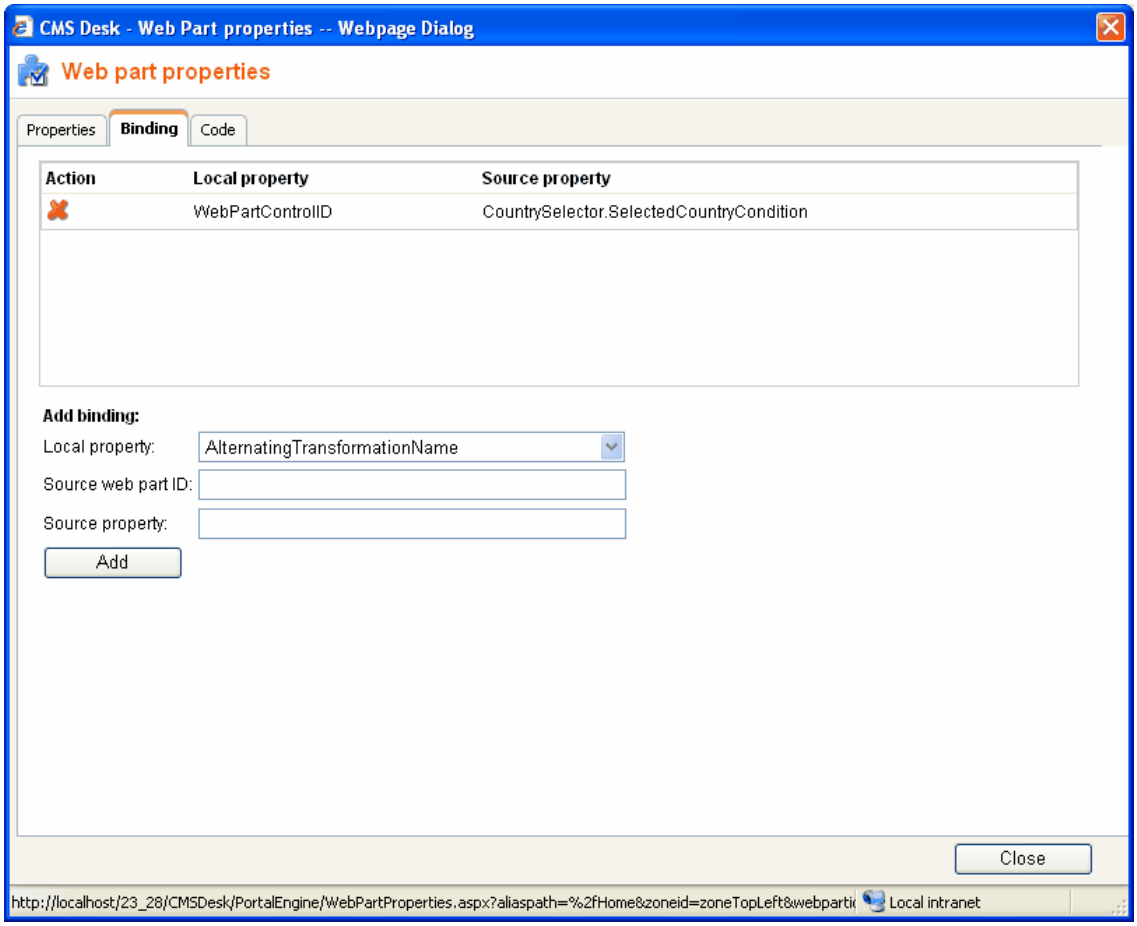
Obsolete feature

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:



© 2009 Kentico Software



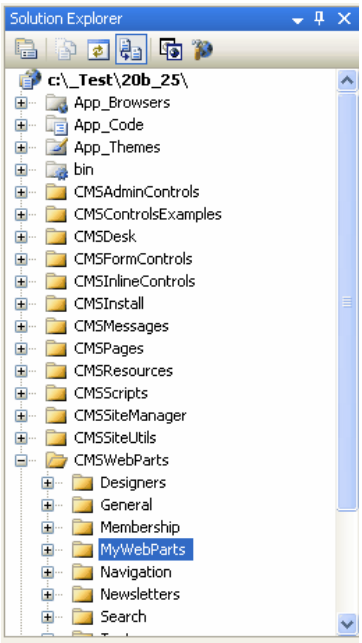
Alternative option

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:



© 2009 Kentico Software

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:

```
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="cc1" %>
<cc1: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.

© 2009 Kentico Software

© 2009 Kentico Software

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:

```
public partial class CMSWebParts_MyWebParts_ProductViewer : CMSAbstractWebPart
```

Add the following code inside the page class:

[C#]

© 2009 Kentico Software

```
/// <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

© 2009 Kentico Software

- 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

© 2009 Kentico Software

9. Go to the Live site mode and see the page. It should look like this:



When you change the drop-down list value, the product list below is automatically updated.

10.13 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:

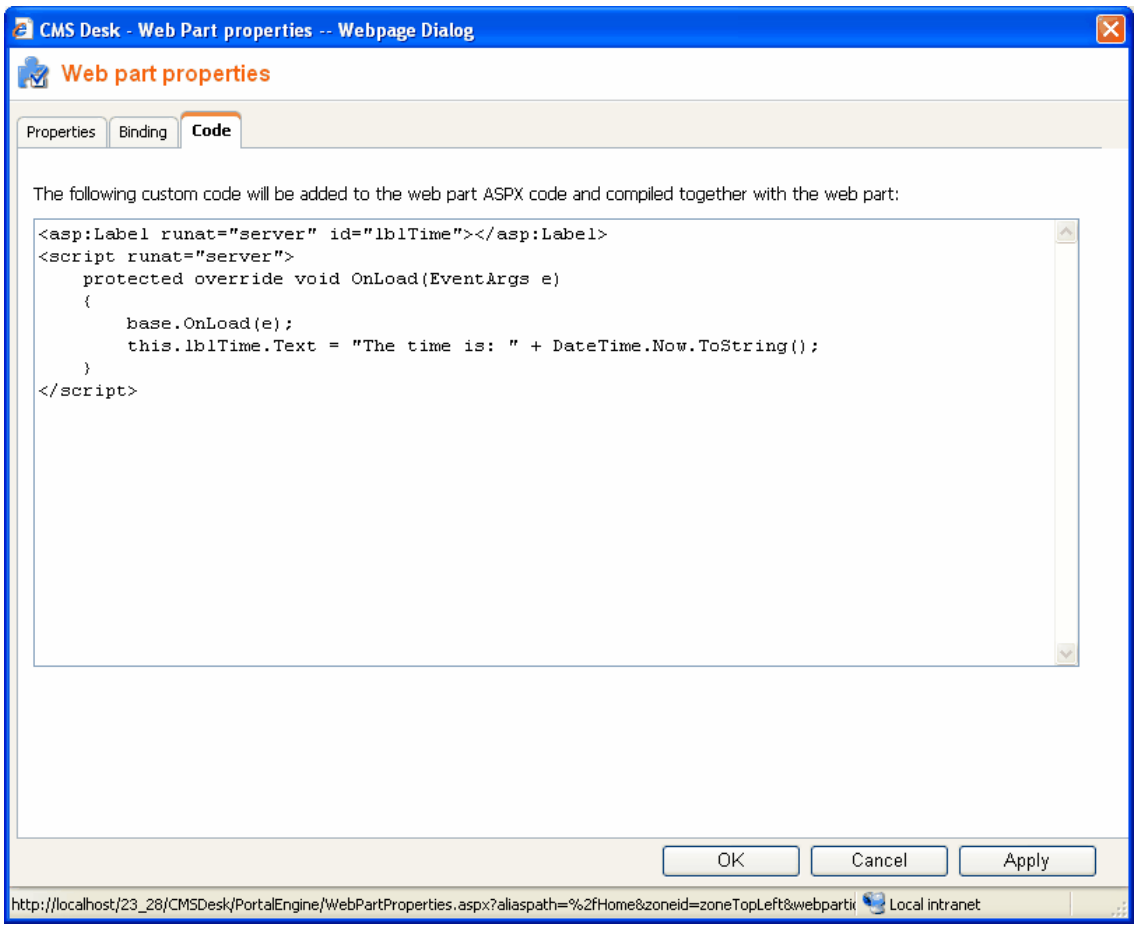
```
<add key="CMSShowWebPartCodeTab" value="true" />
```

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 web site and you will not be able to use the web site in medium trust environment. If this is an issue for you, you can use an alternative solution described in chapter Modifying web part behavior.

© 2009 Kentico Software

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>
```

© 2009 Kentico Software



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.

© 2009 Kentico Software

10.14 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

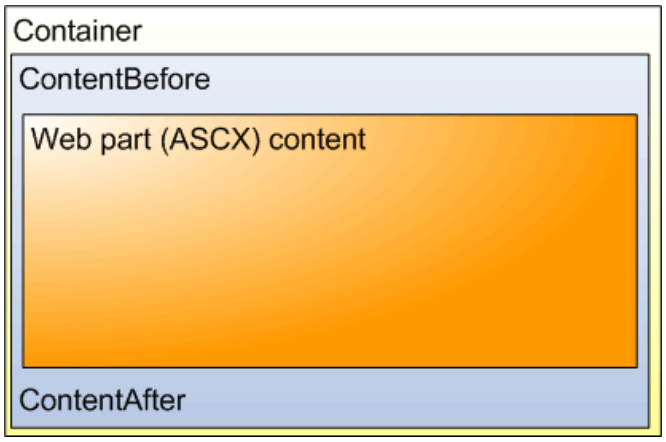
Property Name	Description	Sample Value
Hide on sub-pages	Indicates if web part should be hidden on sub-pages. If you check this box, the web part will be displayed only on the page that uses the page template with this web part and it will be hidden on sub-pages that inherit the page template.	
ID	Web 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>

© 2009 Kentico Software

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

© 2009 Kentico Software

Content filter

Property Name	Description	Sample Value
Document types	Types of documents that should be displayed, separated with a semicolon (;). In case of menu and navigation web parts, the page (cms.menuitem) documents are selected by default. The other web parts retrieve all documents without their custom fields by default. 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).	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 web site-level settings.
Culture code	Culture version of the displayed content.	en-us
Maximum nesting level	Maximum nesting level. It specifies the number of sub-levels in the content tree that should included in the displayed content. Value 1 indicates that only the current document should be returned. Value -1 indicates all child documents.	
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	Code name of the web site from which you want to display the content. If you leave the value empty, the content is retrieved from the current web site.	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.	

© 2009 Kentico Software

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.	

© 2009 Kentico Software

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	

© 2009 Kentico Software

	editing mode.	

© 2009 Kentico Software

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.	

10.15 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.

10.16 Adding custom code to the portal page template

The easiest way how to insert custom code into the portal engine-based web site 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.

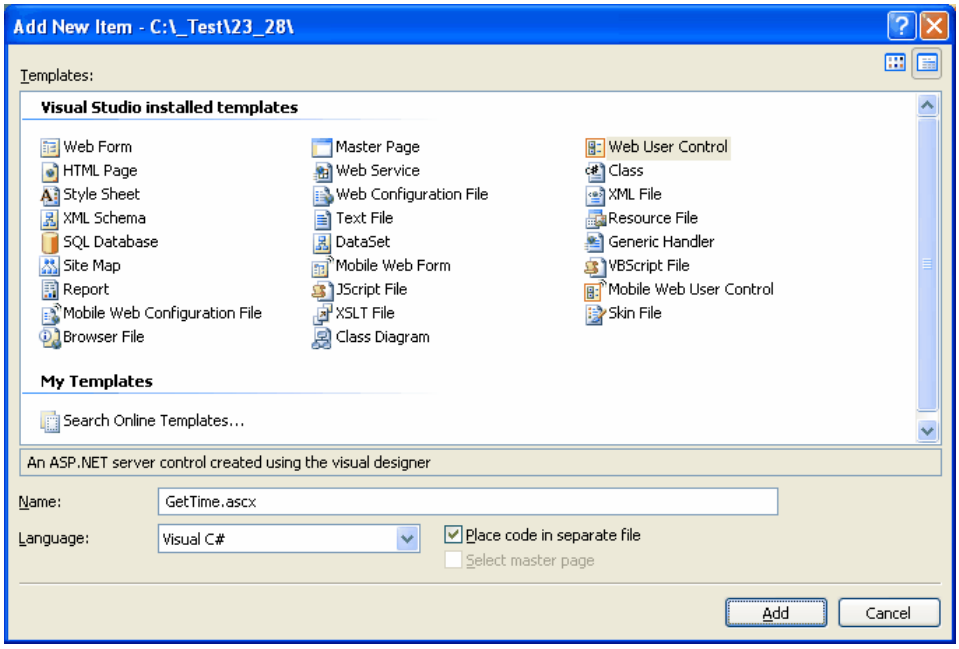
Current time example

In this example, we will create a simple user control (ASCX) using Visual Studio and integrate it to our home page.

Open the web site project using the WebProject.sln file that is placed in the folder where you deployed the web site. 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.

© 2009 Kentico Software

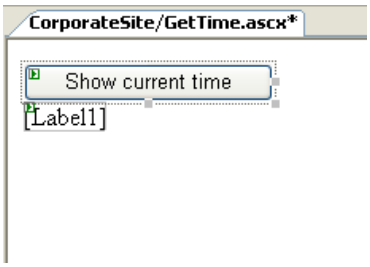
Right-click the new folder and click the **Add new item...** option. Choose to create a new Web User Control and set its name to **GetTime.ascx**. You can set the programming language option to either Visual C# or Visual Basic.



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>



© 2009 Kentico Software

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

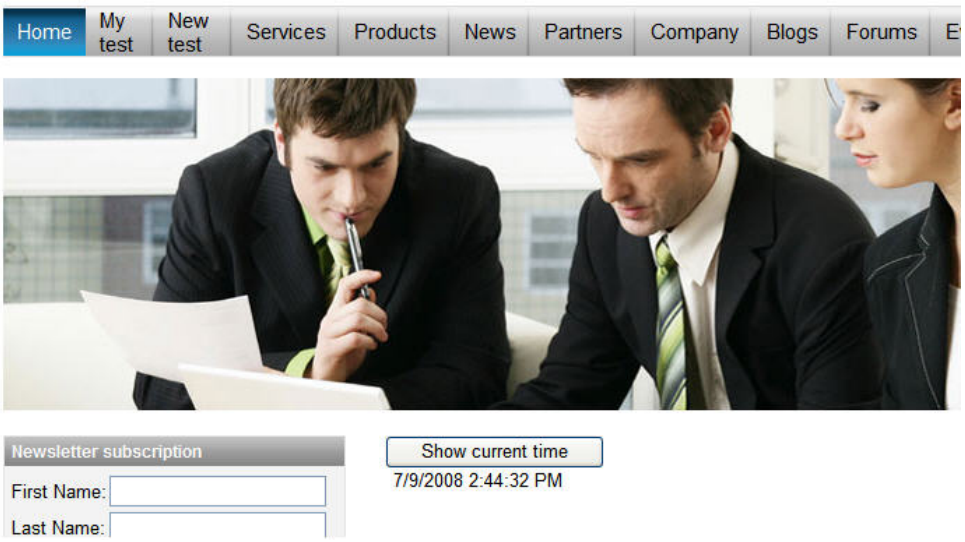
Sign in to **Kentico CMS Desk**, click the **Home** page and click **Design**. Remove the web part in the **zoneCenter** zone and click **+ (Add web part)** in this zone. Choose the **General/User control** web part. Enter the following value in the **User control virtual path** property:

```
~/CorporateSite/GetTime.ascx
```

(the folder name must reflect the folder that you previously created)

© 2009 Kentico Software

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.

10.17 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 web site 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 web site later, when you decide to import the web site on your live server.

© 2009 Kentico Software

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();

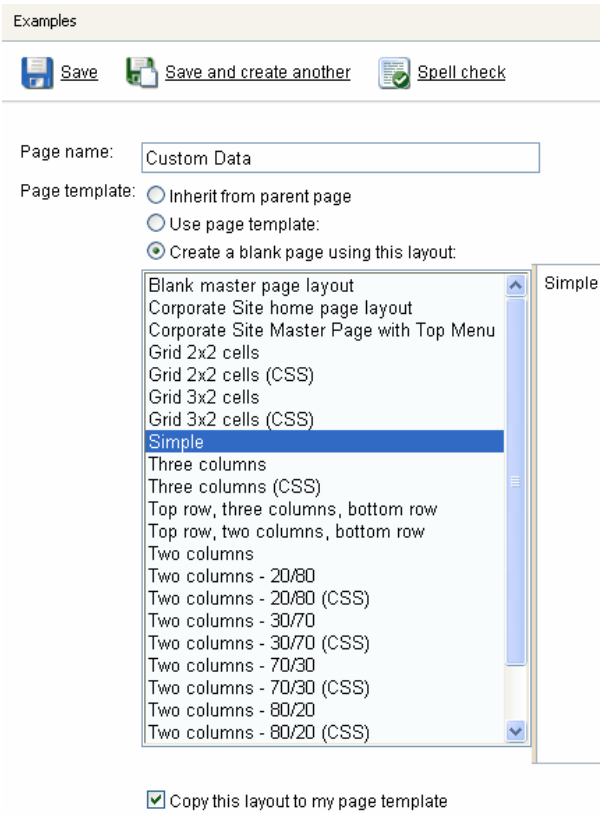
// fill the dataset with data from database
da.Fill(ds);

// bind data to the grid view
GridView1.DataSource = ds;
GridView1.DataBind();
```

Save all changes.

© 2009 Kentico Software

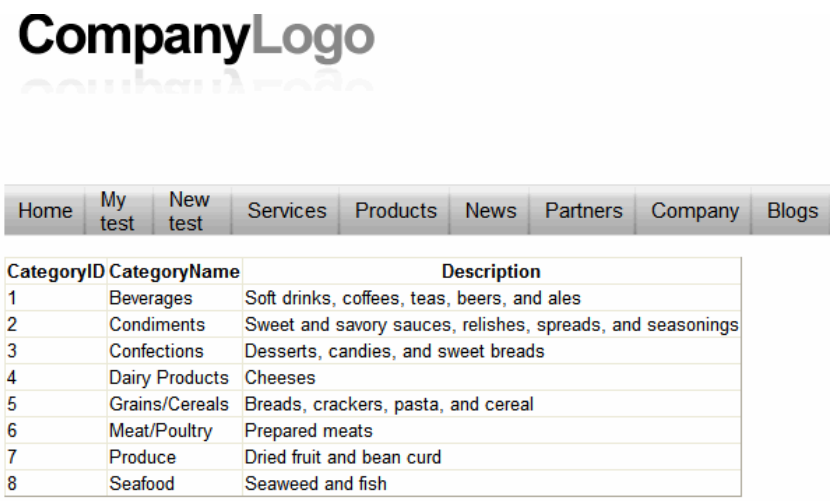
Sign in as administrator to **CMS Desk**, select **/Examples** document in the content tree and create a new **Page (menu item)**. Call it **Custom Data** and choose the **Create a blank page using this layout** option. Select the **Simple** layout and click **Save**.



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**.

© 2009 Kentico Software

Click **OK** and switch to the **Live site** mode of the page. You will see a grid with data from external database:

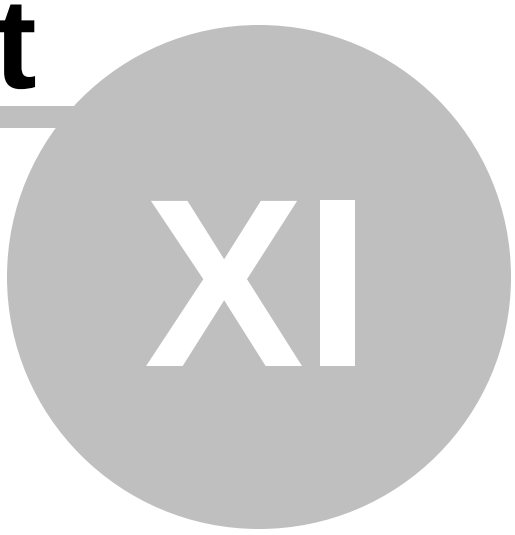


CategoryID	CategoryName	Description
1	Beverages	Soft drinks, coffees, teas, beers, and ales
2	Condiments	Sweet and savory sauces, relishes, spreads, and seasonings
3	Confections	Desserts, candies, and sweet breads
4	Dairy Products	Cheeses
5	Grains/Cereals	Breads, crackers, pasta, and cereal
6	Meat/Poultry	Prepared meats
7	Produce	Dried fruit and bean curd
8	Seafood	Seaweed and fish

As you can see we used standard ASP.NET methods to display external data on the web site.

© 2009 Kentico Software

Part



Development with ASPX page templates

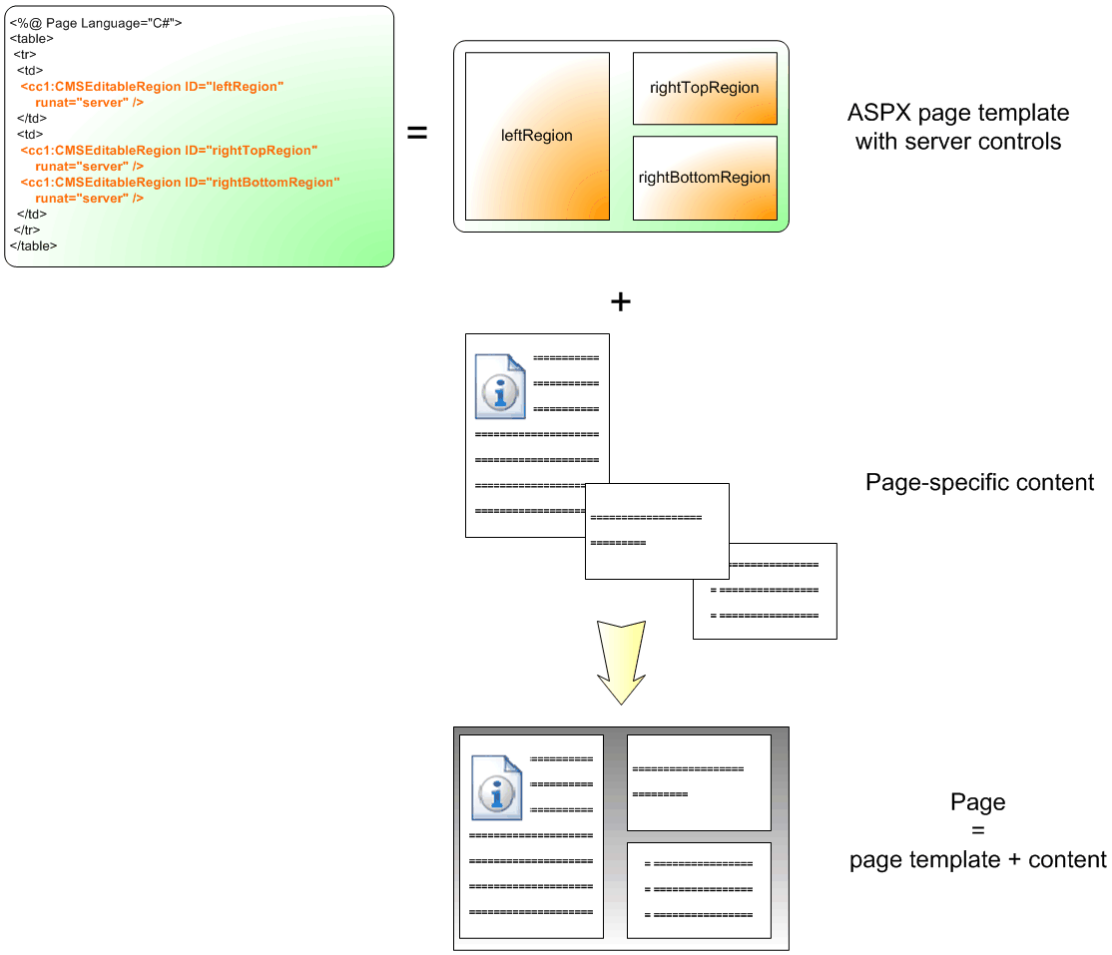
11 Development with ASPX page templates

11.1 How it works

If you're familiar with ASP.NET development in Visual Studio, you may want to choose to develop web sites 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.

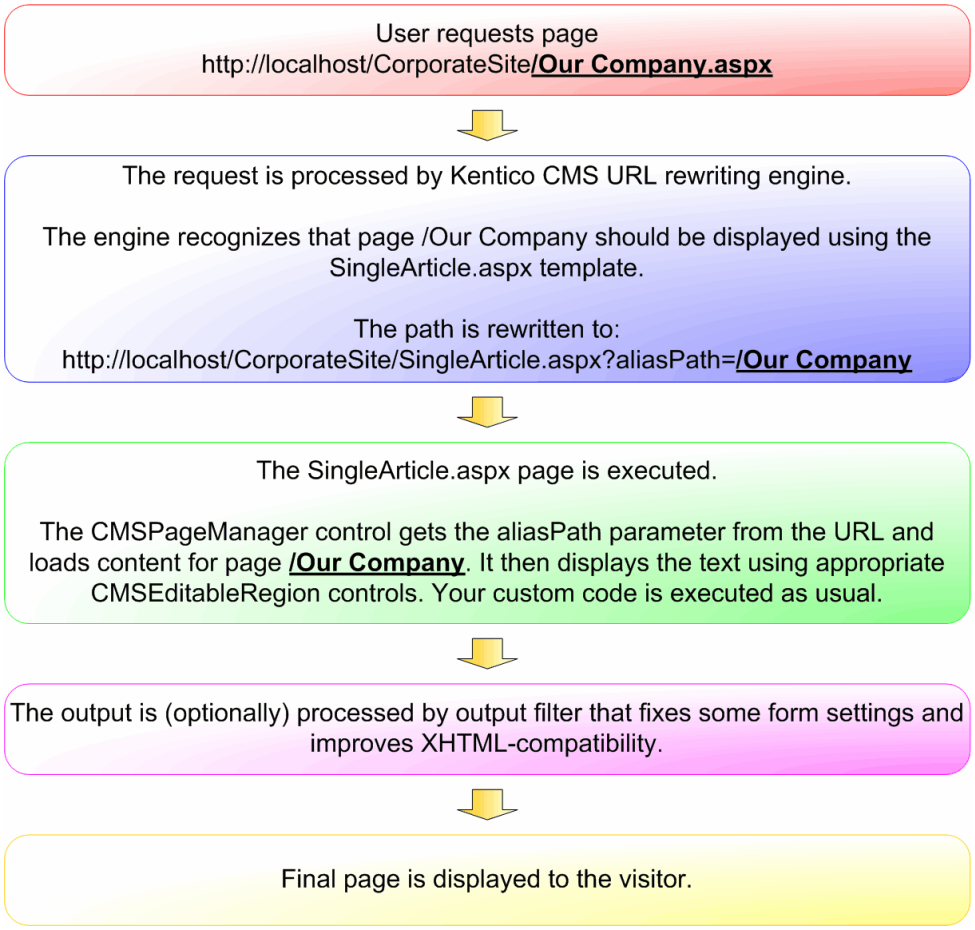
What does the ASPX page template consist of?

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 web site 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.

© 2009 Kentico Software

11.2 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.



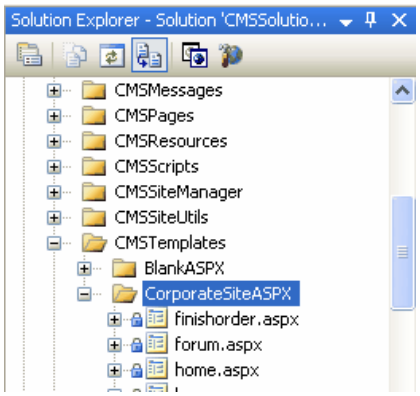
Adding Kentico CMS Controls to your Visual Studio Toolbox

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.

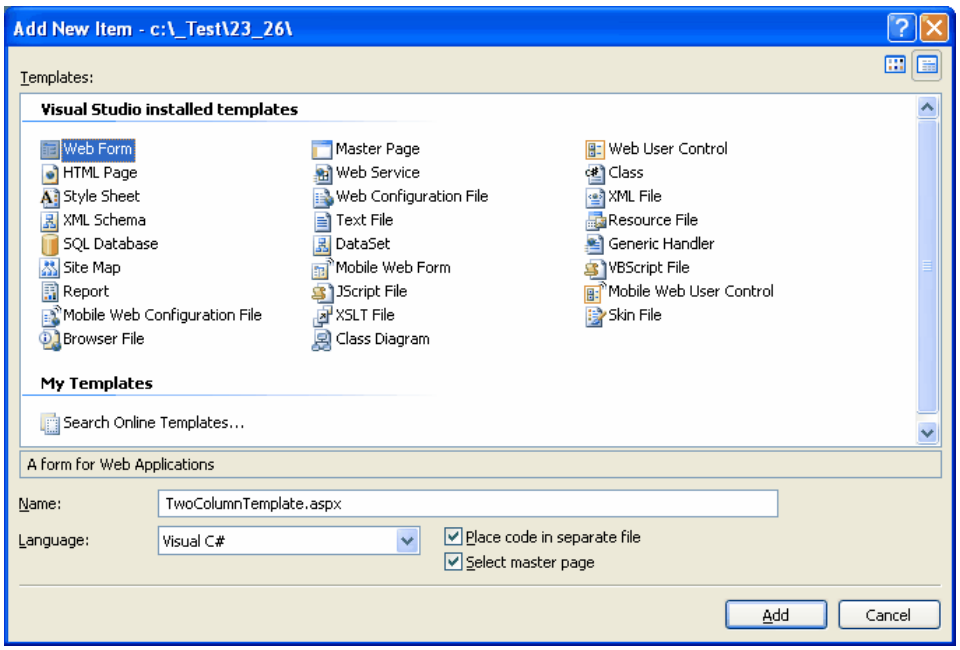
Open the web project in **Visual Studio**. You can open it either using the **WebProject.sln** file or using the **File -> Open -> Web Site** menu.

Now right-click the **CMSTemplates -> CorporateSiteASPX** folder in the Solution Explorer and choose to add a new web item:

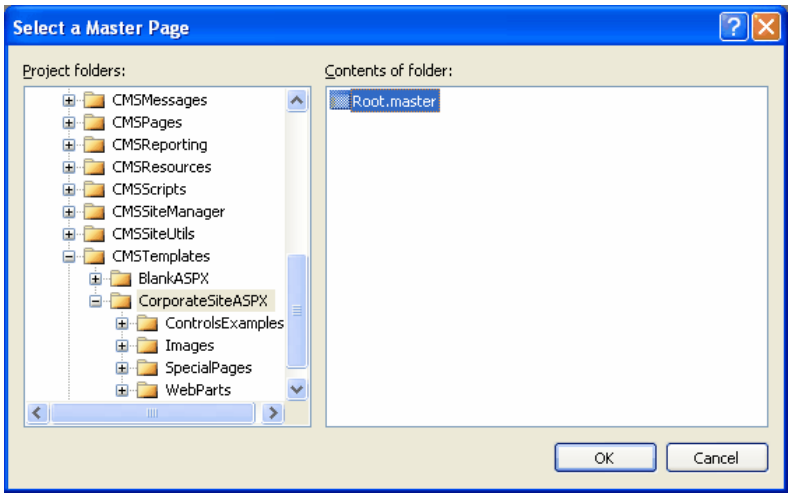


© 2009 Kentico Software

Choose to create a new web form and call it **TwoColumnTemplate.aspx** and check the box **Select master page**. Click **Add**.



The **Select a Master Page** dialog appears. Choose the folder **CMSTemplates/CorporateSiteASPX** and choose the **root.master** file and click **OK**.



© 2009 Kentico Software

Writing the ASPX code

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.

Switch to the code behind. You need to add reference to the CMS.UIControls namespace:

```
using CMS.UIControls;
```

The last step is to modify the class from which our page is inherited. Change the following code:

```
public partial class CMSTemplates_CorporateSiteASPX_TwoColumnTemplate : System.
Web.UI.Page
```

to this:

```
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

© 2009 Kentico Software

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.

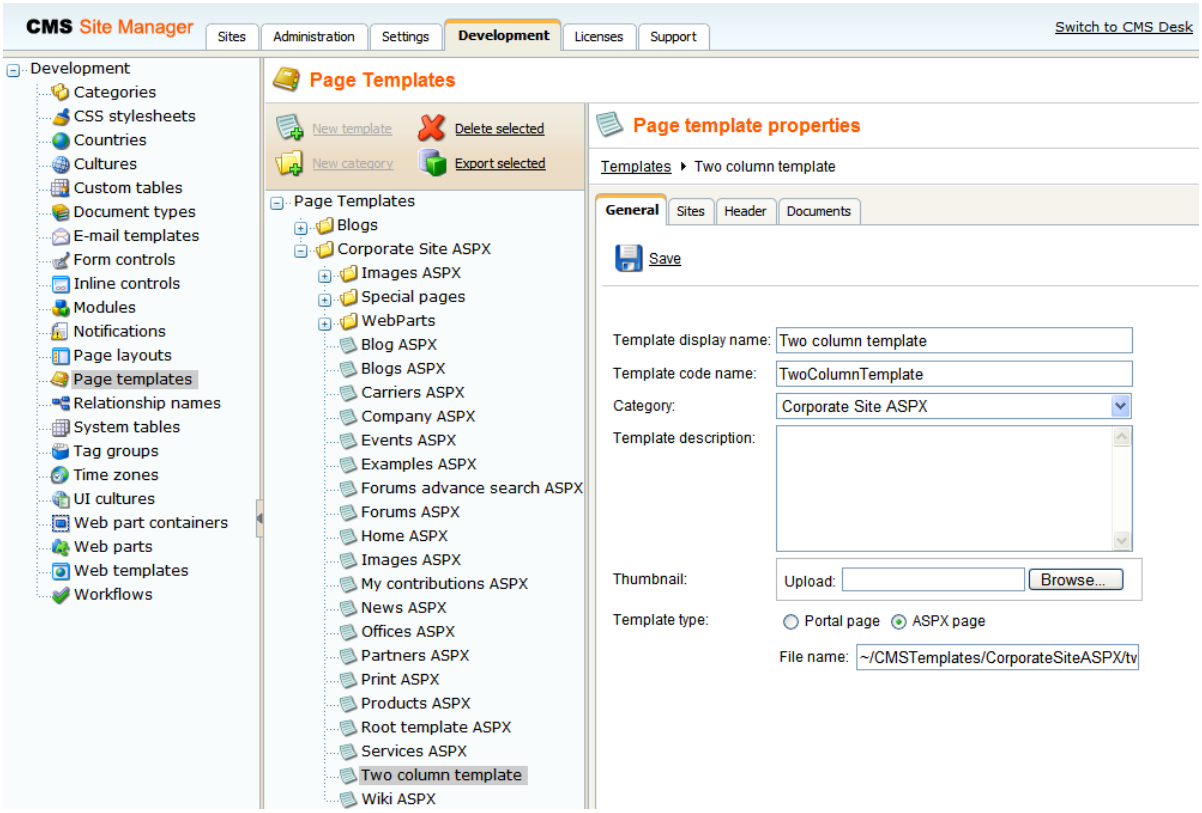
Sign in to **Site Manager** and go to **Development -> Page templates**. Click the **Corporate Site ASPX** folder and click **New template**. Enter the following values:

- Template display name: Two column template
- Template code name: TwoColumnTemplate

Click **OK**. Now enter the following value in the **File name** field:

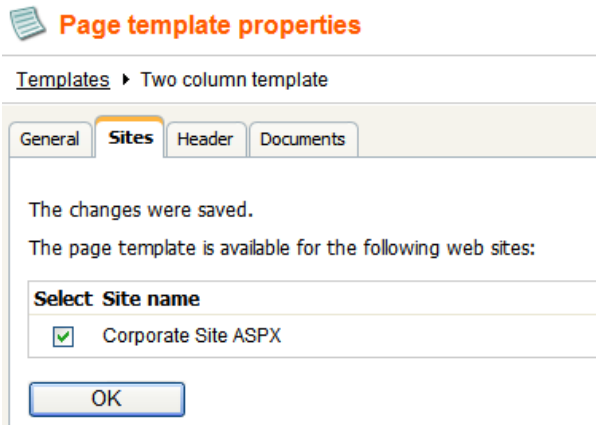
```
~/CMSTemplates/CorporateSiteASPX/twocolumntemplate.aspx
```

It is the virtual path of our ASPX page.



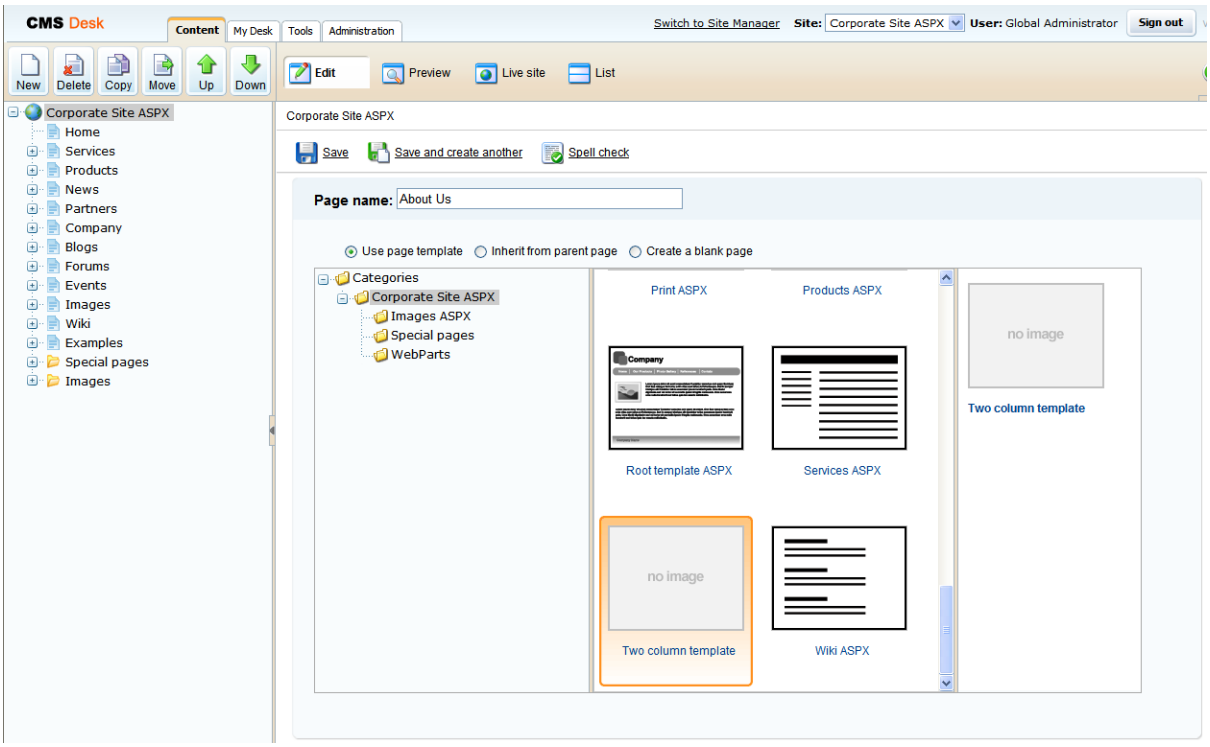
© 2009 Kentico Software

Click **OK** to save the changes. Now click the **Sites** tab and assign the page template to the current web site and click **OK**:

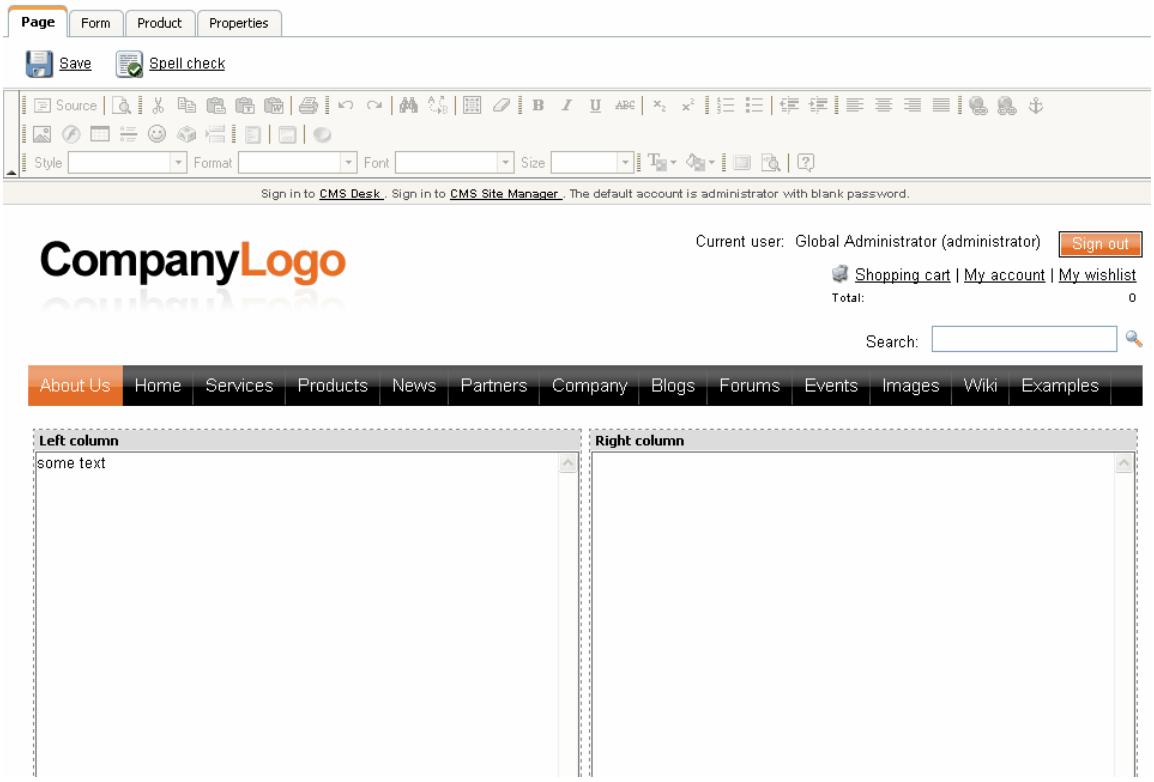


Creating an About Us page based on the new page template

Go to **Kentico CMS Desk -> Content**. Click CorporateSite and click **New** in the Content section main menu. Choose to create a new **Page (menu item)**. Enter the page name **About Us** and choose to create a page using the page template **Corporate Site ASPX/Two column template**:



Click **Save** to create the new page. 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.

© 2009 Kentico Software

11.3 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, that 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="cc1" %>
<%=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="form1" runat="server">

     <cc1:CMSPageManager ID="CMSPageManager1" runat="server" />
     <cc1: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>
```

© 2009 Kentico Software

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" />
```

Switch to code behind. You need to add reference to the CMS.UIControls namespace:

```
using CMS.UIControls;
```

The master page must be inherited from the TemplateMasterPage, so the class definition must look like this:

```
public partial class CMSTemplates_CorporateSiteASPX_Root : TemplateMasterPage
```

© 2009 Kentico Software

And you also need do 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 web site.

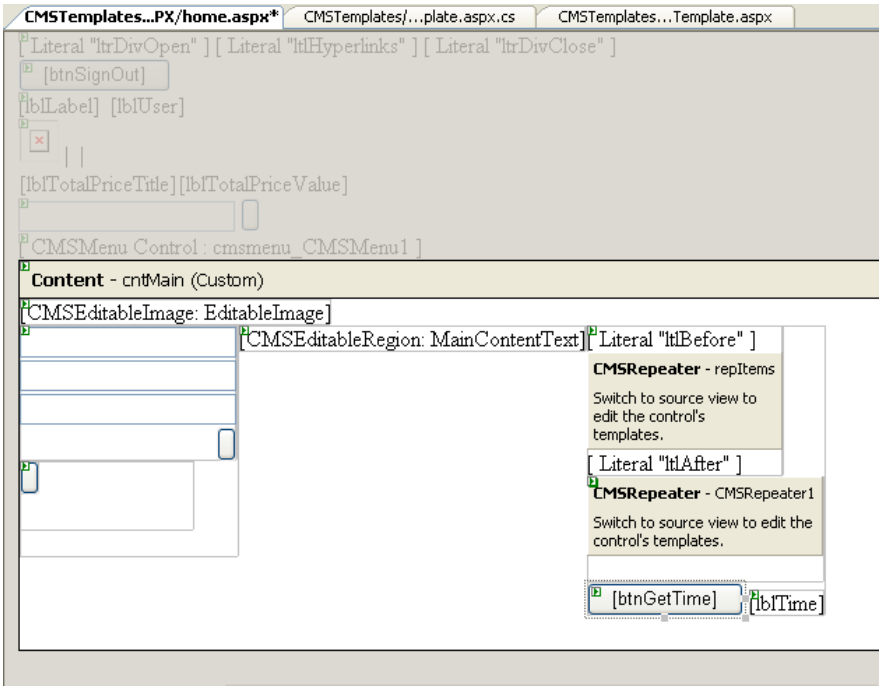
© 2009 Kentico Software

11.4 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 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 web site **Corporate Site ASPX** for this example.

Open the web project in Visual Studio using the **WebProject.sln** file and open the page **home.aspx** located in folder **CMSTemplates\CorporateSiteASPX**.

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.



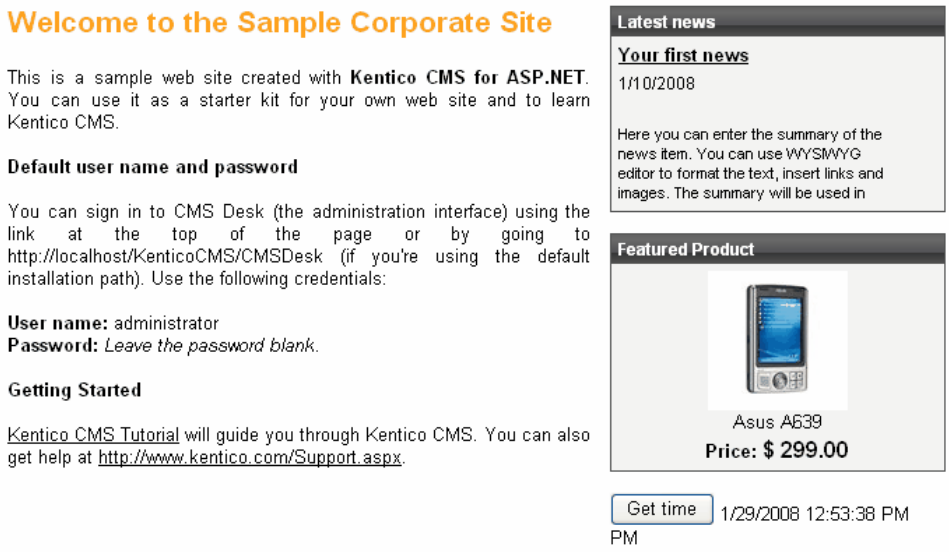
Double-click the button and add the following code inside the click event handler:

[C#]

```
lblTime.Text = DateTime.Now.ToString();
```

© 2009 Kentico Software

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:



As you can see you can use the standard programming methods you usually use. You can also use standard debugging process in Visual Studio.

11.5 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.

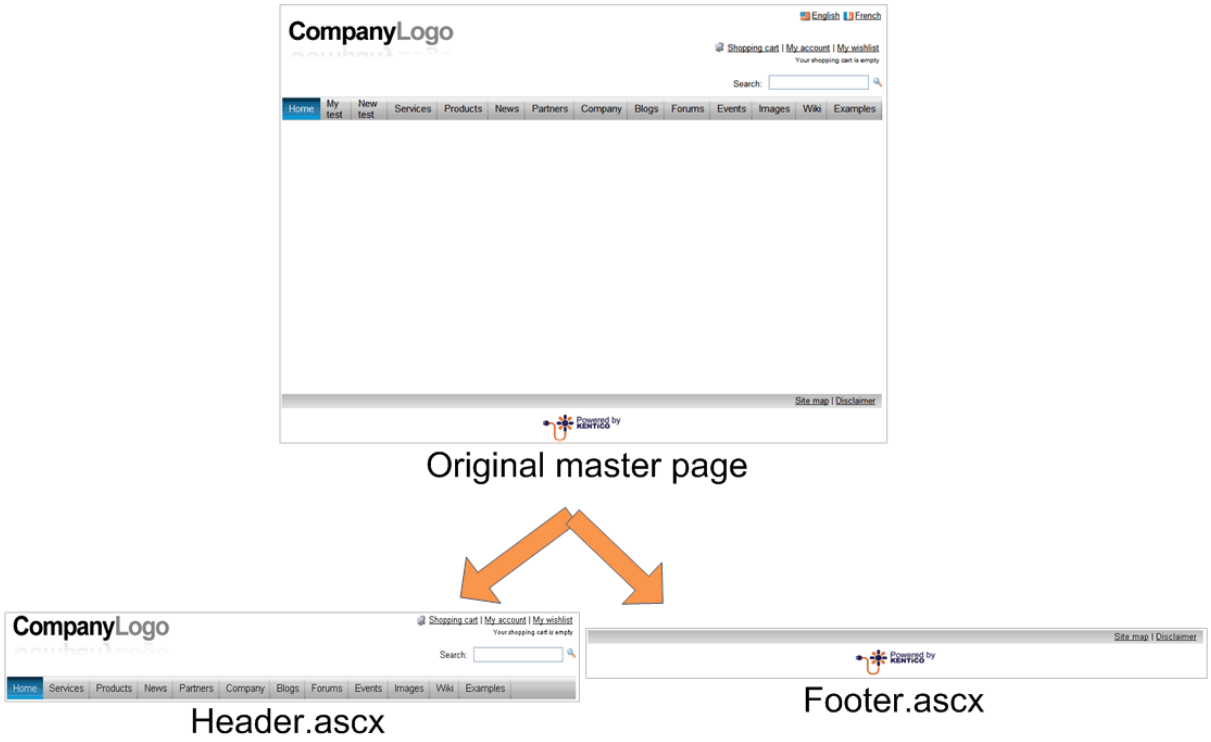
You will create a web site using the portal engine model - it means you will create the master page and some of the pages using the portal engine page templates. The point here is how to "insert" the ASPX pages inside the same master page. Unfortunately, it's not possible to do that directly. However, 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 web site.

The drawback is that you will need to manage the master page in two places. But this issue also has a simple solution:

© 2009 Kentico Software

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.

© 2009 Kentico Software

11.6 Integration with your existing ASP.NET application

If you need to integrate some existing ASP.NET application with Kentico CMS web site, 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 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 CMS and add your own ASPX pages and other files to this project.

   If you need display your own ASPX pages inside the context of the web site, you can simply register them as page templates and then create new pages based on these page templates in the standard web site 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 web site.

   If you wish to use a web site built using the Kentico CMS portal engine development model, please read also the chapter Combining ASPX templates and portal engine templates.

2. **Having CMS in the root and your application in a subfolder**

   If your application can or needs to run separately from the CMS and you want the CMS to manage the main web site, you can place Kentico CMS web project in the root of the web site and your application into a subfolder. You will need to create a virtual directory for the subfolder so that your application runs correctly.

3. **Having your application in the root and CMS in a subfolder**

   If your application can or needs to run separately from the CMS and your application is the main part of the web site and you wish to use the CMS only for some sub-section of the web site where you publish the content, you need to place the CMS into a sub-folder and create a virtual directory for it.

Interaction between CMS and your application

If you need to include your application inside the web site (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 web site.

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 with to use a single system of permissions

© 2009 Kentico Software

(authorization), you can leverage the permission system for custom modules as described in chapter Custom modules.

© 2009 Kentico Software

11.7 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 web site 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 web 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. 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();
```

© 2009 Kentico Software

Save all changes. See the page on the live web site. You will see a grid with data from the external database:

CategoryID	CategoryName	Description
1	Beverages	Soft drinks, coffees, teas, beers, and ales
2	Condiments	Sweet and savory sauces, relishes, spreads, and seasonings
3	Confections	Desserts, candies, and sweet breads
4	Dairy Products	Cheeses
5	Grains/Cereals	Breads, crackers, pasta, and cereal
6	Meat/Poultry	Prepared meats
7	Produce	Dried fruit and bean curd
8	Seafood	Seaweed and fish

As you can see we used standard ASP.NET methods to display external data on the web site.

© 2009 Kentico Software

Part XII

CSS stylesheets and design

12 CSS stylesheets and design

12.1 CSS Overview

CSS stylesheets allow you to modify the design of the web site. You can use standard CSS styles with Kentico CMS as you are used to.

Every **web site** 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 web site 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 web sites on the **Sites** tab.



Stylesheet URL

You can receive any stylesheet using the URL like this:
`web.com/CMSPages/GetCSS.aspx?stylesheetname=mystylesheetcodename`

Combining web site and page stylesheet

If you need to only combine the web site and page stylesheet, you need to configure the page for using its own style sheet and import the web site stylesheet using the following CSS directive:

```
@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.

© 2009 Kentico Software

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

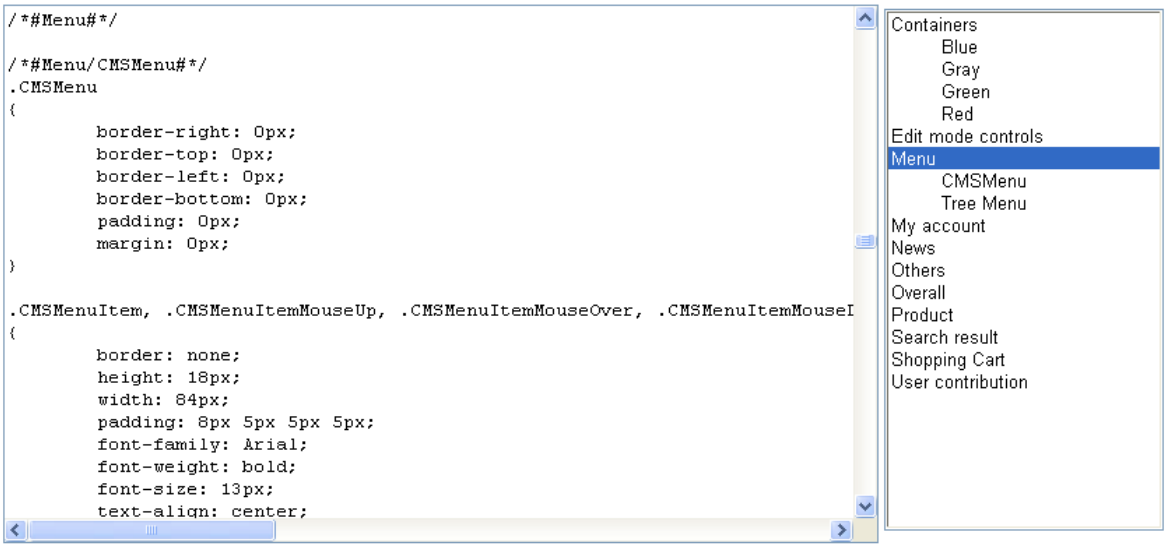
/* #Menu/TreeMenu# */

// some CSS code

/* #Menu/MainMenu# */

// some CSS code
```

The outlined structure will look like this:



© 2009 Kentico Software

12.2 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:

```
<cc1:CMSCalendar Runat="server">
<NextPrevStyle ForeColor="Red"></NextPrevStyle>
<WeekendDayStyle BackColor="#E0E0E0"></WeekendDayStyle>
</cc1:CMSCalendar>
```



Web site design files

It's recommended that you store all images or Flash movies that are part of the web site design template in the application theme folder. This ensures that the files are exported together with web site when your deploying it to some other server.

© 2009 Kentico Software

12.3 Printer friendly CSS styles

This chapter explains how to use the printer friendly CSS styles on your web site. 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:

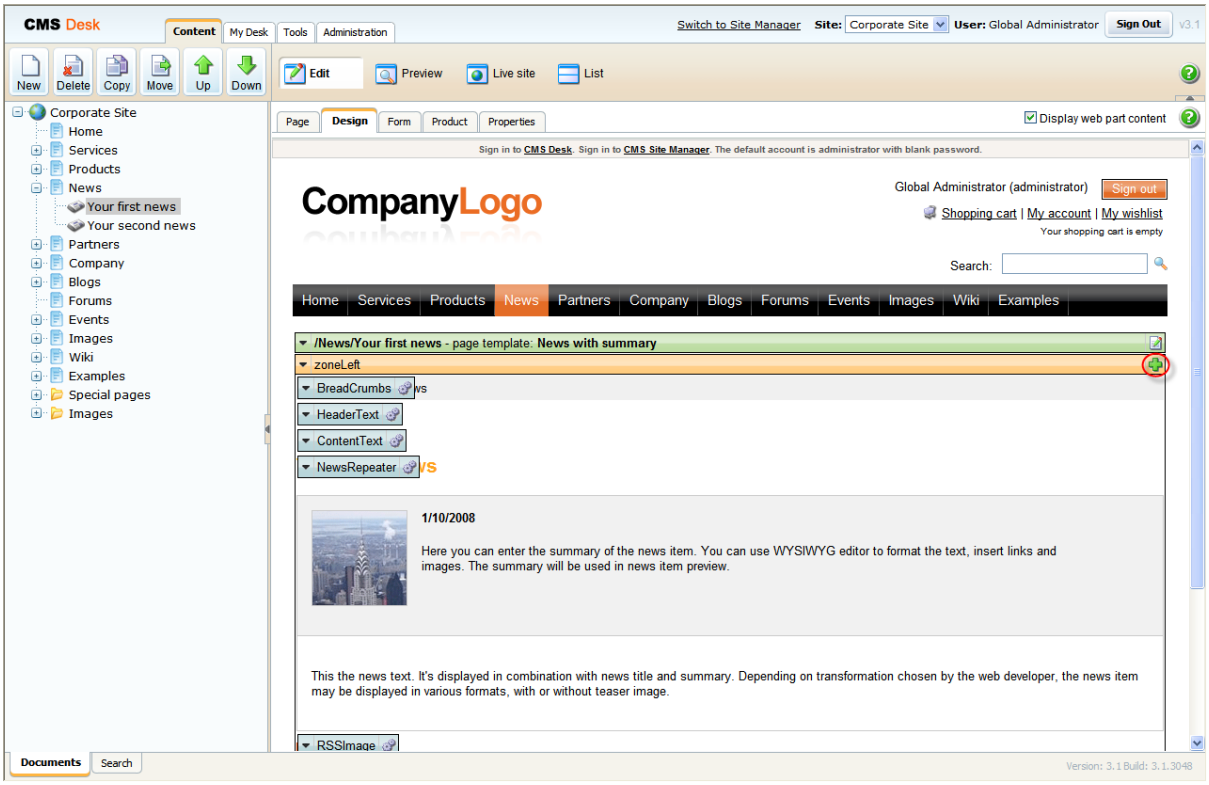
```
<link href="CMSPages/GetCSS.aspx?stylesheetname=Printer_styles" type="text/css"
rel="stylesheet" media="print" />
```

© 2009 Kentico Software

12.4 Print page

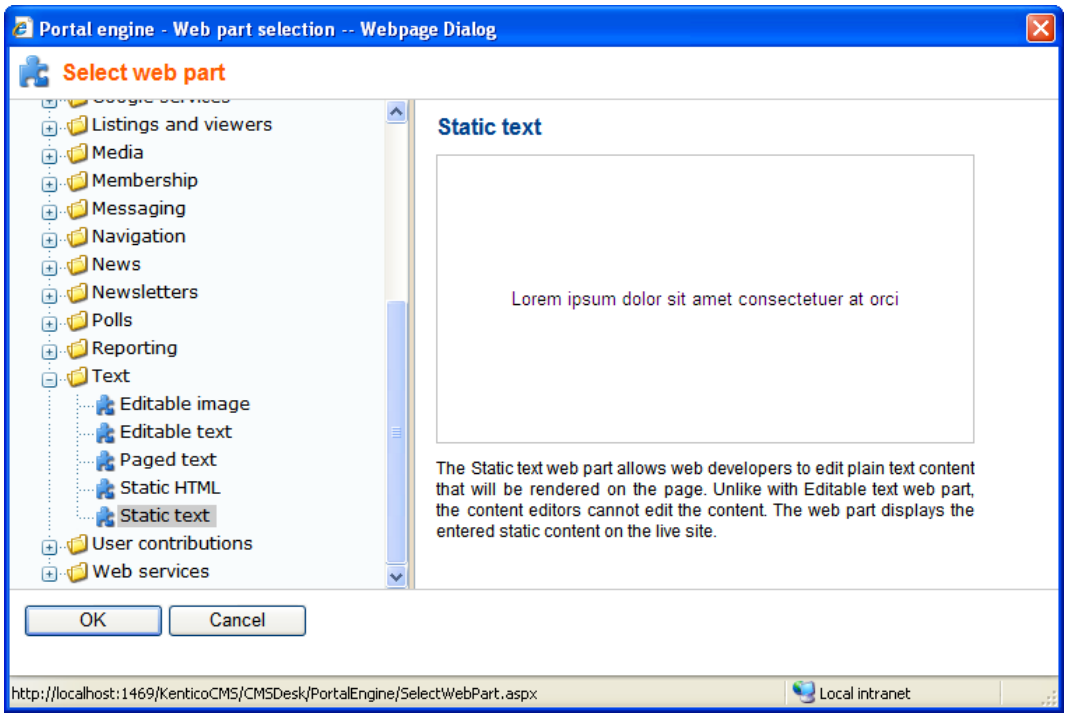
Kentico CMS allows you to add a link button to your web page that will create print version of the given document. The following example shows you on the sample Corporate Site how to create the given button for the news section.

1. Go to **CMS Desk** -> **Content** -> **News** -> **Your first news** -> **Design** and add click the **Add web part** button at the **zoneLeft**.



© 2009 Kentico Software

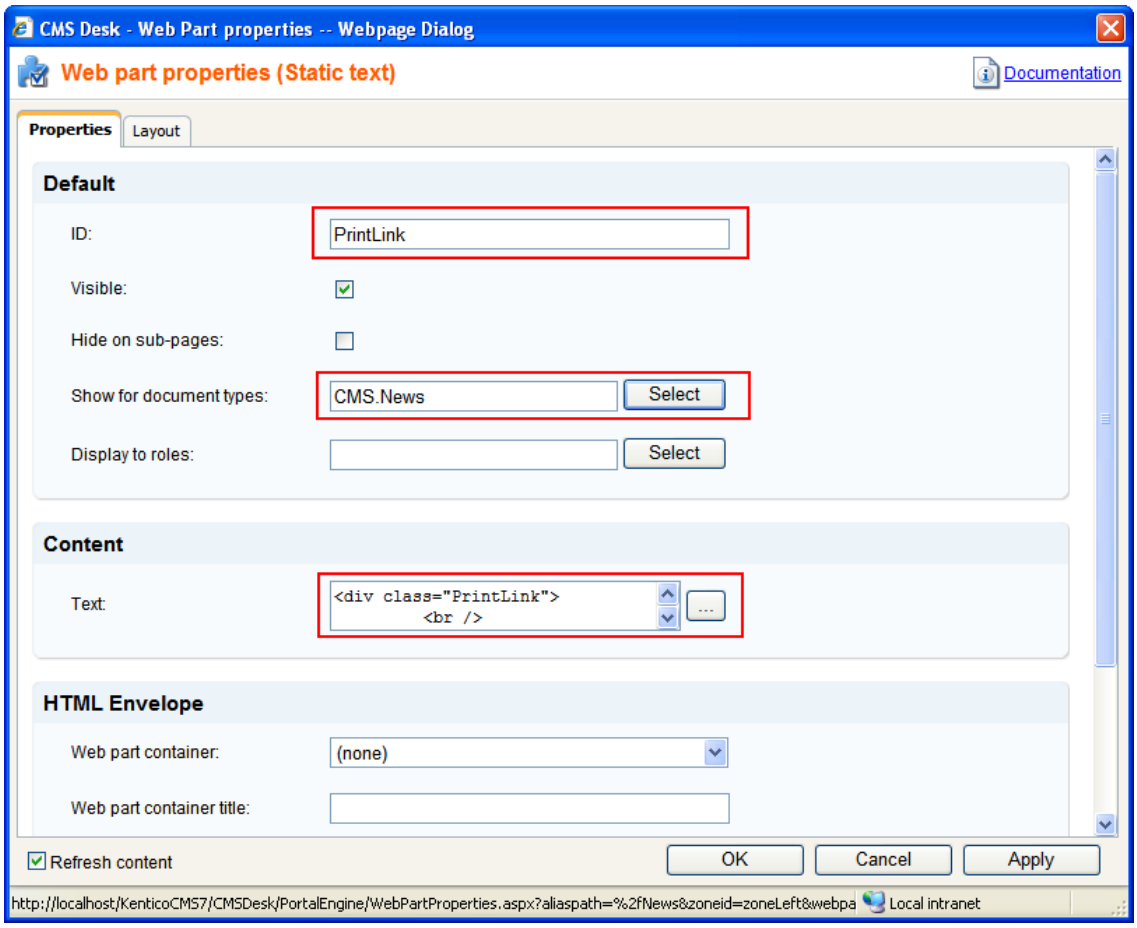
2. Select **Text/Static Text**.



© 2009 Kentico Software

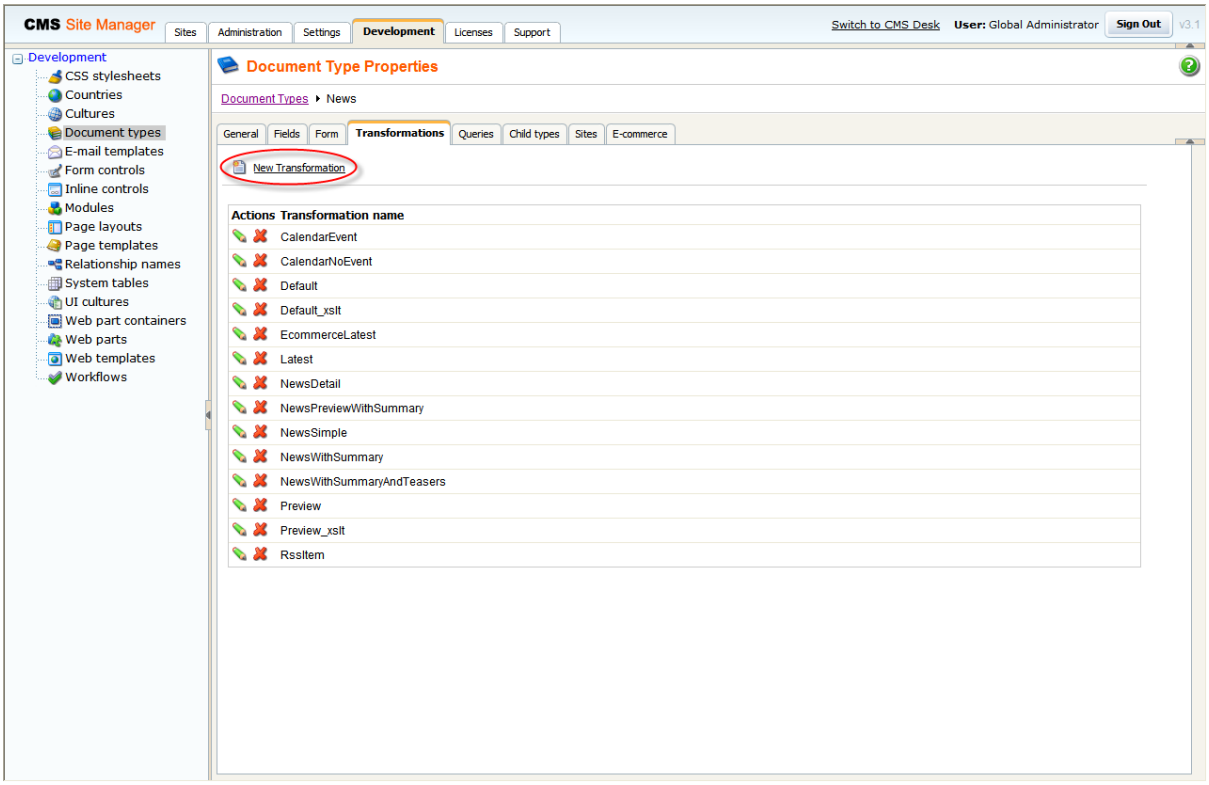
3. In the web part properties, enter *PrintLink* as **ID** and choose **CMS.News** for the Show for document types text box. Enter the following code into the **Text** text box. Then click **OK**.

```
<div class="PrintLink">
      <br />
      <a href="~/SpecialPages/Print.aspx?printpath={%NodeAliasPath%}&classname={%
ClassName%}" target="_blank" >
            <img class="PrintImage" src="~/App_Themes/CorporateSite/Images/
Print.gif" alt="Print" />
            Print
      </a>
</div>
```



© 2009 Kentico Software

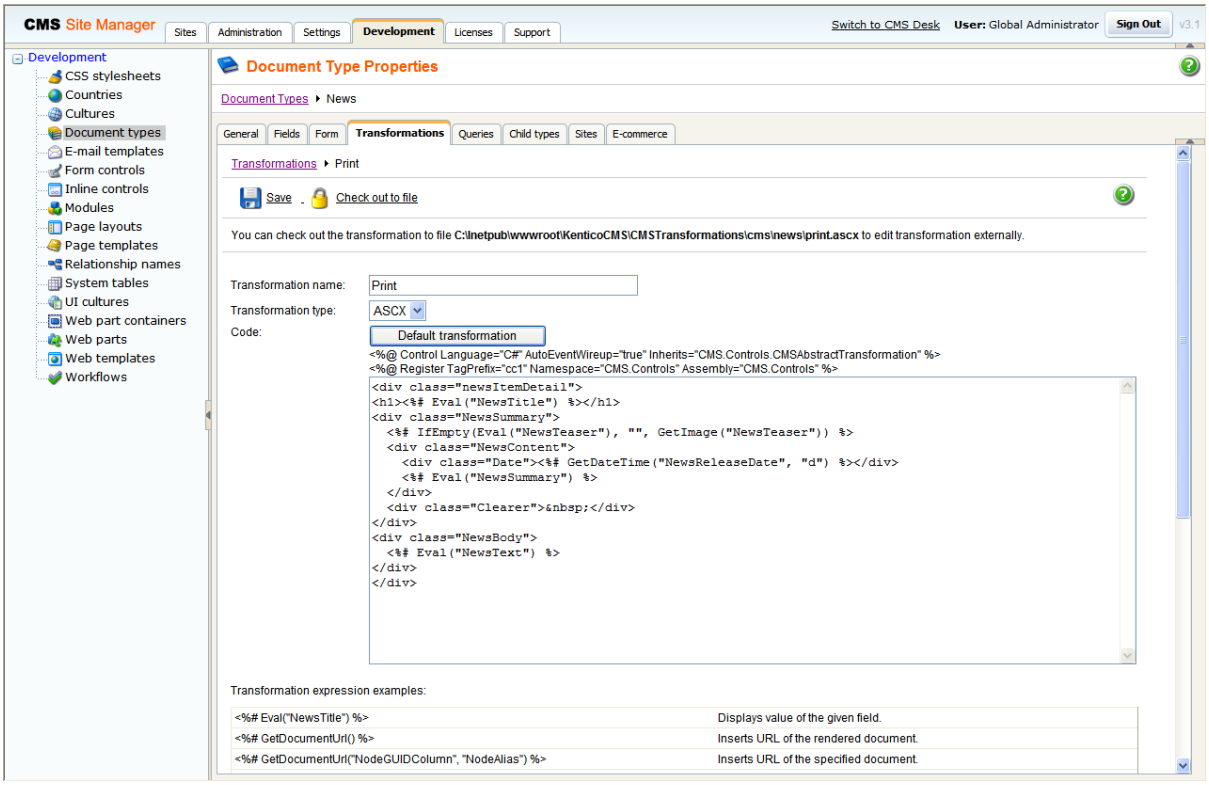
4. Now you have to specify the Print transformation for the new document type. Go to **CMS Site Manager** -> **Development** -> **Document Types** and click the **Edit** button next to the **News** document type. Switch to the **Transformation** tab and click **New Transformation**.



© 2009 Kentico Software

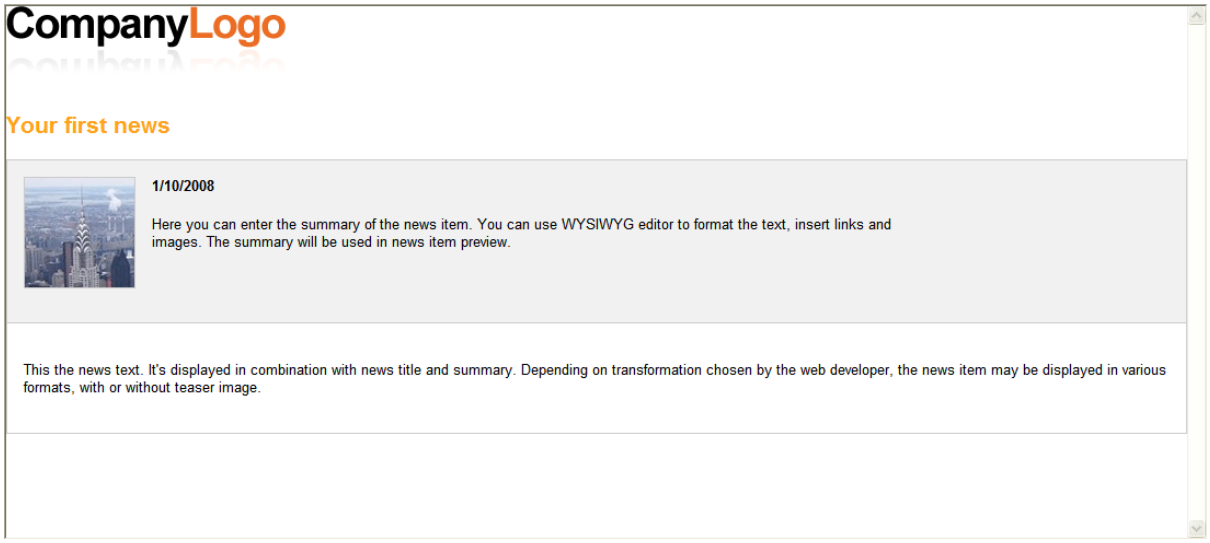
5. Enter *Print* as **Transformation name** and into the **Code** text box enter the following code. Then click **Save**.

```
<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"> </div>
</div>
<div class="NewsBody">
  <%# Eval("NewsText") %>
</div>
</div>
```



© 2009 Kentico Software

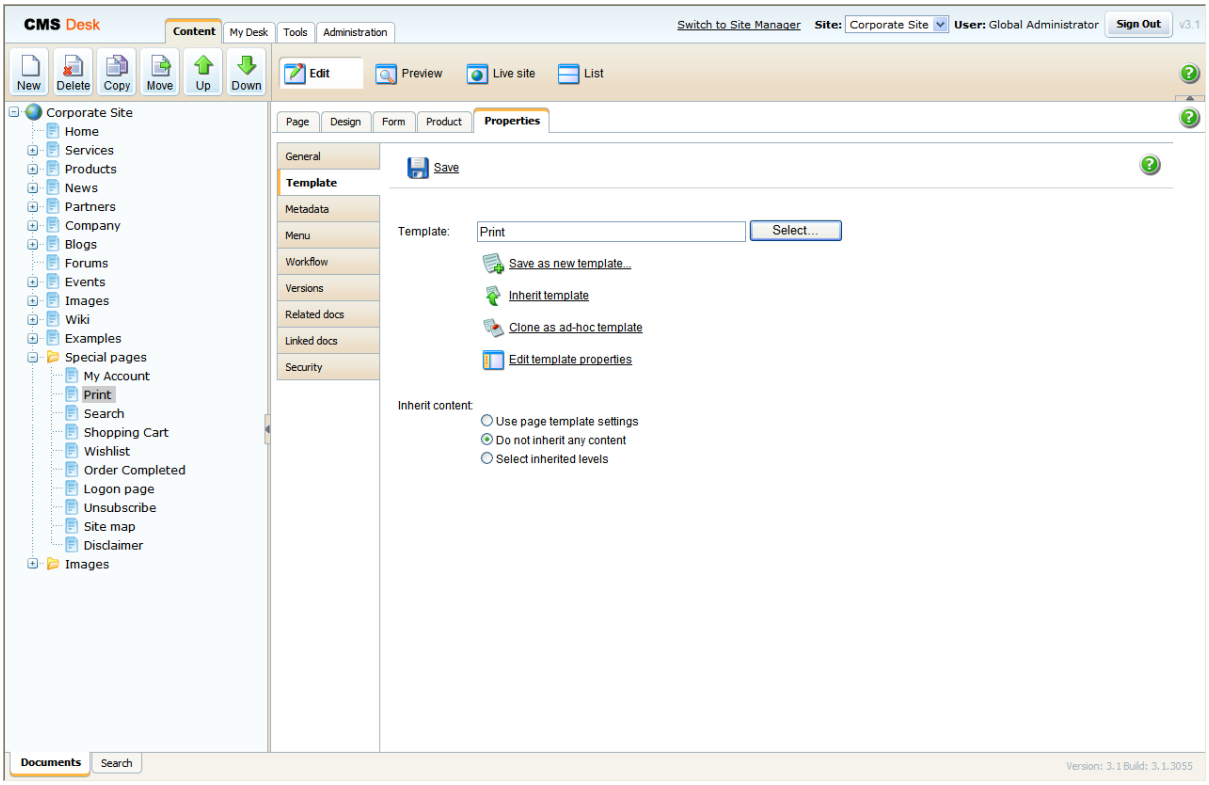
6. Now, go back to **CMS Desk** -> **Content** -> **News** -> **Your first news** and click the newly created **Print** button. You will be redirected to the **Print** page that displays the print version of the given news item.



Please note:
For the sample Corporate Site, the **Print** page is already created. For your own web site, you have to create it by yourself.

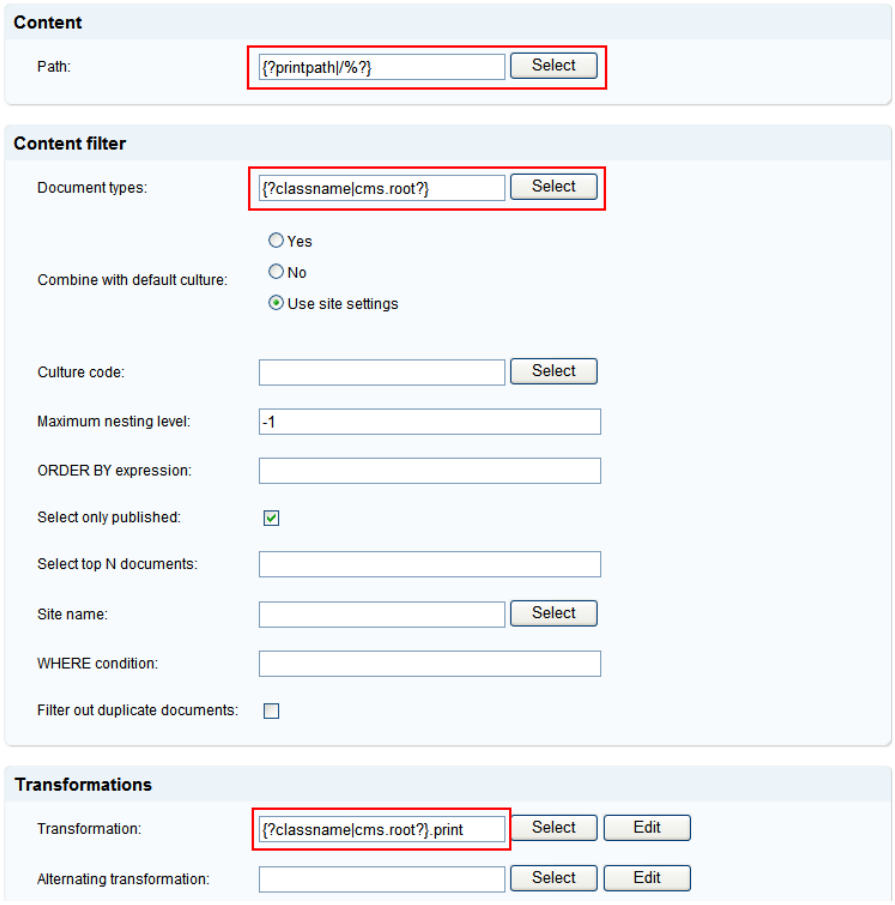
© 2009 Kentico Software

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**.



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



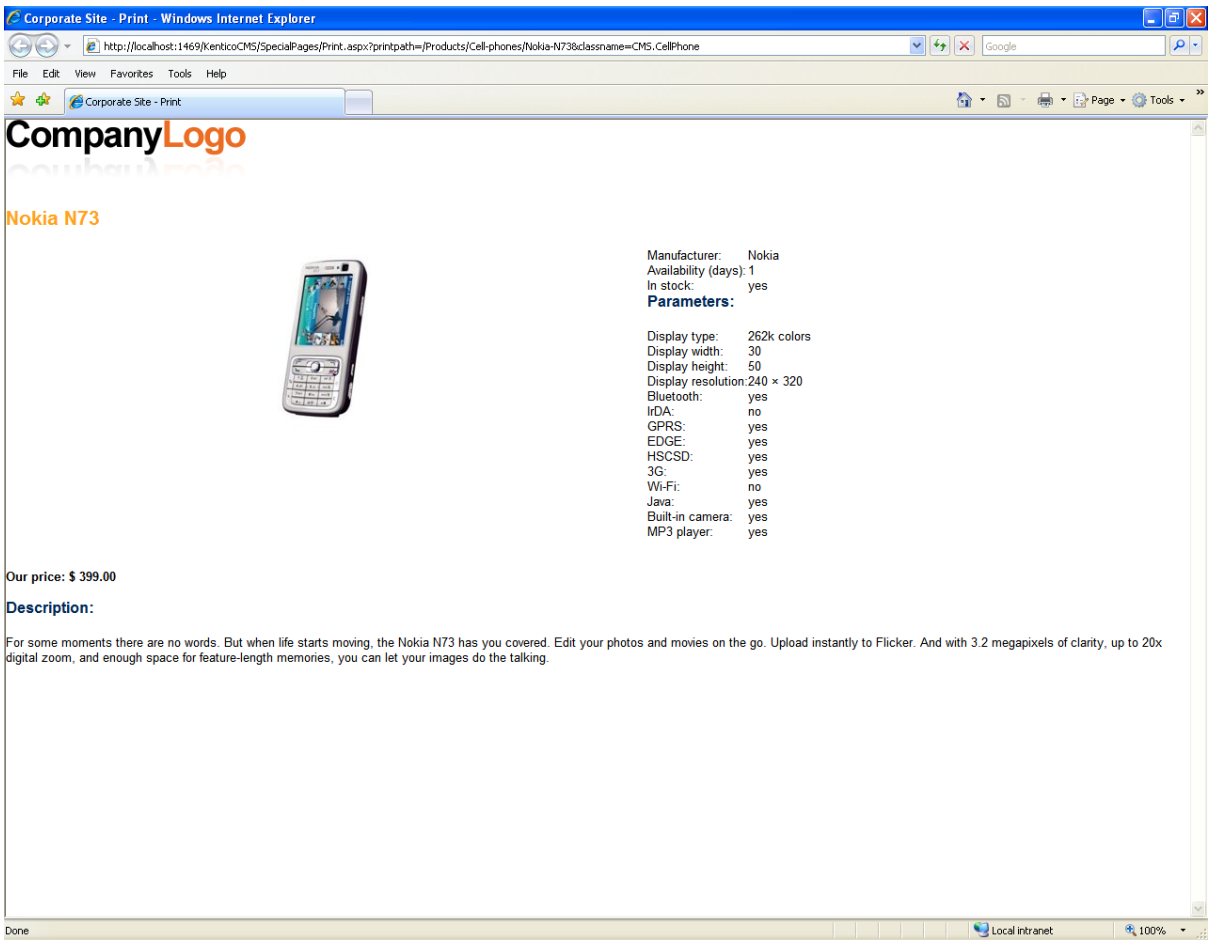
The **Path** text box specifies the path to the document whose print version you want to make. The value of the **printpath** macro expression is supplied in URL. If no value is supplied in URL (for instance you go directly on the **Print** page from the content tree and not through the print link button), 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.

© 2009 Kentico Software

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.



© 2009 Kentico Software

Part XIII

Document types and transformations

13 Document types and transformations

13.1 Document type 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

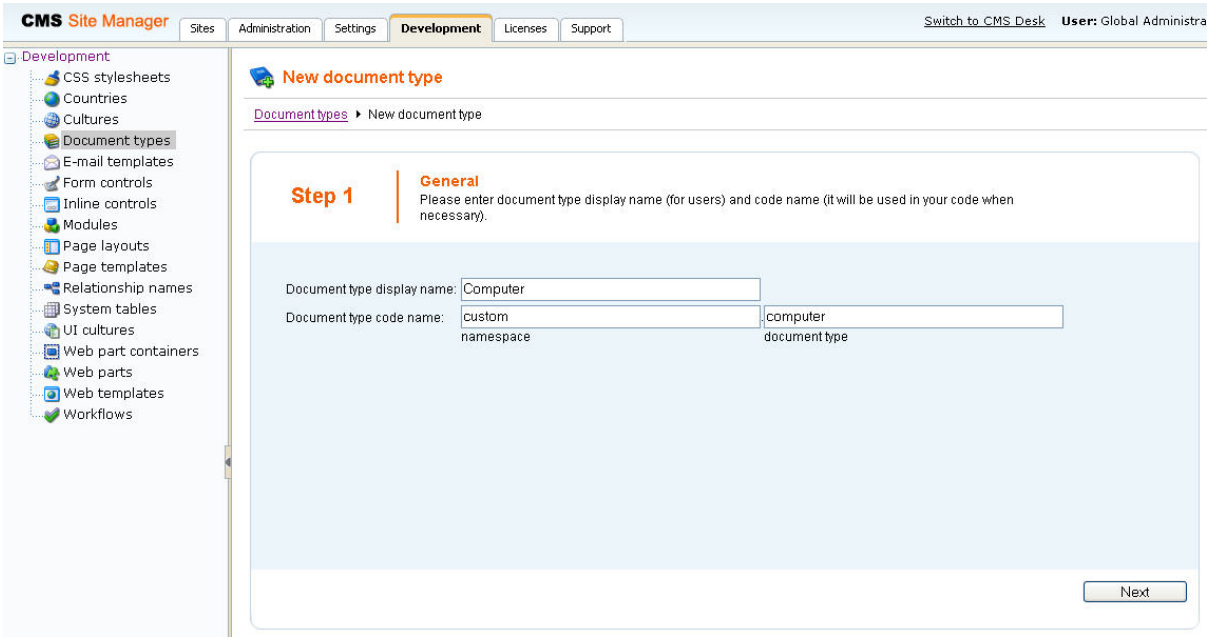
Document type display name	The name of the site displayed to the users.
Document type code name	The name of the site used in the code.
New page	URL of the page that will be used for creating new documents of this type.
Editing page	URL of the editing page that will be used when the document is displayed 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 the user must select some page template first when she creates 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.

© 2009 Kentico Software

13.2 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:

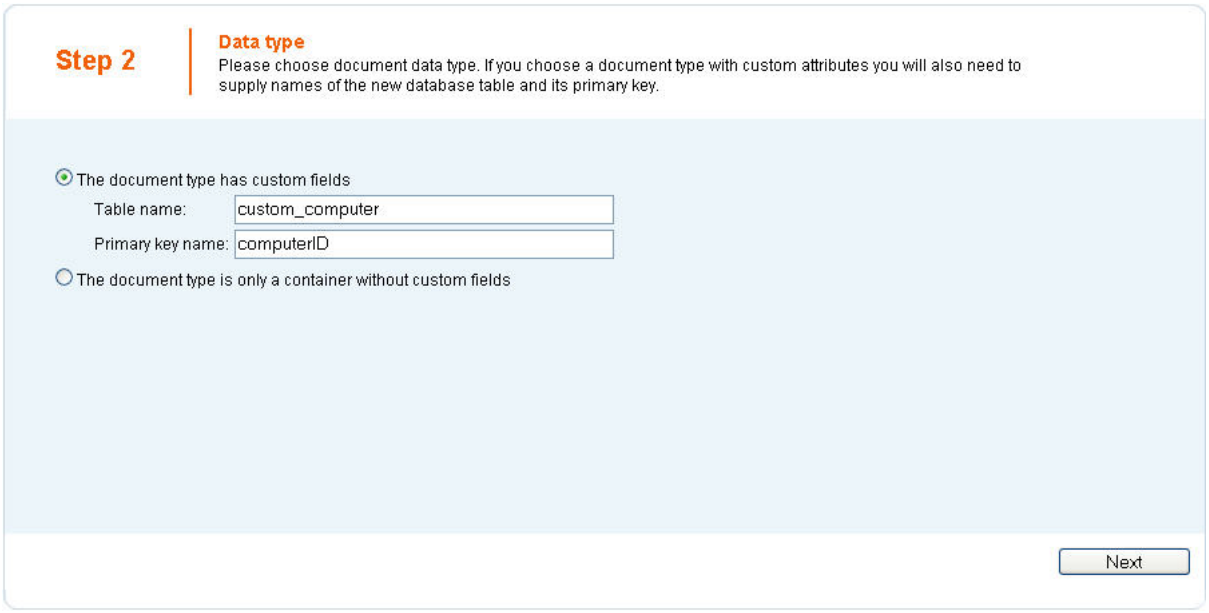
- **Document type display name:** Computer (this name will be displayed to the users)
- **Document type code name:** custom.computer (custom is your namespace to distinguish your document types from system types that use the *cms* namespace, computer is the document type); you will use this value in web part properties later.



© 2009 Kentico Software

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



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)

© 2009 Kentico Software

- **Field type:** Text box

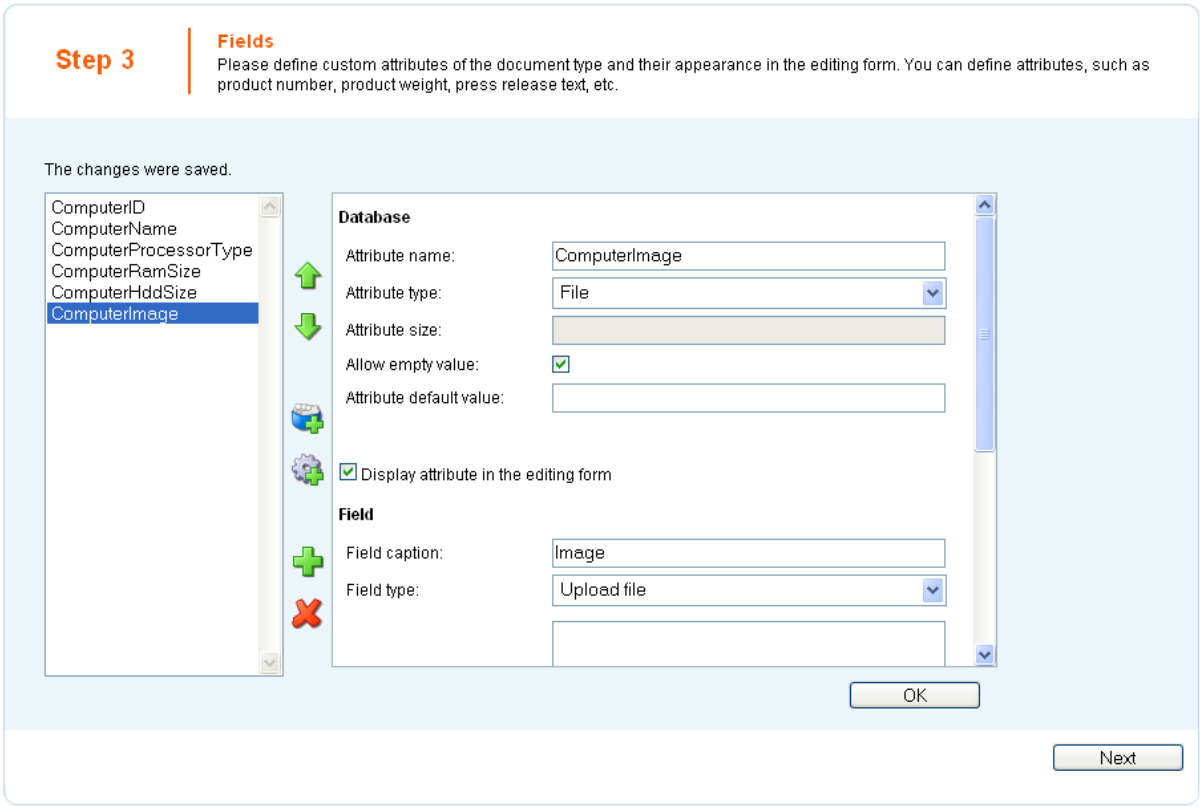
Click **OK**. Click **New attribute** (). Enter:

- **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

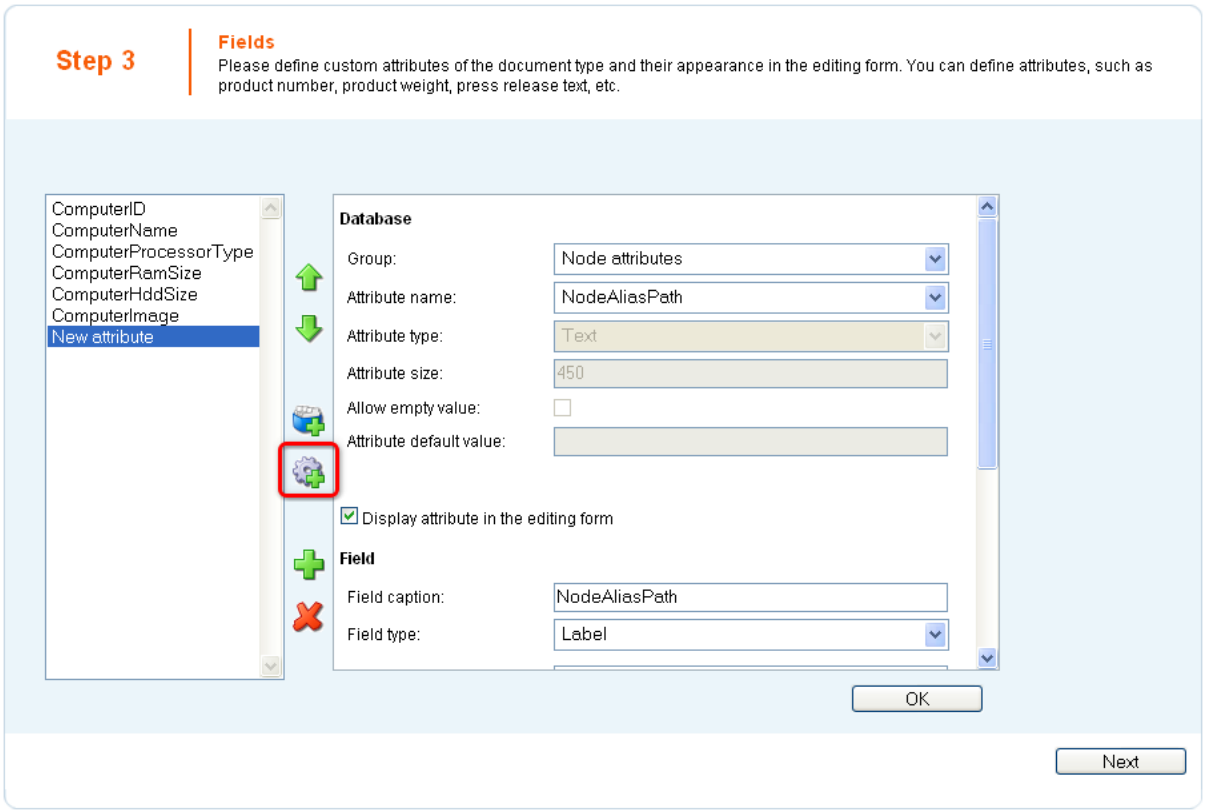
Click **OK**.



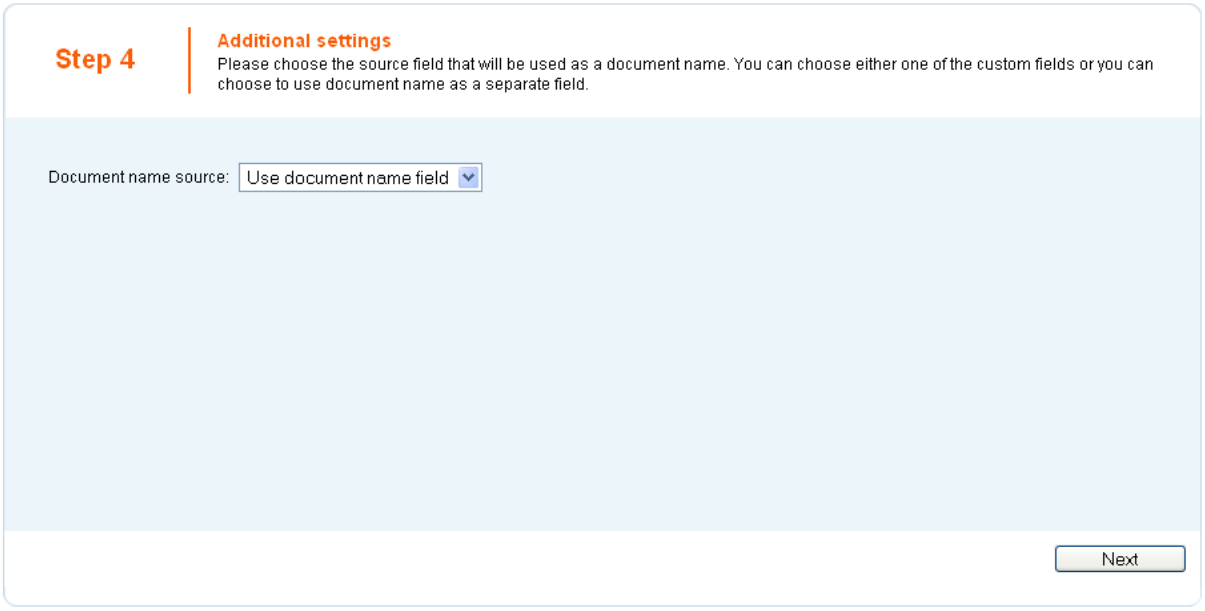
You can also define system fields to be displayed on the documents' **Form** tab. This can be done by clicking the **Add system attribute** icon. Using the **Group** drop-down list, you can then choose from the following two groups of system fields:

- **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.



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.

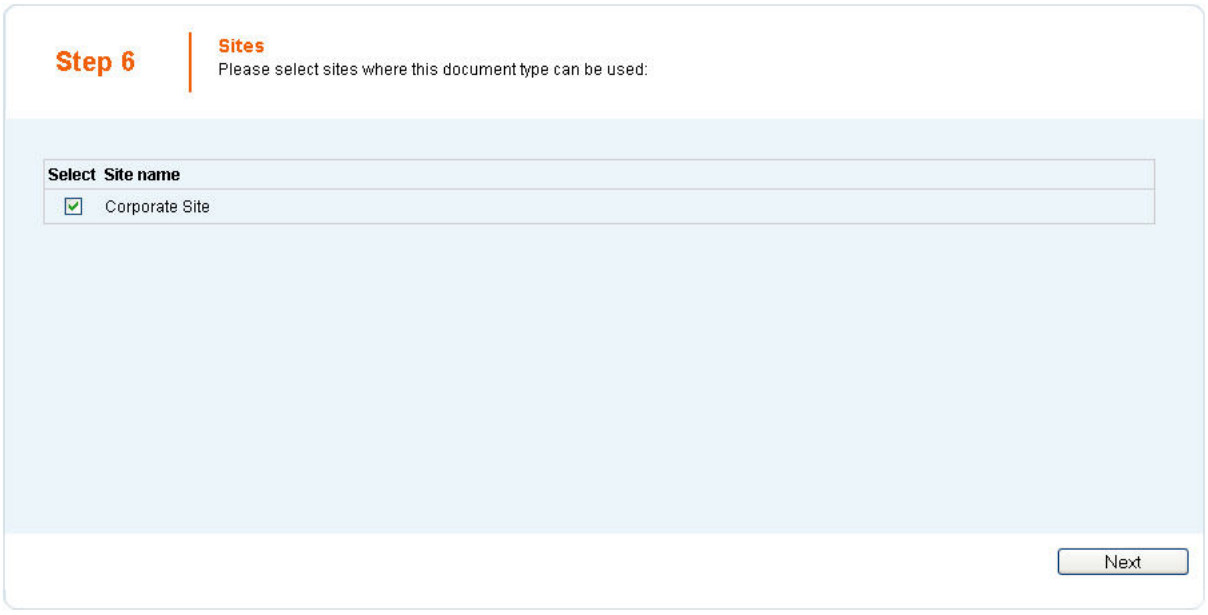


Click **Next**. In step 5, you need to select the document types under which the computers will be displayed. Check only the **Page (menu item)** value, which means the editors will be able to create computer documents only under some page, not under article or news document in the content tree.

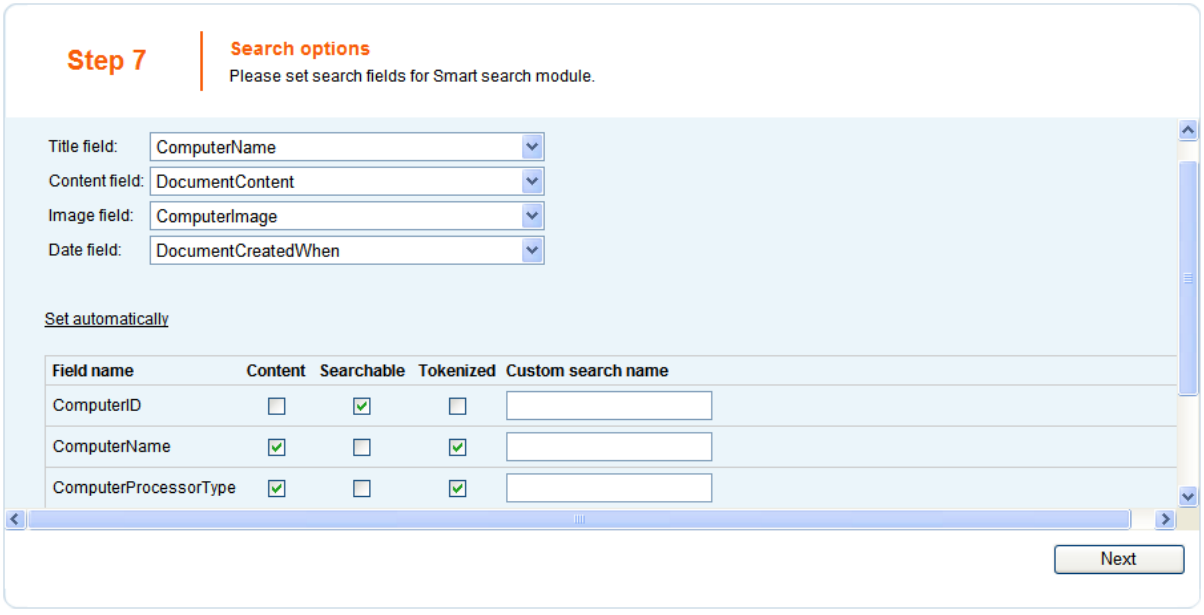


© 2009 Kentico Software

Click **Next**. In step 6, you need to choose which web sites will use this document type. Check the appropriate web site and click **Next**.

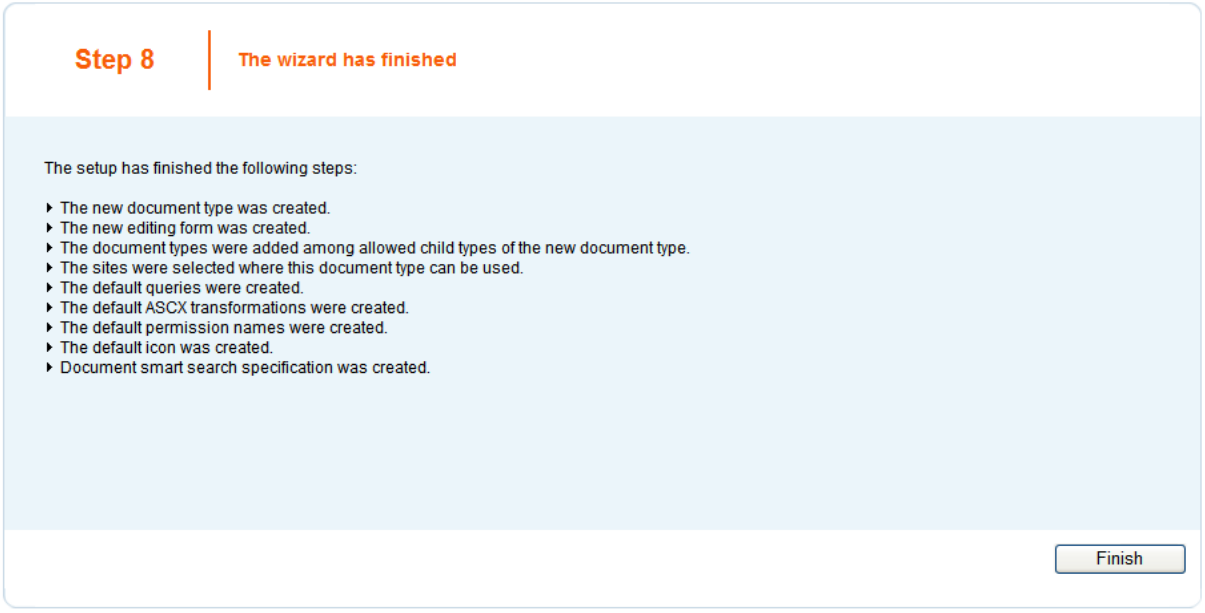


In Step 7, you are asked to specify how documents of this type will be indexed and displayed in the search results. For more information on these settings, please refer to this topic. Make your choice and click **Next**.



© 2009 Kentico Software

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.

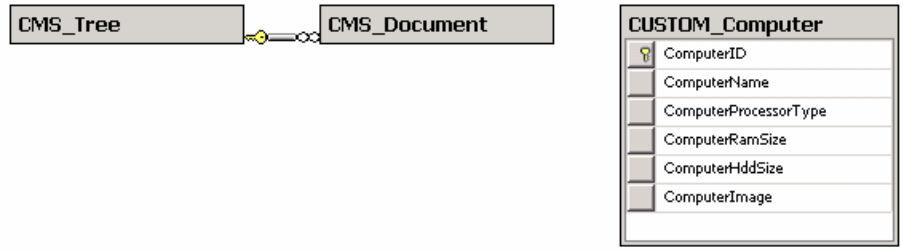


You have learned how to define a new document type.

© 2009 Kentico Software

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

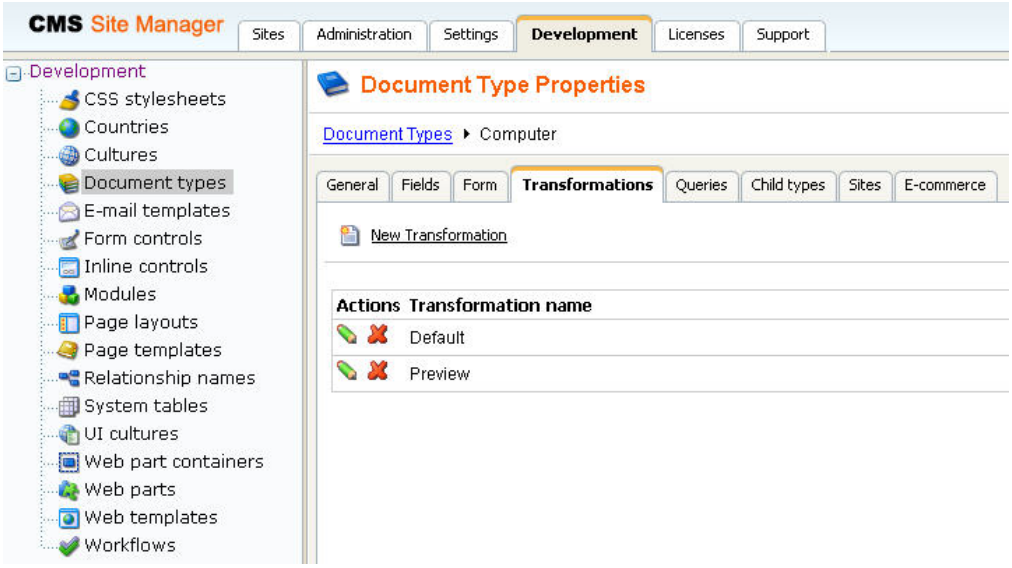
After doing so, all documents of this type should appear with the new icon. You can also change any other document types' icons this way, as all document type icons are stored in the location mentioned above.

© 2009 Kentico Software

13.3 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:



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)

© 2009 Kentico Software

© 2009 Kentico Software

Enter the following transformation code:

```
<div style="text-align:center;border:1px solid #CCCCCC">
<h2><a href="<%# GetDocumentUrl() %>"><%# Eval("ComputerName") %></a></h2>
<img src="<%# GetFileUrl("ComputerImage") %>?maxsidesize=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:

```
<img src="<%# GetFileUrl("ComputerImage") %>?maxsidesize=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 web sites

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

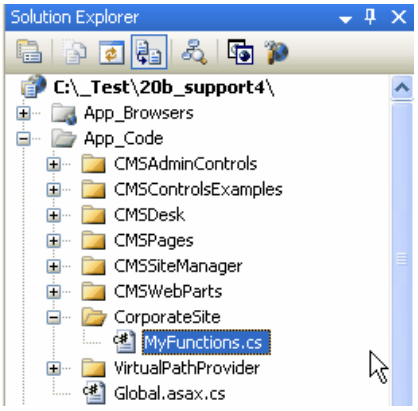
When you switch the content language to French, the French transformation will be automatically used in this case.

© 2009 Kentico Software

13.4 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).



© 2009 Kentico Software

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) %>
```

© 2009 Kentico Software

```
</i>
<br/>
```

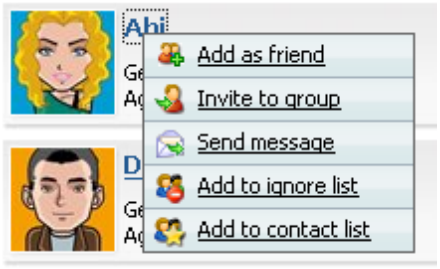
Click **OK** to save. Go to the live site and see the page with news listing. As you can see, the news summary text is truncated to first 10 characters.

You have learned how to write your own transformation methods.

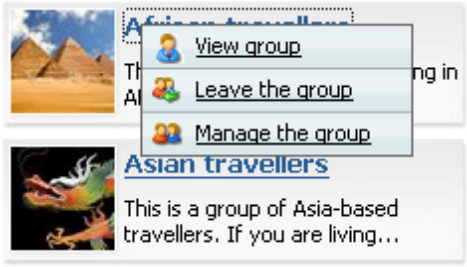
13.5 Context menus in transformations

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 ...
```

© 2009 Kentico Software

```
</cms:usermenucontainer>
```

© 2009 Kentico Software

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>
```

© 2009 Kentico Software

Part XIV

Form controls

14 Form controls

14.1 Form controls 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.

© 2009 Kentico Software

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: • **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. • **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.

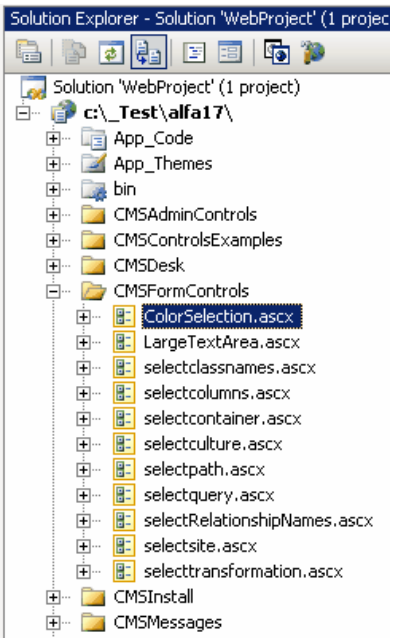
© 2009 Kentico Software

14.2 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 -> Web site** 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:



© 2009 Kentico Software

4. Switch to the code behind.

5. Change the following line

[C#]

```
public partial class CMSFormControls_ColorSelection : System.Web.UI.UserControl
```

to

```
public partial class CMSFormControls_ColorSelection : CMS.FormControls.FormEngineUse
```

[VB.NET]

```
Partial class CMSFormControls_ColorSelection Inherits SystemWeb.UI.UserControl
```

to

```
Partial class CMSFormControls_ColorSelection Inherits CMS.FormControls.FormEngineUse
```

It ensures that our user control inherits from the FormEngineUserControl class and can use its standardized properties.

© 2009 Kentico Software

6. 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.ValidationError = "Please choose some color.";
        return false;
    }
}
```

© 2009 Kentico Software

```
/// <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
```

© 2009 Kentico Software

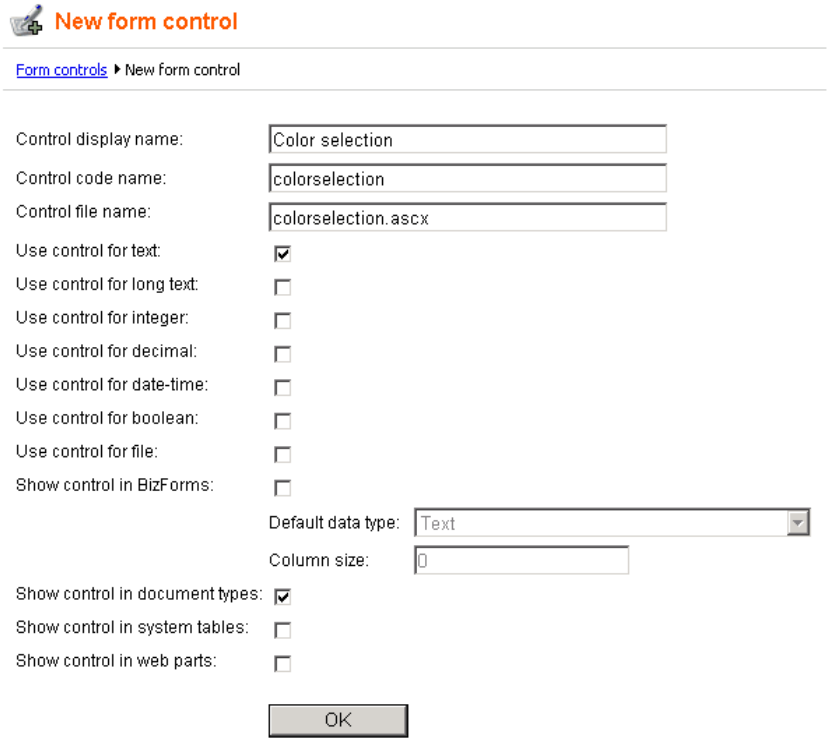
```
        Me.ValidationError = "Please choose some color."
        Return False
    End If
End Function

''' <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
```

© 2009 Kentico Software

7. 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**.

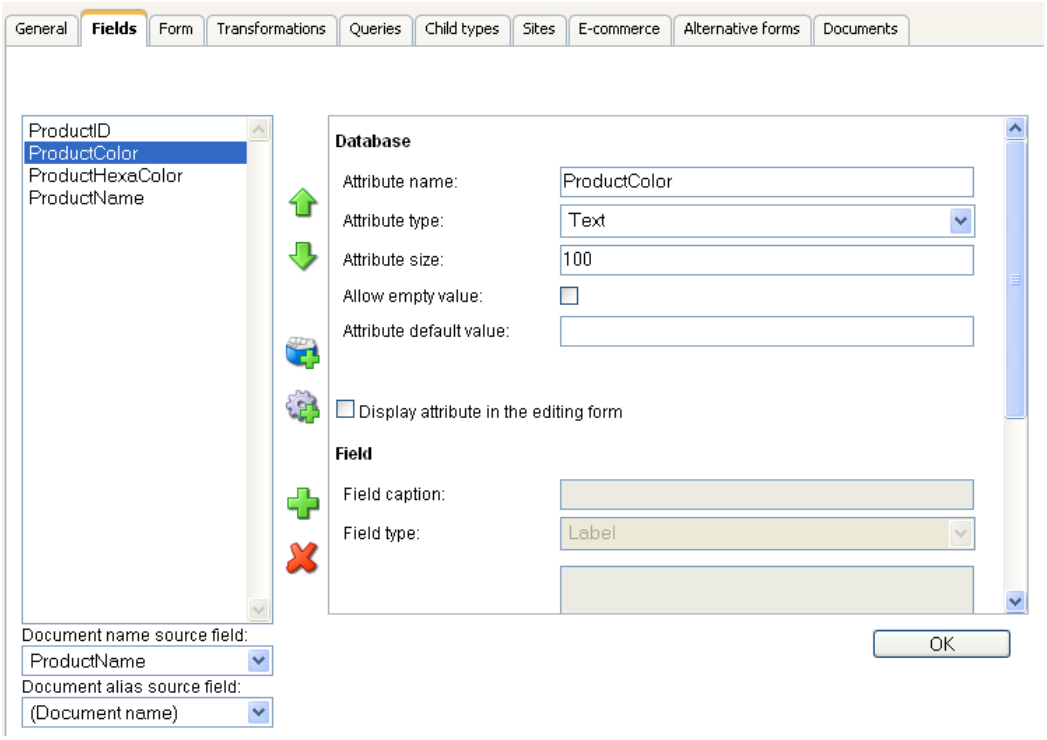


© 2009 Kentico Software

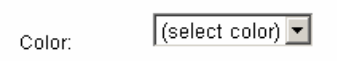
8. Now we will test this control in some document editing form. Go to **Site Manager -> Development -> Document types** and edit the **Product** document type. Click the **Fields** tab and add 2 new fields with the following properties:

   - **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



9. Go to **CMS Desk -> Content** and create a new product in the **Products** section. The new form control will be displayed like this:



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"), T
```

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.

© 2009 Kentico Software

Part XV

Inline controls

15 Inline controls

15.1 Inline controls 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 diplayed 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.

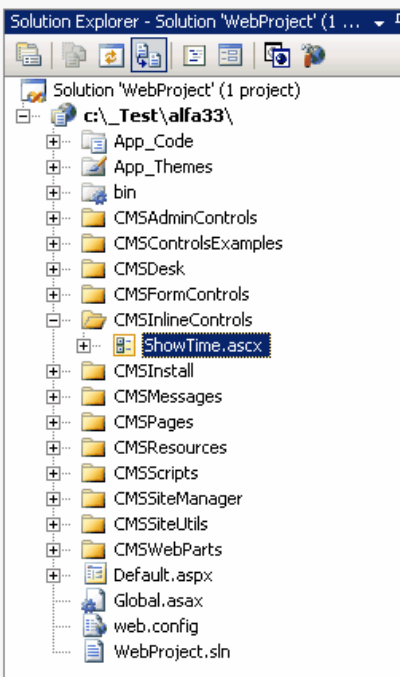
15.2 How to develop inline controls

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 -> Web site** in Visual Studio.

© 2009 Kentico Software

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:



© 2009 Kentico Software

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.

© 2009 Kentico Software

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
```

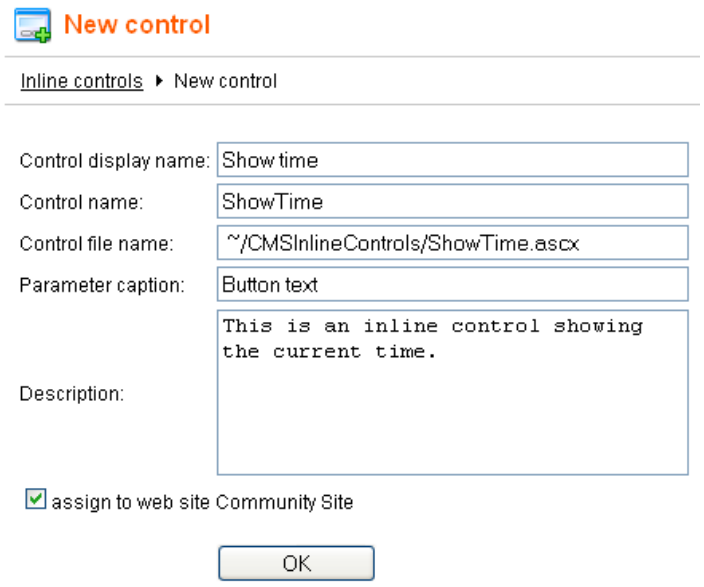
What you did

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



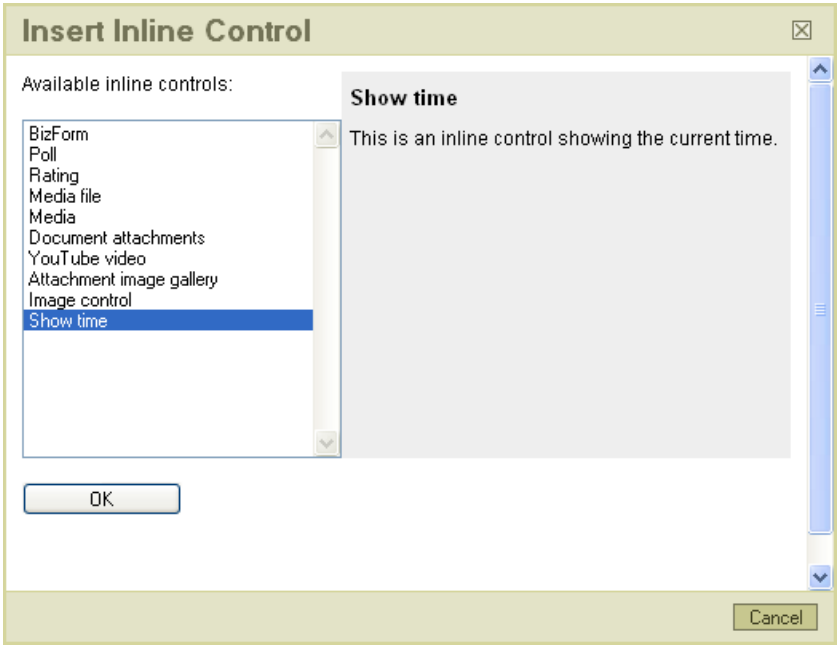
Click **OK**.

© 2009 Kentico Software

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 **Add 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:



© 2009 Kentico Software

Part XVI

Web part development

16 Web part development

16.1 Web part 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	The name of the web part displayed to the users.
Code name	The name of the site used in the code.
Category	Here you can choose the category of the web part catalog where the web part is 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. Example: `Search/cmscompletesearchdialog.ascx` It's recommended that you organize the web parts on the disk in the same way as in the categories.
Description	Description.
Thumbnail	Image used in the web part catalog.

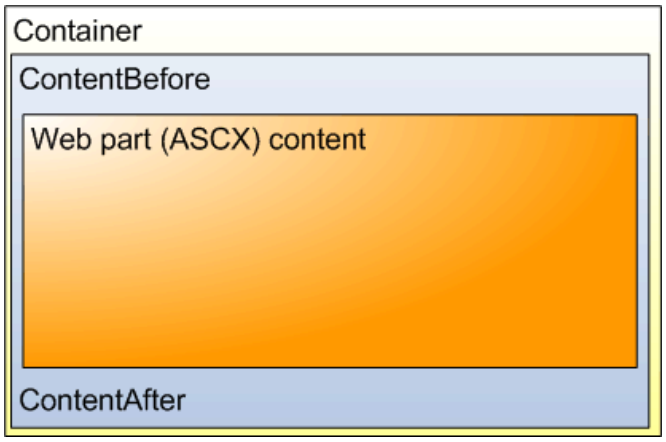
© 2009 Kentico Software

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 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 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.

© 2009 Kentico Software

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 web site 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 `<web site 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.

16.2 Developing web parts

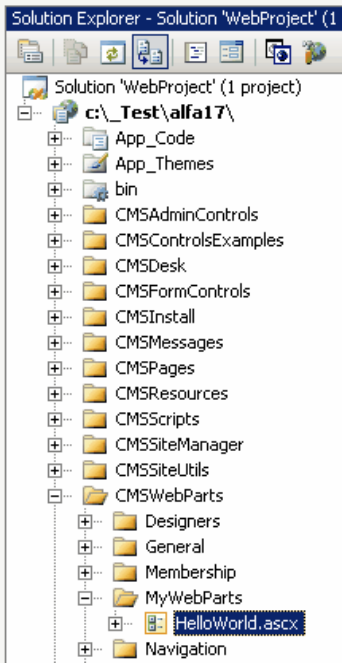
This chapter will guide you through the process of creating a very simple "Hello world" web part that displays a label and a button. When the button is clicked, it updates the current time displayed in the label.

1. Open the web project in Visual Studio (or Visual Web Developer) using the **WebProject.sln** file or using **File -> Open -> Web site** in Visual Studio.

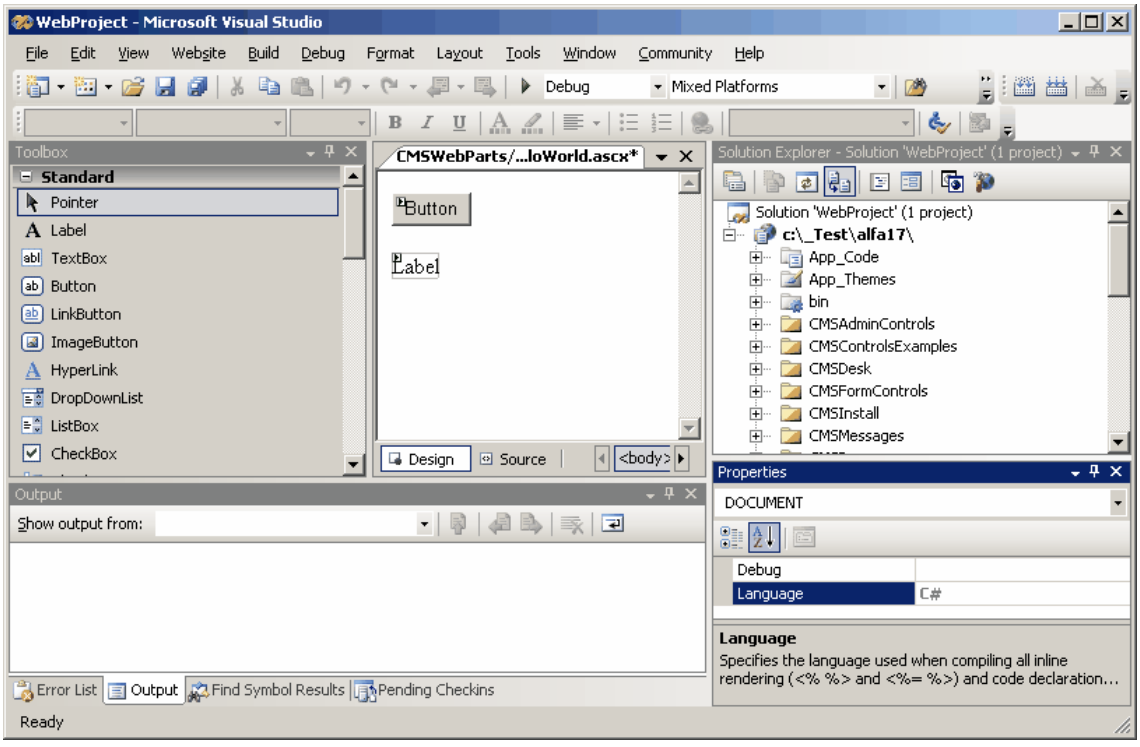
2. Right-click the **CMSWebParts** folder in the **Solution Explorer** window and choose **New Folder**. Rename the folder to **MyWebParts**.

© 2009 Kentico Software

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:



© 2009 Kentico Software

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.

© 2009 Kentico Software

8. Add the following code to the Page_Load method:

[C#]

```
Button1.Text = (string) PartInstance.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(PartInstance.GetValue("ButtonText"), String)
End Sub
```

It sets the button text to the value configured in Kentico CMS Desk.

9. Save all changes.

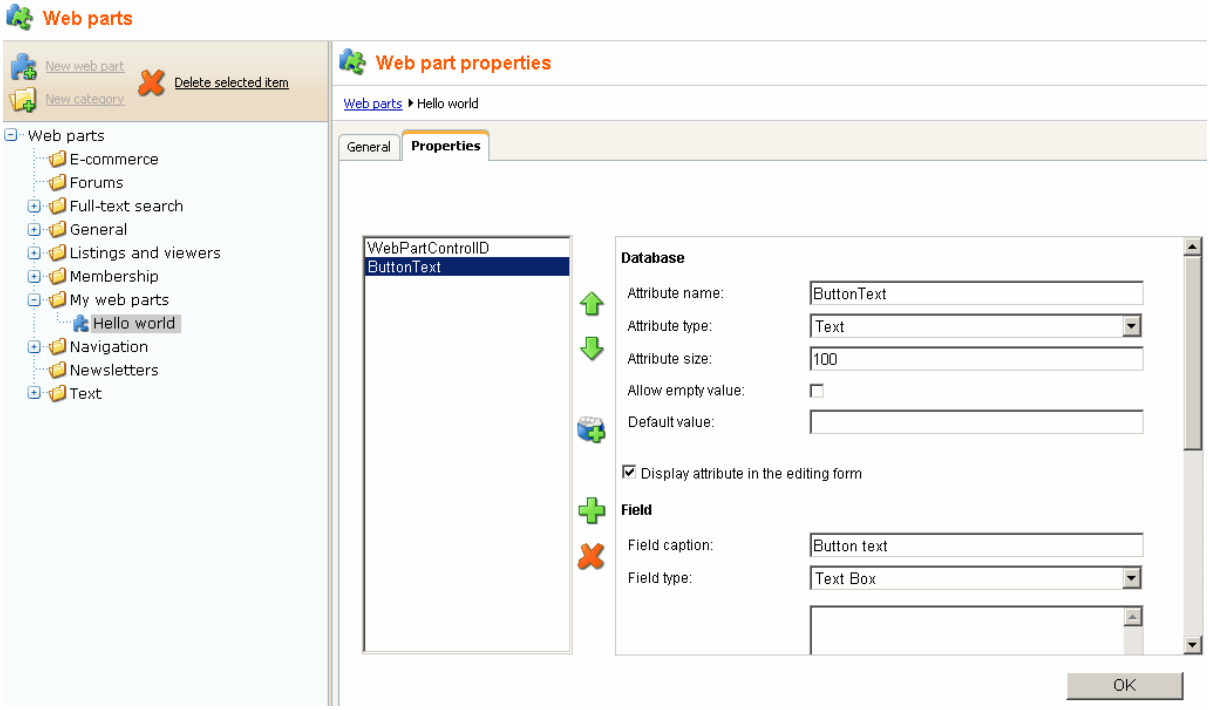
10. Open **Site Manager -> Development -> Web parts**, click the root and click **New category**. Enter *My web parts* into the **Category name** field and click **OK**.

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**.

© 2009 Kentico Software

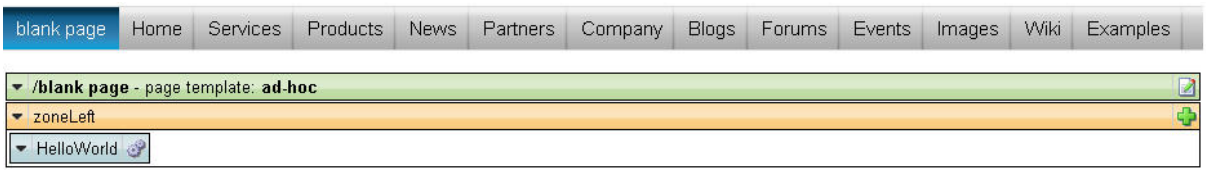
12. Switch to the **Properties** tab and add the following property:
    - Attribute name: ButtonText
    - Attribute type: Text
    - Attribute size: 100
    - Field caption: Button text
    - Field type: Text Box



13. Switch to **CMS Desk**.

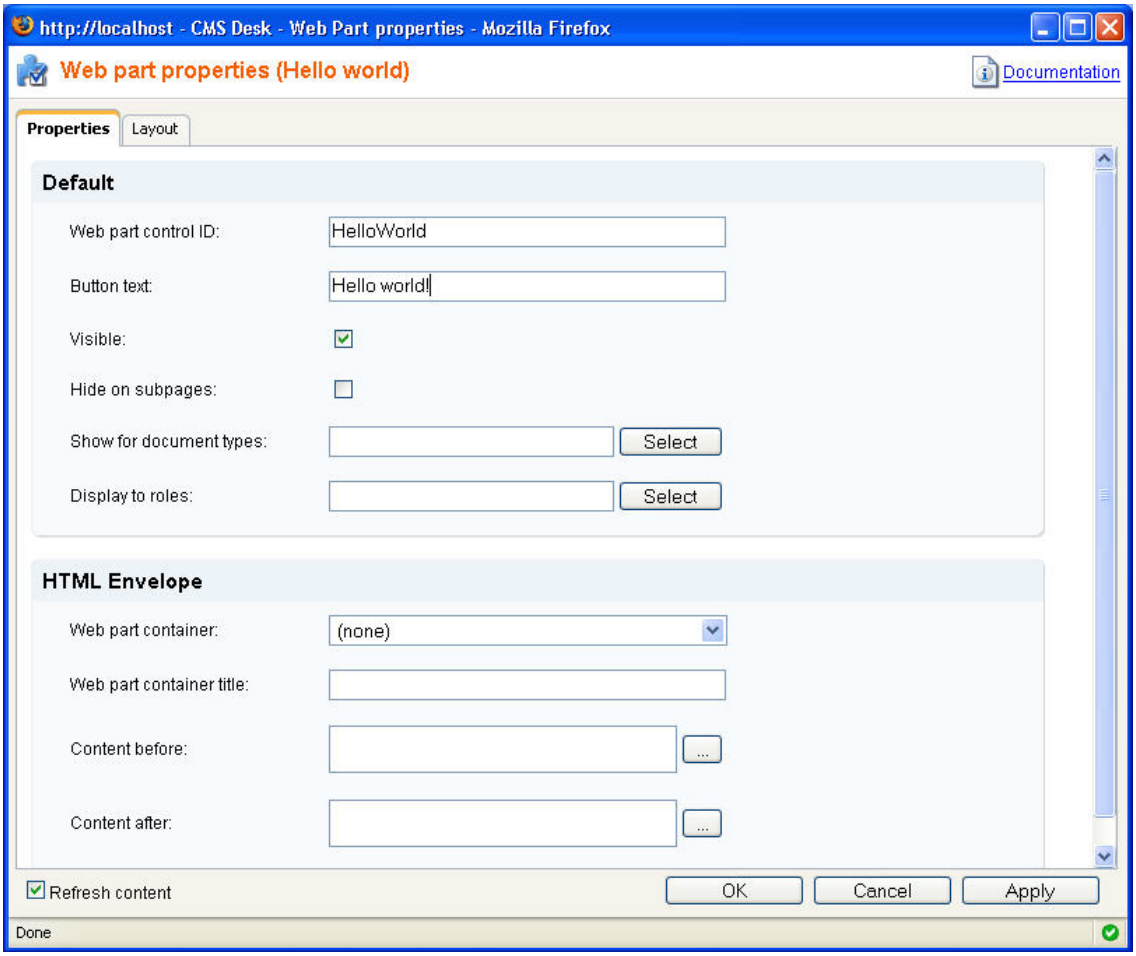
14. Create a new **blank page** using the **Simple** layout (or any other layout) under the root and switch to the **Design** tab.

15. Click **Add web part** in the upper right corner of the web part zone and choose to add the **Hello world** web part:



© 2009 Kentico Software

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.

© 2009 Kentico Software



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).

© 2009 Kentico Software

16.3 Modifying web part behavior

If you need to modify the behavior of standard web parts there are two 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.

16.4 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:



Go to **CMS Desk -> Content** and navigate to the **Home** 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

© 2009 Kentico Software

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="cc1" %>

<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>
                <cc1:LocalizedLabel ID="lblFirstName" runat="server"
AssociatedControlID="txtFirstName" /><br />
                <asp:TextBox ID="txtFirstName" runat="server"
CssClass="SubscriptionTextbox"></asp:TextBox>
            </td>
        </tr>
        <tr>
            <td>
                <cc1:LocalizedLabel ID="lblLastName" runat="server"
AssociatedControlID="txtLastName" /><br />
                <asp:TextBox ID="txtLastName" runat="server"
CssClass="SubscriptionTextbox"></asp:TextBox>
            </td>
        </tr>
        <tr>
            <td>
                <cc1: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="chklNewsletters"></asp:CheckBoxList>
            </td>
        </tr>
        <tr>
            <td align="right">
                <cc1:LocalizedButton ID="btnSubmit" runat="server"
OnClick="btnSubmit_Click" CssClass="SubscriptionButton" />
            </td>
        </tr>
    </table>
</asp:Panel>
```

© 2009 Kentico Software

Click **OK**. When you look at the page now, you will see a dialog like this:





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 an you use your web part layout created in the previous version, the web part may stop working. Please be sure to test your web site after an upgrade carefully if you're using web part layouts.

16.5 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 web site, 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:

© 2009 Kentico Software

- **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 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 web site 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.

16.6 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

© 2009 Kentico Software

- **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 BizFrom 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.

16.7 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

© 2009 Kentico Software

(specialized) web part allows you to do things faster.

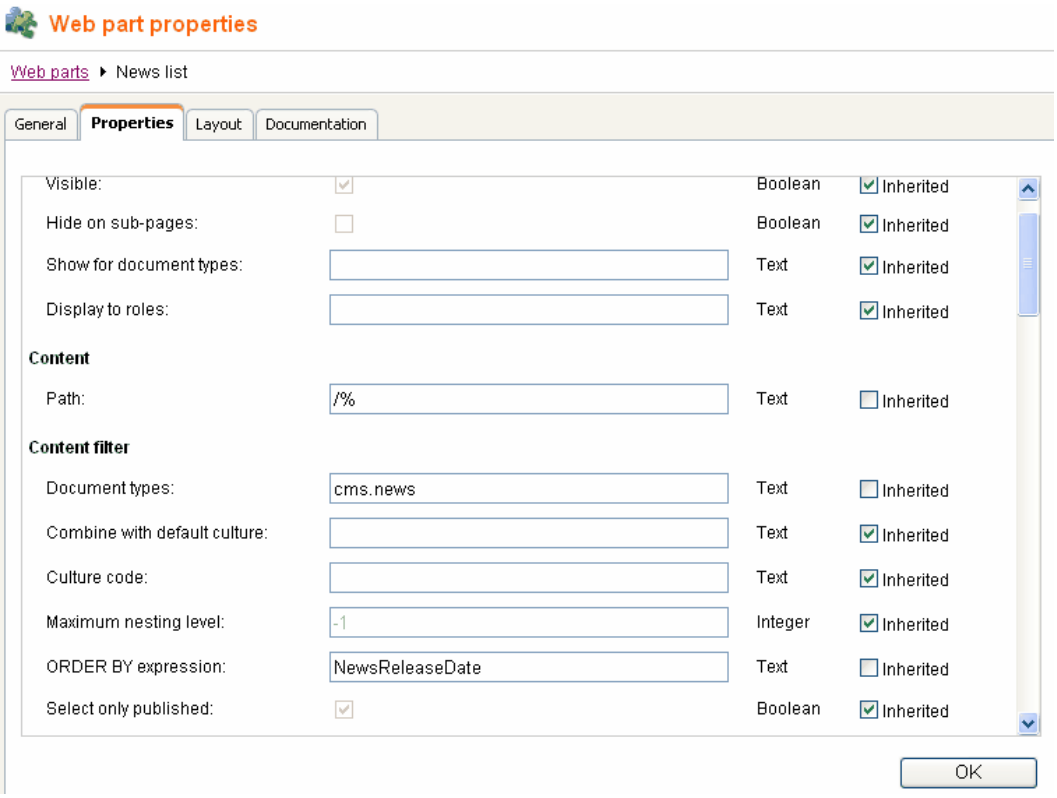
How to create an inherited web part

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**.

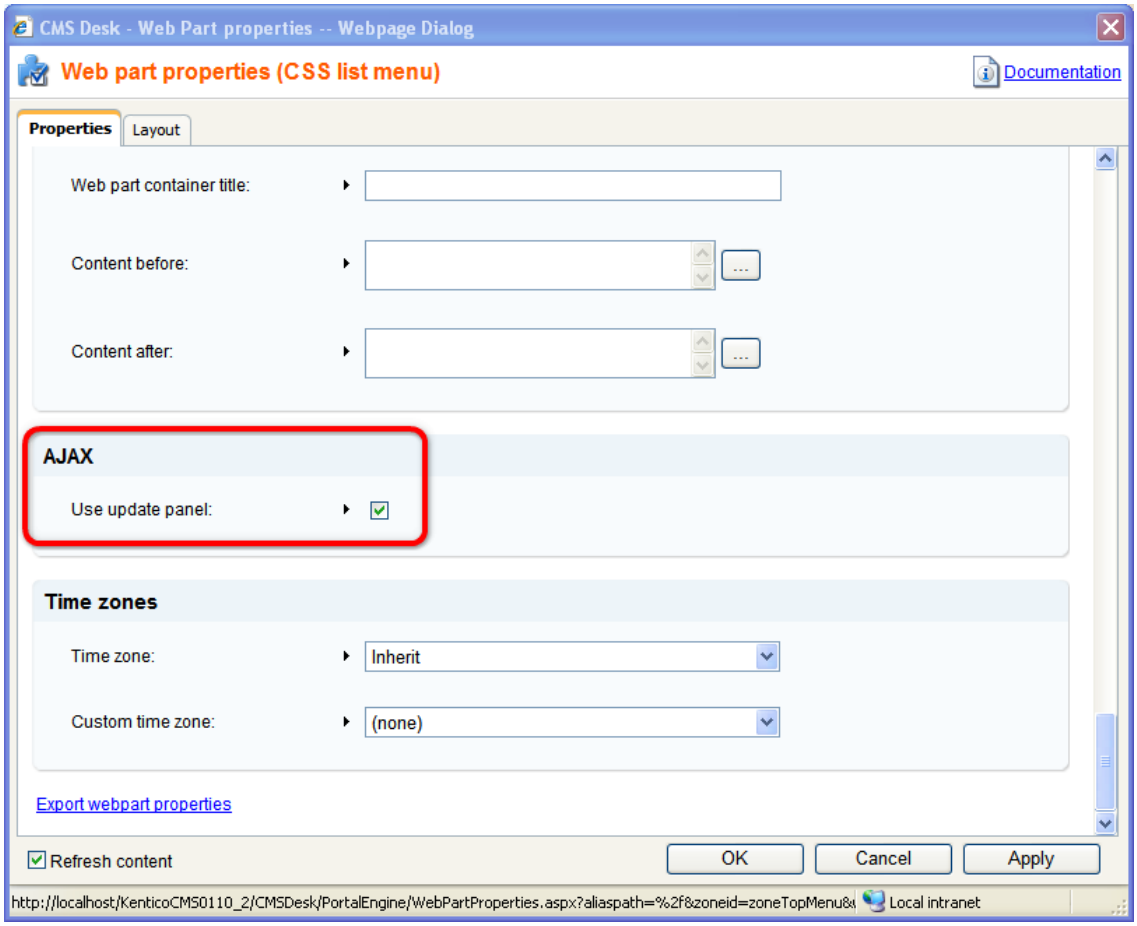


4. Go to **CMS Desk**, choose the **Home** page in the content tree and switch to the **Design** tab. Add the News list web part to the page. It will display all site news without any additional configuration now.

© 2009 Kentico Software

16.8 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, "");
```

© 2009 Kentico Software

16.9 Web part containers

16.9.1 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 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**:



© 2009 Kentico Software

16.9.2 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

6. View the page in **Live site** mode. The web part will be surrounded with border and it will have the blue title.

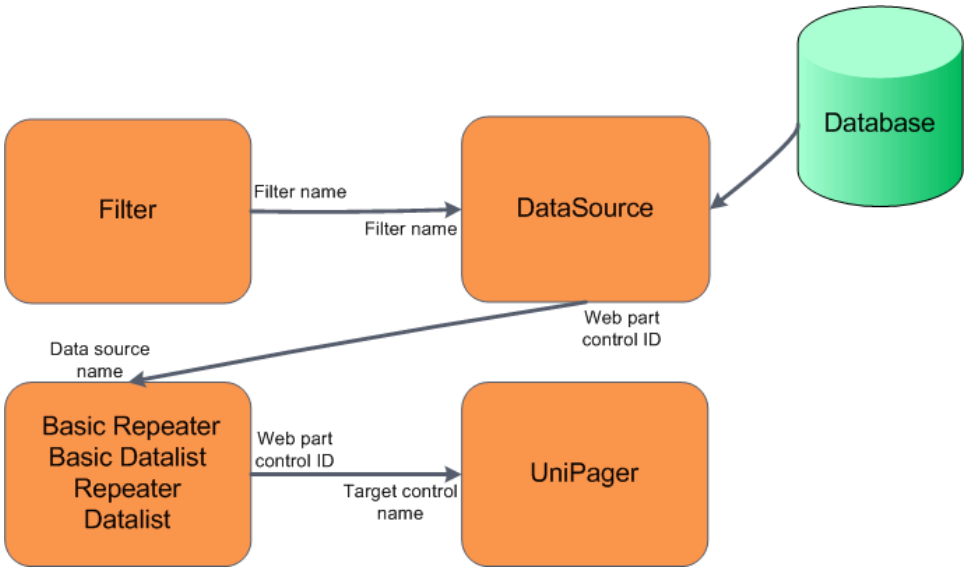
© 2009 Kentico Software

16.10 Data source web parts

16.10.1 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.

1. Sign in to CMS Desk as the administrator (login *administrator* with blank password).

2. 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**.

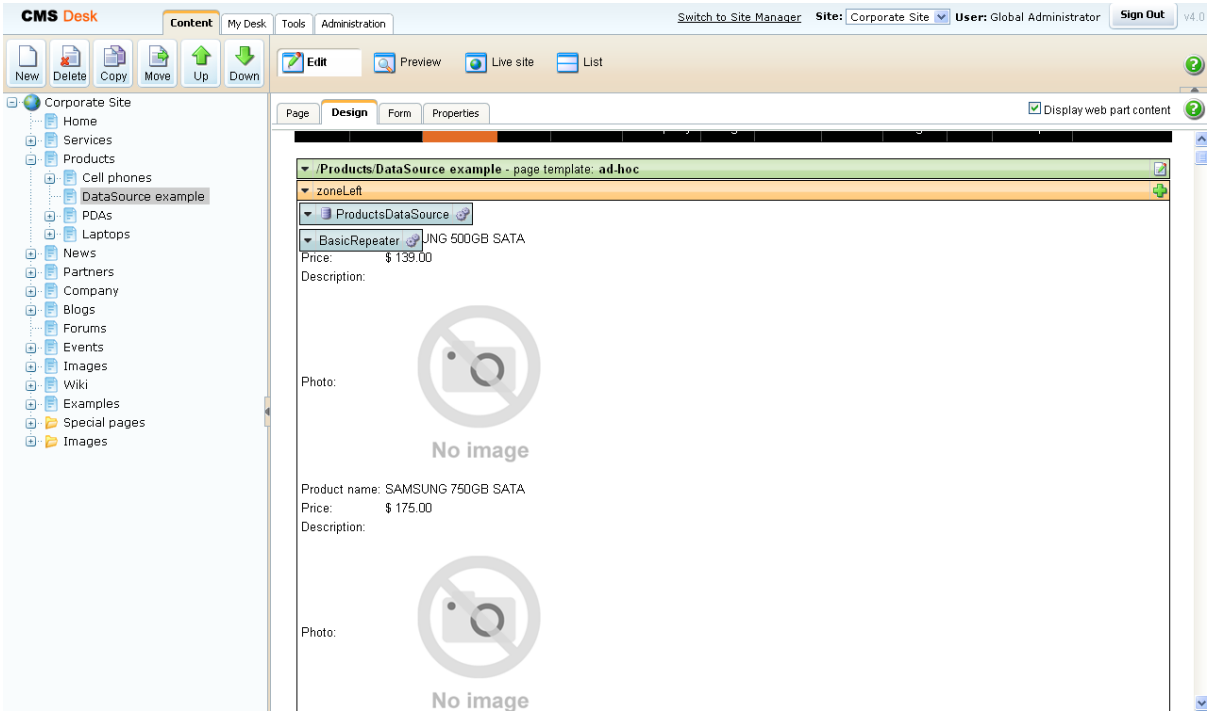
3. Add the **Data Sources -> Products data source** web part to the only web part zone on the page. Leave default values for all its properties and click **OK**.

© 2009 Kentico Software

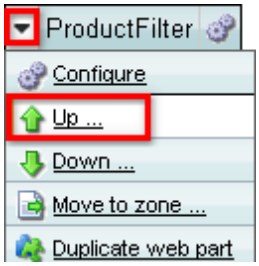
4. Add the **Listings & Viewers -> Basic Repeater** web part to the same web part zone. Set the following properties:

- **Data source name**: ProductsDataSource
- **Transformation name**: CMS.Product.Default

Click **OK**. You should see the repeater displaying products as in the following screenshot.



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

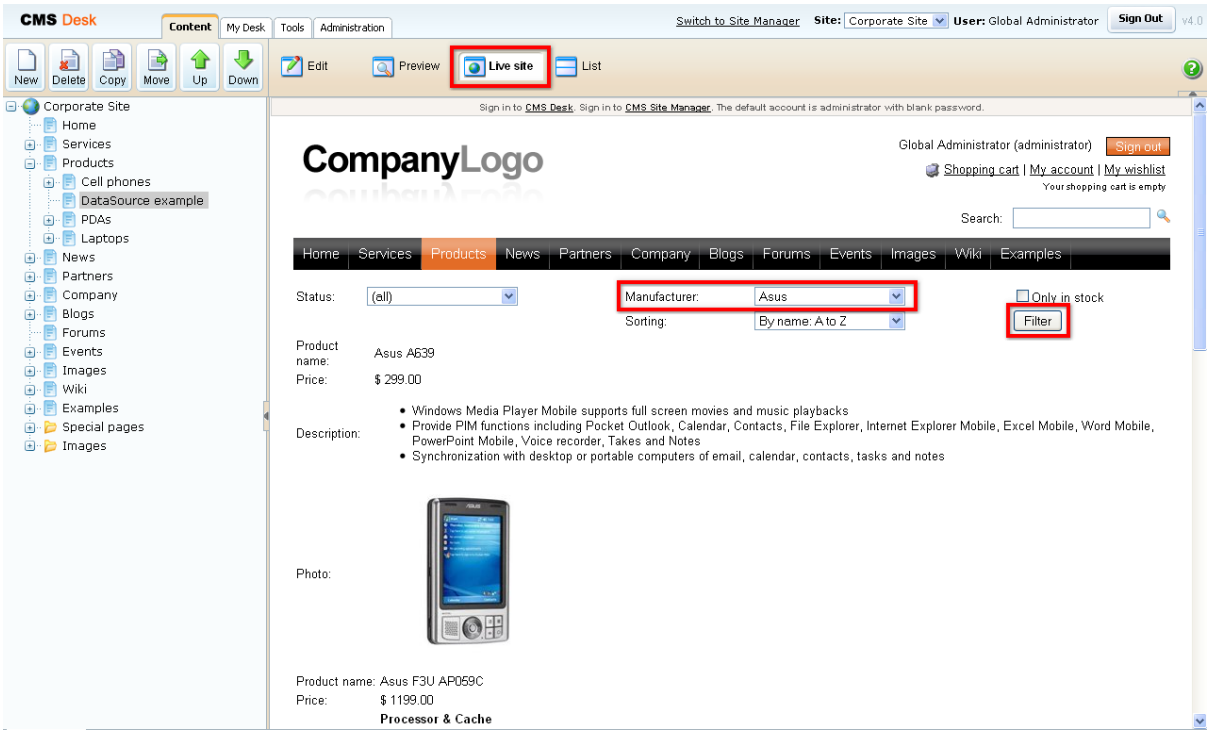
Also open the ProductsDataSource's web part properties and enter the same filter name into its **Filter name** filed:

- **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.

© 2009 Kentico Software

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.



© 2009 Kentico Software

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:

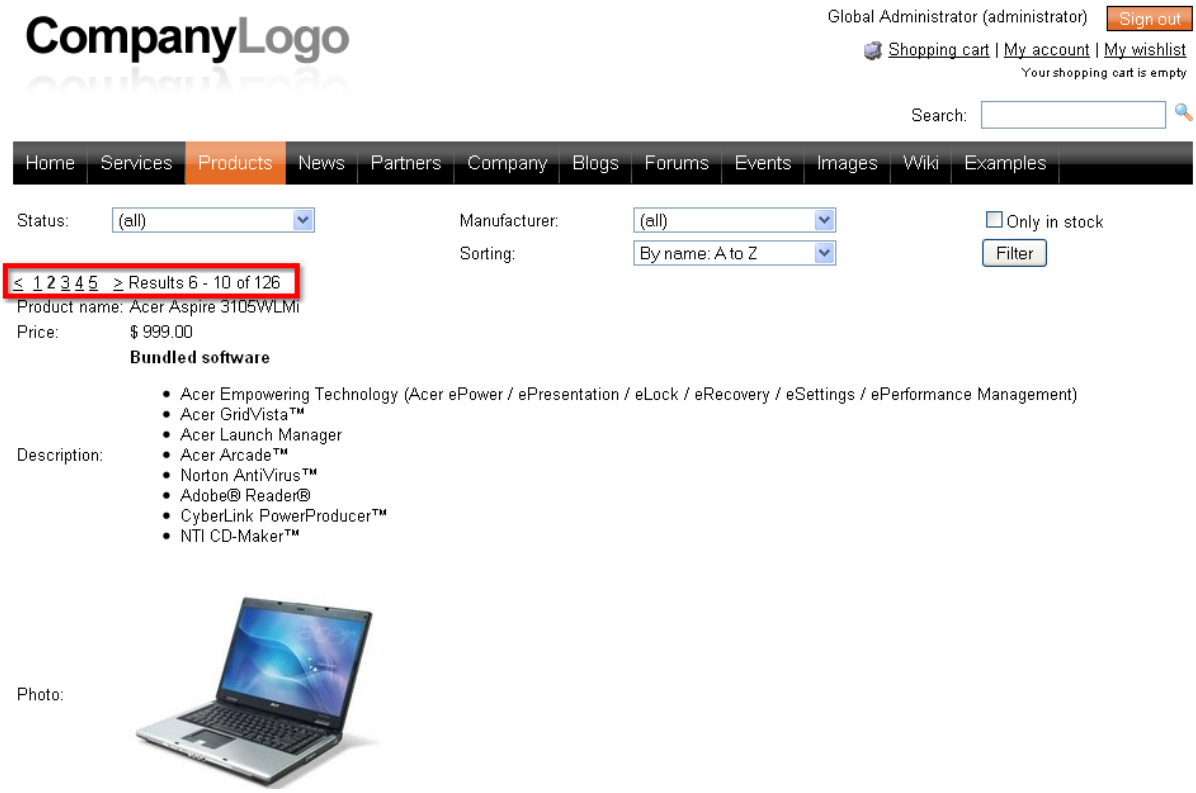
- **Target control name**: BasicRepeater
- **Page size**: 5
- **Group size**: 5

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.



© 2009 Kentico Software

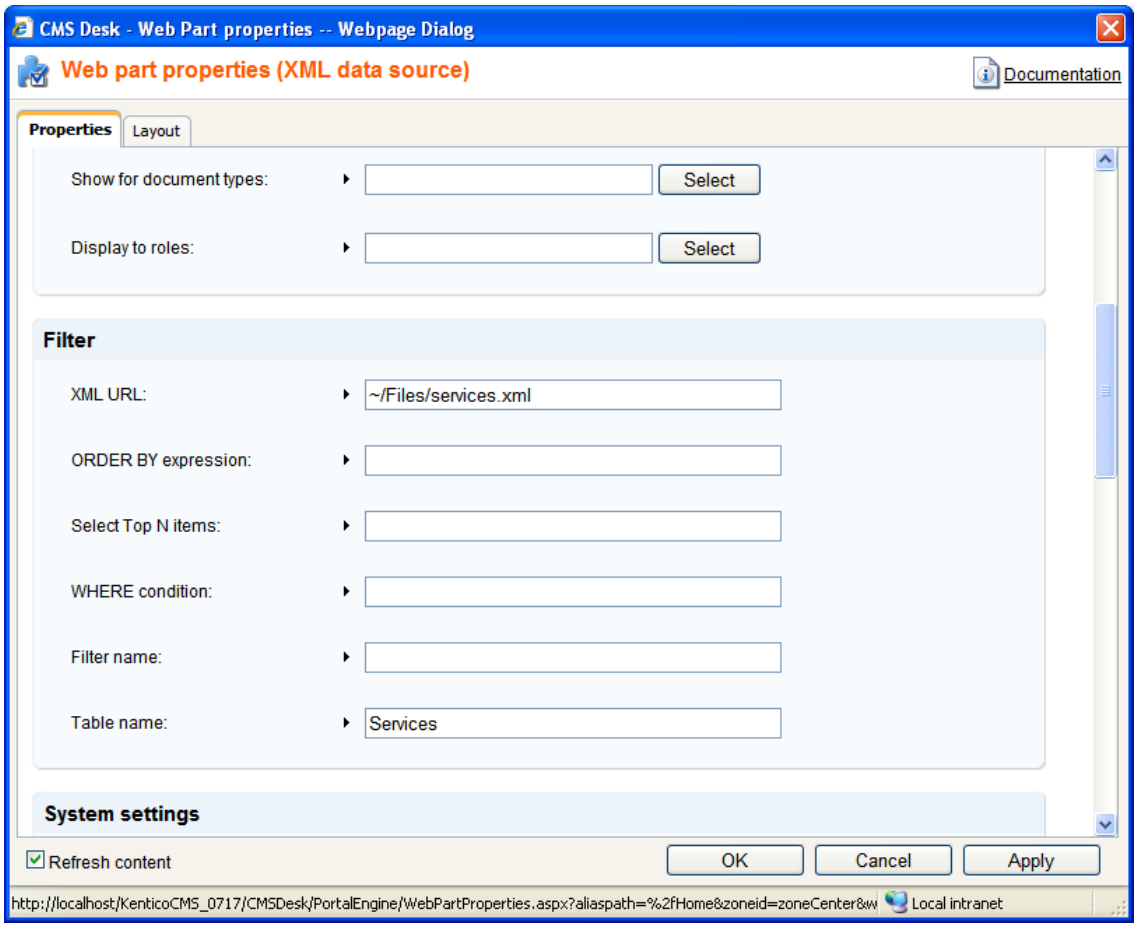
16.10.2 Problems with XMLDataSource

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).



© 2009 Kentico Software

16.10.3 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

```
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
```

© 2009 Kentico Software

```
    {
        get
        {
            return mWhereCondition;
        }
        set
        {
            mWhereCondition = value;
        }
    }

  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" %>
```

© 2009 Kentico Software

```
<cms:DataSourceControl ID="srcUsers" runat="server" />
```

DataSourceWebPart.ascx.cs

```
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;
        }
    }
}
```

© 2009 Kentico Software

Part XVII

Developing custom modules

17 Developing custom modules

17.1 Custom modules

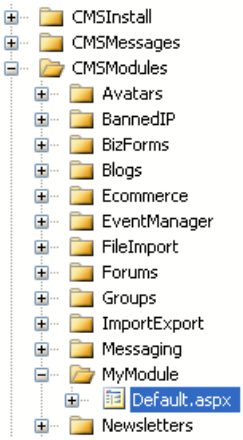
This chapter describes how you can create a custom module integrated into Kentico CMS administration interface, such as event booking system, CRM system or any other module.

In the following example, you will learn how to create a simple module with a single button that displays the current date and time. You will also learn how to control access to this module.

1. Open Kentico CMS web project in Visual Studio. You can do that either using the WebProject.sln file or using File -> Open -> Web site 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 module and change the following line:

[C#]

```
public partial class CMSModules_MyModule_Default : System.Web.UI.Page
```

to:

[C#]

```
public partial class CMSModules_MyModule_Default : CMSDeskPage
```

It ensures that the module can be used only by users with access to Kentico CMS Desk.

© 2009 Kentico Software

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:

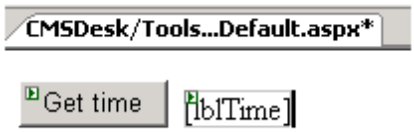
[C#]

```
if (!CMSContext.CurrentUser.IsAuthorizedPerResource("myprojects.mymodule", "read"))
{
    RedirectToAccessDenied("myprojects.mymodule", "Read");
}
```

It checks if the current user has Read permission for module myprojects.mymodule.

7. Switch to the Design tab 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 Click event handler:

[C#]

```
if (CMSContext.CurrentUser.IsAuthorizedPerResource("myprojects.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 module my projects.module and if so, it displays the current date and time.

© 2009 Kentico Software

10. Run the project and sign in to **Site Manager**.

© 2009 Kentico Software

11. Go to **Development -> Modules** and click **New module**. Enter the following values:
    - Module display name: My module
    - Module code name: myprojects.mymodule
    - Show in tools menu: yes
    - Resource URL: ~/CMSModules/MyModule/Default.aspx

    Click **OK**.

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: enabled

Click **OK**.

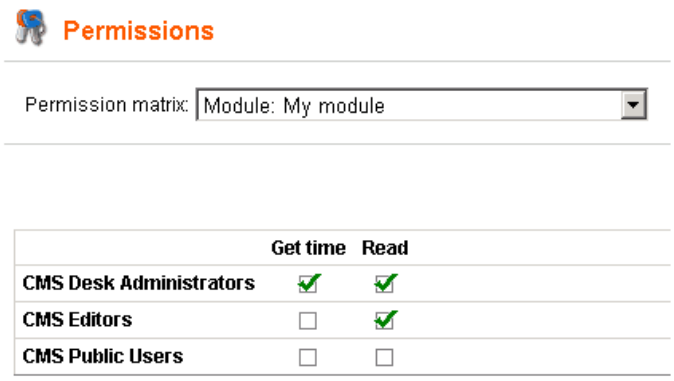
13. Add another permission:

- Permission display name: Get time
- Permission code name: gettime
- Display in matrix: enabled

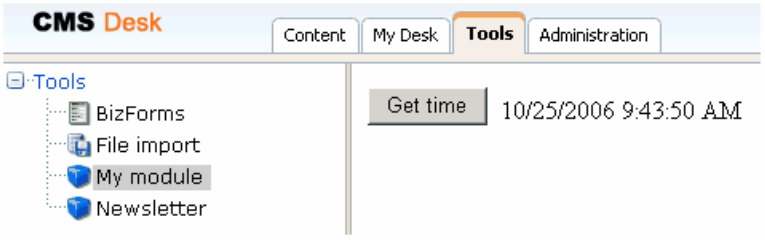
Click **OK**.

14. Go to the **Sites** tab and enable the new module to appropriate sites.

15. Go to **CMS Desk -> Administration -> Permissions** and choose the Module: My module value in the drop-down list. Grant **CMS Editors** with **Read permission** and CMS **Desk Administrators** with **Get time** and **Read permissions**:



16. Go to **CMS Desk -> Tools**. You can see the My module icon in the list now. Click it and you will see your form. When you click the button, you can see the current date and time on the right:



© 2009 Kentico Software

You can also try to sign in under a different account with different permissions and test the access control.



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 are 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

© 2009 Kentico Software

Part XVIII

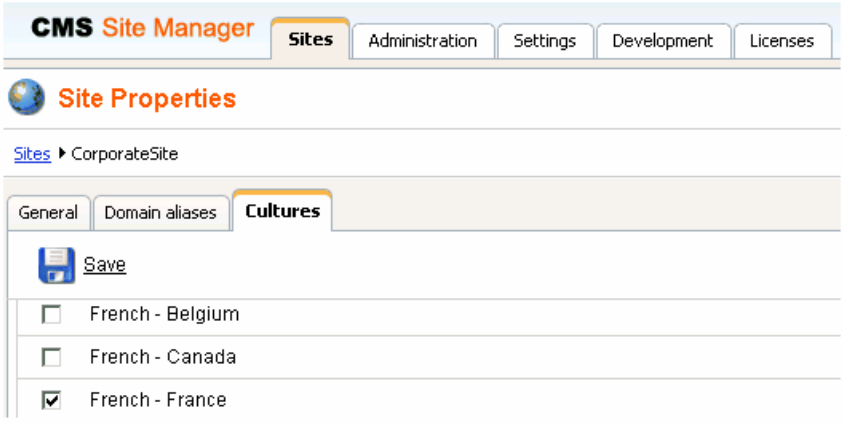
Multilingual and international support

18 Multilingual and international support

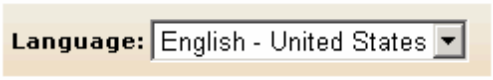
18.1 Configuring multiple languages

This chapter explains how to configure web site for displaying content in multiple languages. When you create a new web site, it uses the culture you specified during the New site wizard. The following guide shows you how to add extra language versions to the standard Corporate Site:

1. Go to **Site Manager -> Sites** and click **Edit site** button next to the Corporate Site. Go to the **Cultures** tab. Check the box next to the following cultures: French - France and German - Germany. Click **Save**.



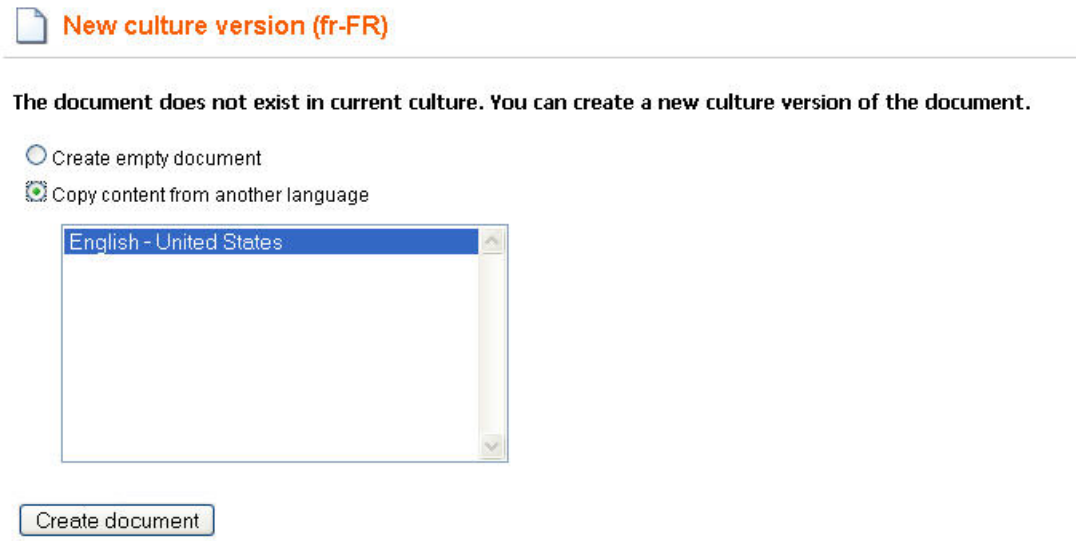
2. Switch to the CMS Desk. You can see there's a new drop-down list with language selection in the main toolbar:



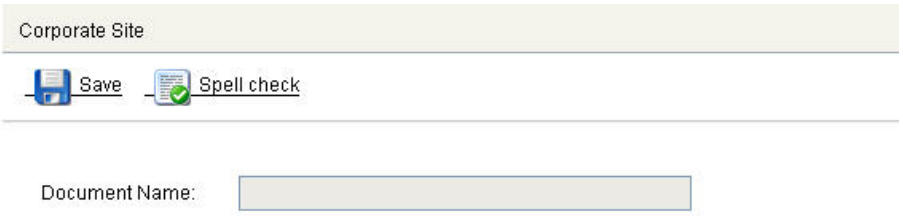
3. Click root document and choose **French** culture. Since the French version of the document doesn't exist yet, you're offered with two options:
   - **create empty document** - this option creates a new document of the same type without any content.
   - **copy content from another language** - this option creates a new document of the same type and copies the content from the English version

© 2009 Kentico Software

Choose to copy content from the English version and click **Create document**:



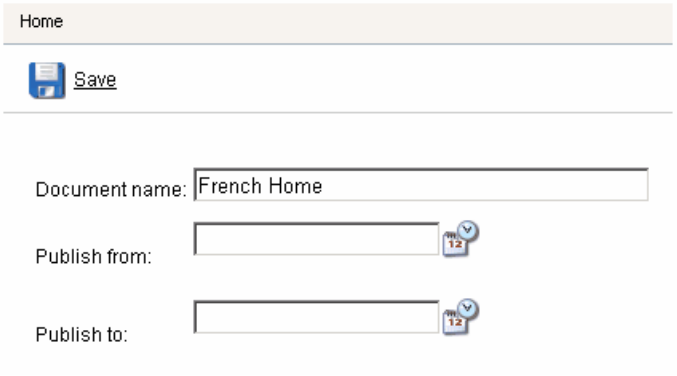
4. You are redirected to the editing form of the new version:



The root cannot have any name, so the box is now disabled. Click **Save**. The new document culture version is created.

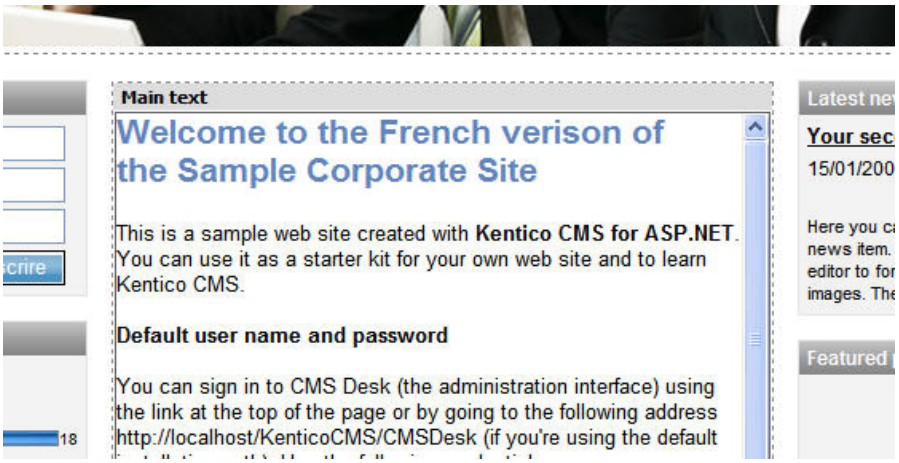
© 2009 Kentico Software

5. Now repeat the same for the **Home** page. On the editing form, change the document name to: French Home.



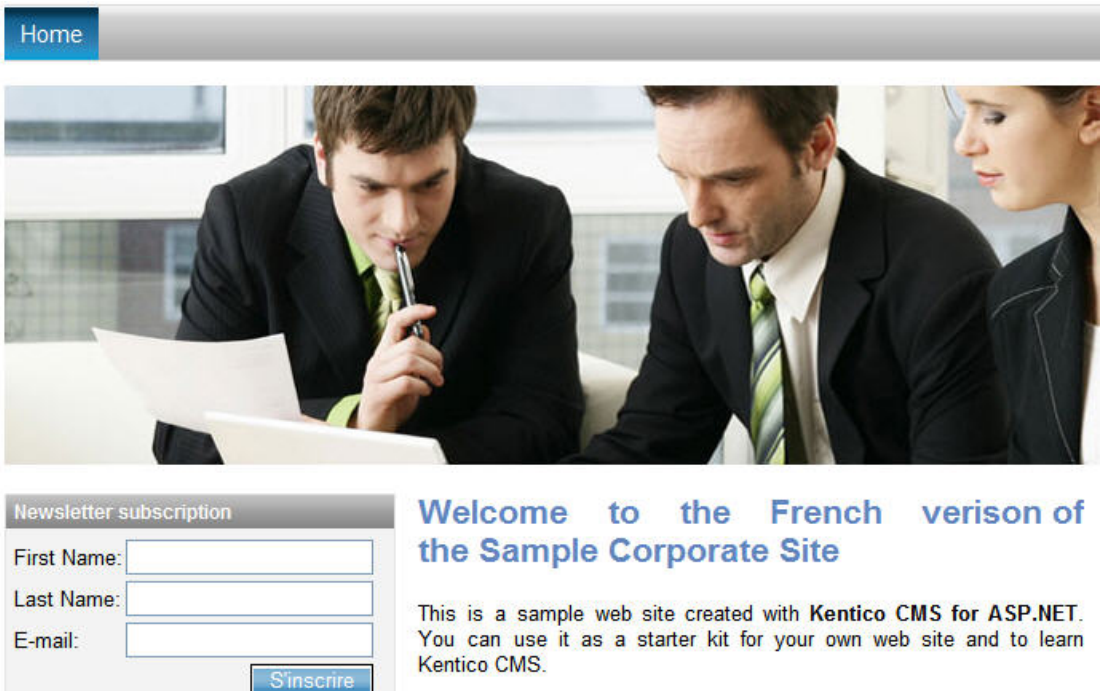
Click **Save**.

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 -> Web site**. 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 web site now:



As you can see, the documents (menu items) that are not translated to French, are now displayed in the default culture (English).

© 2009 Kentico Software



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 web site 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.

18.2 Default language selection

When the user first comes to the web site, her 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 web site.

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:

- mydomain.com (main domain)
- mydomain.de (domain alias)
- mydomain.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. mydomain.fr domain, the content is automatically displayed in French.

18.3 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 has always this URL: `/Home.aspx`

If you want to see the same page in French, you need to go to: `/Home.aspx?lang=fr-fr`

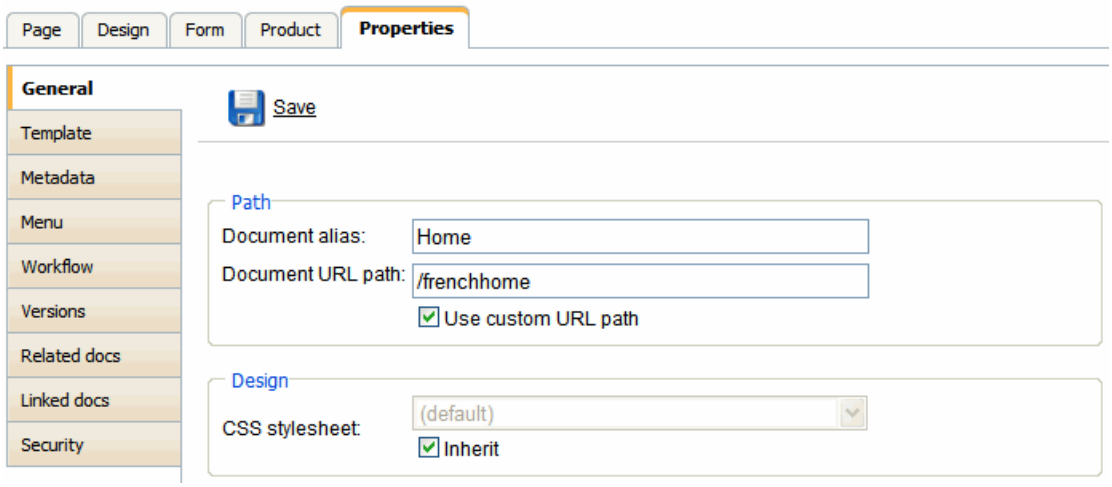
Once the language is changed, the selected language is stored in the visitor browser's cookie and when the user comes back to URL /Home.aspx (without any parameter), she is displayed with the French version.

© 2009 Kentico Software

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**



Now sign out, switch to the English version and go to URL: `<web project>/frenchhome.aspx page`
The web site 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.

18.4 International and RTL support

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.

© 2009 Kentico Software

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 web site 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 web site.

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" />
```

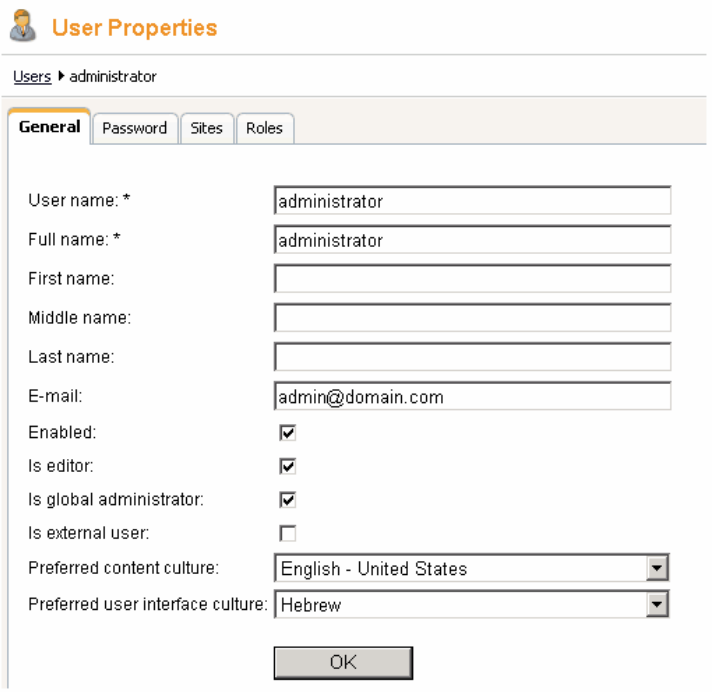
When the key is added, the priorities are the following:

1. custom.resx
2. cms.resx
3. database (Site Manager -> Development -> UI Cultures)

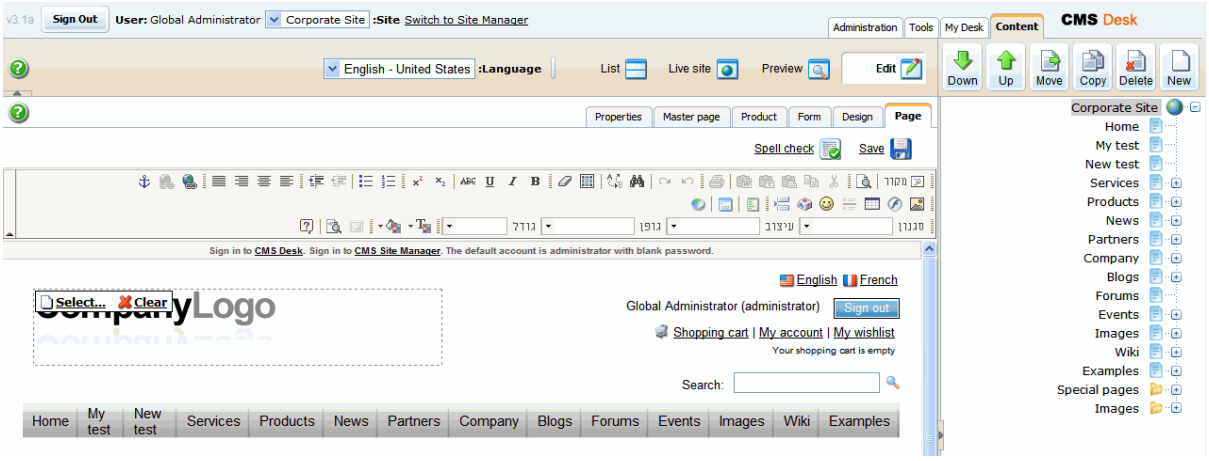
© 2009 Kentico Software

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:



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):



© 2009 Kentico Software

Using the Right-to-left languages

If the web site is displayed in language that uses right-to-left direction, 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.

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;Verdan
```

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.



UI culture vs. content culture

The user interface direction is driven by the preferred UI culture of the current user while the content direction is driven by the preferred (content) culture of the current user.

© 2009 Kentico Software

18.5 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: `{$key$}`	Displays value of the given string specified in the Site Manager -> Development -> UI Cultures section or in the resx files in the CMSResources folder.	{$myform.firstname$}
`In-place localization:` `{$=default_string\|culture_code=translation\|culture_code=translation\|etc.$}`	Displays the strings defined in the expression. 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).	{$=Hello\|de-de=Hallo\|it-it=Ciao$}

See also: Appendix A - Macro expressions

18.6 Translation management

18.6.1 Overview

The translation management features brings various improvements aimed to facilitate web site 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 Kentico CMS 4.1. The full functionality is supposed to be implemented in one of the following versions.

These features are available only under the **Enterprise** and **Social Networking** licences.

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

18.6.2 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

© 2009 Kentico Software

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.

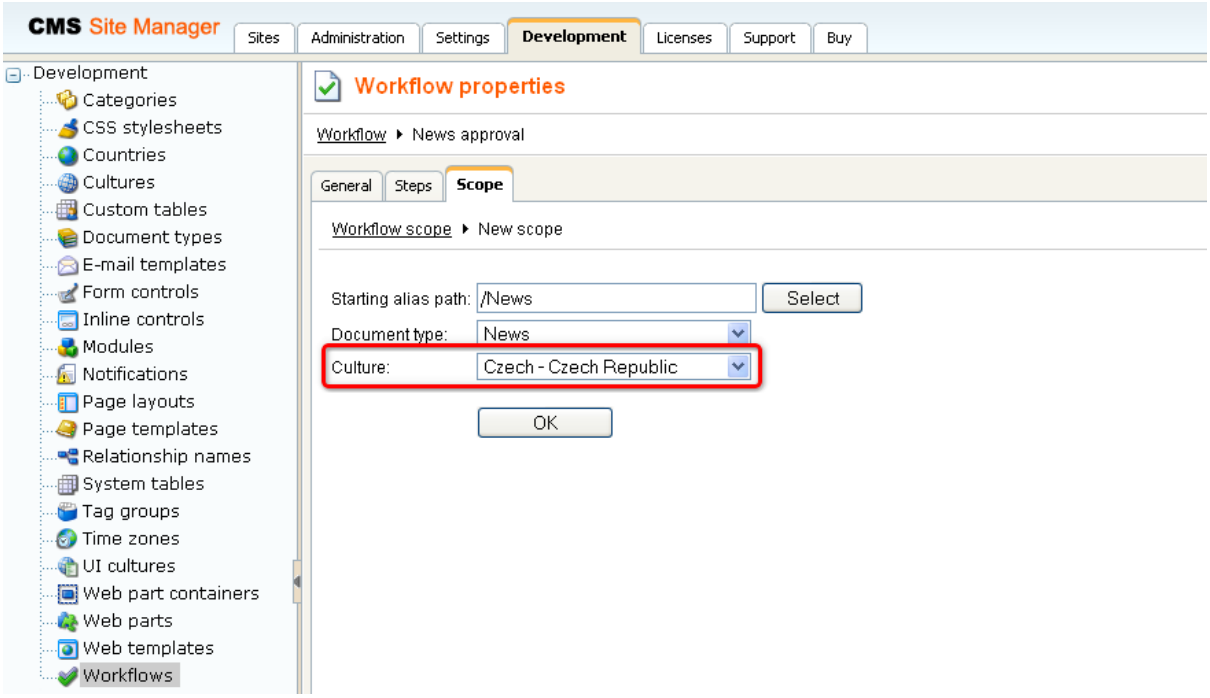
> **Please note!**
>
> The **Culture** drop-down list is displayed only in case that you have the **Enterprise** or **Social Networking** licence. In other cases, the property is not displayed.

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



© 2009 Kentico Software

18.6.3 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.

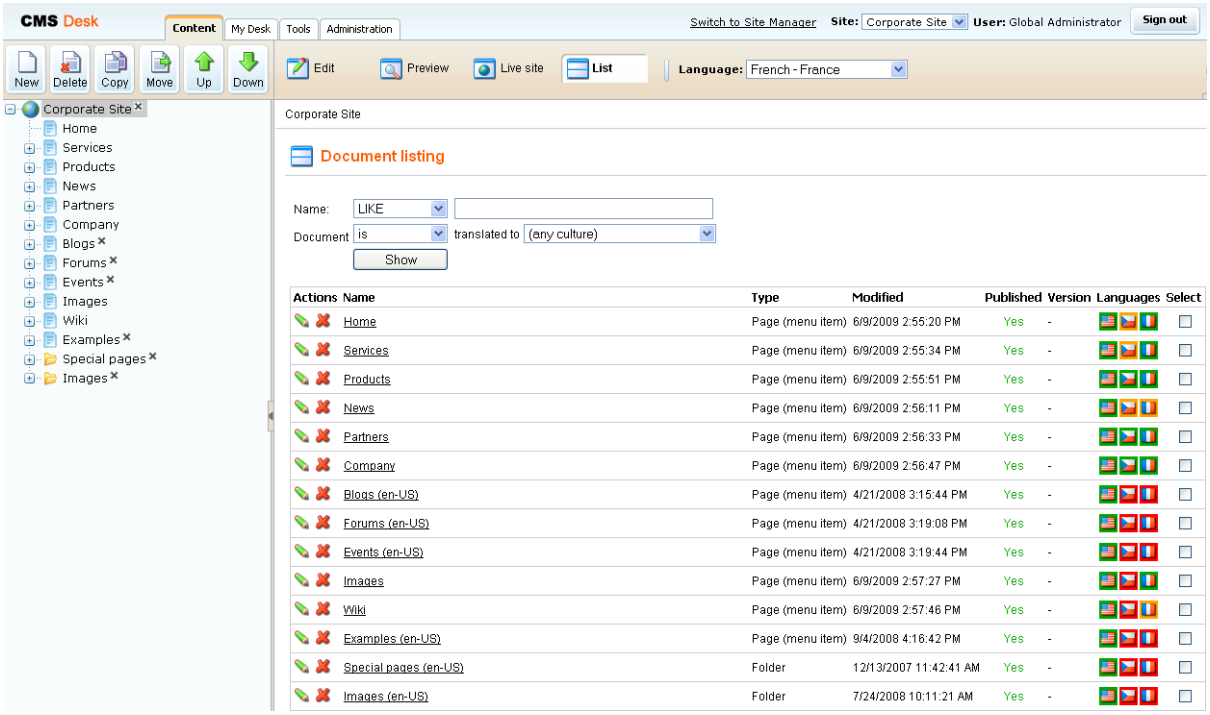
As you can see in the screenshot below, there is the **Languages** column with flags on different colored backgrounds. This column is displayed only on multi-language sites. The flags represent the particular language versions of each document.

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

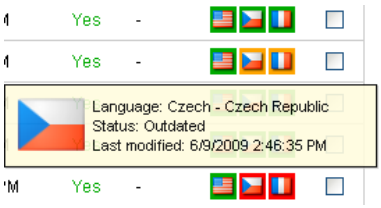
If you click a **Translated** or **Outdated** flag, you are redirected to the **Edit -> Page** tab of the appropriate language version of the document. If you click a **Not available** flag, you are redirected to the language version's creation dialog.

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.



If you hover a flag with the mouse cursor, an info box will be displayed, giving additional information about the language version.

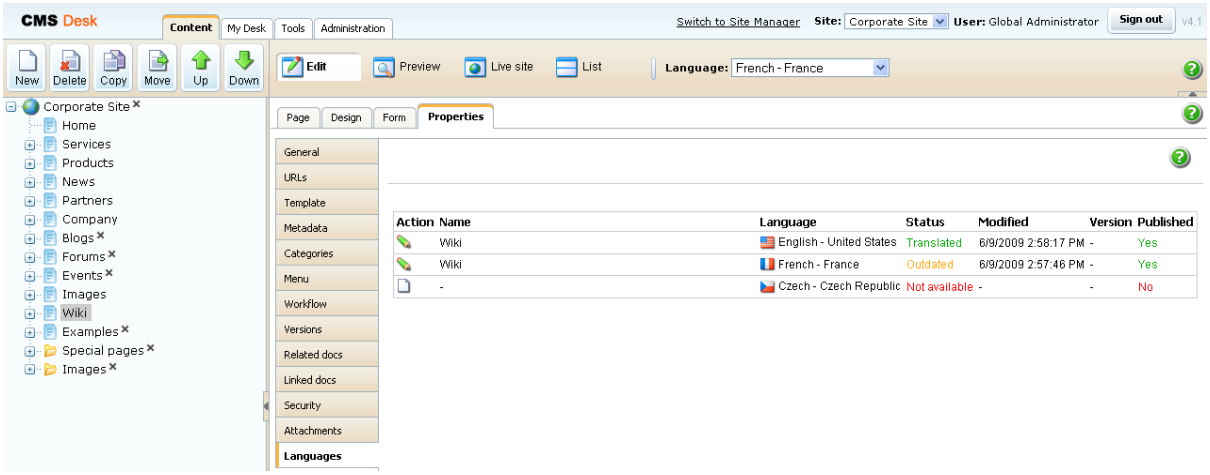
© 2009 Kentico Software



The Languages tab

The same statuses can be shown separately for each document. You can view them by selecting the document form 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.

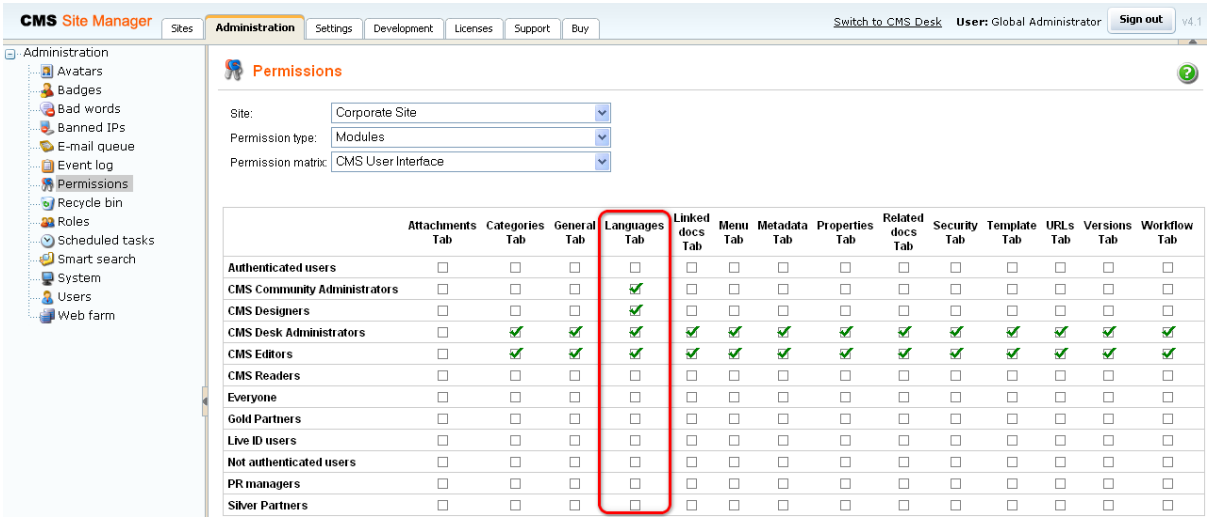


Hiding the Languages tab

The **Languages** tab can be displayed or hidden to members of particular roles. This can be done in **Site Manager -> Administration -> Permissions**, by enabling the **Languages** tab permission in the **Modules -> CMS User interface** permission matrix.

For this to work, you also need to have the **Site Manager -> Settings -> Content management -> Personalize user interface by permissions** option enabled.

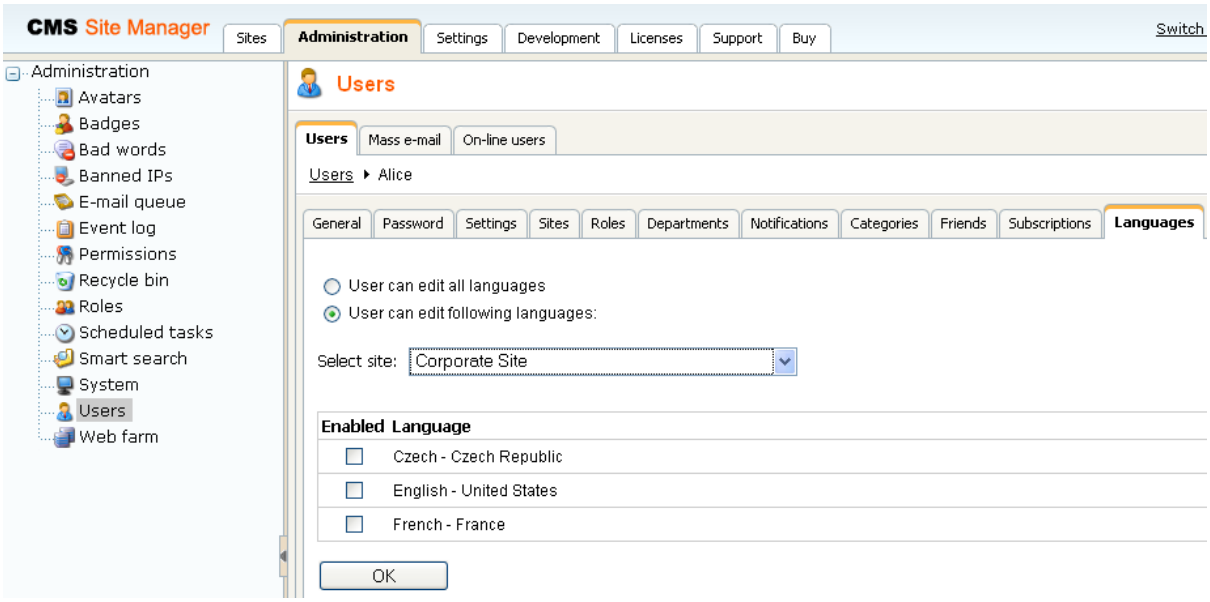
© 2009 Kentico Software



18.6.4 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



© 2009 Kentico Software

Part



Caching and performance

19 Caching and performance

19.1 Performance overview

The performance of your web site depends on many aspects:

1. Hardware on which your web site and database server are running.
2. Available system performance when you're sharing the system resource with other applications (typically in shared hosting environment).
3. The size of your web site.
4. The complexity of the web site (number of nesting levels, number of web parts on the page, etc.)
5. Custom code you added to the web site.
6. Use of caching.
7. Other special circumstances, such as network connectivity between web server and SQL server, etc.

Troubleshooting Kentico CMS 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 web site.**
   Go to CMS Site Manager -> Settings, choose the appropriate web site in the Sites drop-downlist and choose the Web Site category. Make sure the values are set like these:
   - Cache content >= 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 web site may be slowed down by output filters. Go to Site Manager -> Settings, choose the appropriate web site 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 web site:

   - Excluded output form filter URLs
   - Excluded resolve filter URLs
   - Excluded XHTML filter URL

© 2009 Kentico Software

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 be require lots of CPU time and may harm the overall web site 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 web site, 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/web sites 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 web site is accessed not very frequently (less that 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 web site and we will try to analyze it.

19.2 Caching options

Global caching settings

Go to **CMS Site Manager -> Settings -> Web Site**, choose your web site 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

© 2009 Kentico Software

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 only 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

© 2009 Kentico Software

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> nodeid|<linkednodeid> nodes|<sitename>|<classname>|all **+ for every parent node**: node|<sitename>|<aliaspath>|childnodes	node|corporatesite|/home|en-us node|corporatesite|/home nodeid|12 nodeid|34 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:

© 2009 Kentico Software

- **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 web site contains sections for site members, the caching will be personalized, which means each signed in user will have his/her 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.

File management and performance

The files can be stored in 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.

© 2009 Kentico Software

Part



Membership and User registration

20 Membership and User registration

20.1 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.

20.2 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 web site 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.



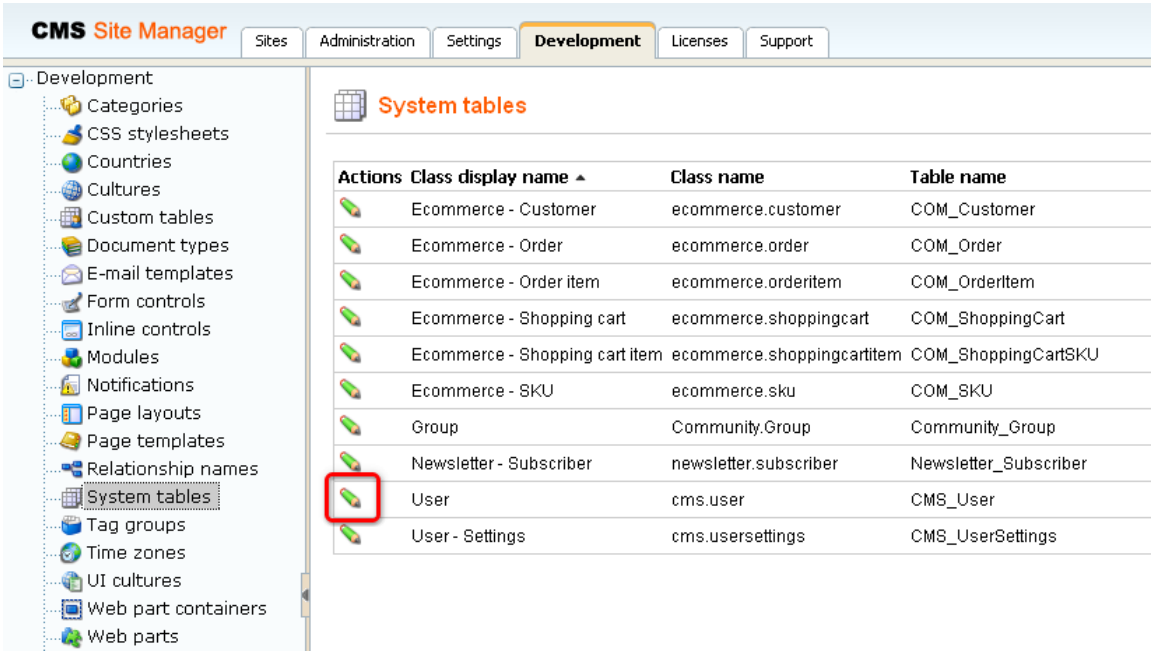
20.3 Creating a custom registration form

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.

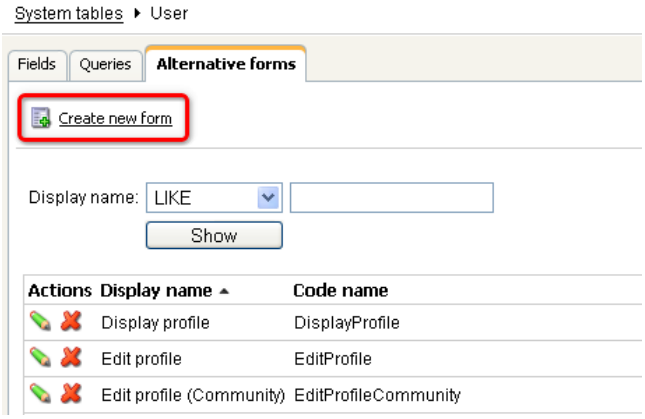
In the following example, you will learn how to use a custom registration form on your site. You will create an **alternative form** and use it for registration via the **Custom registration form** web part. If you are not familiar with the **Alternative forms** concept, please refer to the Alternative forms chapter first.

© 2009 Kentico Software

1. Go to **Site Manager -> Development -> System tables** and choose to **Edit** ( ) the **User** system table.



2. Switch to the **Alternative forms** tab and click the **Create new form** link above the list.



© 2009 Kentico Software

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**.



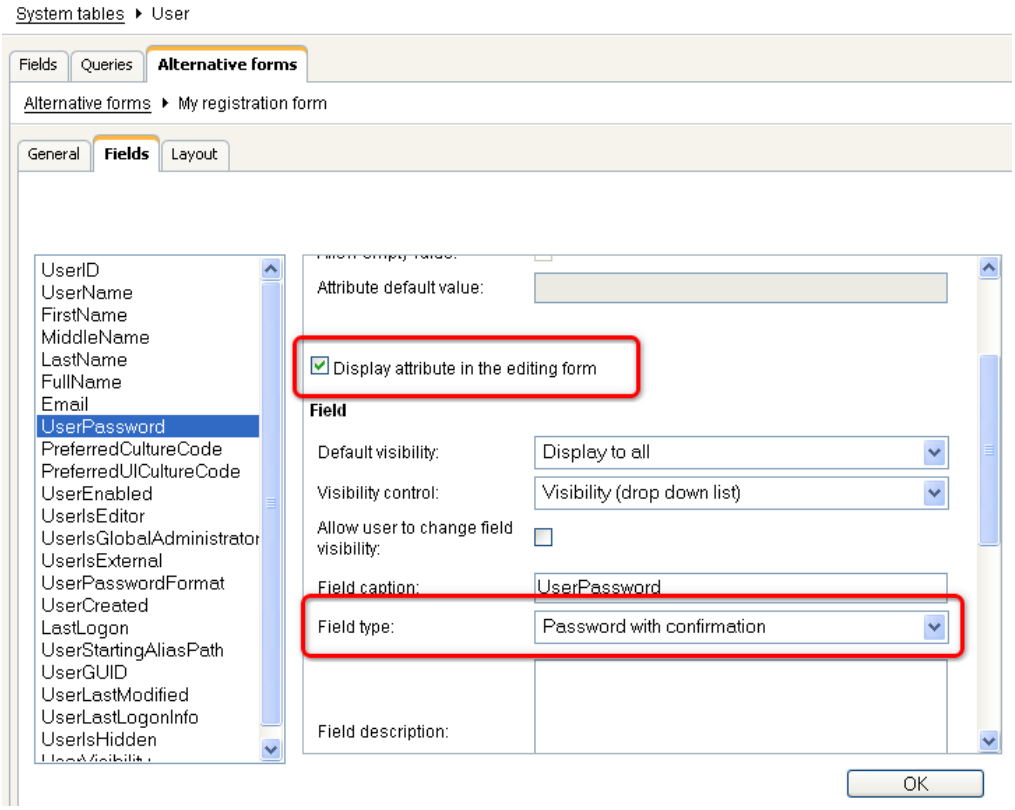
4. Your new form is now created and you are redirected to the editing interface of it. Switch to the **Fields** tab.

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**

© 2009 Kentico Software

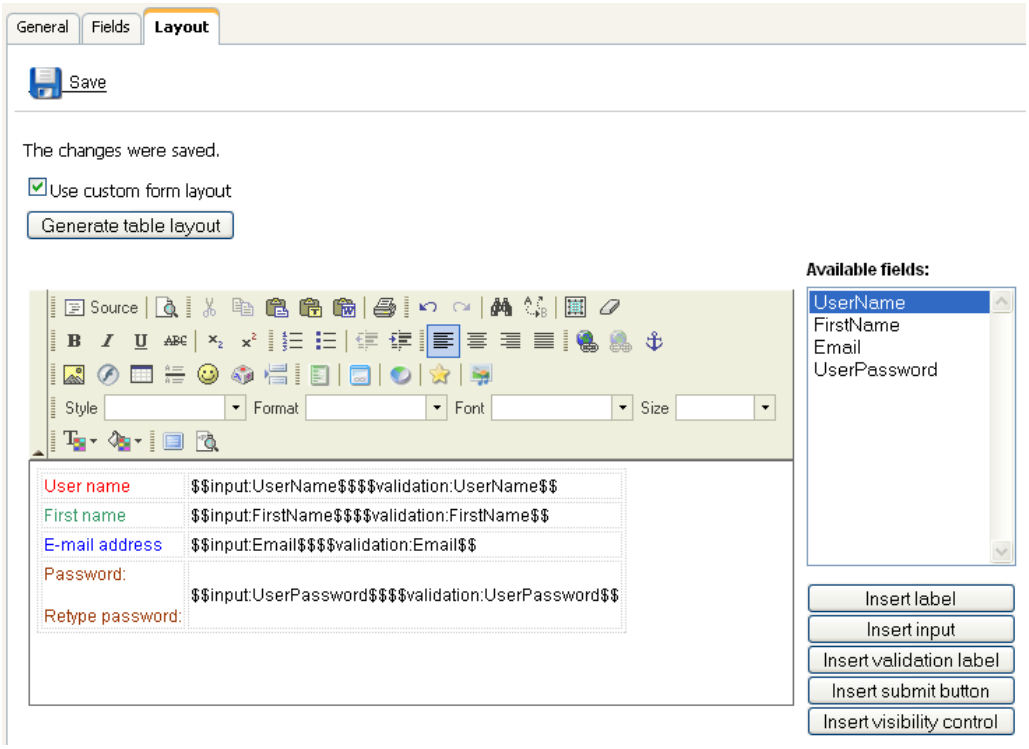
Go through the attributes and check the **Display attribute in the editing form** check-box for those mentioned above, which makes them visible on our registration form. Uncheck the check-box for the rest. For the **UserPassword** attribute, change also the value of the **Field type** drop-down list to **Password with confirmation**.



© 2009 Kentico Software

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.

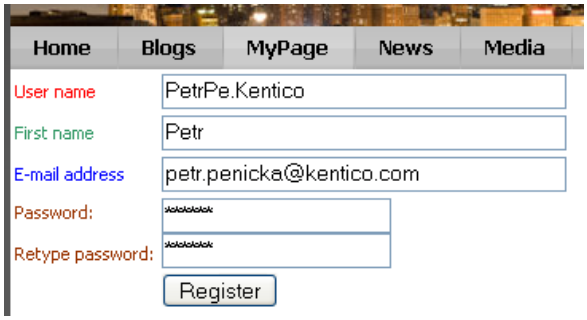


6. Now switch to **CMS Desk**. Choose or create a page where you want to add the registration form and select it in the content tree. Switch to the **Design** tab and add () the **Membership -> Custom registration form** web part to the page. Set the following property of the web part:

- **Alternative form** - cms.user.MyRegistrationForm

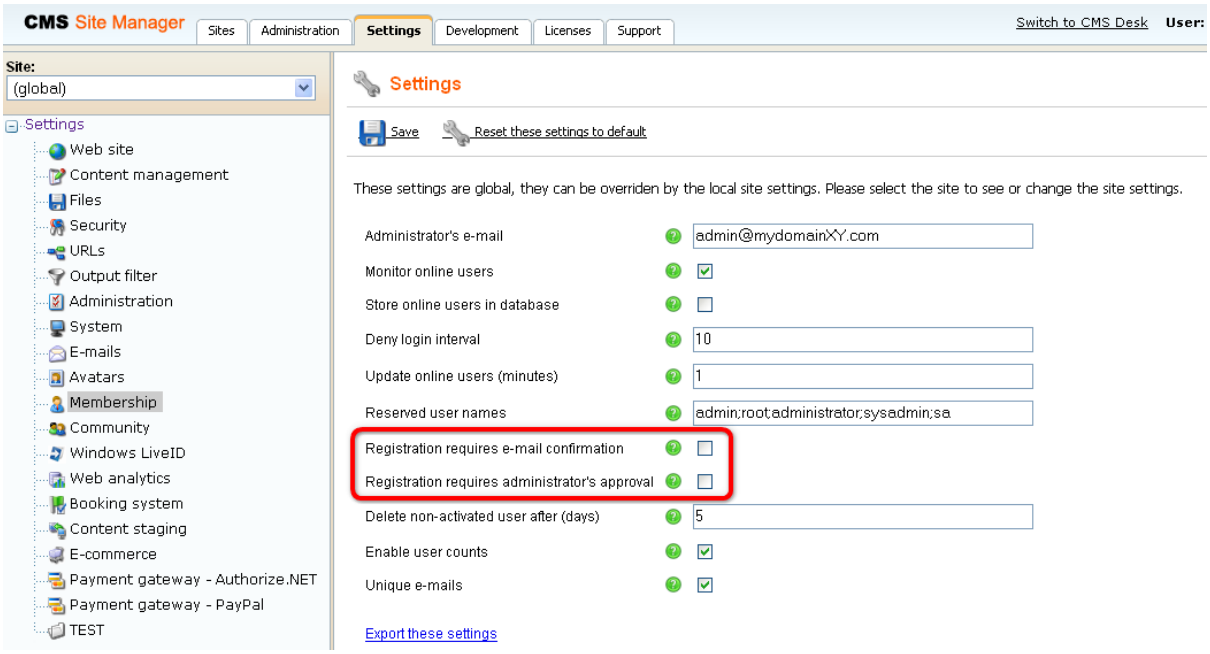
© 2009 Kentico Software

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 web site using the form and verify that the user has been created in **Site Manager -> Administration -> Users**.



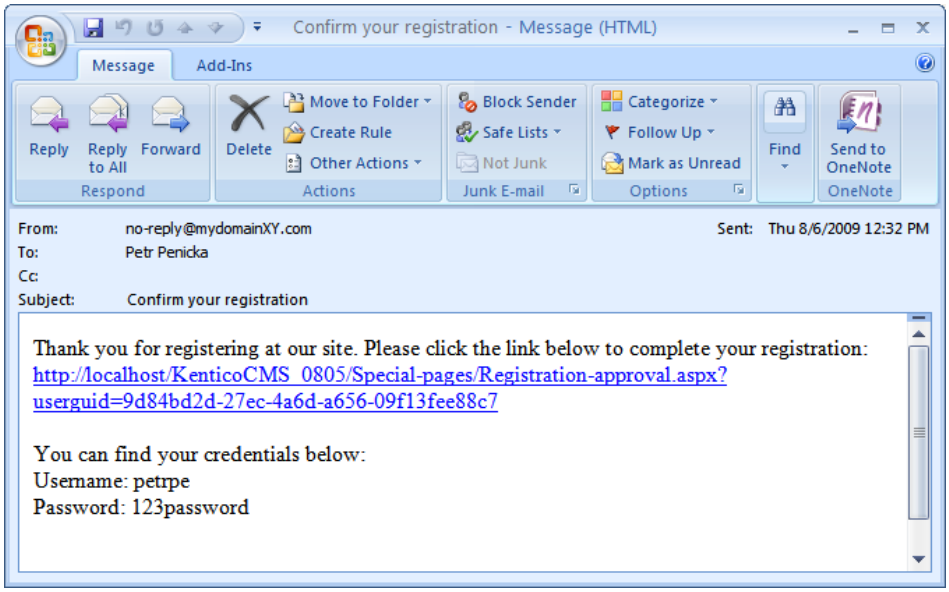
20.4 Registration approval and double opt-in

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.



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:

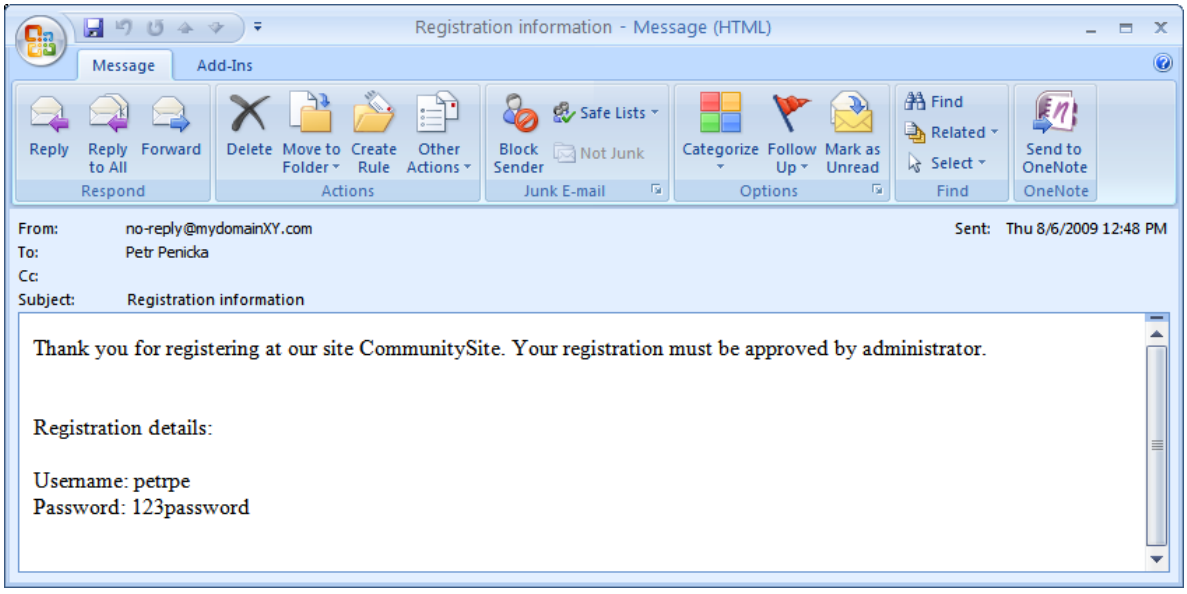
> Your registration has been approved. Now you are able to login using your username and password. Click here to continue.

The link at the end of the message will redirect the user to the title page of the web site. The user can then log in using the registration details received in the e-mail.

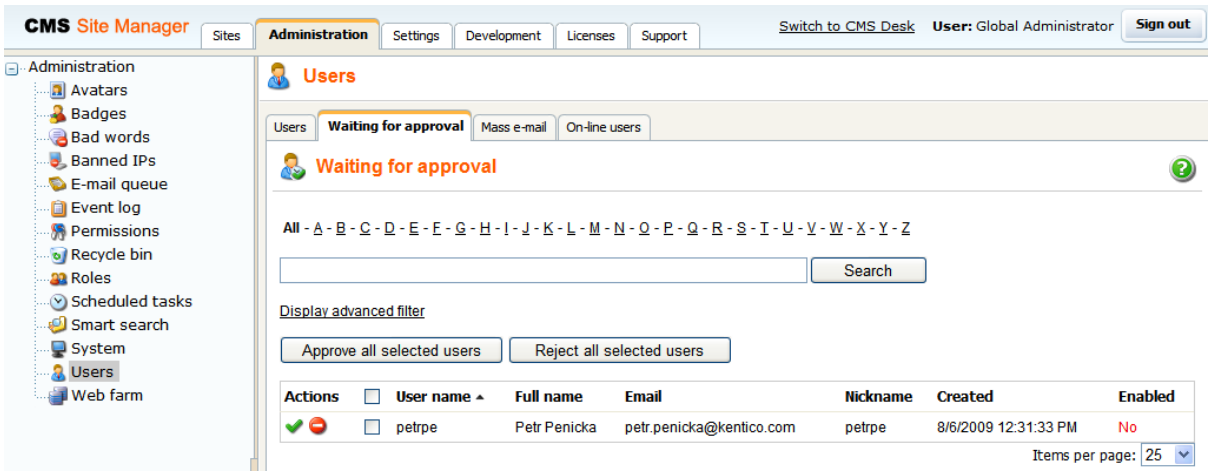
© 2009 Kentico Software

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.

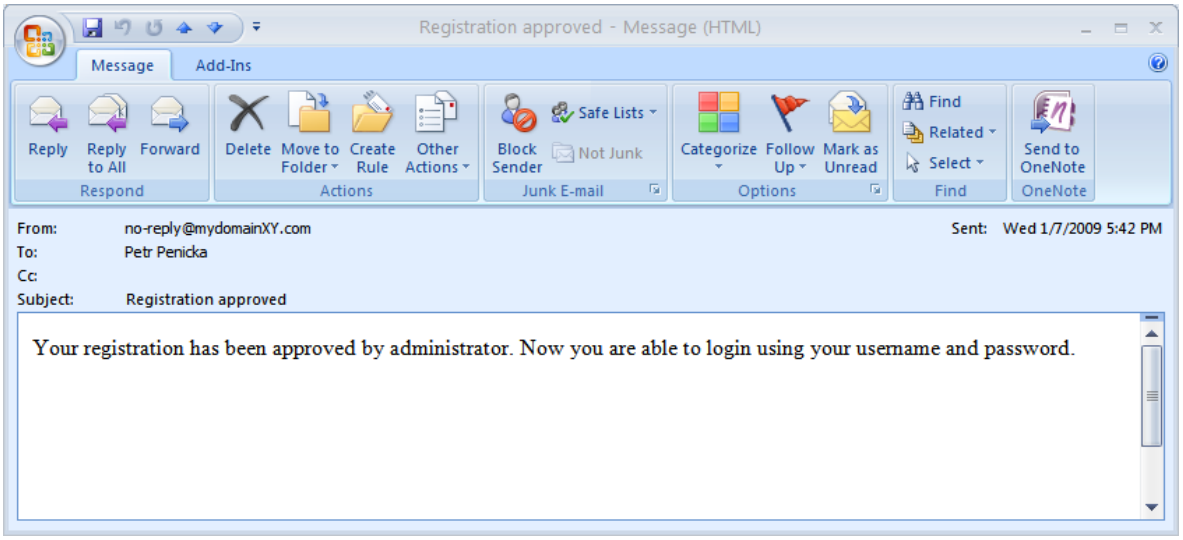


In case that the option is enabled, the **Waiting for approval** tab will be displayed in **Site Manager -> Administration -> Users**. On this tab, site administrators can **Approve** (✔) or **Reject** (⛔) user's registration.



© 2009 Kentico Software

After the administrator's approval, user receives another e-mail, confirming that her 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.

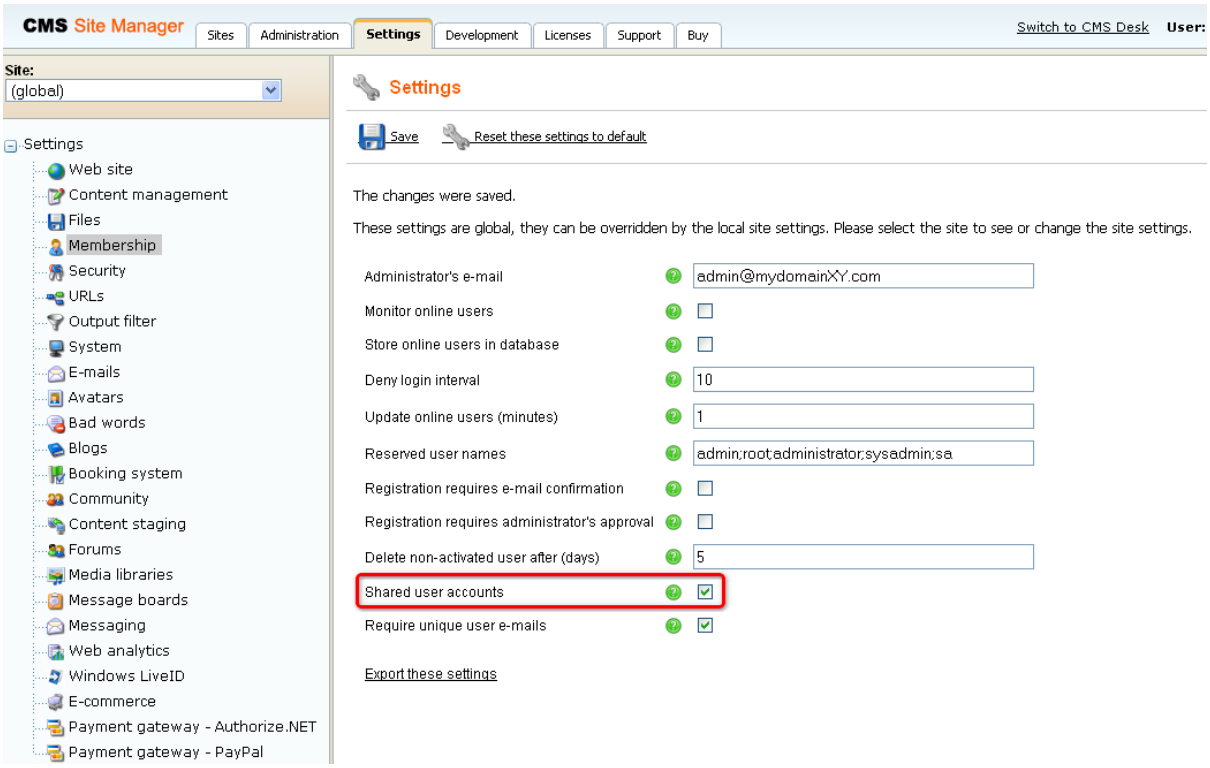
© 2009 Kentico Software

20.5 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, she can automatically log-on to the other sites running on the same installation using the same credentials.

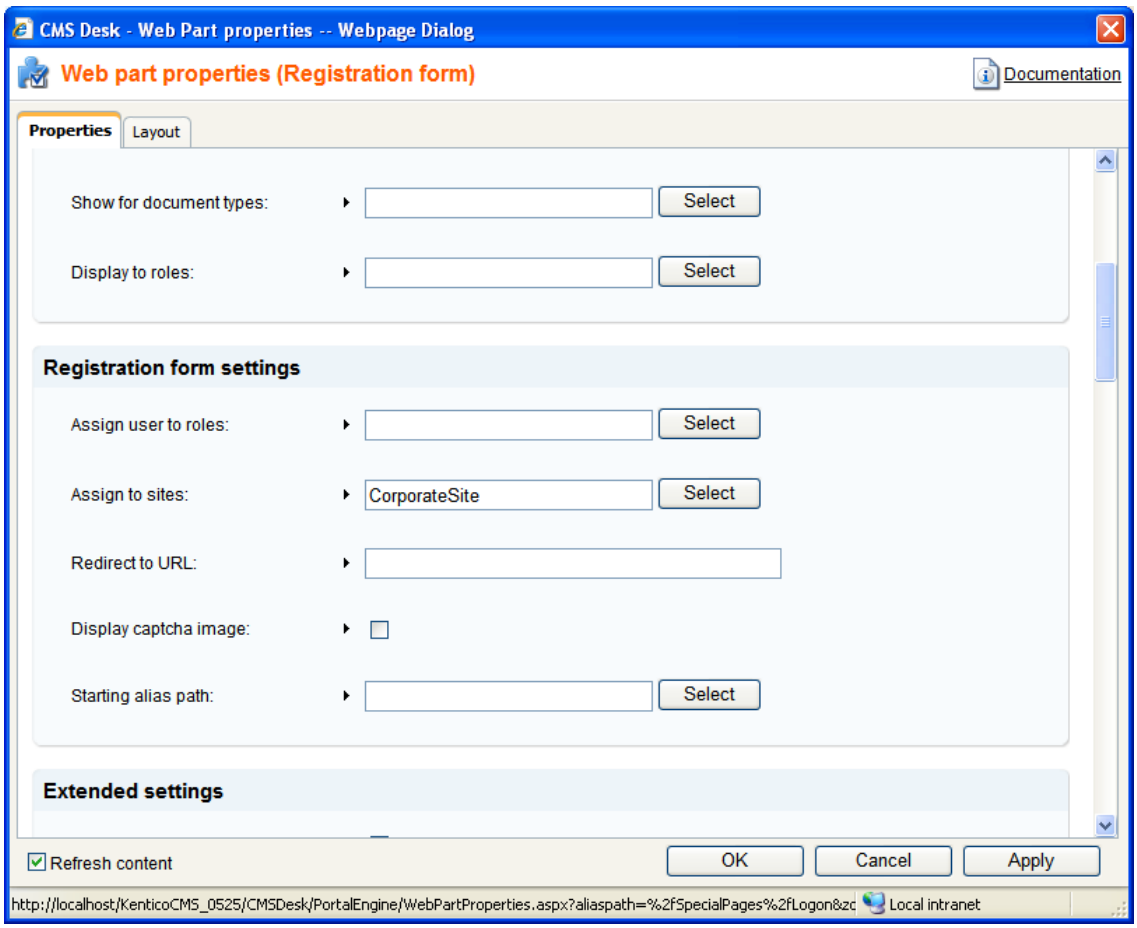
This behaviour can be switched on or off in **Site Manager -> Settings -> Membership**, using the **Shared user accounts** check-box.

- 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.



© 2009 Kentico Software

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.



© 2009 Kentico Software

20.6 Custom fields visibility

20.6.1 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**.

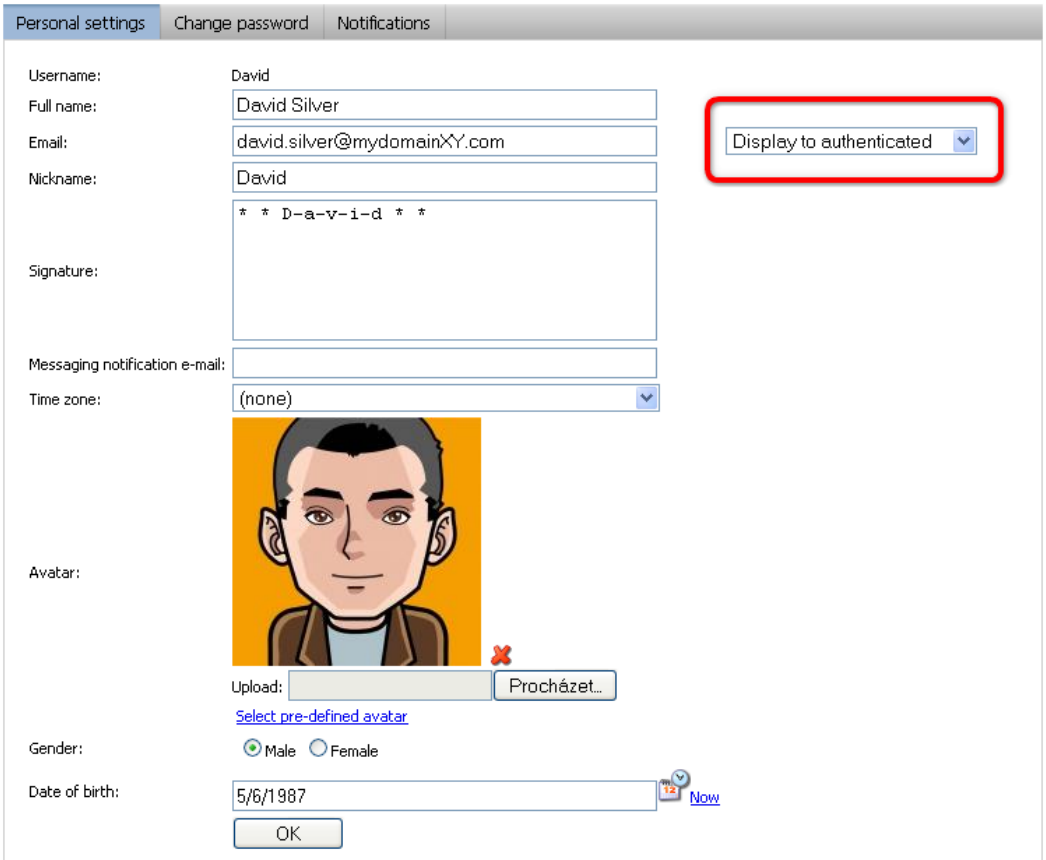
1. Run the **Community site** and sign out of the administration interface. Log on to the site using the **Sign in** form on the right. Enter *David* with blank password and click **Log on**.

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.

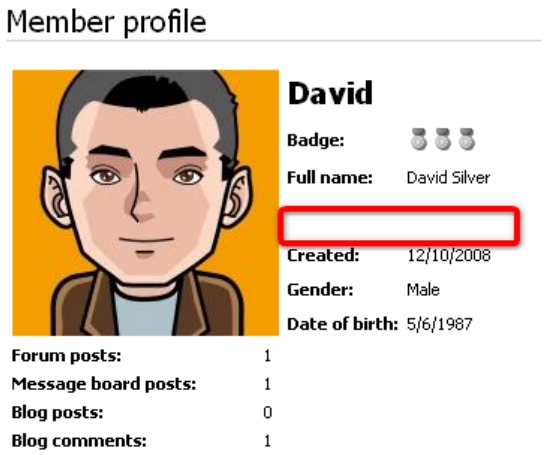
3. You can see a drop down list next to the **E-mail** field, as in the screenshot below. Using this control, users can define to whom will the e-mail address be displayed. The following four options are available:

- **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**.



4. You have just configured the user's profile so that only authenticated users can see his 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.



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.



© 2009 Kentico Software

20.6.2 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.

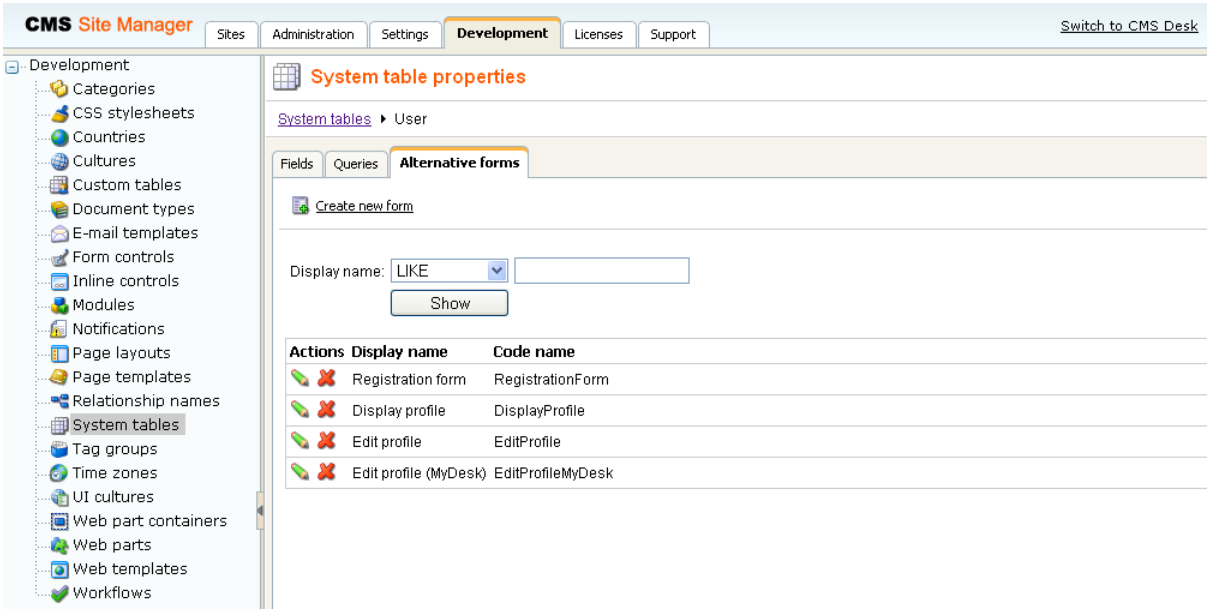
The **CMS_User** system table is the database table where information about registered users is stored. Each of the four alternative forms that you see in the list is used in a specific situation when the system accesses the table:

- **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

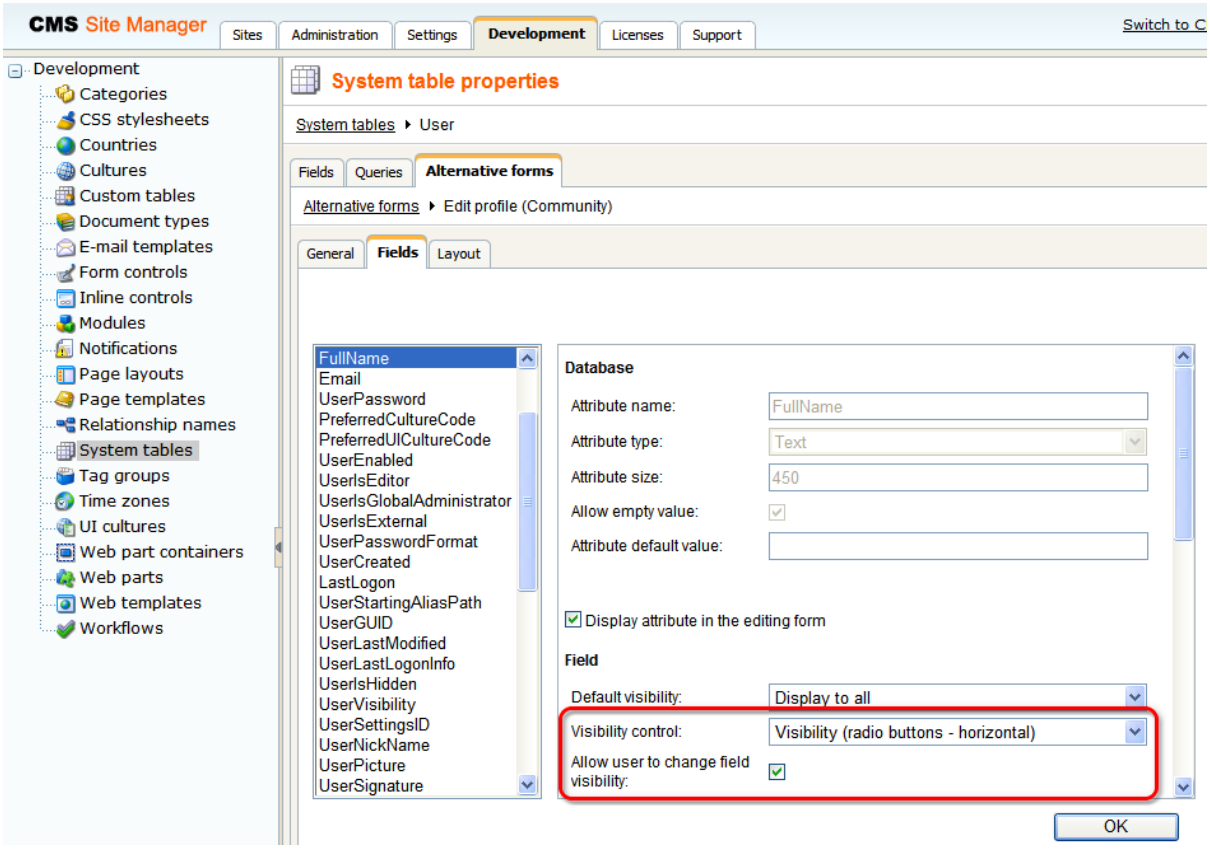
Field visibility can be set in each of these forms.



© 2009 Kentico Software

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 (radi buttons - horizontal)** from the **Visibility control** drop-down. Check the **Allow user to change field visibility** check-box and click **OK**.



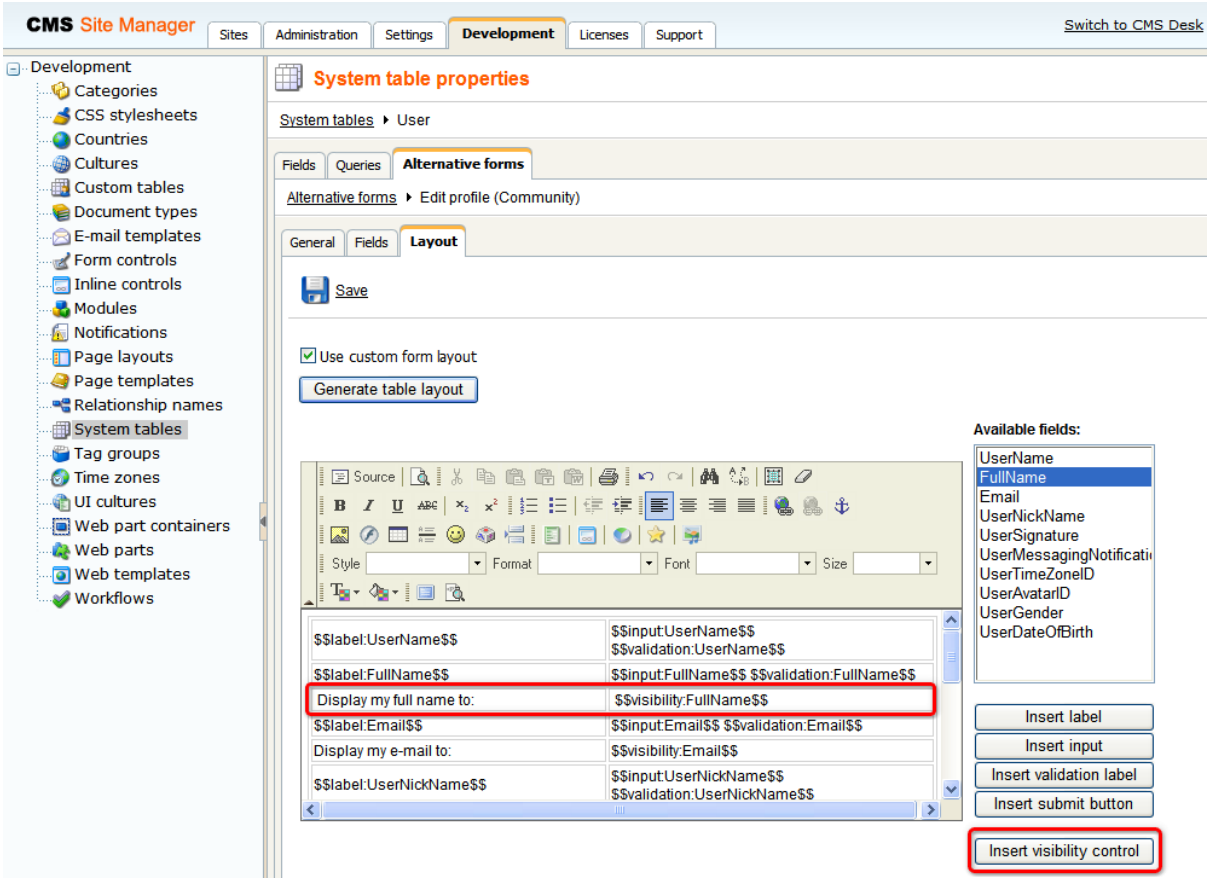
© 2009 Kentico Software

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:*.

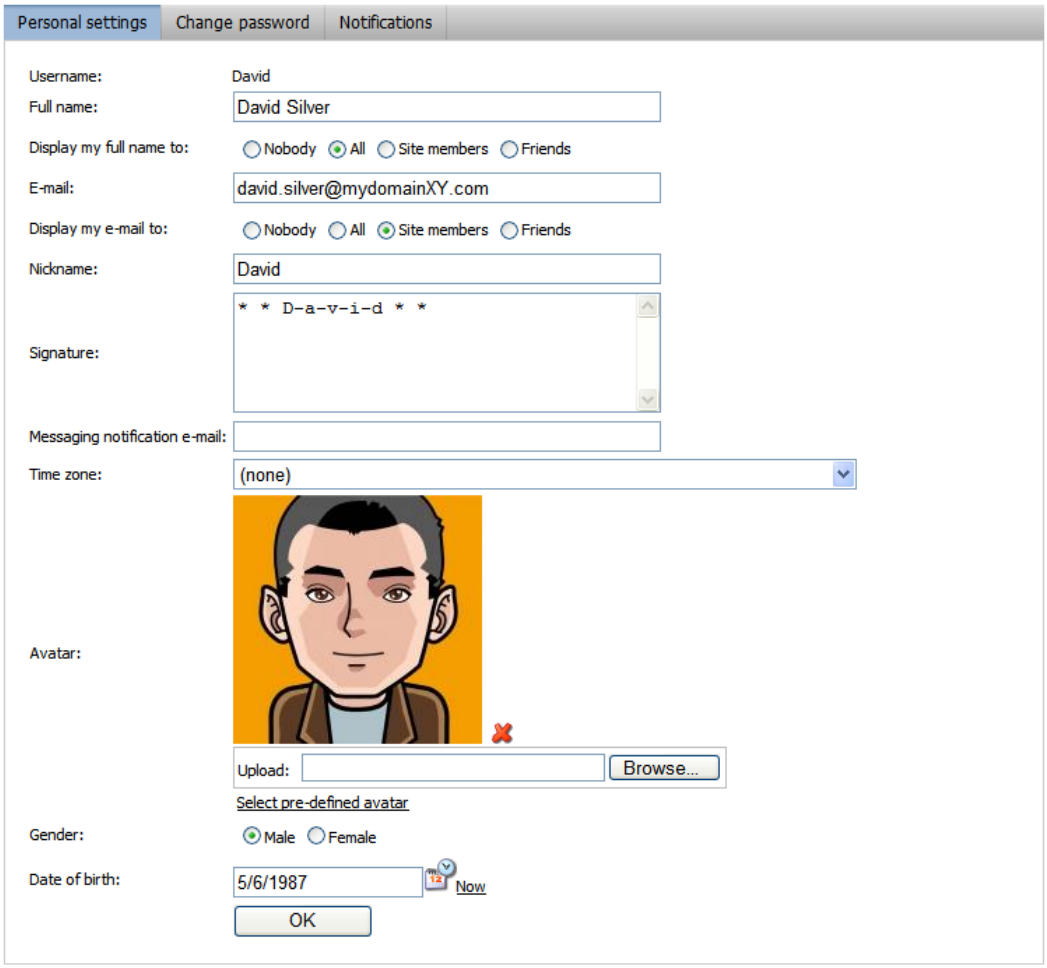
Now we will add the visibility control itself. Place the cursor into the second column, select **FullName** from the **Available fields** list and click the **Insert visibility control** button. The result should look as in the screenshot below.

When you are finished, click **Save**.



© 2009 Kentico Software

3. Now sign out of the administration interface and sign in to the web site 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.



20.6.3 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:

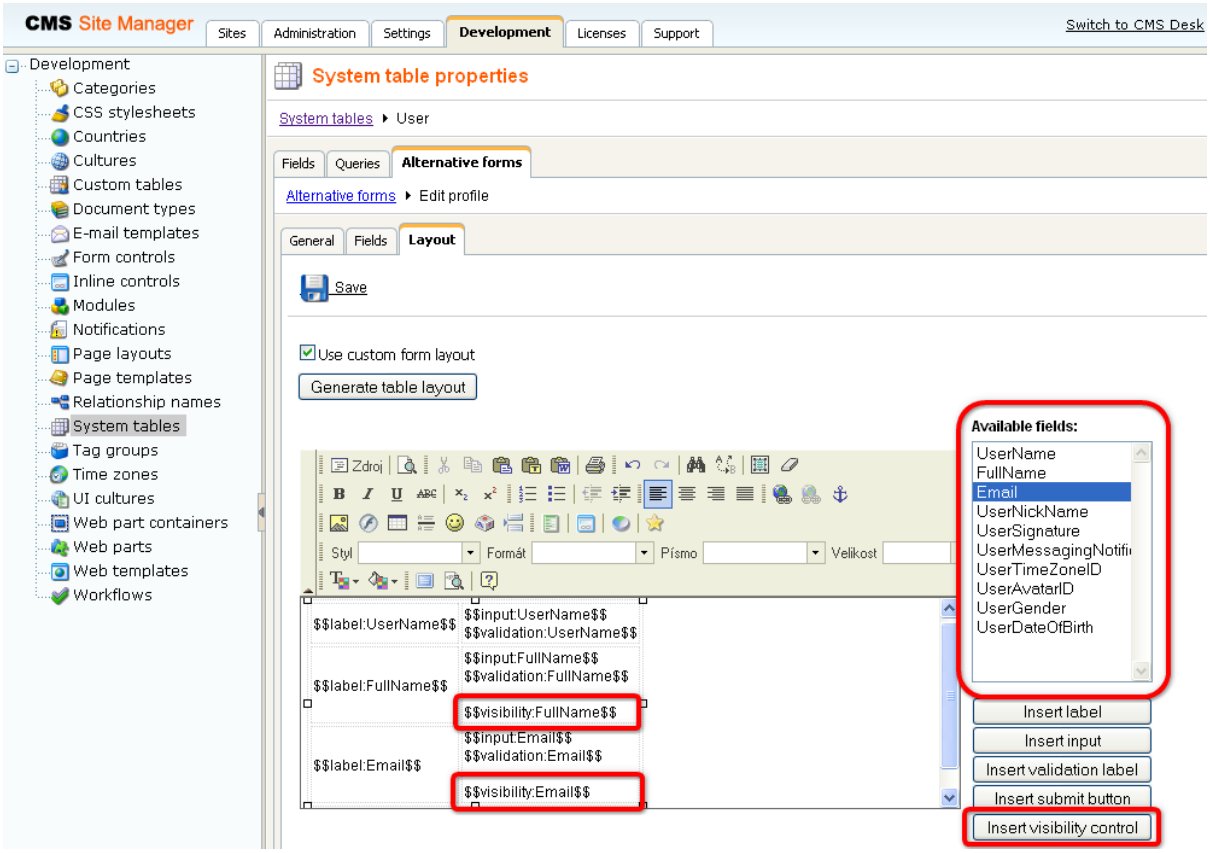
- the **Allow user to change visibility** check-box must enabled for each field that you want to use the drop-down list for. In case it is not enabled, the drop-down list will not be functional.
- add the drop-down list manually to the form, using the **Insert visibility control** button:

1. Go to **Site Manager -> Development -> System tables**. Choose to **Edit** ( ) the **User** system table and switch to the **Atlernative 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.

© 2009 Kentico Software

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.



20.6.4 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

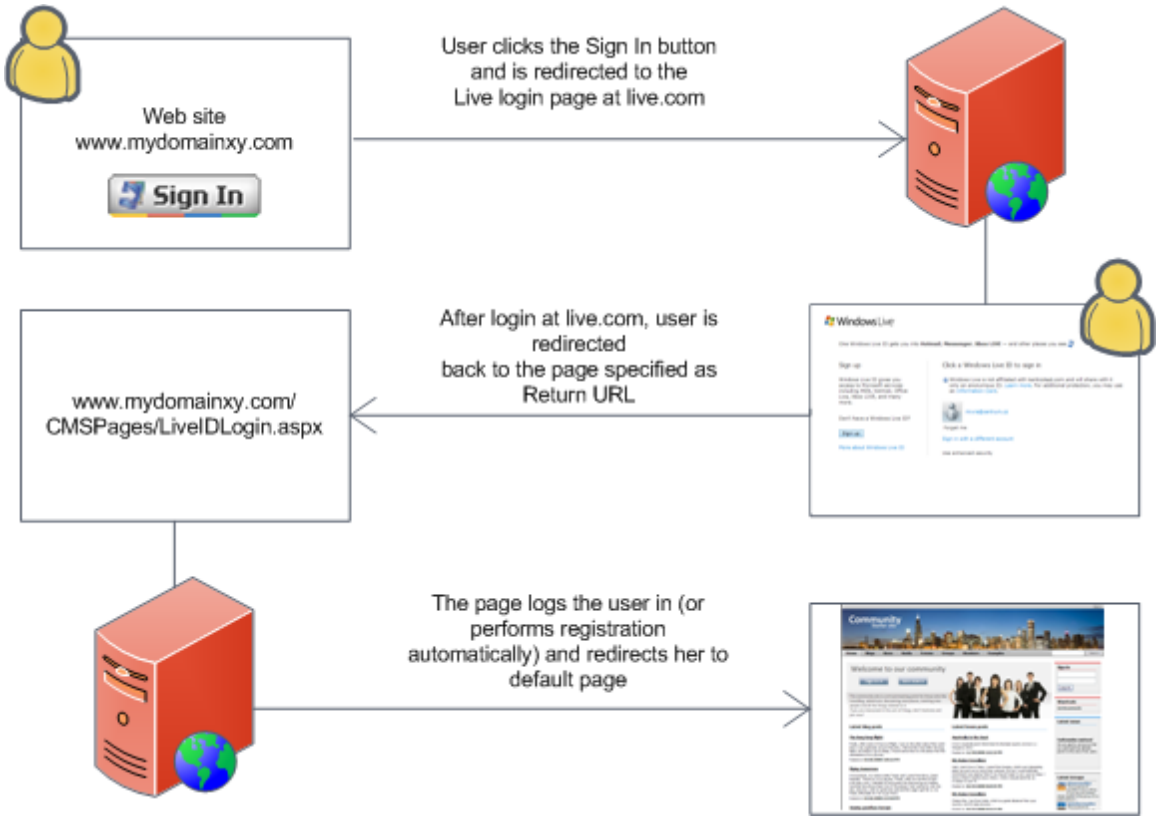
© 2009 Kentico Software

20.7 Windows Live ID

20.7.1 Overview

LiveID is a single sign-on service provided and maintained by Microsoft. By integrating LiveID into your web site, you can allow site visitors to log in to your web site using their LiveID login and password. Even unregistered users can log in using their LiveID, in which case a new user account will be created automatically based on their LiveID account.

The following diagram shows how the process of LiveID login works.



For this to work on your site, you have to do the following things:

1. Register your web site at https://msm.live.com/app - to learn how to do it click here

2. Set up Kentico CMS LiveID support - to learn how to do it click here

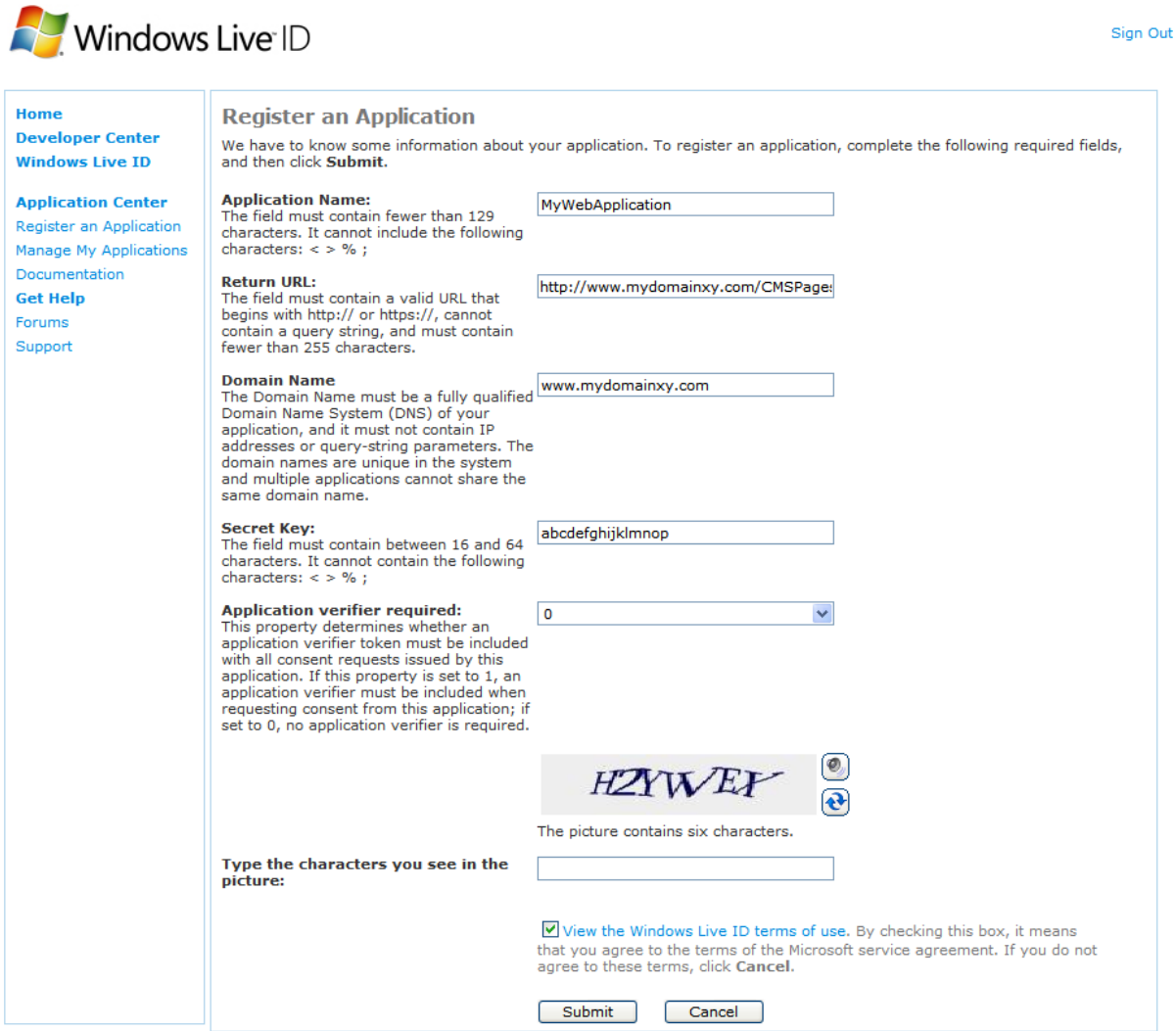
3. Add the LiveID web part to your site and optionally add and configure the Live ID required data web part - info here

© 2009 Kentico Software

20.7.2 Registering your application

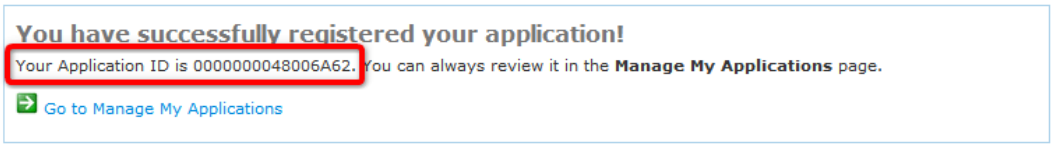
To enable the LiveID log on for your site, you must register your web site at the following address: https://msm.live.com/app. Click the **Register an application** link in the left menu, you will be redirected to the application registration page. You have to enter the following details:

- **Application Name** - this is simply an identifying name of your web application used in the LiveID system and has no effect on functionality
- **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 name field
- **Domain name** - enter the fully qualified domain name of your web site
- **Secret key** - enter some key that will be used to encrypt data transferred between your web site and the LiveID server; be sure to remember this key as you will have to enter it in Kentico CMS settings
- **Application verifier required** - it is recommended to choose 0



© 2009 Kentico Software

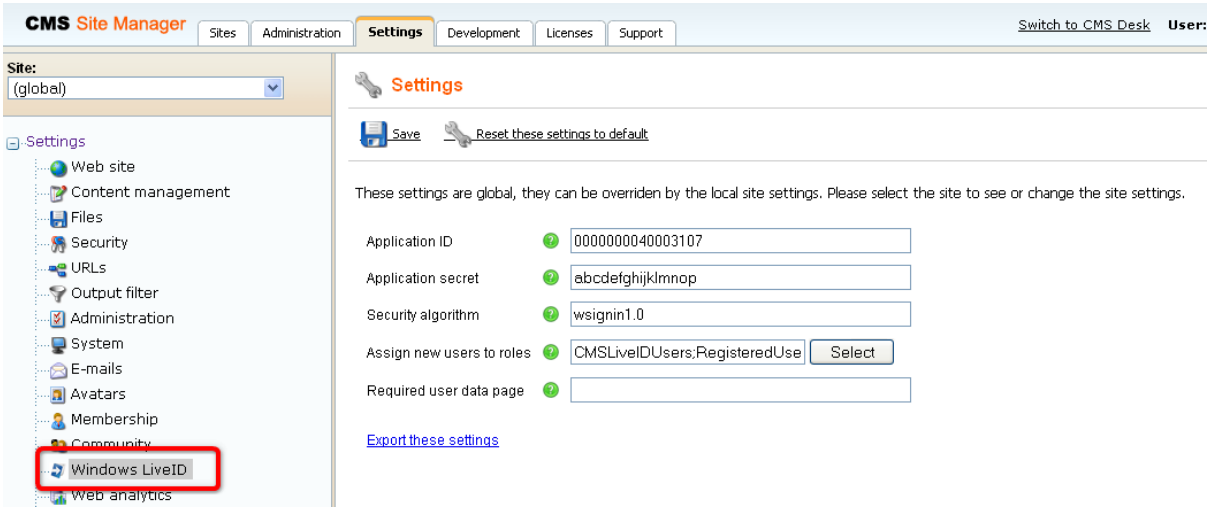
When you're finished, retype the CAPTCHA, agree with terms of use and click the **Submit** button. You will be displayed with the following message, showing you the **Application ID**. You will use this ID later in Kentico CMS settings.



20.7.3 Settings

LiveID 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.

- **Application ID** - identifier of your web site; you were given this ID when registering your web site to LiveID
- **Application secret** - secret code that will be used for encryption of messages transferred between your web site and the LiveID server; you entered this key when registering your web site to LiveID
- **Security algorithm** - algorithm used for encryption of messages transferred between your web site 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** - alias path to a page containing the 'Required LiveID user data' web part; if entered, then when a new LiveID user logs in to the site, her user account is not created automatically, but she is required to enter some additional data (or merge with an existing account) using the web part



© 2009 Kentico Software

20.7.4 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.

Windows LiveID

This webpart can be used by site visitors to sign in to your web site using their Live ID. It can be placed on any page of your web site. 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.



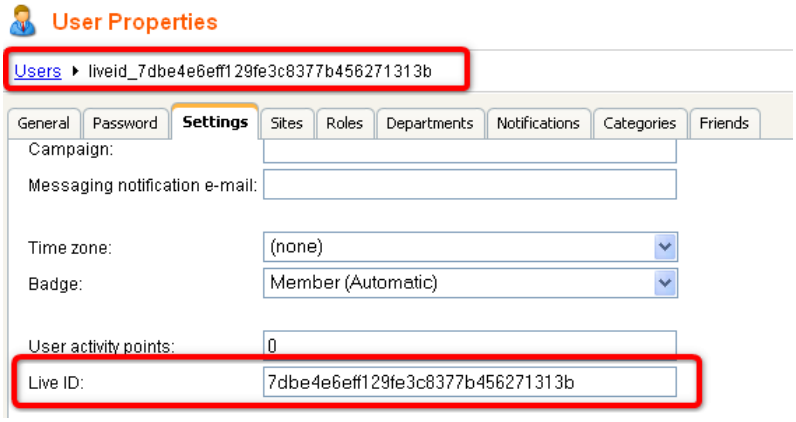
Although the web part works fine without setting any of its properties, the following can be set:

- **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

When some user signs in through LiveID for the first time, Kentico CMS automatically creates a new user account for her. Such account has the **User name** field filled, in format '*liveid_<liveidtoken>*'. The **LiveID** field contains the bare LiveID Token.

The LiveID Token is a hexadecimal identifier that KenticoCMS recognizes the user accessing the site via LiveID by. It is received from the LiveID server and is unique for each application - other web sites supporting LiveID logon will recognize the same user under some different LiveID Token.

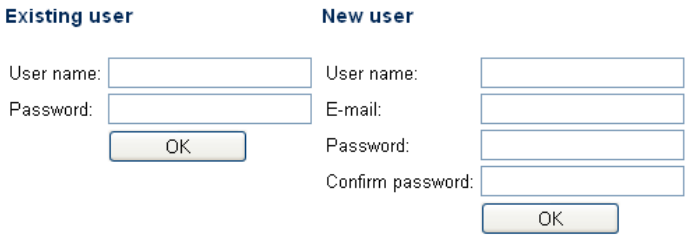


In some cases, you may want the new users to provide some extra details before creating the new account. This can be achieved using the Live ID user data web part. The web part must be placed on a page specified by the **Required user data page** in **Site Manager -> Settings -> Windows LiveID**.

© 2009 Kentico Software

In the left part, an existing site user can merge her current user account with the LiveID by just entering her user name and password. In this case, the LiveID Token will be added to the LiveID field of the existing profile.

New users can enter the required details in the right part of the web part.



The web part has the following specific properties:

- **Can set password** - if checked, new users will be able to set a password for their new account so that they can log in the usual way as well as via 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)

© 2009 Kentico Software

20.8 Badges

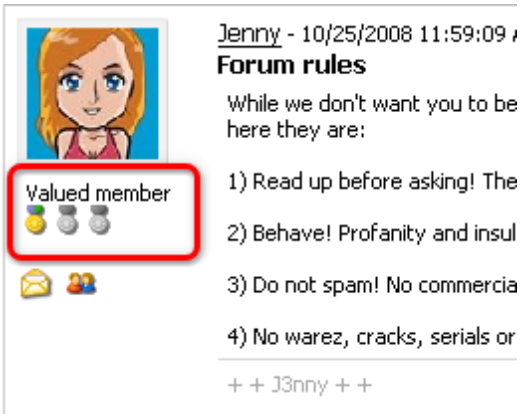
20.8.1 Badges

Users can be labeled with badges. These are images with a short text, expressing user's activity level, importance or role in the context of the web site. They are displayed in forum posts, on users' public profile or in your own custom control.

There are two types of badges:

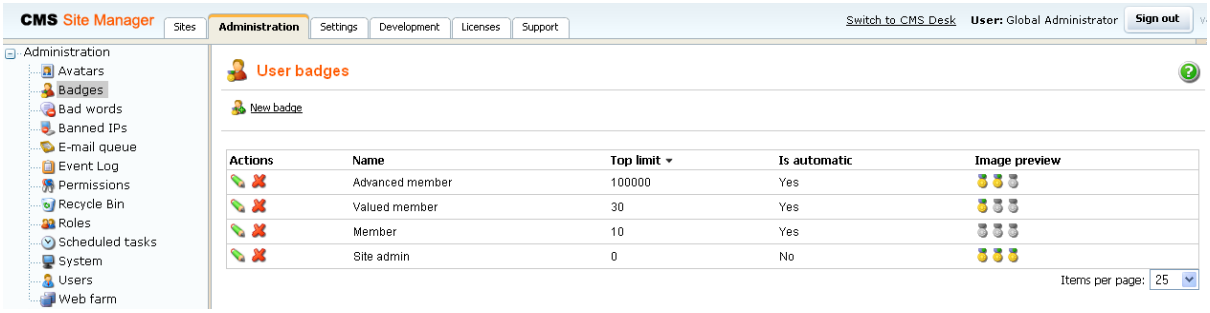
- **Automatic badges** - these are assigned to users based on the number of gained activity points
- **Non-automatic badges** - these are assigned to users manually by site administrators and are assigned permanently, regardless of the number of gained activity points

In the screenshot below, you can see one of the pre-defined badges in a forum post.



20.8.2 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.



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

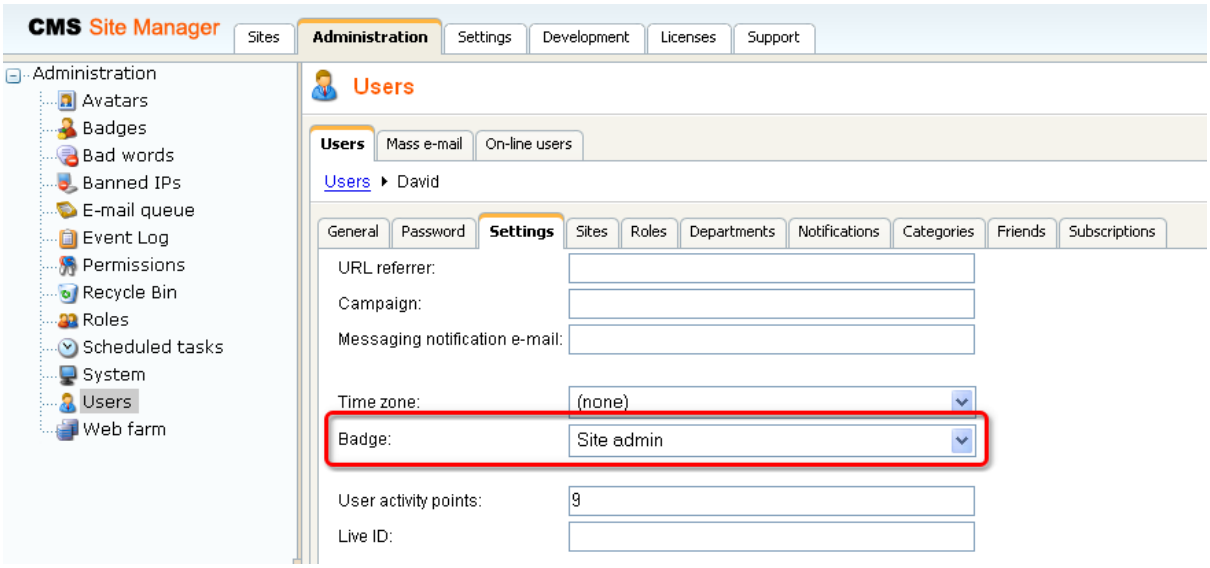
© 2009 Kentico Software

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 to automatic badges

20.8.3 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.



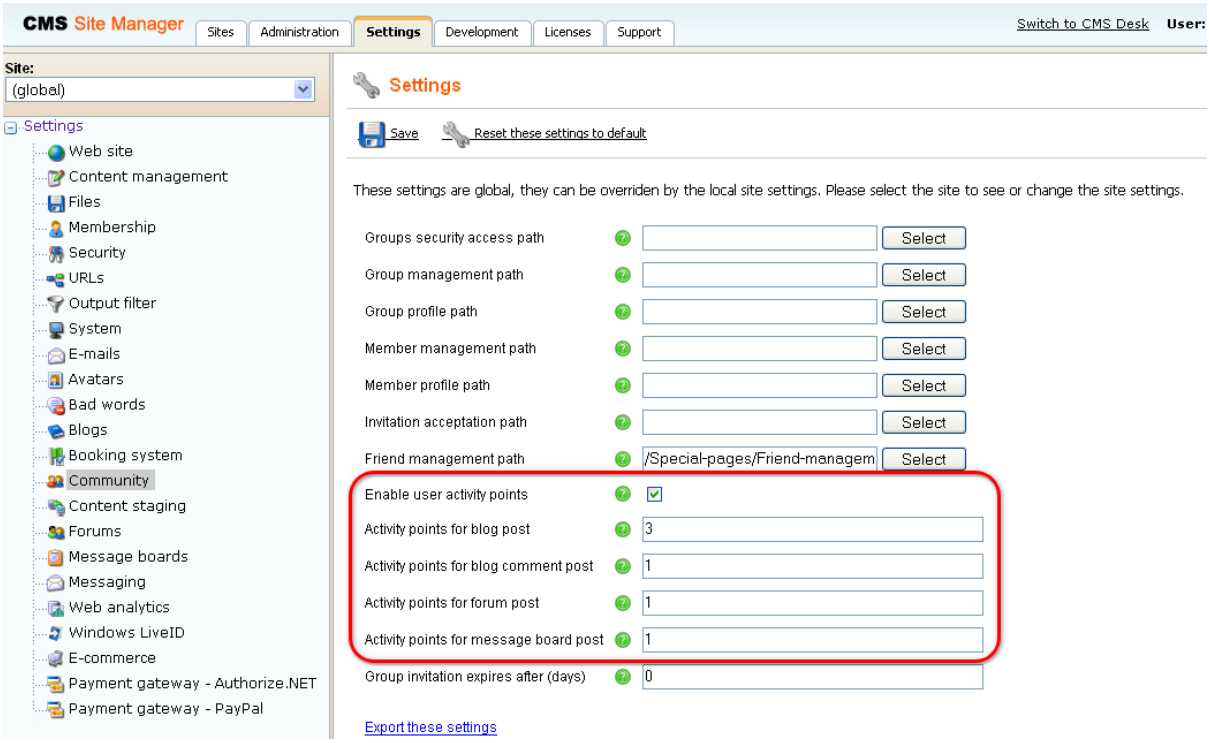
© 2009 Kentico Software

20.8.4 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



20.8.5 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

© 2009 Kentico Software

Part



Microsoft Silverlight

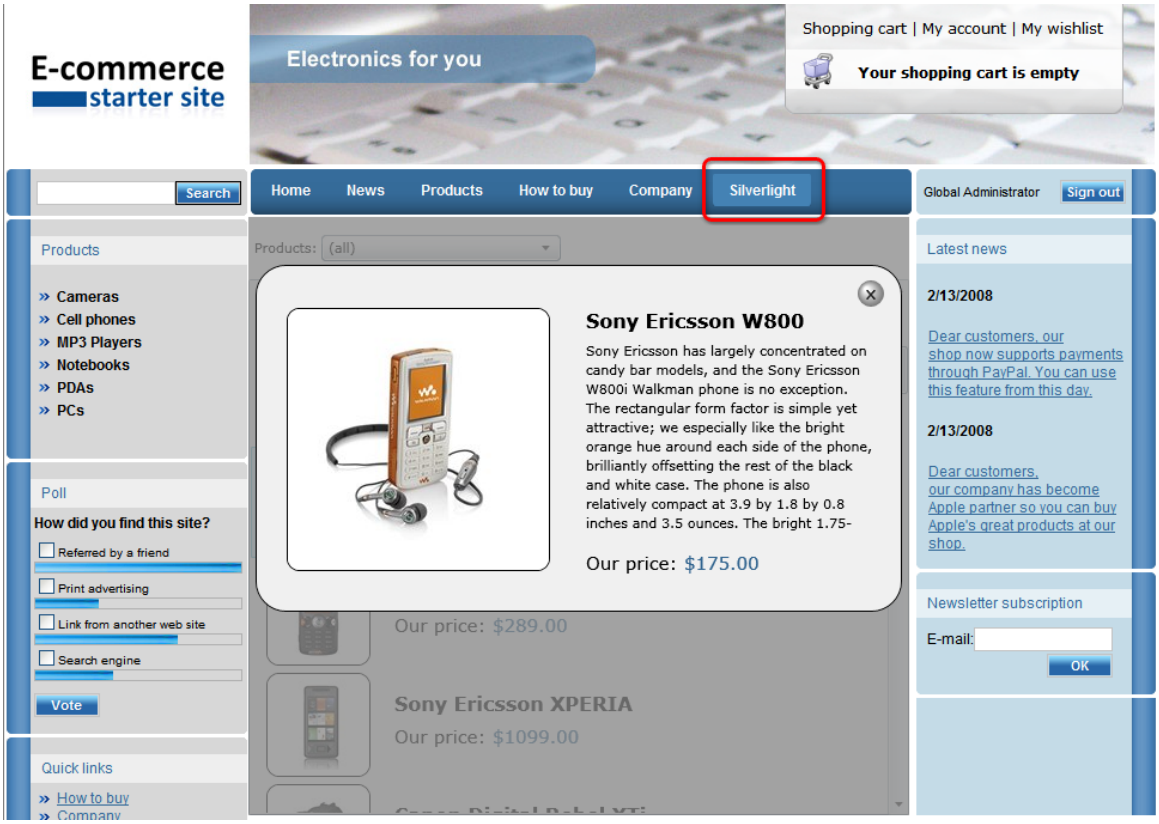
21 Microsoft Silverlight

21.1 Introduction

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.



How it works in general:

1. Developer creates a web site 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, she is automatically prompted to install it.
4. The Silverlight application is executed.

Creating Silverlight applications

© 2009 Kentico Software

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 powerfull 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.

21.2 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 web site.

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 web site.

© 2009 Kentico Software

21.3 IIS configuration

Silverlight introduces two new file extensions:

- **.xaml** for XAML files
- **.xap** for the zip-based binary packaging format

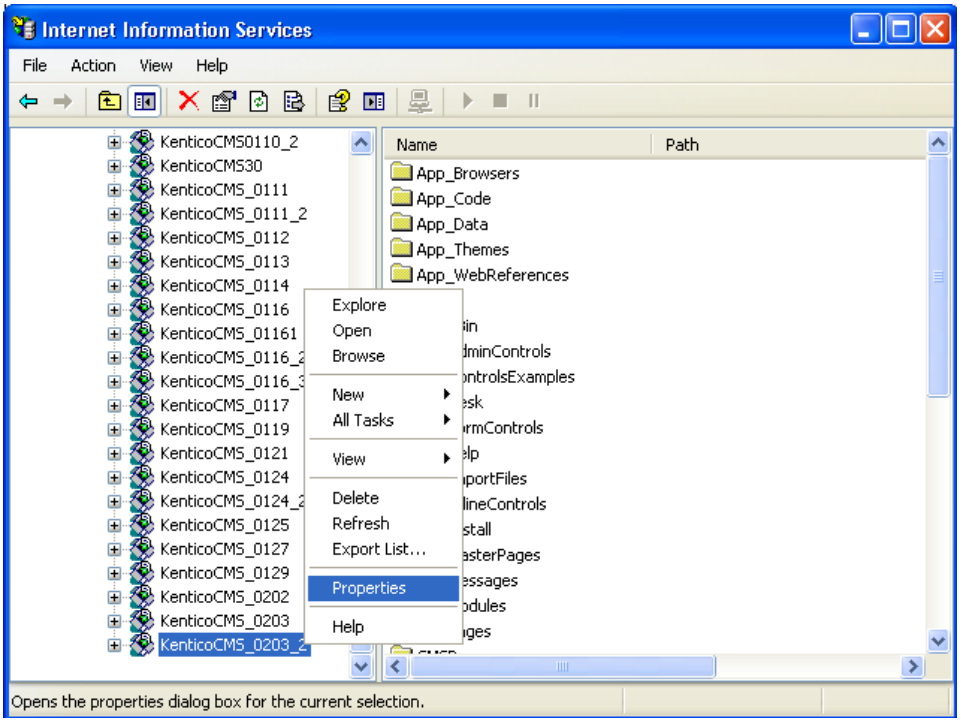
For your application to work correctly, you need to add the MIME types for these file extensions to your web server so that it recognizes Silverlight content appropriately:

- **Extension**: .xaml
- **MIME type**: application/xaml+xml

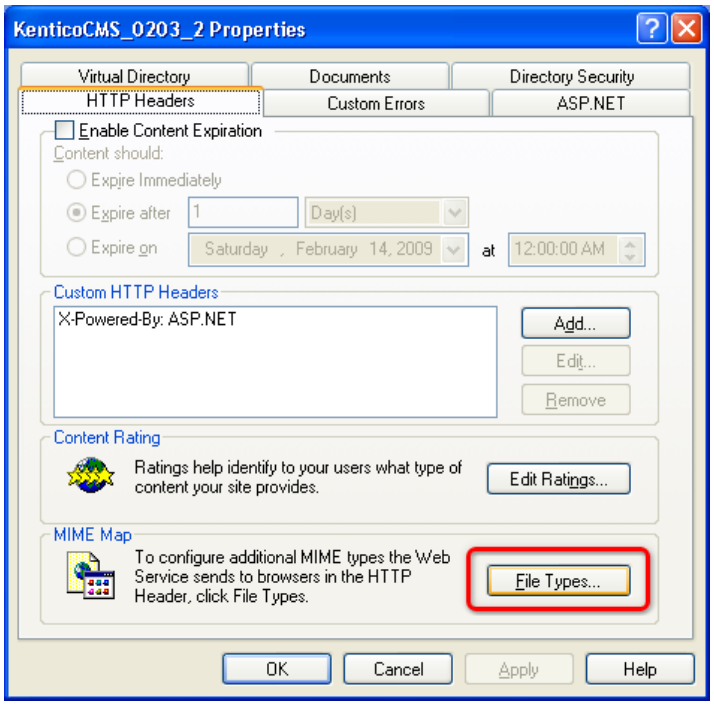
- **Extension**: .xap
- **MIME type**: application/x-silverlight-app

Here is a step-by-step guide on how to do it on IIS 5.1:

1. Open IIS, right-click your web site and choose **Properties**.



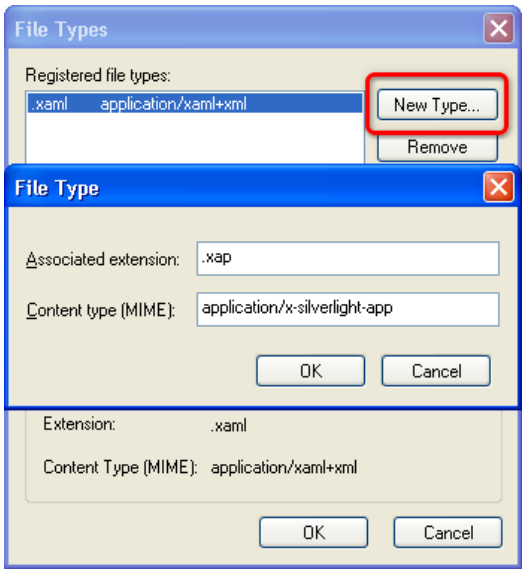
2. Switch to the **HTTP Headers** tab and choose **File Types** in the **MIME Map** section.



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



© 2009 Kentico Software

Part



API programming and Kentico CMS internals

22 API programming and Kentico CMS internals

22.1 API 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.

22.2 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 dabatase to get the data. You can use the property CurrentPageInfo 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 NodeID, NodeName, AliasPath, ClassName, 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 his/her preferences. Beside the standard UserInfo properties, it also provides the following ones: **MenuItemViewMode** – the view mode used for page (menu item) documents (cms.menuitem type). **PreferredUICultureInfo** – read-only property returning the current user's preferred UI culture (as CultureInfo object). **PreferredCultureCode** – gets/sets user's preferred content culture. You can use this property to change the culture of the displayed content. **PreferredUICultureCode** – gets/sets user's preferred UI culture. It's used mainly by Kentico CMS webparts, controls and in the administration interface. **IsAuthorizedPerResource** – returns true if the current user is authorized with given permission for given module (resource).

© 2009 Kentico Software

	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. **IsAuthorizedPerTreeNode** – returns true if the current user is authorized with given permission for given document (node). **IsPublic** – returns true if the current user is the Public user account used for anonymous visitors.
ViewMode	The view mode in which the documents are displayed (edit, design, form, live site, preview).
WebApplicationVirtualPath	Returns the virtual path of the current web application.
ResolveCurrentPath	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.: */{0}/{1}* applied on *"/products/computers/ibm"* results in: *"/products/computers"*

22.3 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.

© 2009 Kentico Software

22.4 Managing documents

22.4.1 Content management internals

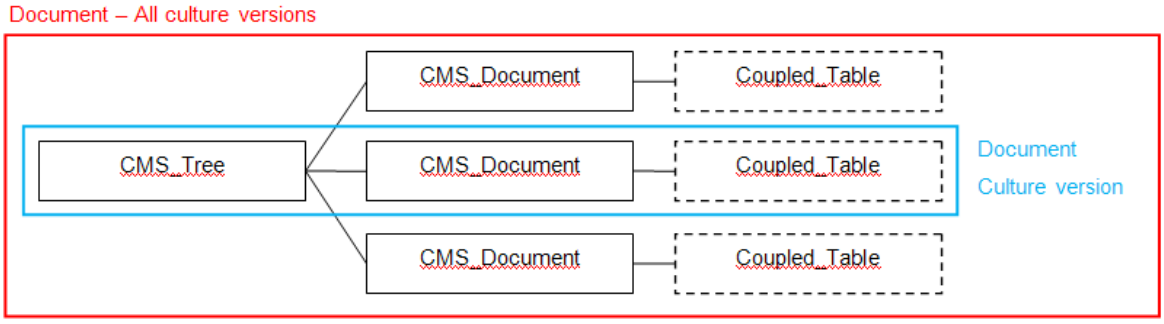
This chapter describes the structure of the content stored in the Kentico CMS repository and how they can be accessed.

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 web site 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,

© 2009 Kentico Software

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

22.4.2 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");
```

© 2009 Kentico Software

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 pa
node.DocumentContent.EditableWebParts["mainText"] = "my text";

// Set mainText region content of the node representing a page (for ASPX page templa
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
```

© 2009 Kentico Software

```
UserInfo ui = UserInfoProvider.GetUserInfo("administrator");
CMS.TreeEngine.TreeProvider tree = new CMS.TreeEngine.TreeProvider(ui);

// Get Single document node specified by it`s 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 ...
```

22.4.3 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)
{
```

© 2009 Kentico Software

```
    // 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);
}
```

© 2009 Kentico Software

22.4.4 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.Cu

if (node != null)
{
   // change some values
   node.SetValue("NewsSummary", "Some changed summary.");
   node.SetValue("NewsText", "Some changed text.");
   // Update the document
   node.Update();
}
```

22.4.5 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.Cu

if (node != null)
{
   // Delete the document
   node.Delete();
}
```

© 2009 Kentico Software

22.4.6 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.Cu
// Get target node under which the document will be copied
CMS.TreeEngine.TreeNode target = provider.SelectSingleNode(CMS.CMSHelper.CMSContext.

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);
}
```

22.4.7 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.Cu

// Get target node under which the document will be moved
CMS.TreeEngine.TreeNode target = provider.SelectSingleNode(CMS.CMSHelper.CMSContext.

if ((target != null) && (node != null))
{
   // Move the document under the specified target
   provider.MoveNode(node, target.NodeID);
}
```

22.4.8 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.

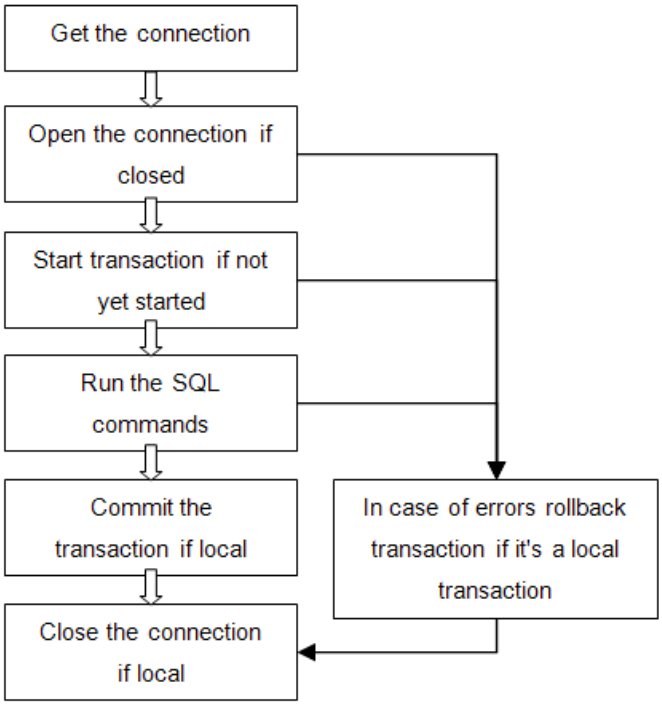
Native transactions

© 2009 Kentico Software

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.

© 2009 Kentico Software

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)
{
  bool closeConnectionAtTheEnd = false;
  bool commitTransactionAtTheEnd = false;

  try
  {
    // Open connection is necessary
    if (!conn.DataConnection.IsOpen())
    {
      conn.DataConnection.Open();
      closeConnectionAtTheEnd = true;
    }
    // Start transaction if necessary
    if (!conn.DataConnection.IsTransaction())
    {
      conn.DataConnection.BeginTransaction();
      commitTransactionAtTheEnd = true;
    }


    // --- 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 INSTATIATE 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 if necessary
    if (commitTransactionAtTheEnd)
    {
      conn.DataConnection.CommitTransaction();
      commitTransactionAtTheEnd = false;
    }
  }
  catch (Exception ex)
  {
```

© 2009 Kentico Software

```
    // Rollback transaction if necessarry
    if (commitTransactionAtTheEnd)
    {
      conn.DataConnection.RollbackTransaction();
      commitTransactionAtTheEnd = false;
    }
    throw ex;
  }
  finally
  {
    // Close the connection if necessarry
    if (closeConnectionAtTheEnd)
    {
      conn.DataConnection.Close();
      closeConnectionAtTheEnd = false;
    }
  }
}
```

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.

22.4.9 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.";
            }
```

© 2009 Kentico Software

22.4.10 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.";
            }
```

22.5 Managing attachments and files (cms.file)

22.5.1 Managing attachments

he 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:

© 2009 Kentico Software

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.Connect
  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.E
if (existingGuid != Guid.Empty)
{
  // Get the attachment
```

© 2009 Kentico Software

```
  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.

22.5.2 Managing files (cms.file)

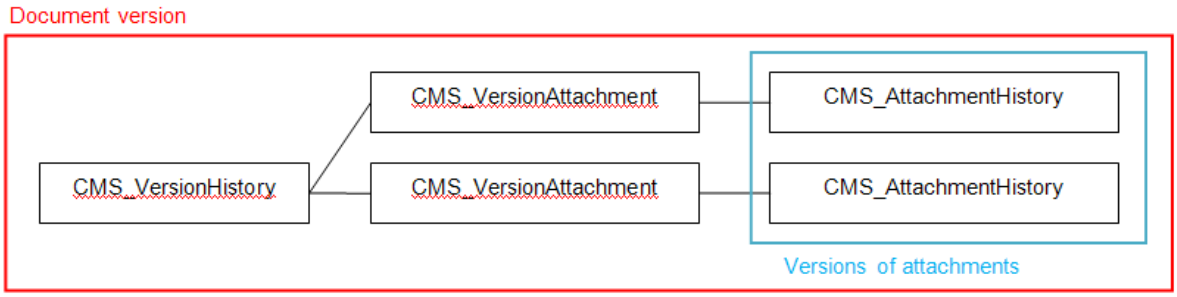
The File document type (cms.file) is actually just another document type and you can modify it using the same methods that you use for other document types. The actual file (uploaded image, Word document or other file type) is stored as an attachment in field **FileAttachment**.

22.6 Managing documents with workflow

22.6.1 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**.

22.6.2 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:

© 2009 Kentico Software

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.

© 2009 Kentico Software

Getting current workflow step

The current workflow step ID is stored in the document field **DocumentWorfklowStepID**. 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;
    }
  }
}
```

© 2009 Kentico Software

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.

22.6.3 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:

© 2009 Kentico Software

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;
```

© 2009 Kentico Software

```
// Update the document
node.SetValue("DocumentName", "New name");
DocumentHelper.UpdateDocument(node, tree);
```

© 2009 Kentico Software

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);
```

22.6.4 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);
```

© 2009 Kentico Software

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);
            }
```

© 2009 Kentico Software

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(
```

© 2009 Kentico Software

```
"TestingWorkflow");

            // Delete the worfklow
            WorkflowInfoProvider.DeleteWorkflowInfo(wi.WorkflowID);
```

22.6.5 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)
```

© 2009 Kentico Software

```
                // 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);
                }
            }
```

© 2009 Kentico Software

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);
```

© 2009 Kentico Software

```
        }
```

© 2009 Kentico Software

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, "");
            }
```

© 2009 Kentico Software

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, "");
            }
```

© 2009 Kentico Software

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, "");
                }
             }
```

© 2009 Kentico Software

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, "");
            }
```

© 2009 Kentico Software

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);
            }
```

22.7 Security management

22.7.1 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.

© 2009 Kentico Software

22.7.2 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");
```

© 2009 Kentico Software

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);
```

22.7.3 Setting user password

[C#]

```
using CMS.SiteProvider;

...

UserInfoProvider.SetPassword("testinguser", "newpassword");
```

© 2009 Kentico Software

22.7.4 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#]

© 2009 Kentico Software

```
// Delete the role
CMS.SiteProvider.RoleInfoProvider.DeleteRole("ArticleEditor", CMS.CMSHelper.
CMSContext.CurrentSiteName);
```

© 2009 Kentico Software

22.7.5 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
```

© 2009 Kentico Software

```
CMS.SiteProvider.UserInfoProvider.AddUserToRole("Alice", "DocumentEditor", CMS.
CMSHelper.CMSContext.CurrentSiteName);
```

© 2009 Kentico Software

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.

22.7.6 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
}
```

22.7.7 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;
```

© 2009 Kentico Software

© 2009 Kentico Software

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 web site
}
```

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 web site
}
```

© 2009 Kentico Software

22.8 Site management, import and export

22.8.1 Creating a new web site

The following example shows how you can create a new web site based on the Blank web site 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";
        }
```

22.8.2 Import and export of the web site

You can export and import a web site 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 web site
  - siteDisplayName - display name of the newly created web site
  - siteDomain - domain name of the newly created web site
  - fullSourcePath - physical disk path of the package with exported site
  - websitePath - physical disk path of the web site root

- `public static void ExportSite(string siteName, string fullExportFilePath, string websitePath, bool template)`
  - siteName - code name of the web site to be exported
  - fullExportFilePath - physical disk path of the export package
  - websitePath - physical disk path of the web site 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).

© 2009 Kentico Software

22.8.3 Update web site properties

The following example shows you how to modify web site 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 dsiplay 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)
            {
```

© 2009 Kentico Software

```
                lblError.Text = "Error when modifying site properties.<br />
>Original exception: " + ex.Message;
            }
        }
```

© 2009 Kentico Software

22.8.4 Delete web site

The following example shows how you can delete an existing web site:

[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);
```

22.9 Custom Providers

22.9.1 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 (it's described in the Kentico CMS E-commerce guide)

You can also use global event handlers to customize the system behavior, such as document modifications, authentication process, etc.

22.9.2 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 web site project.

© 2009 Kentico Software

5. Add the reference do **IDataConnectionLibrary**, **SettingsProvider**, **DirectoryUtilities** a **GlobalHelper** libraries located in the web site project to the CustomDataProvider project.
6. Build the solution.

© 2009 Kentico Software

7. Add the following key to the AppSettings section of your **web.config** file:

```
<add key="CMSDataProviderAssembly" value="CMS.CustomDataProvider"/>
```

8. Run the web site, it should use the **CustomDataProvider** library now.
9. If everything works fine, you can modify the code of the Custom Data Provider as needed.

22.9.3 Custom E-mail Provider

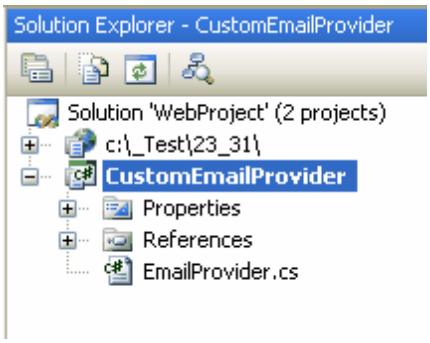
The custom e-mail provider allows you to use third-party e-mail components for sending e-mails or add custom actions when an e-mail is sent (e.g. logging the sent e-mails to some file for auditing purposes). All e-mails sent by Kentico CMS and its modules will use your custom e-mail provider.

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:

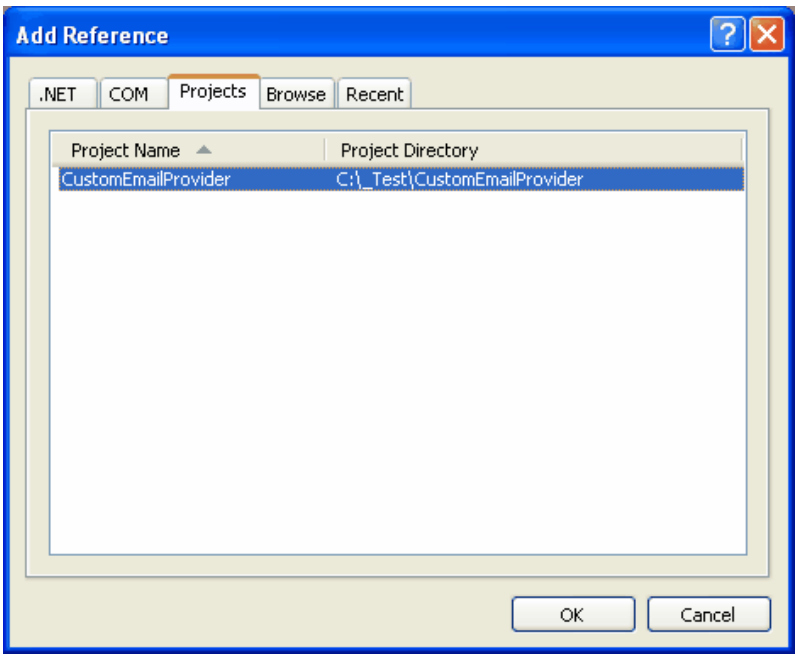


3. Unfold the **References** section of the **CustomEventHandler** project and delete invalid references.

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

© 2009 Kentico Software

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.

© 2009 Kentico Software

22.9.4 Custom Search Provider

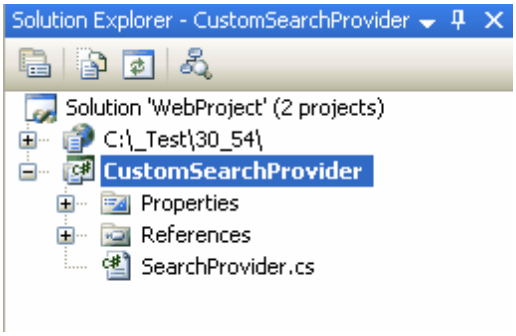
Kentico CMS allows you to write your own search provider that can use some third-party search engine. You can also write a custom search provider when you need to modify or filter search results returned by the standard search engine.

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:

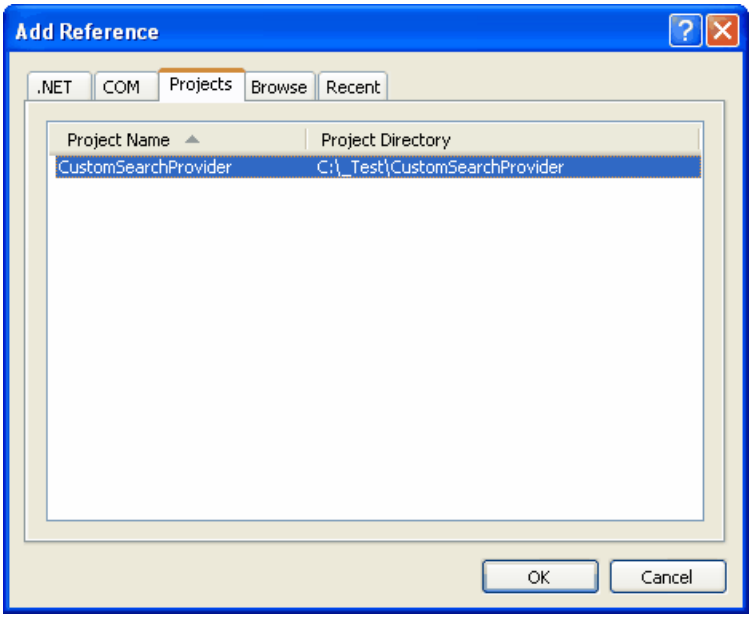


3. Unfold the **References** section of the **CustomEventHandler** project and delete invalid references.

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

© 2009 Kentico Software

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;
```

© 2009 Kentico Software

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:



© 2009 Kentico Software

22.10 Data layer

22.10.1 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

© 2009 Kentico Software

22.10.2 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();
}
```

© 2009 Kentico Software

© 2009 Kentico Software

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);
```

22.10.3 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);
```

© 2009 Kentico Software

```
}

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)
{
```

© 2009 Kentico Software

```
    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;
        }
    }
}
```

22.11 Global events and their handling

22.11.1 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" />
```

© 2009 Kentico Software

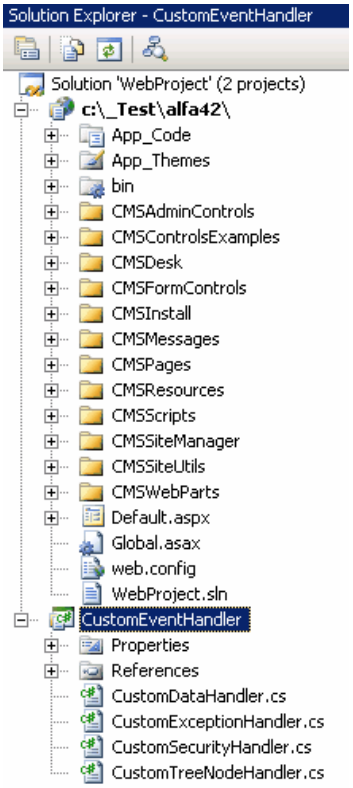
Default event handler library

The default 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" />

How to write your own event handler

1. Copy the **CustomEventHandler** project from Kentico CMS installation (typically C:\Program Files\KenticoCMS\3.x\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:

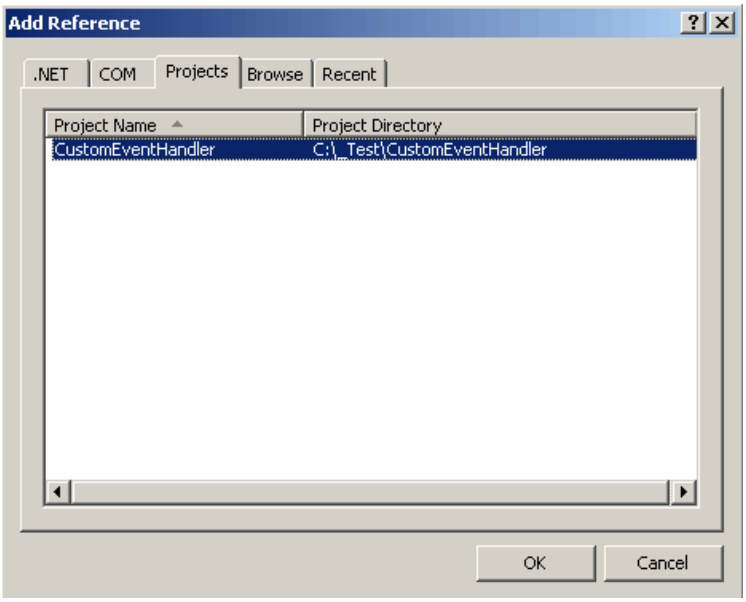


© 2009 Kentico Software

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.EmailEngine.dll
   - CMS.DataEngine.dll
   - CMS.WorkflowEngine.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

© 2009 Kentico Software

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.

22.11.2 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 her 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;
```

© 2009 Kentico Software

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 refference 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.

22.11.3 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#]

© 2009 Kentico Software

```
using CMS.EmailEngine;
```

© 2009 Kentico Software

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.

22.11.4 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.

© 2009 Kentico Software

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;
```

22.11.5 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

© 2009 Kentico Software

- OnBeforeInsertNewCultureVersion
- OnAfterInsertNewCultureVersion

© 2009 Kentico Software

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 you e-mail address.

4. Compile and run the project. Create a new document of type News. You should receive the e-mail message with it 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.

© 2009 Kentico Software

22.11.6 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";
```

© 2009 Kentico Software

```
  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.

© 2009 Kentico Software

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;
```

22.12 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

```
using System;
using CMS.SettingsProvider;

/// <summary>
/// Summary description for SiteRegistration
/// </summary>
public class SiteRegistration : IDataContainer
{
    #region "Variables"
```

© 2009 Kentico Software

```
    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>
```

© 2009 Kentico Software

```
    /// 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;
        }
```

© 2009 Kentico Software

```
    }


    /// <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
```

© 2009 Kentico Software

```
///
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.

```
<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.

© 2009 Kentico Software

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%}
```

22.13 Customizing the administration interface and web application events

This chapter describes how to customize the administration interface and web site functionality in the way which is safe for future system updates and compatible with the import/export functionality.

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

© 2009 Kentico Software

- 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

© 2009 Kentico Software

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;
}
```

© 2009 Kentico Software

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;
    }
```

© 2009 Kentico Software

22.14 Using API and CMS Controls outside CMS project

You can use Kentico CMS API and Kentico CMS Controls also outside the standard CMS web site 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 apllication 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:

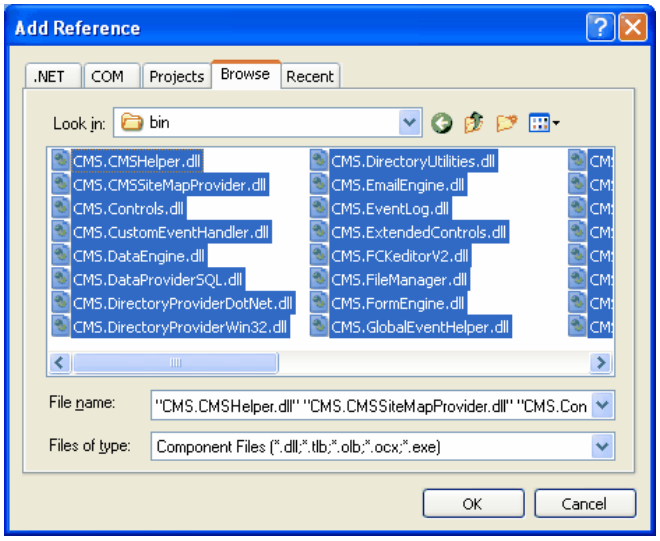
```
<configuration>
       <connectionStrings>
         <add name="CMSConnectionString" connectionString="Persist Security
              Info=False;database=KenticoCMS;server=myserver;user id=sa;
password=mypassword;Current
              Language=English;Connection Timeout=120;" />
```

It's recommended that you copy the exact connection string line from the web.config file of the CMS web project.

© 2009 Kentico Software

Adding a reference to Kentico CMS API libraries

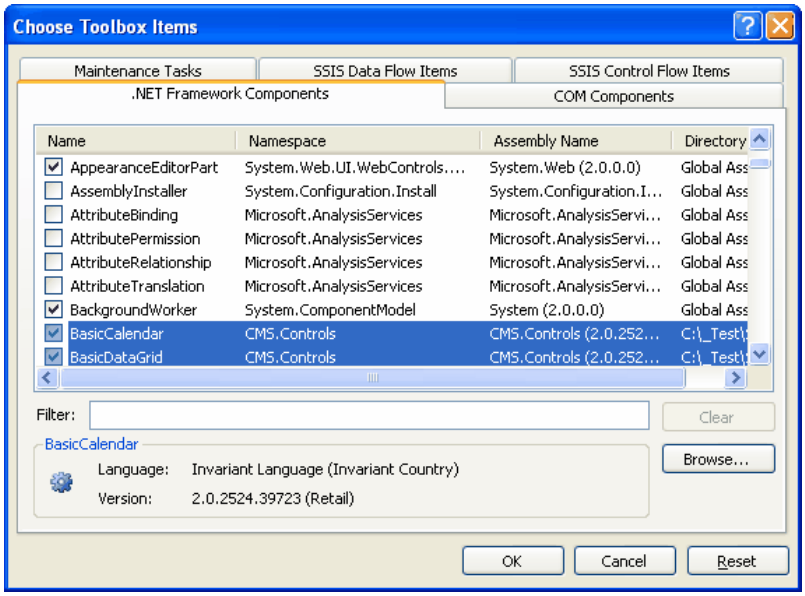
Now we will add a reference to Kentico CMS libraries. Right-click your web project in the **Solution Explorer** and and choose **Add reference...** Choose the **Browse** tab and locate the CMS web project's bin folder. Choose all libraries and click OK:



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.

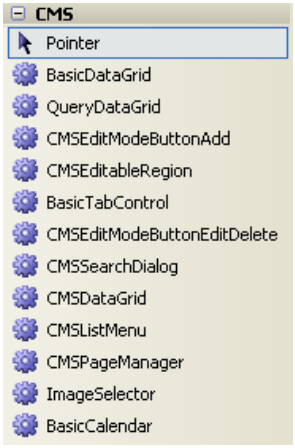
Right-click the new tab and click **Choose Items...** Click **Browse...** and locate the **CMS.Controls.dll** library in the **bin** folder of your application. Click **Open** and click **OK** on the **Choose Toolbox Items** dialog.



© 2009 Kentico Software

© 2009 Kentico Software

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.

© 2009 Kentico Software

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:



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.

© 2009 Kentico Software

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 web site.

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

© 2009 Kentico Software

the `CMSRepeater1.ReloadData(true)` method so that the data is reloaded and the changes are applied.

© 2009 Kentico Software

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
```

© 2009 Kentico Software

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 web site 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.

© 2009 Kentico Software

Part XXII

Import Utilities

23 Import Utilities

23.1 Import overview

Kentico CMS provides two tools for importing content:

- File import module that enables import of bunch of files from disk to the content tree.
- SQL import utility that enables import of data from MSSQL database table as documents to the content tree.

23.2 SQL import

23.2.1 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.

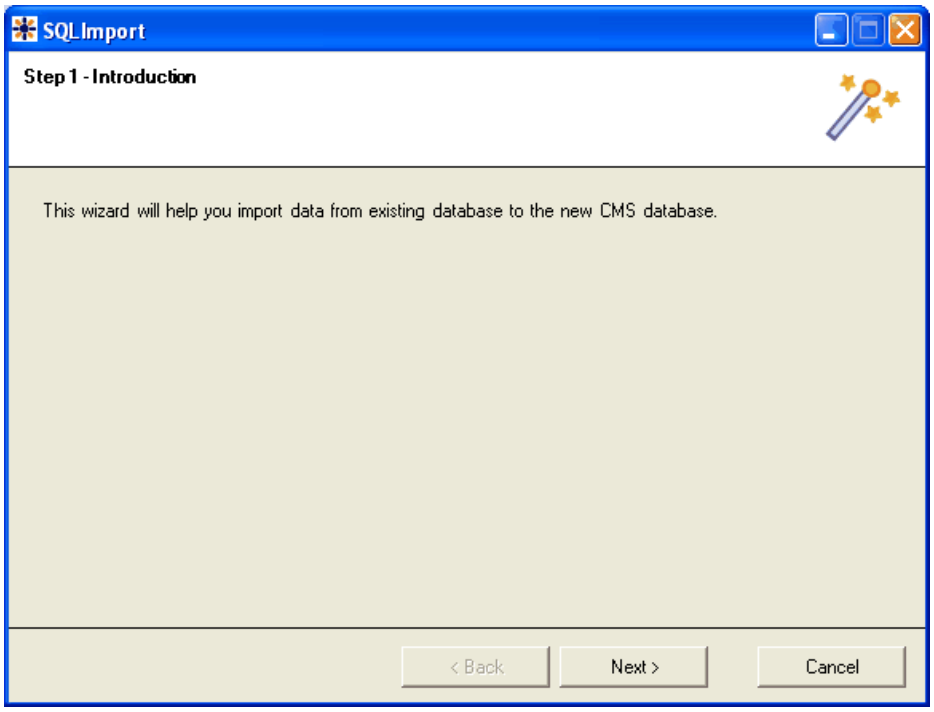
© 2009 Kentico Software

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.	<add name="SourceConnectionString" connectionString="Persist Security Info=False;database=mysourcedb; server=myserver;user id=sa; password=mypassword;Current Language=English;Connection Timeout=120;" />
CMSConnectionString	Connection string to the Kentico CMS database. You can copy this value from the web.config file of your web project.	<add name="CMSConnectionString" connectionString="Persist Security Info=False;database=mycmsdb; server=myserver;user id=sa; password=mypassword;Current Language=English;Connection Timeout=120;" />
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.	<add key="CMSDefaultUserID" value="53" />
ImportFilesDiskPath	The physical disk path to the folder with files to be imported (in case you are importing files together with data).	<add key="ImportFilesDiskPath" value="c:\Temp" />
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]).	<add key="WebApplicationPhysicalPath" value="C:\Website" />

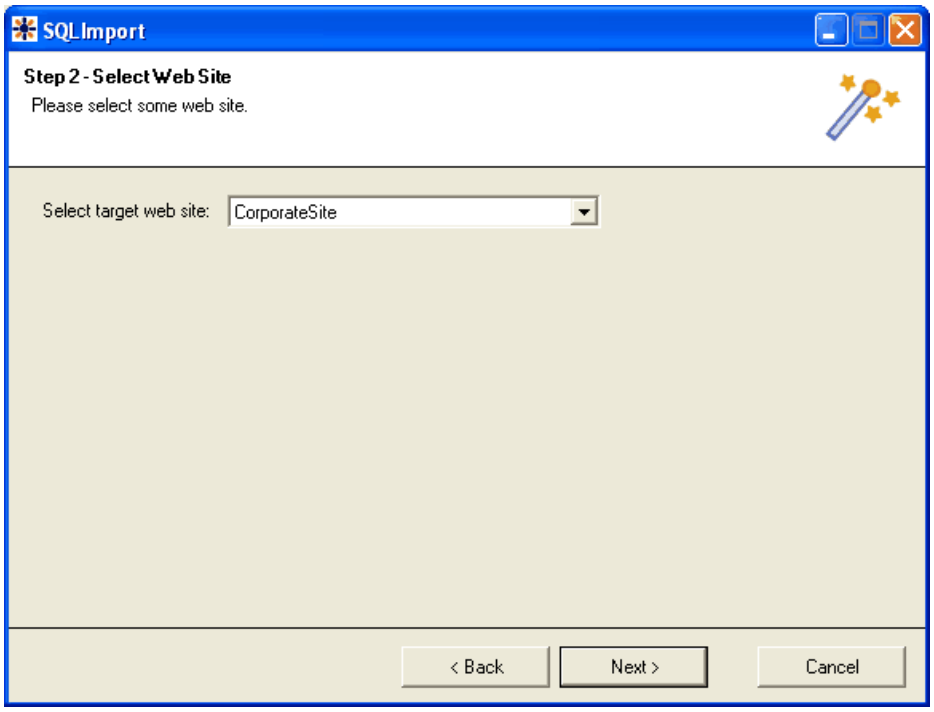
© 2009 Kentico Software

Now you can start the import utility using SQLImport.exe. The import wizard starts:



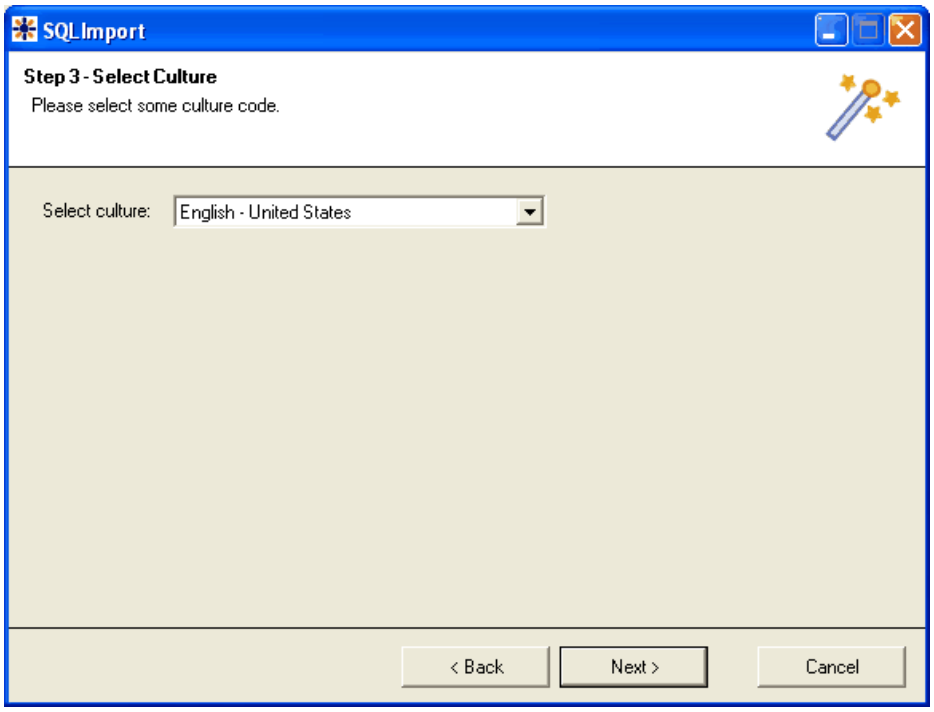
© 2009 Kentico Software

Click **Next**. Select the target web site:



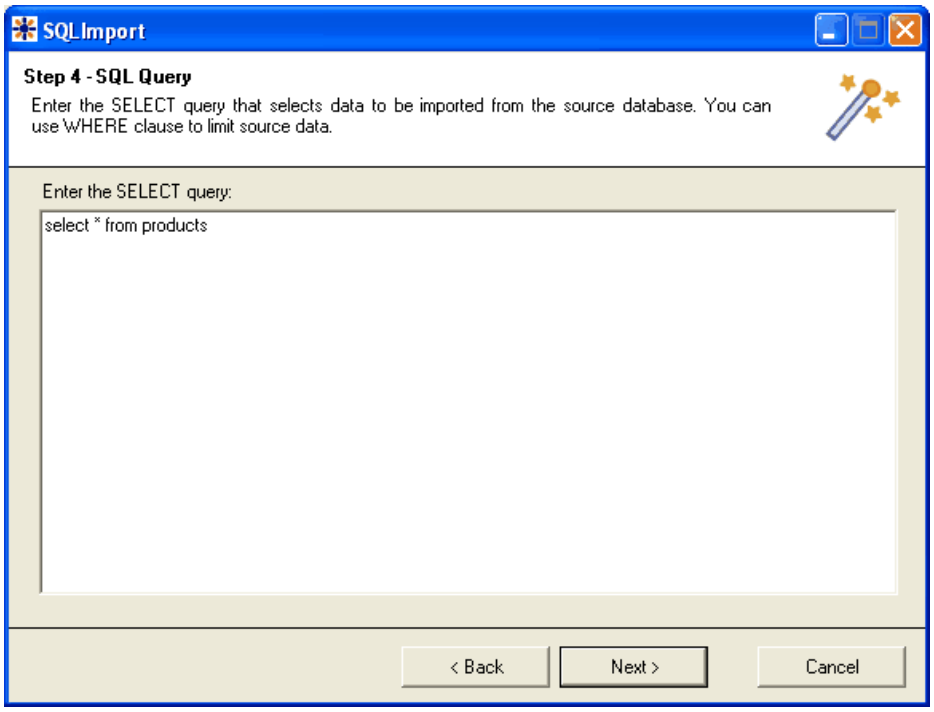
© 2009 Kentico Software

Click **Next**. Select the target content culture:



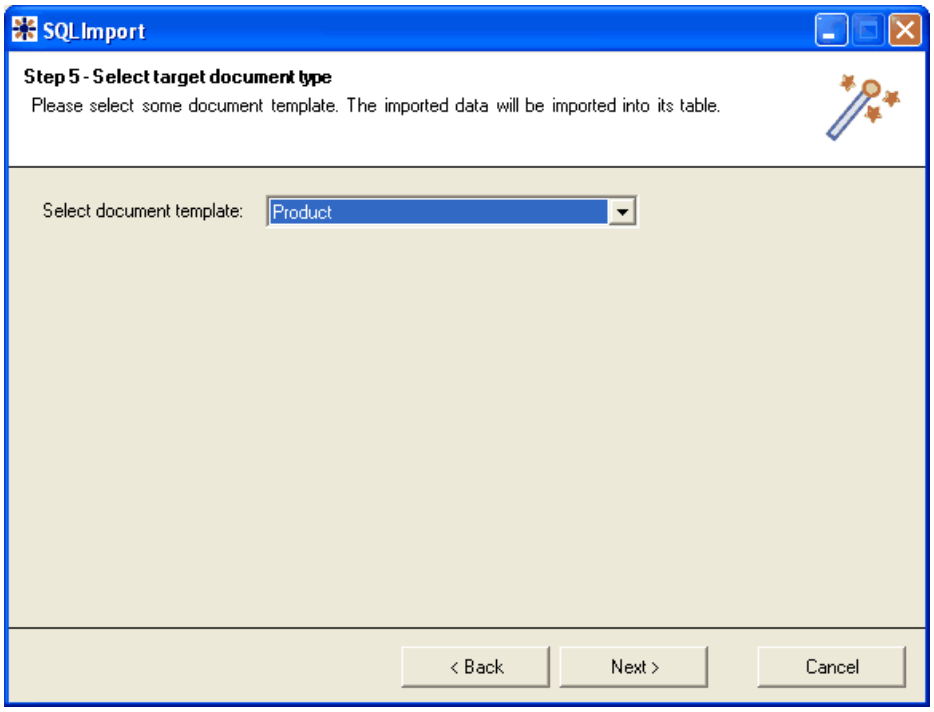
© 2009 Kentico Software

Click **Next**. Enter the SQL query that will return the data to be imported from the source database:



© 2009 Kentico Software

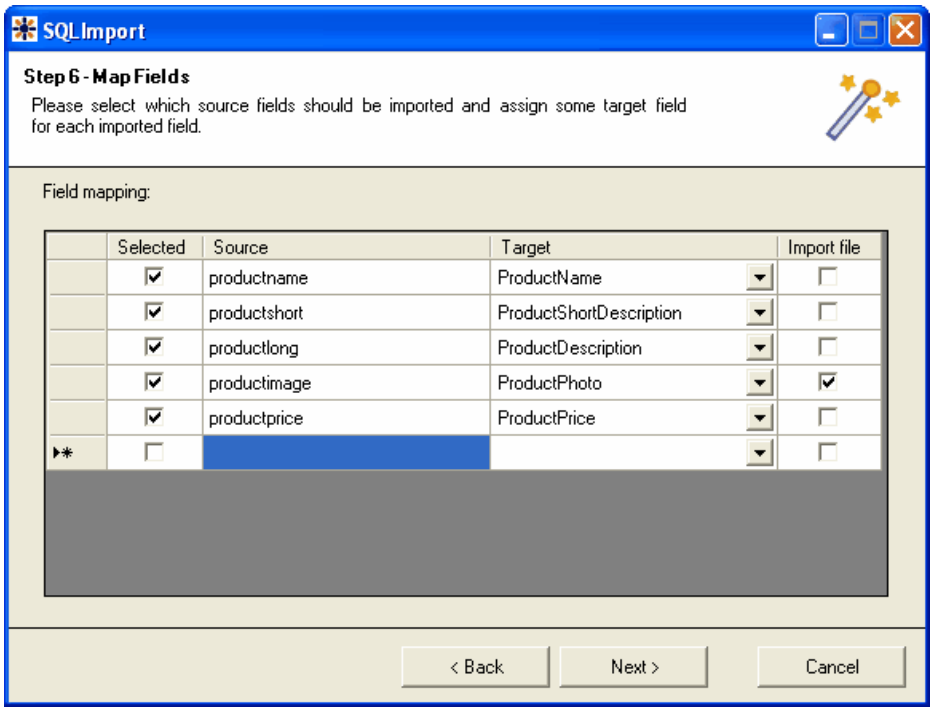
Click **Next**. Select the type of the imported documents.



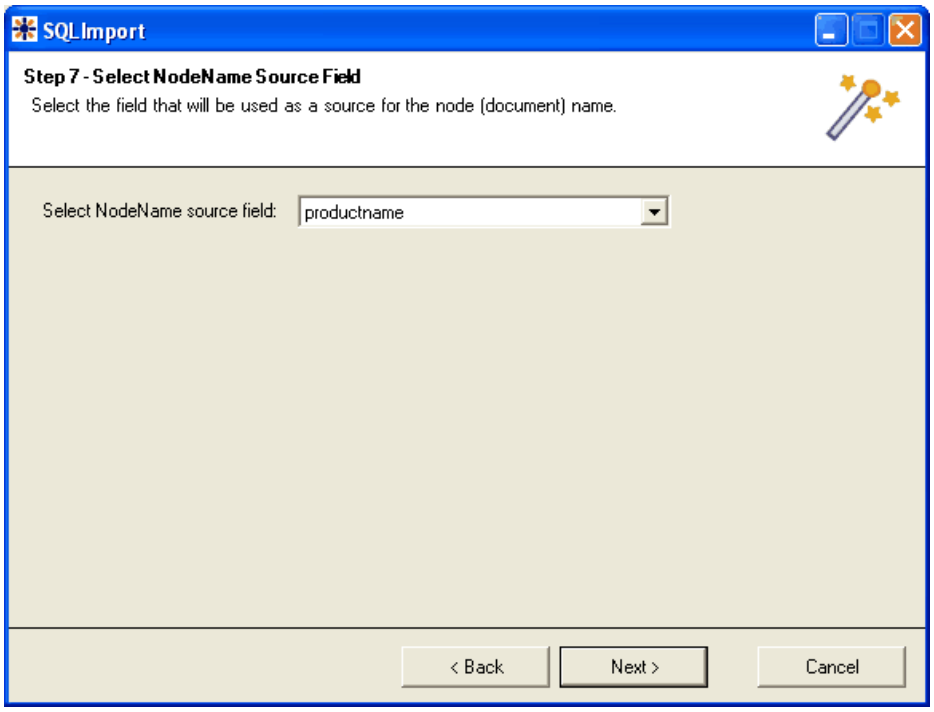
© 2009 Kentico Software

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.

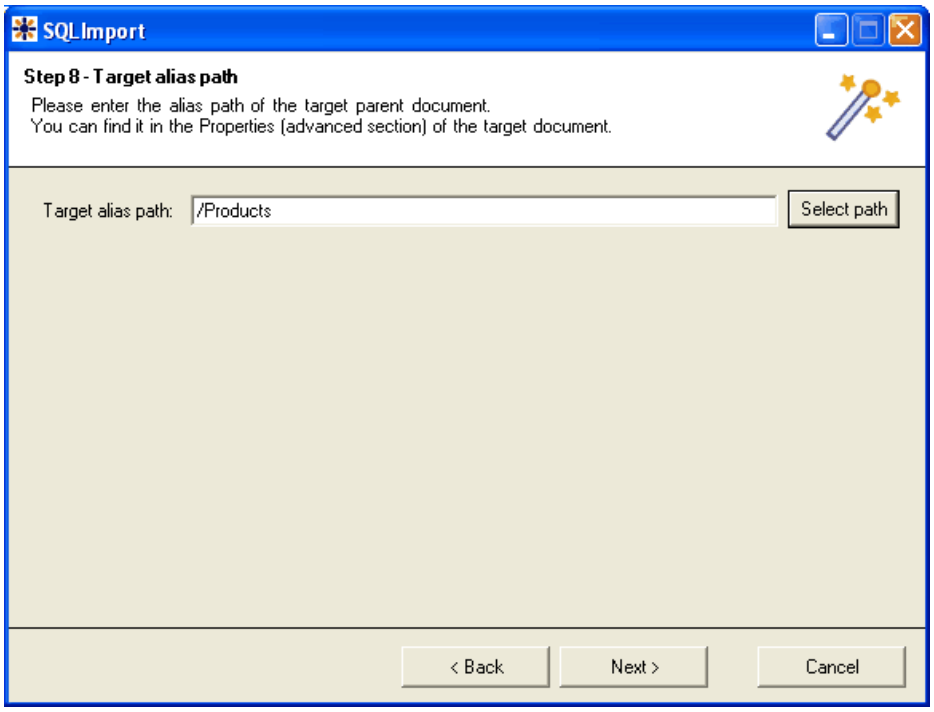


Click **Next**. Select the field that will be used for the name of the document:



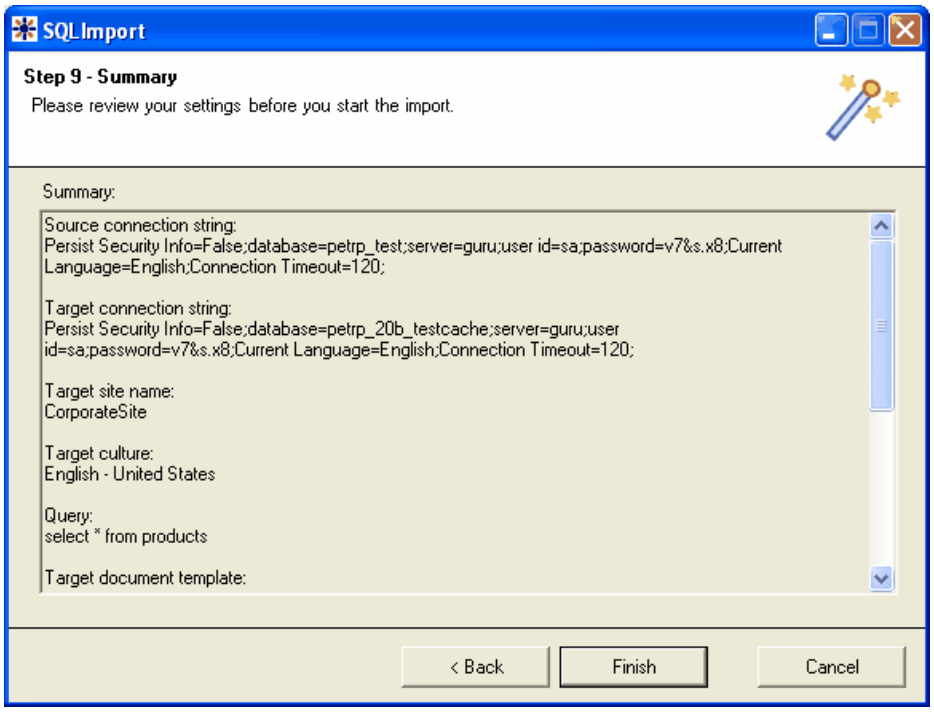
© 2009 Kentico Software

Click **Next**. Select the target alias path where the documents should be imported:



© 2009 Kentico Software

Click **Next**. Review the import settings:



Now the data is imported into Kentico CMS database.

© 2009 Kentico Software

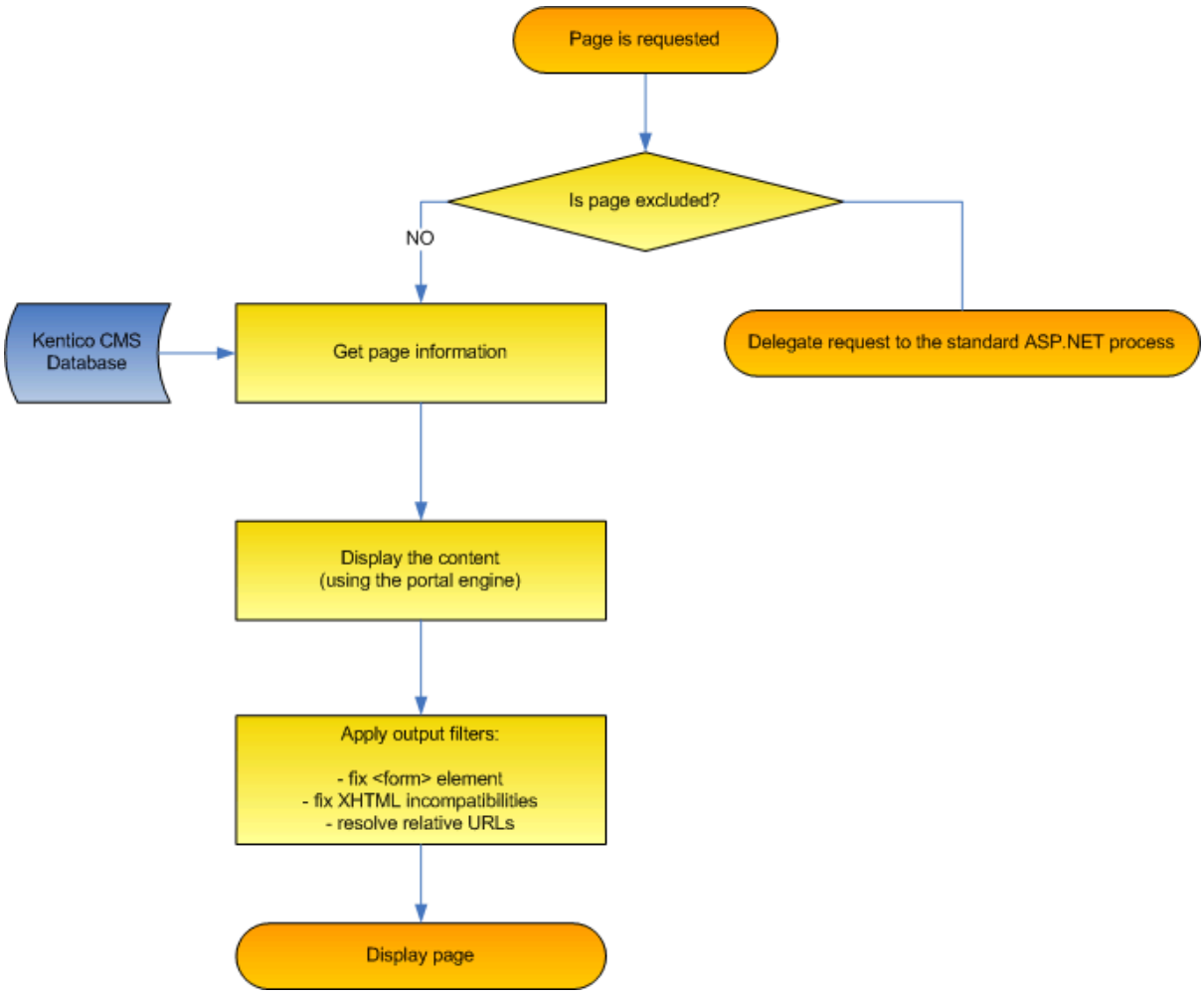
Part XXIV

Page processing and URLs

24 Page processing and URLs

24.1 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:



24.2 URL rewriting

Kentico CMS uses a system of friendly URL addresses. It allows you to use URLs like:

`http://www.mydomain.com/products/kentico-cms.aspx`

instead of

`http://www.mydomain.com/products.aspx?id=527`

© 2009 Kentico Software

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.mydomain.com/products/kentico-cms.aspx`** and looks up the web site based on the domain name (either on the main domain name or domain aliases). If it doesn't find any running web site, 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 -> Web site -> 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=/prodcuts/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 user where she is located on the web site.
- You can easily send the URL of the document to your friend and she will see the same page with particular document.

24.3 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 web site; if **Media** is the value, then **<domain>/Media.aspx** is the URL under that 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**

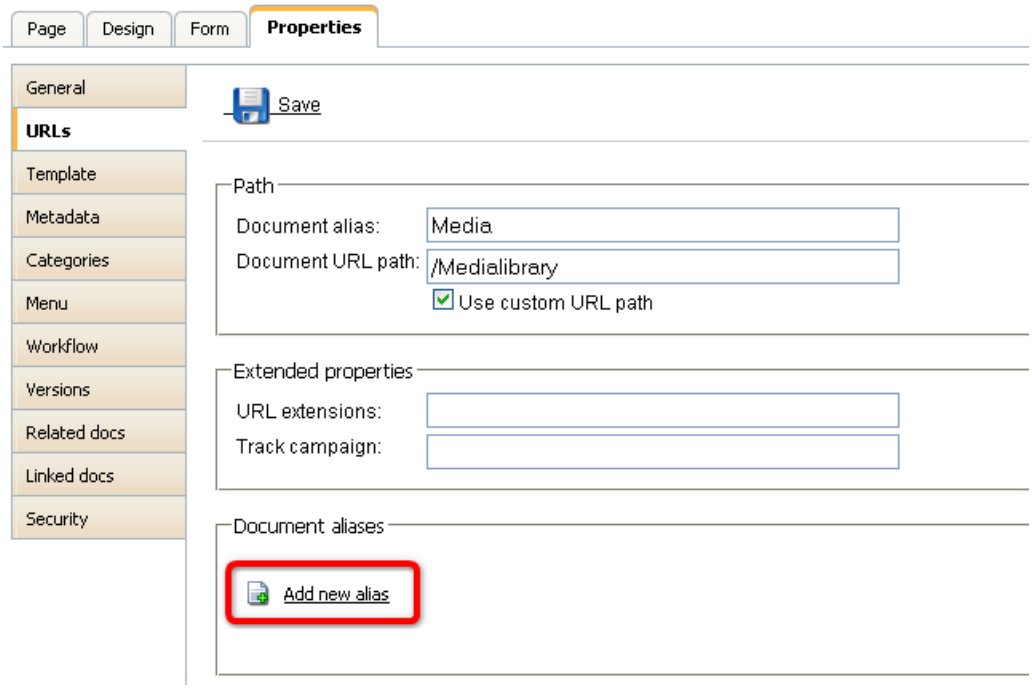
Kentico CMS 4.0 brings the possibility of having an unlimited number of aliases for each document.

© 2009 Kentico Software

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.

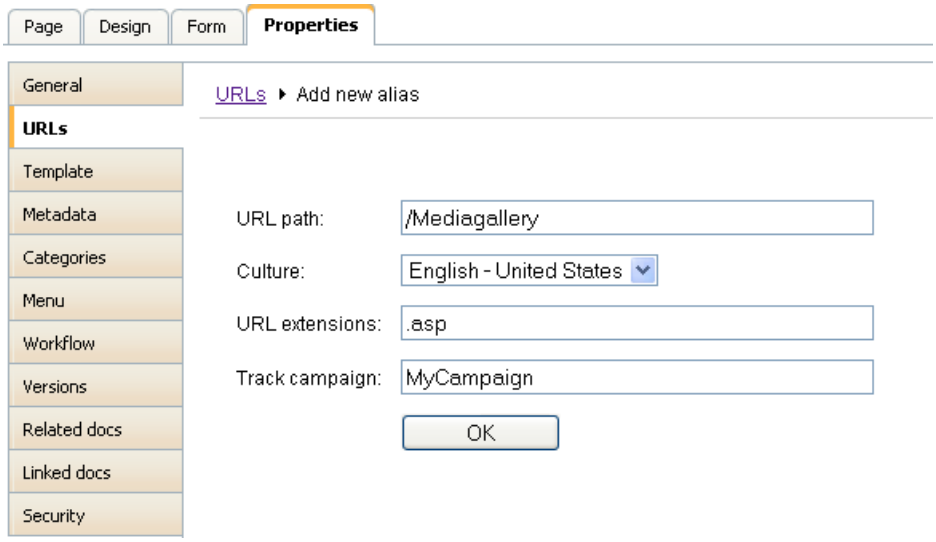
2. Click the **Add new alias** link in the **Document aliases** section.



© 2009 Kentico Software

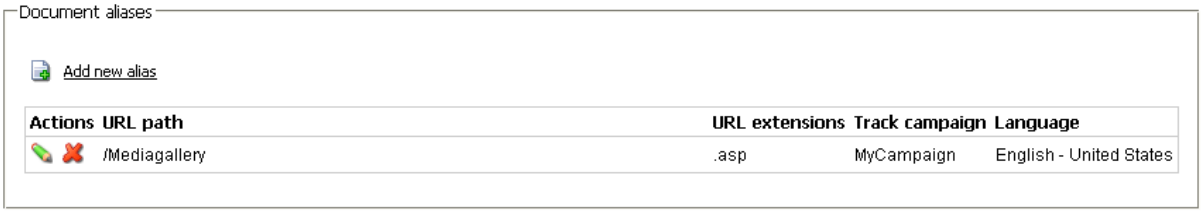
3. Enter the following details:

- **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



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.



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.

© 2009 Kentico Software

24.4 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.mydomain.com/products/kentico-cms.aspx`.

You can also use **custom extensions**, such as `.htm`, `.html` or any custom extension. However, in this case, you need to configure the system as described in Configuration of custom URL extensions.

Alternatively, you can use **URLs without extensions**, such as `http://www.mydomain.com/products/kentico-cms`. In this case, you need to configure the system as described in Configuration of extension-less URLs.

Excluding URLs from the CMS engine

If you need to add your own pages to the web site, 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 -> 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 -> 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 -> 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 -> Default Url Path Prefix** value.
The URLs will then look like this: `http://www.mydomain.com/myprefix/products/kentico-cms.aspx`.

Automatic creation of new document aliases

If you check the **Site Manager -> Settings -> URLs -> Remeber original URLs when moving documents** check-box, new document aliases will be automatically created when a new extension or URL path is set.

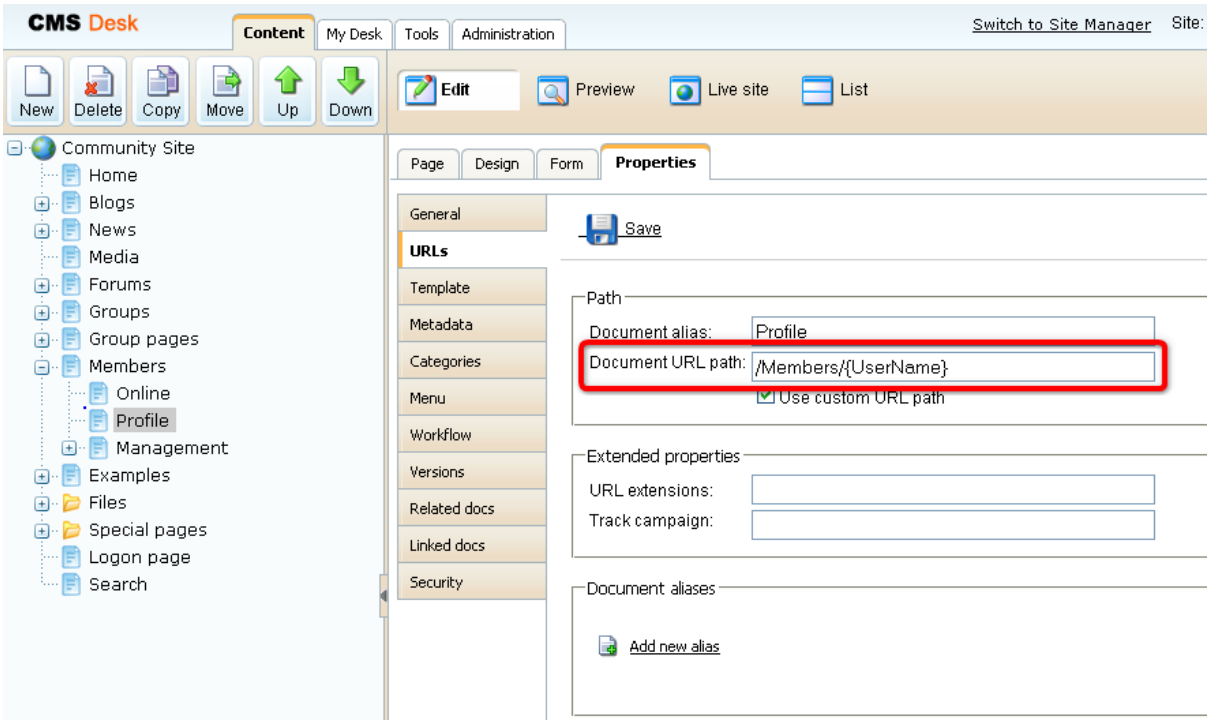
© 2009 Kentico Software

24.5 Wildcard URLs

Wildcard URLs

Wildcard URLs are one of the new features in Kentico CMS 4.0. 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

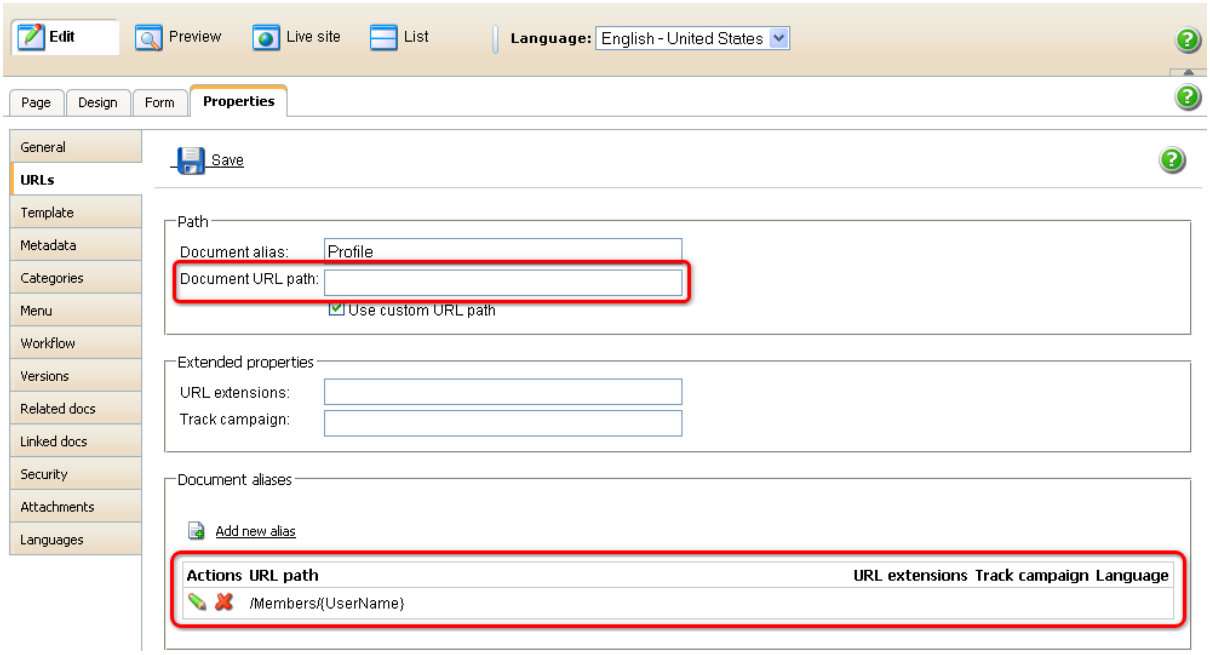
The **Document URL path** is unique for each language version of a document. Because of this fact, you may encounter problems when referring to a page using a wildcard URL on multi-lingual sites. Let's explain the situation using the following example:

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

© 2009 Kentico Software

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:



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,

© 2009 Kentico Software

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.

24.6 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.mydomain.com/getdoc/016fad52-0d69-46d5-80dc-daec9173c0c7/Products.aspx
```

It's an equivalent of

```
http://www.mydomain.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.mydomain.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.mydomain.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.mydomain.com/getattachment/763c8921-be94-4610-99b4-25e8d3be5b08/logo.aspx

The URL consists of the following parts:
`<domain>/getattachment/<file GUID>/<filename><extension>`

© 2009 Kentico Software

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

24.7 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
maxsidesize	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

24.8 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 (;).

© 2009 Kentico Software

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 (;).

24.9 URLs related settings

URLs related settings can be performed in **Site Manager -> Settings -> URLs**. The following table enumerates the settings and provides explanations 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: `' \ /:*? " <>|&%.'#[]+ =`.
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 extension of friendly URLs. The extension with dot should be entered, such as: *.aspx* or *.html*. When you omit this value, the friendly URLs will be the same as the alias path (e.g. '`/products/nokia`'). **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 friendly to search engines (SEO friendly). They show user where she is located on the web site. You can easily send the URL of the document to your friend and she will see the same page with particular document.
Files friendly URL extension	Specifies extension of files friendly URLs that will be used, such as ".aspx" or ".html". Example: getfile/<node alias>/myimage.gif.aspx When you ommit this value, the files friendly URLs will end with image extenstion: getfile/<node alias>/myimage.gif
Excluded URLs	List of URLs (without domain) that should be excluded from the CMS engine. You can enter several paths separated by semicolon (;).

© 2009 Kentico Software

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 'urlpathprefix' query string parameter.
Use name path for URL path	If checked, this key indicates that name path should be automatically copied to the 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
Remeber original URLs when moving documents	Determines if new document aliases should be created when 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 ~/CMSPages/GoogleSiteMap.aspx.

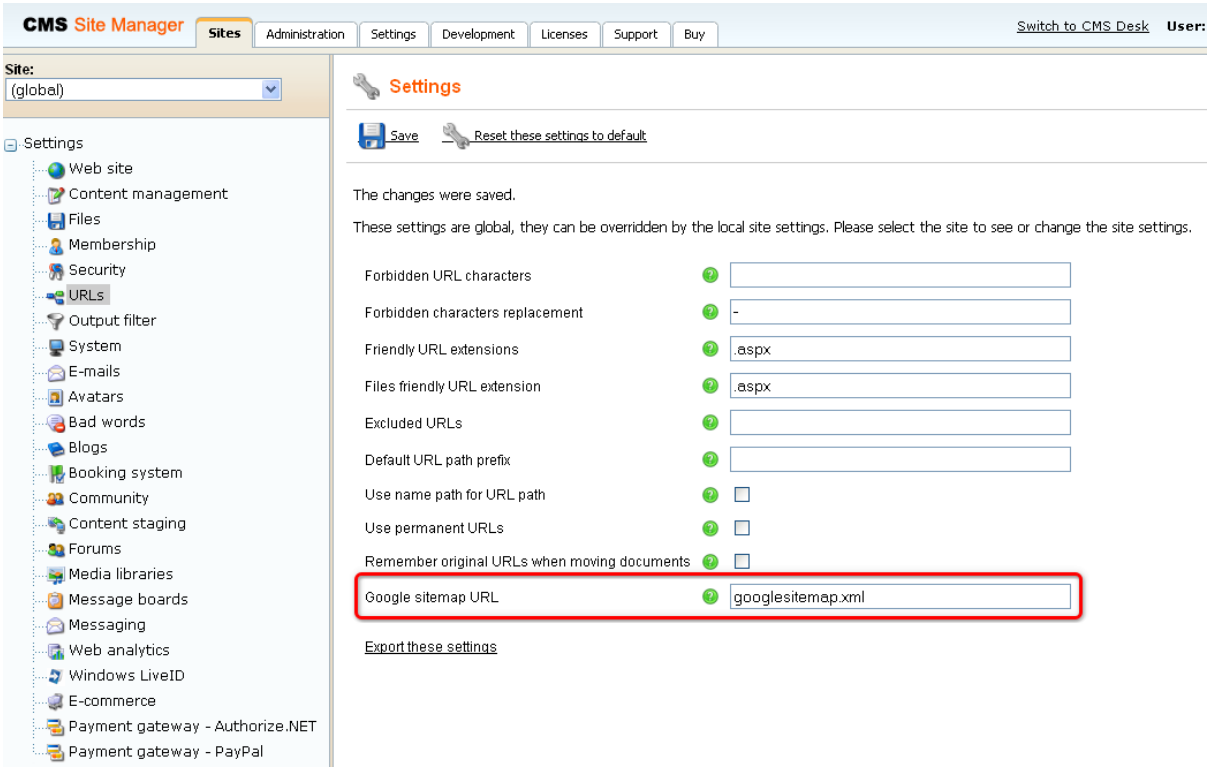
24.10 Google Sitemap

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 https://www.google.com/webmasters/tools/docs/en/protocol.html.

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 throught *<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.

© 2009 Kentico Software



© 2009 Kentico Software

Part XXV

System tables and custom fields

25 System tables and custom fields

25.1 System tables

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.

25.2 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";
```

© 2009 Kentico Software

Part



Site settings and web.config parameters

26 Site settings and web.config parameters

26.1 Settings overview

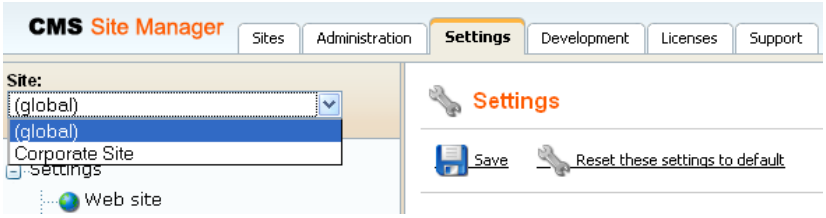
Kentico CMS settings are stored in two places:

- **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 the Web.config parameters chapter.

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 web site in the drop-down list in the upper left corner



The site-specific settings may inherit global values:



Settings are organized in the following categories:

- **Web site** - general web site settings
- **Content management** - settings related content management of your web site
- **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** - settings related to URLs, URL extensions, forbidden characters in URLs, 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

© 2009 Kentico Software

- **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.

26.2 Web.config parameters

The system settings include appSettings keys and other settings, such as connection string placed in appropriate sections of the web.config file.

appSettings keys

appSettings keys are stored in section **/configuration/appSettings**.

Key	Description	Sample Value
CMSDirectoryProviderAssembly	Name of the assembly that should be used for operations in the file system. You can choose from the following options: • **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.	<add key="CMSDirectoryProviderAssembly" value="CMS.DirectoryProviderDotNet" /> or <add key="CMSDirectoryProviderAssembly" value="CMS.DirectoryProviderWin32" />
CMSProgrammingLanguage	Indicates the programming language used in transformations and in custom code added to web parts. The default value is C#.	<add key="CMSProgrammingLanguage" value="C#" /> or <add key="CMSProgrammingLanguage" value="VB" />

© 2009 Kentico Software

CMSSearchProviderAssembly	Name of the assembly that is used for full-text search. The default assembly is CMS.SearchProviderSQL.	<add key="CMSSearchProviderAssembly" value="CMS.SearchProviderSQL" />
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.	<add key="CMSStagingAcceptAllCertificates" value="true" />
CMSTrialKey	Contains a temporary trial license key. You can remove this value after installation.	
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.	<add key="CMSUseAutomaticScheduler" value="false" />
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.	<add key="CMSRunSchedulerWithinRequest " value="false" />
CMSSchedulerURL	URL of the physical location of the scheduler.aspx page. The default value is ~/cmspages/scheduler.aspx.	<add key="CMSSchedulerURL" value="https://domain/cmspages/scheduler.aspx" />
CMSSchedulerAcceptAllCertificates	If true, all security certificates (including not valid ones) will be accepted when accessing the scheduler.aspx page via a secured protocol.	<add key="CMSSchedulerAcceptAllCertificates" value="true" />
CMSSchedulerUserName	User name under which scheduler.aspx should be accessed (e.g. when using windows authentication).	<add key="CMSSchedulerUserName " value="office/myname" />
CMSSchedulerPassword	Password for the user name under which scheduler.aspx should be accessed.	<add key="CMSSchedulerPassword" value="mypassword123" />
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.	<add key="CMSUseCustomHandlers " value="true" />
CMSWebFarmServerName	Code name of the web farm server. This	<add

© 2009 Kentico Software

	value is used for native web farm synchronization support.	key="CMSWebFarmServerName" value="server1" />
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.	<add key="CMSWYSIWYGFixXHTML" value="true" />
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.	<add key="CMSUseIFrameForHTMLEditorToolbar" value="true" />
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.	<add key="CMSUseVirtualPathProvider" value="false" />
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.	<add key="CMSDefaultSpellCheckerCulture" value="en-US" />
CMSShowLogonCultureSelector	Indicates if the user interface logon page should display a drop-down list with available user interface languages.	<add key="CMSShowLogonCultureSelector" value="false" />
CMSShowWebPartCodeTab	Indicates if the Code tab is displayed in web part properties dialog in CMS Desk. This parameter can be used for backward compatibility purposes. Otherwise, using the Code tab is now obsolete.	<add key="CMSShowWebPartCodeTab" value="true" />
CMSShowWebPartBindingTab	Indicates if the Binding tab is displayed in web part properties dialog in CMS Desk. This parameter can be used for backward compatibility purposes. Otherwise, using the Binding tab is now obsolete.	<add key="CMSShowWebPartBindingTab" value="true"/>
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.	<add key="CMSShoppingCartExpirationPeriod" value="60" />
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.	<add key="CMSUseCurrentSKUData" value="true"/>
CMSFullClientCache	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-	<add key="CMSFullClientCache" value="true"/>

© 2009 Kentico Software

	live-site mode, as changes made to the pages would not be displayed due to the caching.	
CMSRenderGeneratorName	Indicates if the 'generator' meta tag stating that the page was generated by Kentico CMS is generated in the header of each page. The default value is "false".	<add key="CMSRenderGeneratorName" value="true"/>
CMSClearFieldEditor	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.	<add key="CMSClearFieldEditor" value="true"/>
CMSShowTemplateASPXTab	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.	<add key="CMSShowTemplateASPXTab" value="true"/>
CMSDatabaseCulture	Specifies the default culture of the system's database.	<add key="CMSDatabaseCulture" value="en-us"/>
CMSDataProviderAssembly	Specifies custom data provider assembly used as the database connector for the CMS. See this topic for more details.	<add key="CMSDataProviderAssembly" value="CMS.CustomDataProvider"/>
CMSWebFarmEnabled	Indicates if Web farms are enabled (true) or not (false). See this topic for more details.	<add key="CMSWebFarmEnabled" value="true"/>
CMSDisposeConnectionAfterClose	If true, database connection is automatically disposed (allocated resources released) when a database connection is closed.	<add key="CMSDisposeConnectionAfterClose" value="true"/>
CMSUseSessionCookies	Indicates if session cookies are used or not.	<add key="CMSUseSessionCookies" value="true"/>
CMSImportWindowsRoles	When Windows authentication is used and this key set to true, roles available in the Active Directory will be imported into the system.	<add key="CMSImportWindowsRoles" value="true"/>
CMSDefaultUICulture	Specifies the default UI culture.	<add key="CMSDefaultUICulture" value="en-us"/>
CMSFileScriptTimeout	The maximum number of seconds a script can run before the server terminates it.	<add key="CMSFileScriptTimeout" value="7200"/>
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.	<add key="CMSUseExtensionOnPostback" value="true"/>

© 2009 Kentico Software

CMSUseSQLResourceManager	If true, SQL Resource manager is used to retrieve strings used in the user interface.	<add key="CMSUseSQLResourceManager" value="true"/>
CMSLoadHTMLEditorByIFrame	If true, the WYSIWYG editor is loaded in an iFrame.	<add key="CMSLoadHTMLEditorByIFrame" value="true"/>
CMSUseFrameForHTMLEditorToolbar	Indicates if HTML frame is used for the WYSIWYG editor toolbar.	<add key="CMSUseFrameForHTMLEditorToolbar" value="true"/>
CMSAllowCheckIOPermissions	If true, write permissions on the site folder are checked when necessary and produce an error message when are insufficient.	<add key="CMSAllowCheckIOPermissions" value="true"/>
CMSEmailTransferEnconding	Specifies the type of encoding used for e-mails sent from the CMS.	<add key="CMSEmailTransferEnconding" value="TransferEncoding. Unknown (-1)"/>
CMSEmailProviderAssembly	Specifies custom email provider assembly. Read this topic for more information.	<add key="CMSEmailProviderAssembly' value="CMS. CustomEmailProvider"/>
CMSCheckParameters	Indicates if parameters checking is allowed. Read this topic for more details.	<add key="CMSCheckParameters" value="true"/>
CMSReportCheckParameters	If true, exception reporting the parameters is thrown when the parameters do not match. Read this topic for more details.	<add key="CMSReportCheckParameters" value="true"/>
CMSLogEvents	Indicates if logging events in the Event log is enabled.	<add key="CMSLogEvents" value="true"/>
CMSLogMetadata	Indicates if logging of metadata events in the Event log is enabled.	<add key="CMSLogMetadata" value="true"/>
CMSLogKeepPercent	Coefficient for Event log deletion, keeps the specified percentage of log items alive and deletes the log by batch when the set percentage is exceeded.	<add key="CMSLogKeepPercent" value="10"/>
CMSCustomHandlersAssembly	Specifies custom event handler assembly. Read this topic for more information.	<add key="CMSCustomHandlersAssembly" value="CMS. CustomEventHandler"/>
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.	<add key="CMSWorkflowSendEmailToModerator" value="true"/>
CMSControlElement	If present in the web.config, the tag entered in the value will be used instead of the SPAN tag when generating pages.	<add key="CMSControlElement" value="div"/>
CMSUseParsedSelfClose	Indicates if parsed self closing tags operations (faster) are used instead of standard self close filter.	<add key="CMSUseParsedSelfClose" value="true"/>

© 2009 Kentico Software

CMSEnableOrderItemEditing	If true, order item parameters, such as order item name and order item unit price, can be modified when editing an existing order.	<add key="CMSEnableOrderItemEditing" value="true"/>
CMSUseMetaFileForProductImage	Indicates if meta files should be used for product images in E-commerce.	<add key="CMSUseMetaFileForProductImage" value="true"/>
CMSUseCustomEcommerceProviders	Specifies whether to use custom E-commerce provider handlers. See this topic for more details.	<add key="CMSUseCustomEcommerceProviders" value="true"/>
CMSCustomEcommerceProviderAssembly	Specifies the custom e-commerce provider assembly. See this topic for more details.	<add key="CMSCustomEcommerceProviderAssembly" value="CMS.CustomECommerceProvider"/>
CMSVirtualPathProviderAssembly	Specifies the Custom virtual path provider assembly. See this topic for more details.	<add key="CMSVirtualPathProviderAssembly" value="CMS.CustomVirtualPathProvider"/>
CMSGetFileEndRequest	If true, ApplicationInstance.CompleteRequest() is used instead of Response.End() in the CompleteRequest method.	<add key="CMSGetFileEndRequest" value="true"/>
CMSLogEventsToFile	If true, events are also logged into the ~\App_data\logevents.log file.	<add key="CMSLogEventsToFile" value="true"/>
CMSUseSQLResourceManagerAsPrimary	Changes the priority of used localization resource strings to: 1. custom.resx 2. cms.resx 3. database (Site Manager -> Development -> UI Cultures)	<add key="CMSUseSQLResourceManagerAsPrimary" value="false" />
FCKeditor:BasePath	Specifies where the location of FCK (WYSIWYG) editor. By default, it is located in ~\CMSAdminControls\FCKeditor.	<add key="FCKeditor:BasePath" value="/FCKeditor/"/>
FCKEditor:UserFilesPath	Specifies path to user files.	<add key="FCKEditor:UserFilesPath" value="/UserFiles/"/>
CMSDefaultUserID	Specifies default user ID.	<add key="CMSDefaultUserID" value="53"/>
ImportFilesDiskPath	Specifies path to attachments that should be attached to documents imported via the SQL Import windows application.	<add key="ImportFilesDiskPath" value="C:\Temp"/>
UICulture	Specifies the default user interface culture. En-us is the default one, which can be overridden by adding this key.	<add key="UICulture" value="en-us"/>
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	<add key="CMSDeleteTemporaryAttachmentsOlderThan" value="12" />

© 2009 Kentico Software

	the entered value will be deleted when the scheduled task is executed.	
CMSExportExcludedFolders	Specifies which folders will be filtered from being included in Files folder of the export package. More info here.	<add key="CMSExportExcludedFolders" value="test*;cms*" />
CMSExportExcludedFiles	Specifies which files will be filtered from being included in the Files folder of the export package. More info here.	<add key="CMSExportExcludedFiles" value="test*;cms*" />
CMSEnsureSafeUserNames	Indicates if forbidden characters in user and 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 users and roles imported with forbidden characters. Therefore, it is NOT RECOMMENDED to turn it off.	<add key="CMSEnsureSafeUserNames" value="false" />
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.	<add key="CMSForbiddenUserNameCharactersReplacement" value="-" />
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.	<add key="CMSForbiddenRoleNameCharactersReplacement" value="-" />
CMSAllowGZip	Enables Gzip compression of output HTML code.	<add key="CMSAllowGZip" value="true" />
CMSLanguageParameterName	Changes the name of the 'lang' querystring parameter so that you get *Home?sprache=de-de* instead of *Home?lang=de-de*.	<add key="CMSLanguageParameterName" value="sprache" />
CMSAliasPathParameterName	Changes the name of the 'aliaspath' querystring parameter so that you get *products.aspx?ap=/products/myproduct* instead of *products.aspx?aliaspath=/products/myproduct*.	<add key="CMSAliasPathParameterName" value="ap" />
CMSDisableAdministrationInterface	Disables the administration interface. The 'Access denied' screen is displayed on each attempt to access CMS Desk or Site Manager.	<add key="CMSDisableAdministrationInterface" value="true"/>

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:

© 2009 Kentico Software

Key	Description	Sample Value
CMSTransactionIsolationLevel	Isolation level for explicit transactions.	<add key="CMSTransactionIsolationLevel" value="ReadCommitted" />
CMSDefaultIsolationLevel	Isolation level for all queries, even without transactions. It's used only if the value is not ReadCommitted. The settings below modify the behavior for ReadUncommitted.	<add key="CMSDefaultIsolationLevel" value="ReadUncommitted" />
CMSUseDefaultIsolationLevelOnlyWithOpenTransactions	If true, the default isolation level is used only when some transaction is already running.	<add key="CMSUseDefaultIsolationLevelOnlyWithOpenTransactions" value="true" />
CMSAllowSimultaneousTransactions	If false, there can be only one transaction running at the same time.	<add key="CMSAllowSimultaneousTransactions" value="true" />
CMSMaxTransactionWaitTimeout	Indicates how many seconds a transaction should wait for completion of another running transaction if simultaneous transactions are not allowed.	<add key="CMSMaxTransactionWaitTimeout" value="1" />

Special settings for file synchronization on web farms

By adding the following keys to your web.config, you can enable or disable synchronization of certain kind of files stored in the file system.

Key	Description	Sample Value
CMSWebFarmSynchronizeFiles	General key determining if files should be synchronized (true) or not (false).	<add key="CMSWebFarmSynchronizeFiles" value="true" />
CMSWebFarmSynchronizeAttachments	Enables/disables synchronization of atachments.	<add key="CMSWebFarmSynchronizeAttachments" value="true" />
CMSWebFarmSynchronizeMetaFiles	Enables/disables synchronization of meta files.	<add key="CMSWebFarmSynchronizeMetaFiles" value="true" />
CMSWebFarmSynchronizeMediaFiles	Enables/disables synchronization of media files.	<add key="CMSWebFarmSynchronizeMediaFiles" value="true" />
CMSWebFarmSynchronizeBizFormFiles	Enables/disables synchronization of BizForm files.	<add key="CMSWebFarmSynchronizeBizFormFiles" value="true" />
CMSWebFarmSynchronizeAvat	Enables/disables synchronization of	<add

© 2009 Kentico Software

ars	Avatars.	key="CMSWebFarmSynchronizeAvatars" value="true" />
CMSWebFarmSynchronizeForumAttachments	Enables/disables synchronization of forum attachments.	<add key="CMSWebFarmSynchronizeForumAttachments" value="true" />
CMSWebFarmSynchronizeDeleteFiles	Enables/disables synchronization of deleted files.	<add key="CMSWebFarmSynchronizeDeleteFiles" value="true" />

Connection string

The database used by Kentico CMS engine is specified by the connection string CMSConnectionString in the **/configuration/connectionStrings** section. Here's an example of such connection string:

```
<add name="CMSConnectionString" connectionString="Persist Security Info=False;
database=CMS;server=myserver;user id=sa;password=mypassword123;Current
Language=English;Connection Timeout=120;" />
```

© 2009 Kentico Software

Part XXVI

E-mail templates

27 E-mail templates

27.1 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>
```

© 2009 Kentico Software

```
            <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%}**.

© 2009 Kentico Software

Part

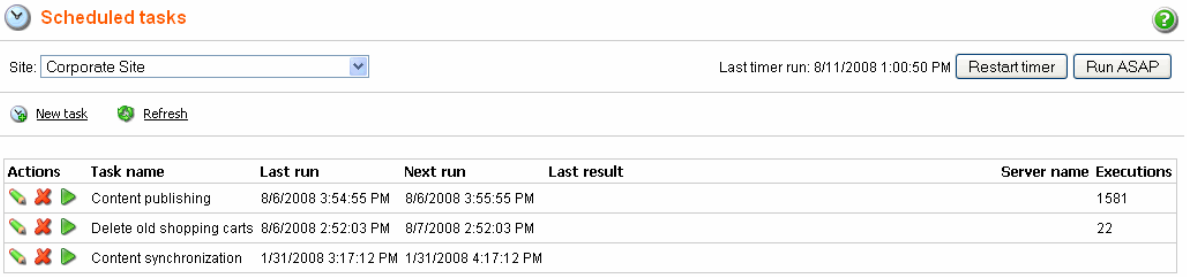


Scheduler

28 Scheduler

28.1 Scheduler 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**.



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 web site is not running. This happens when the process is recycled without being started again (after a long period of web site 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 web site is always running. You can do that by using some utility or an external service that requests the home page of your web site on a regular basis.

© 2009 Kentico Software

28.2 Scheduling a custom code

The process of scheduling includes two steps: writing code to perform required action and creating 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.

© 2009 Kentico Software

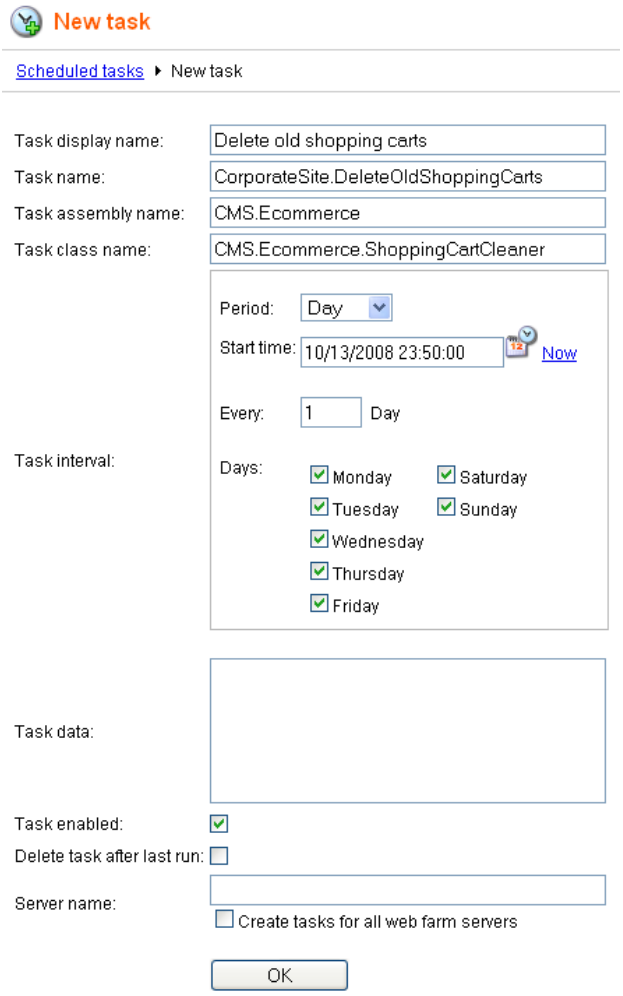
Creating a new task

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.

© 2009 Kentico Software



© 2009 Kentico Software

Part XXIX

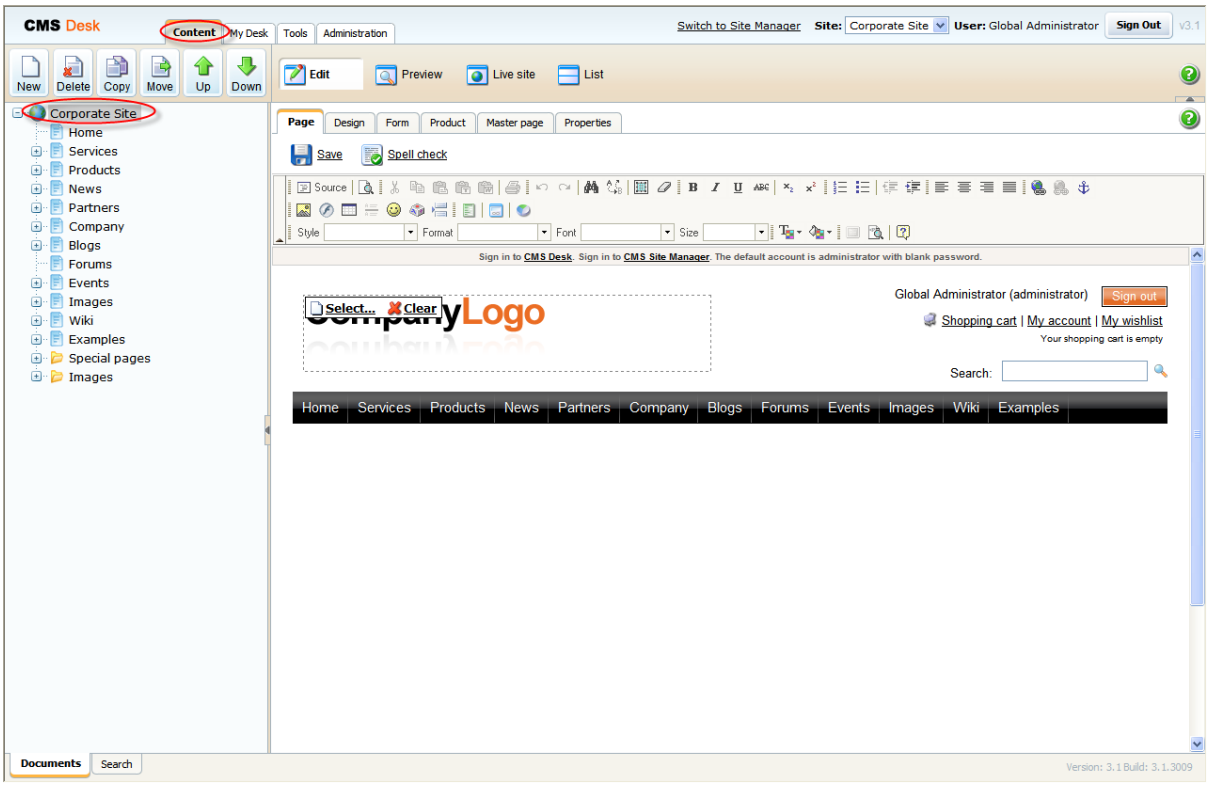
Rebranding

29 Rebranding

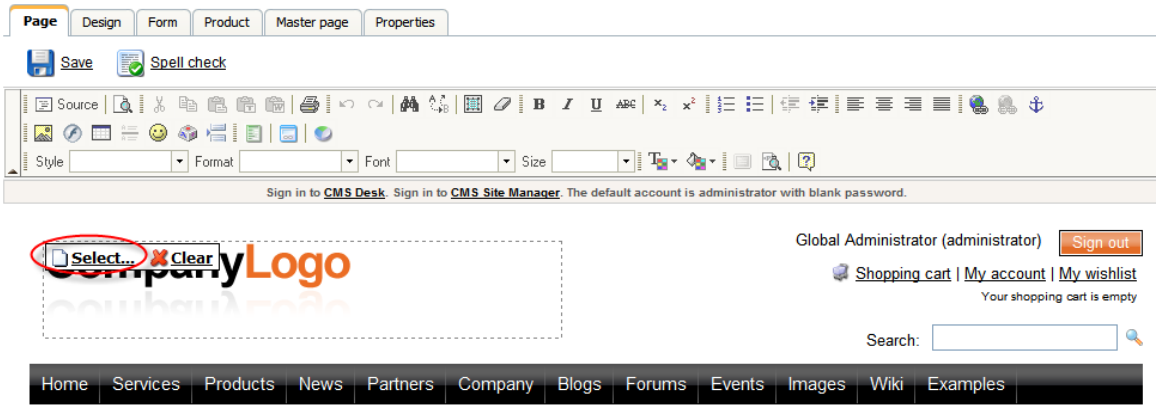
29.1 How to rebrand Kentico CMS with your name and design

29.1.1 Changing a logo in the header

1. Go to **CMS Desk** -> **Content** -> **Corporate Site**.

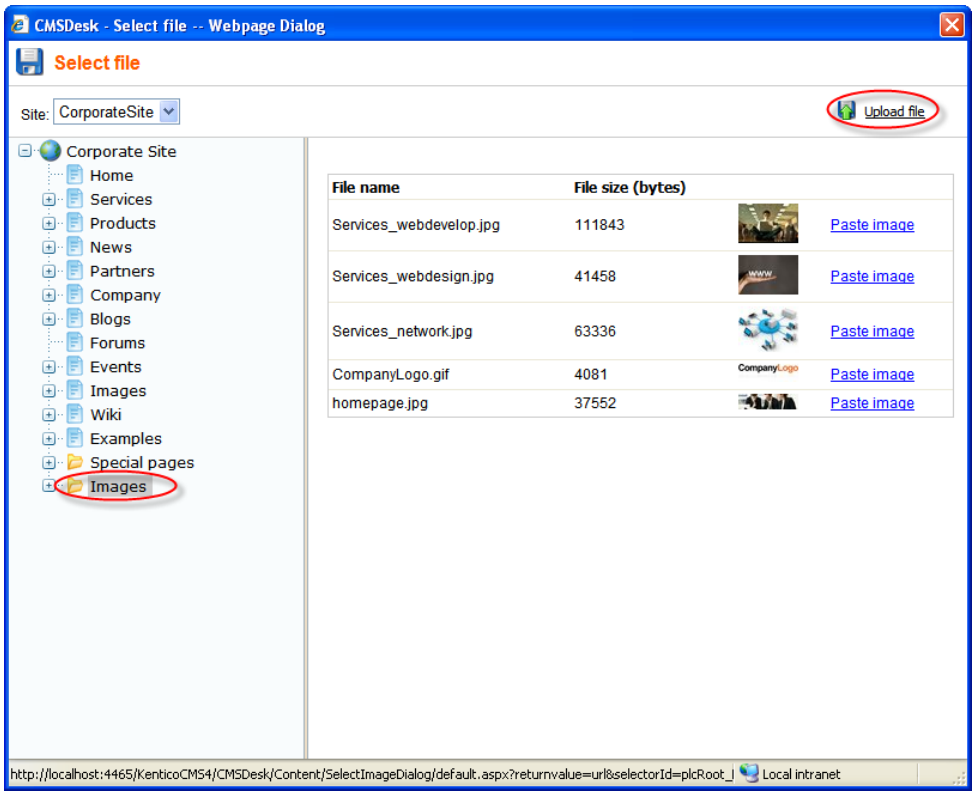


2. Click **Select ...** above the logo.

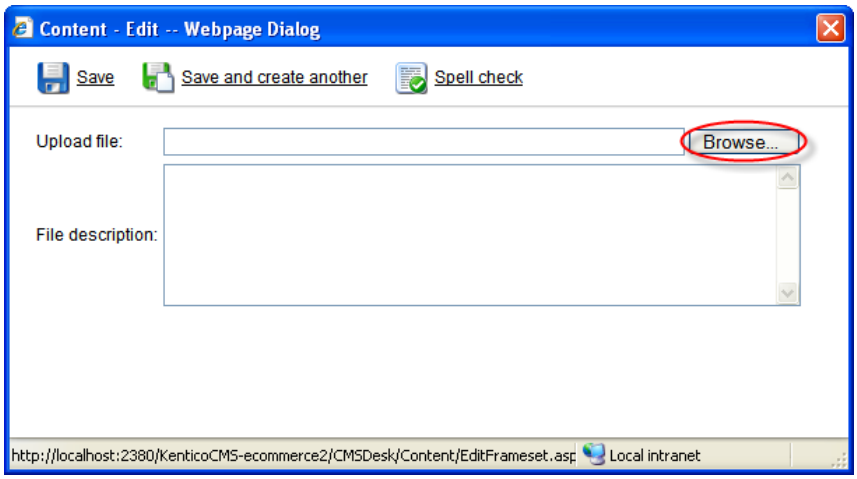


© 2009 Kentico Software

3. In the web page dialog, select **Images** in the content tree and click the **Upload file** button at the top-right.

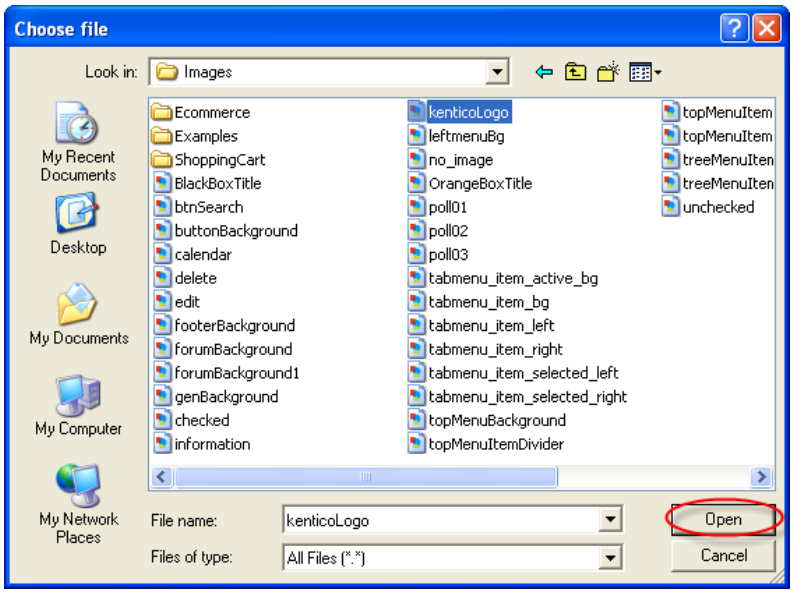


4. In the new dialog, click **Browse**.

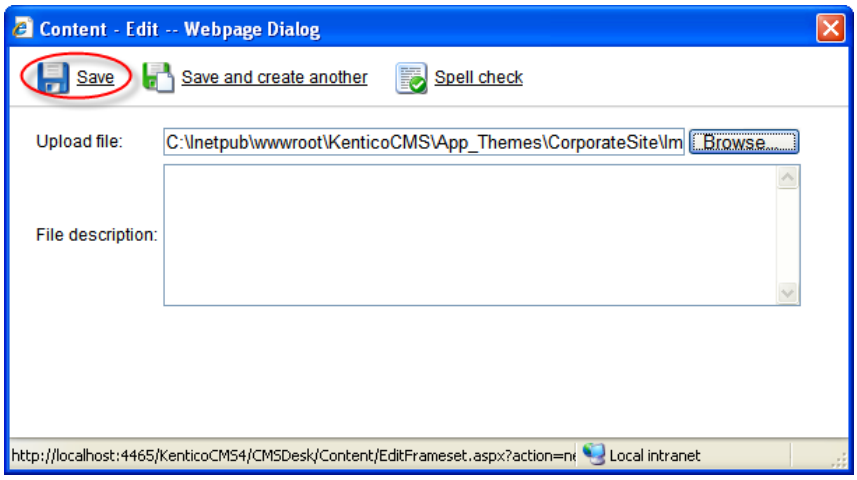


© 2009 Kentico Software

5. Find an image you want to upload and click **Open**.

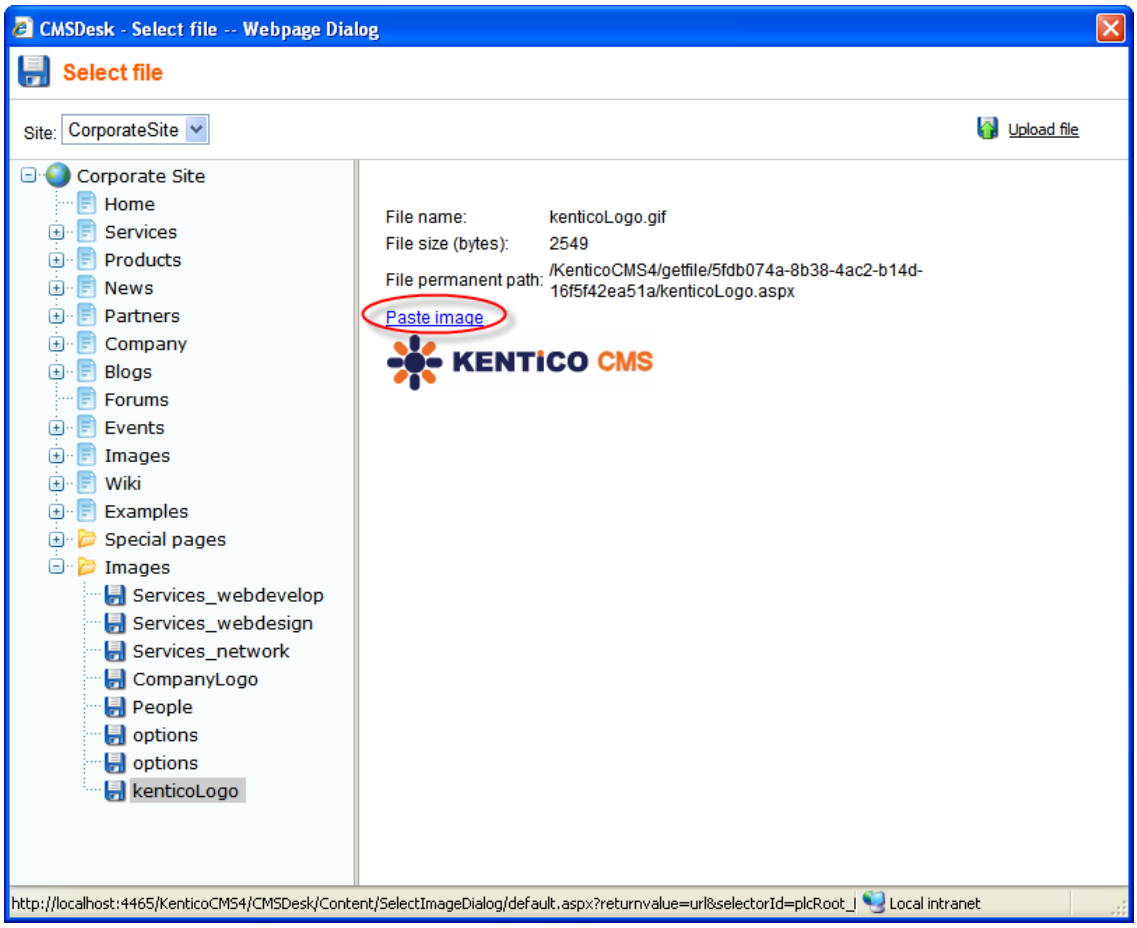


6. Click **Save**. Your new logo image is now ready to be posted on your web site.

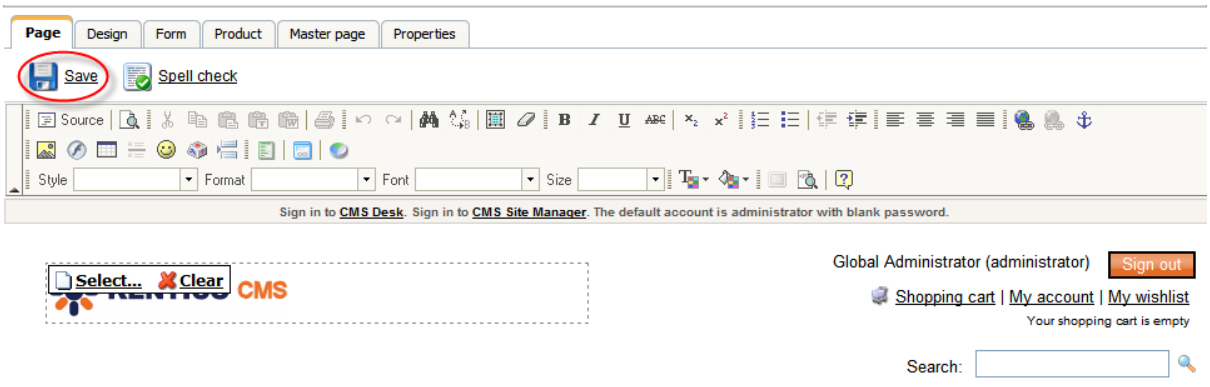


© 2009 Kentico Software

7. Click **Paste image** right above the picture.



8. Now click **Save**.



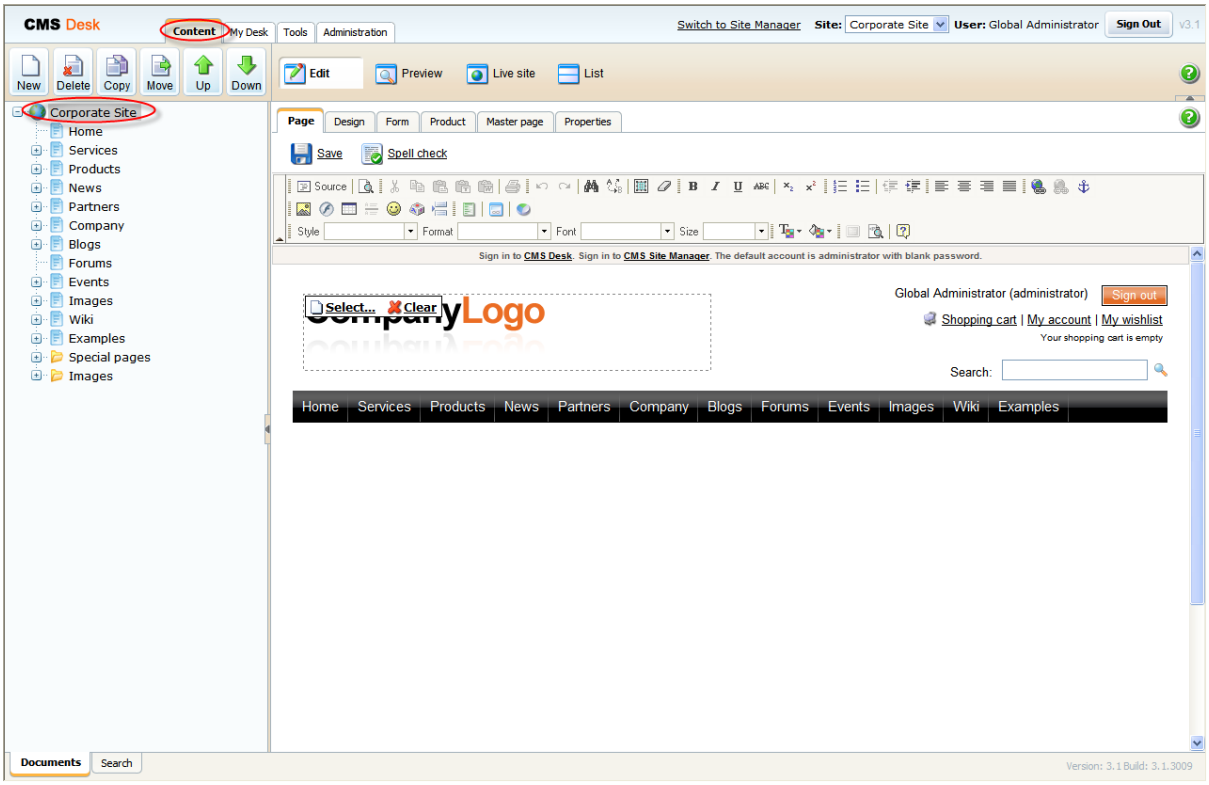
© 2009 Kentico Software

You've just publish a new logo on your web site.



29.1.2 Removing the log-on bar

1. Go to **CMS Desk** -> **Content** -> **Corporate Site**.

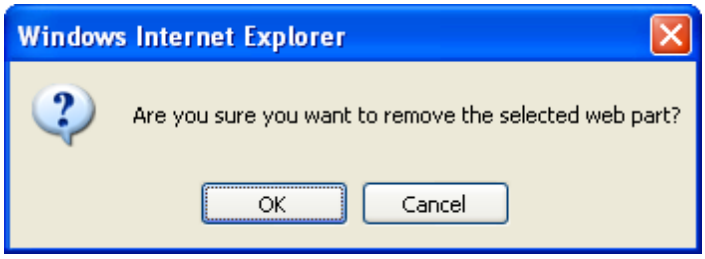


2. Switch to the **Design** tab and right-clicked the **txtTrialInfo** webpart at the top-left and choose **Remove**.

© 2009 Kentico Software



3. Click **Ok** to remove the bar from your website.



That's how you remove the signing-in bar from your web site.

© 2009 Kentico Software



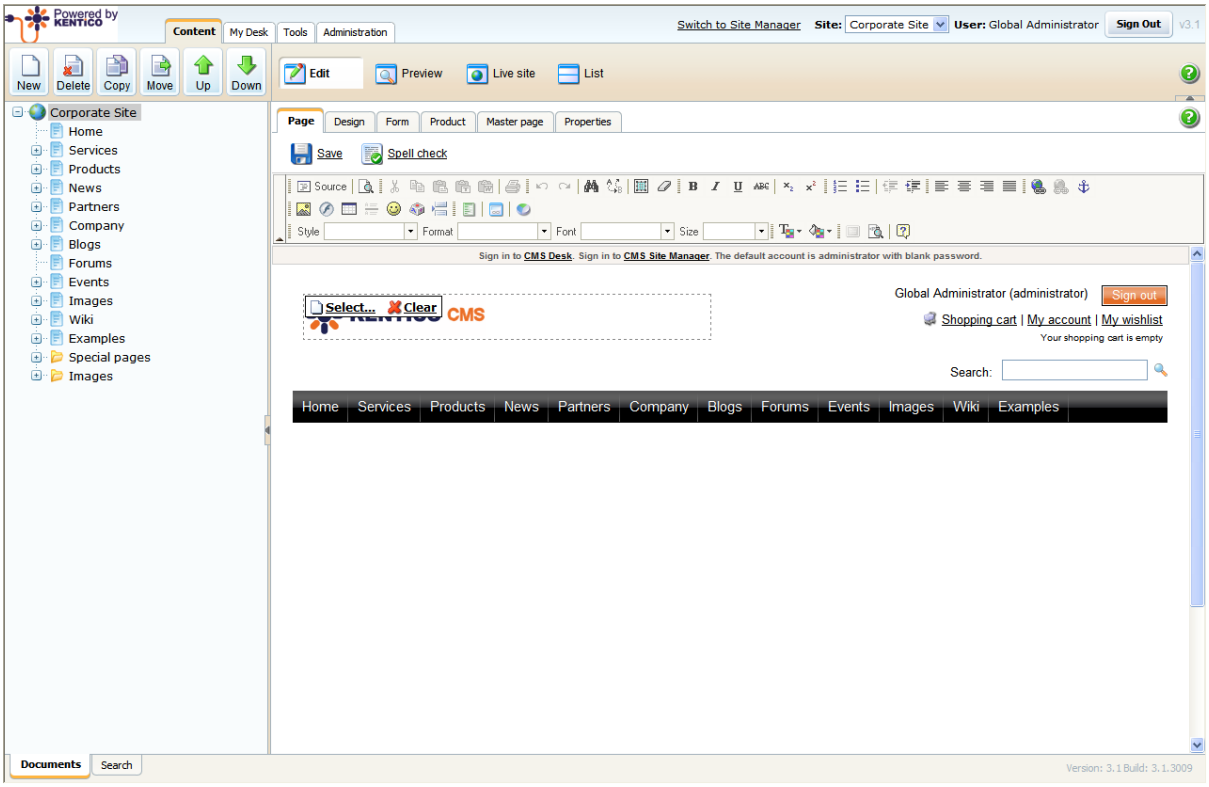
© 2009 Kentico Software

29.1.3 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.

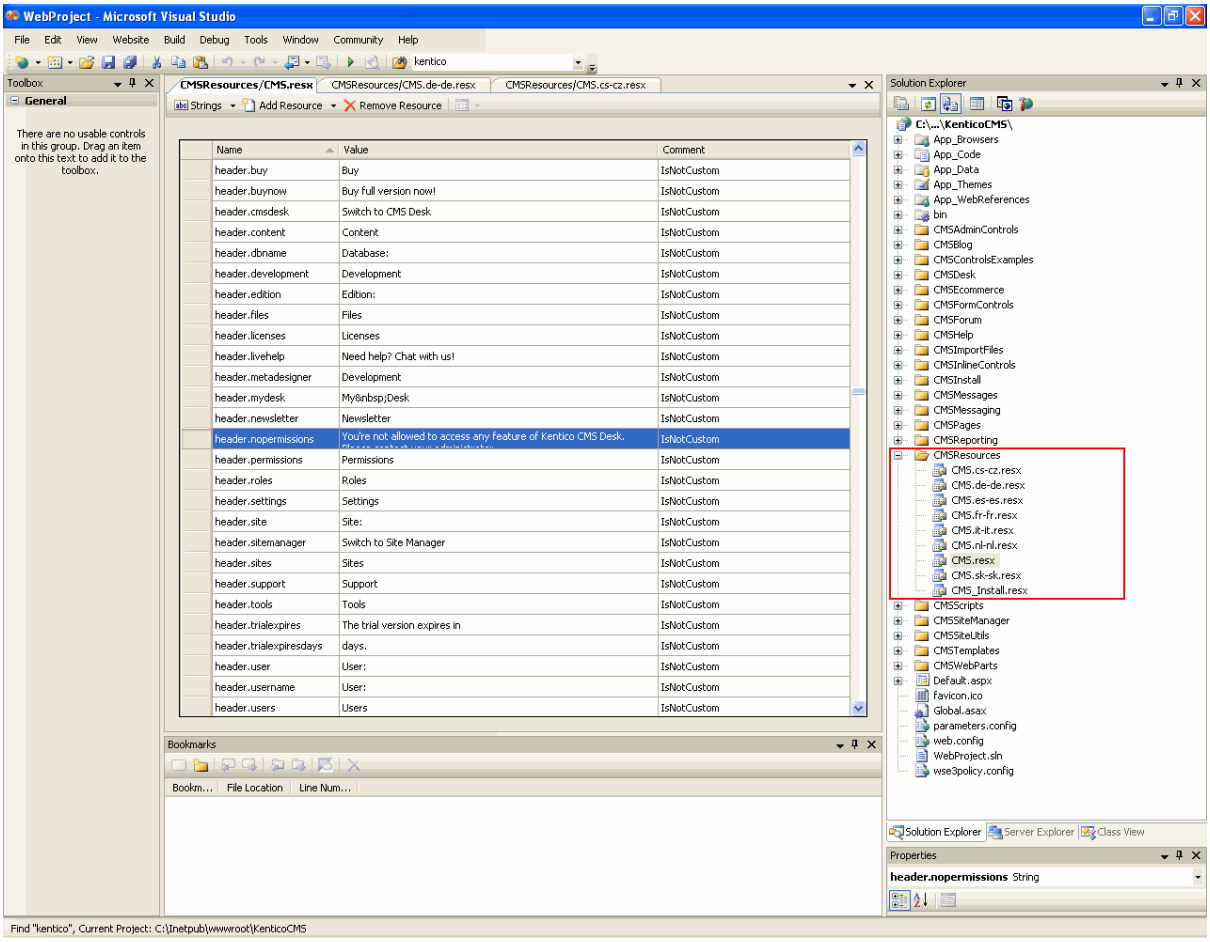
1. Go to **<your KenticoCMS directory>\App_Themes\Default\Images\CMSDesk** for changing the logo in CMS Desk or to **<your KenticoCMS directory>\App_Themes\Default\Images\CMSSiteManager** for changing the logo in CMS Site Manager.

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.



29.1.4 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.



© 2009 Kentico Software

Part



Debugging & Optimalization

30 Debugging & Optimalization

30.1 SQL queries debugging

SQL queries debugging can be turned on by adding the following keys to the *web.config* file of your web project:

This key will make the **SQL debug** tab visible in **Site Manager -> Administration -> System**. On this tab, you can see a log of debugged pages SQL queries history.

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

The value property of this key determines the number of last loaded pages displayed in the previously mentioned log.

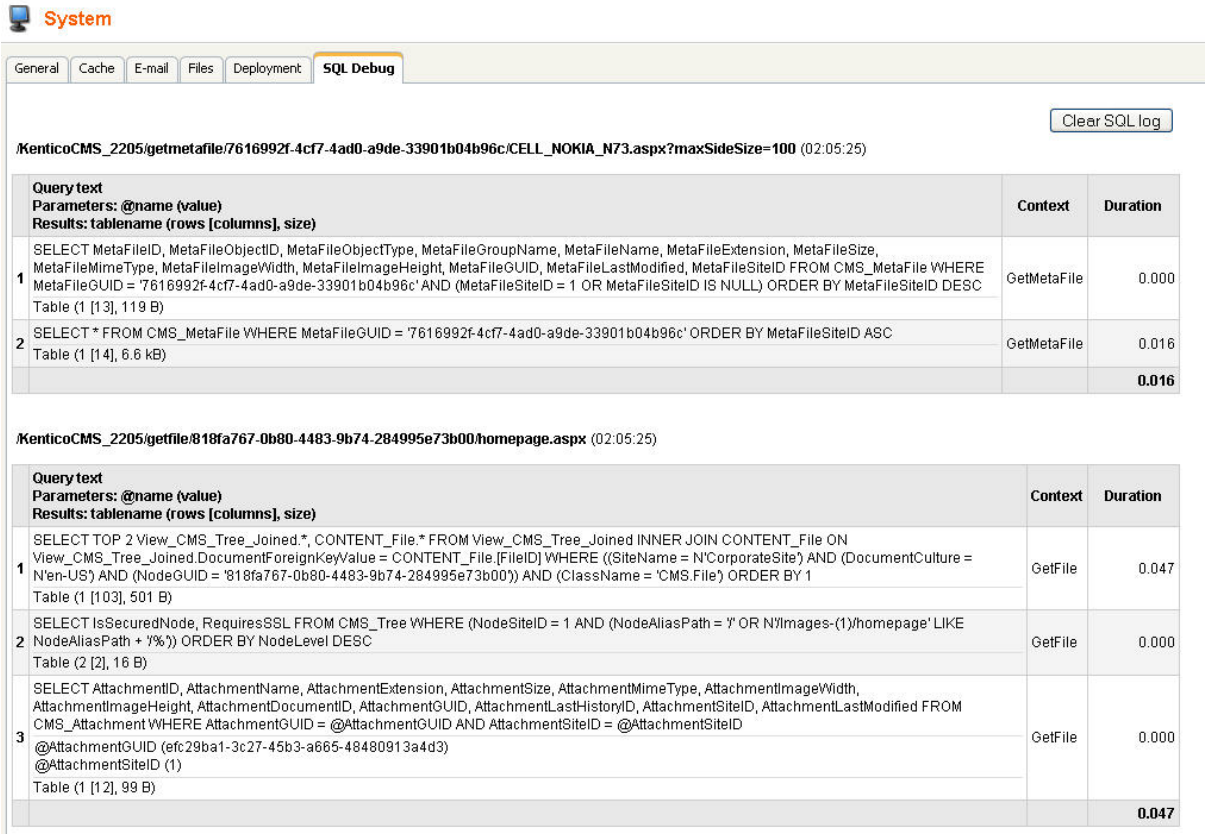
```
<add key="CMSDebugSQLQueriesLogLength" value="10" />
```

© 2009 Kentico Software

You can see the appearance of the log in the screenshot below. 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.



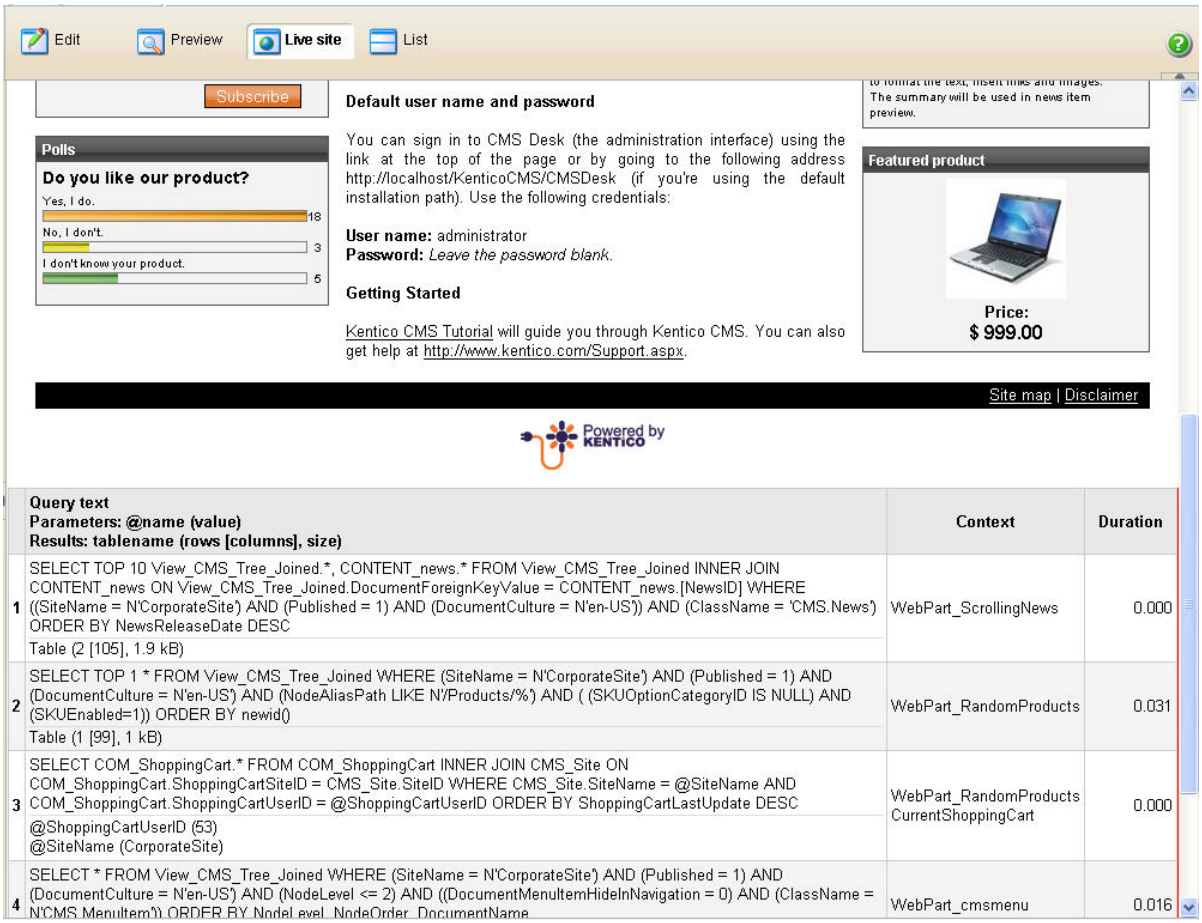
© 2009 Kentico Software

There are also different ways of displaying the query log:

The following key will turn on SQL debugging in **Live site** mode.

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

A log table of all SQL queries executed when loading a page will be displayed on the bottom of the page, as you can see in the following screenshot:



© 2009 Kentico Software

Adding this key will turn on logging SQL queries into a file. All executed SQL queries will be logged into *<web root>/AppData/logsql.log*:

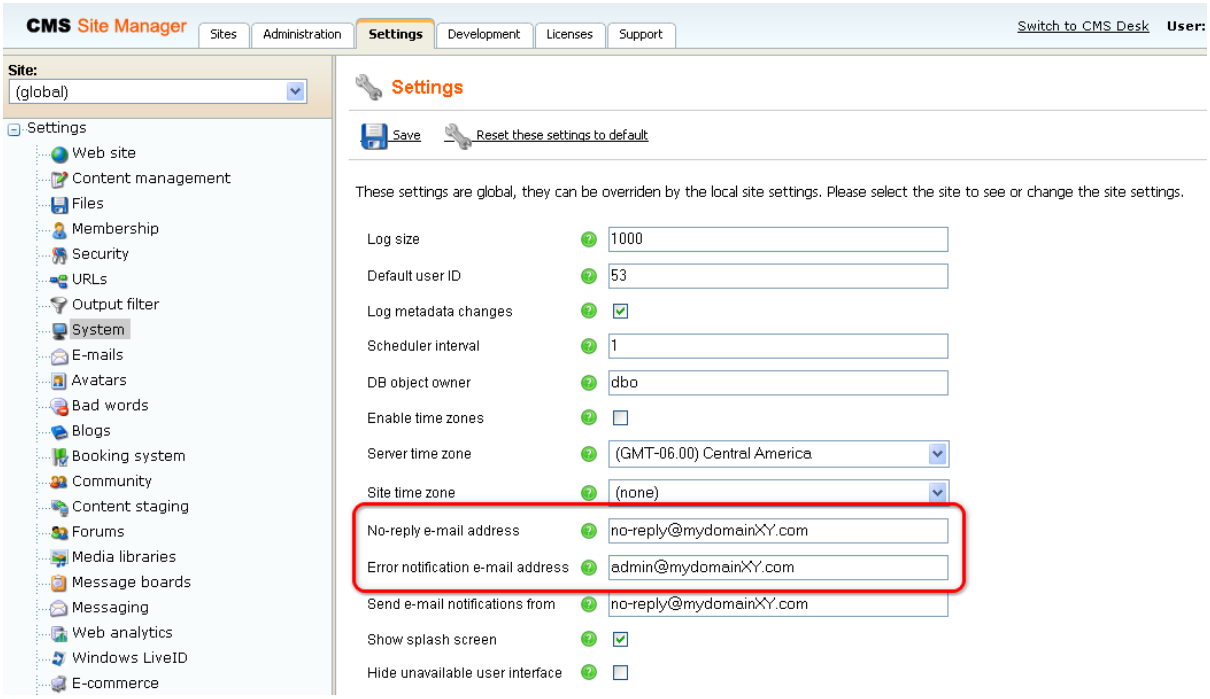
```
<add key="CMSLogSQLQueries" value="true" />
```

If you want to use SQL debugging on ASPX page templates, you need to manually add the following control to the page. It will display the same queries table as in the Live site mode debugging described above.

```
<cms:QueryLog ID="logQuery" runat="server" />
```

30.2 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.



© 2009 Kentico Software

Part



Modules

31 Modules

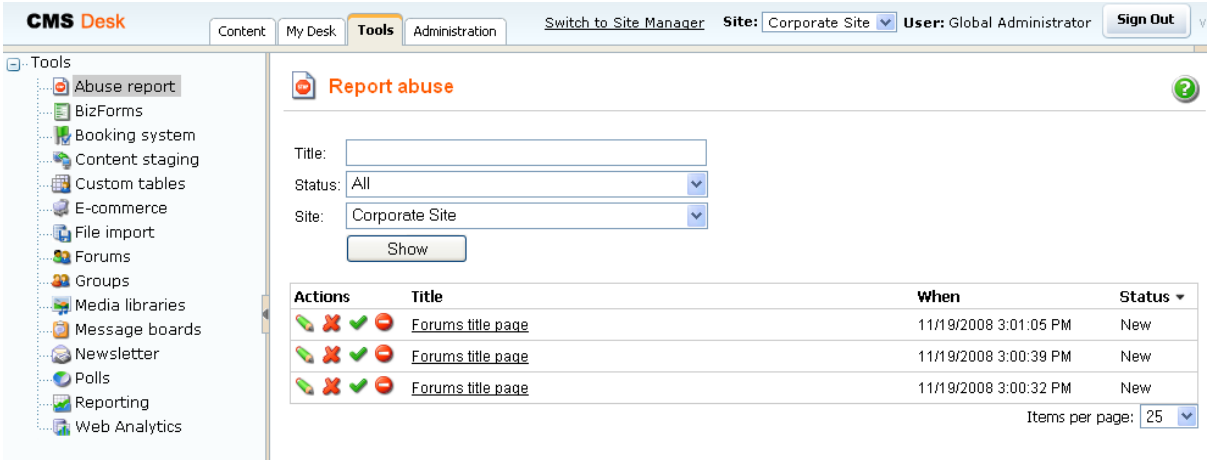
31.1 Abuse report

31.1.1 Abuse report module overview

The Abuse report module enables site visitors to report indecent posts, comments or some other forms of web site abuse. The module comes with two web parts, Abuse report and In-line abuse report, enabling site visitors to send the reports.

31.1.2 Abuse reports management

Abuse reports can be viewed and managed in **CMS Desk -> Tools -> Abuse report**.



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 that 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.

If you click the title of a report, you will be redirected to the page that the report was sent from. If you mouse-over it, the report description entered by the sender of the report will be displayed in form of a tooltip.

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 web site abuse

© 2009 Kentico Software

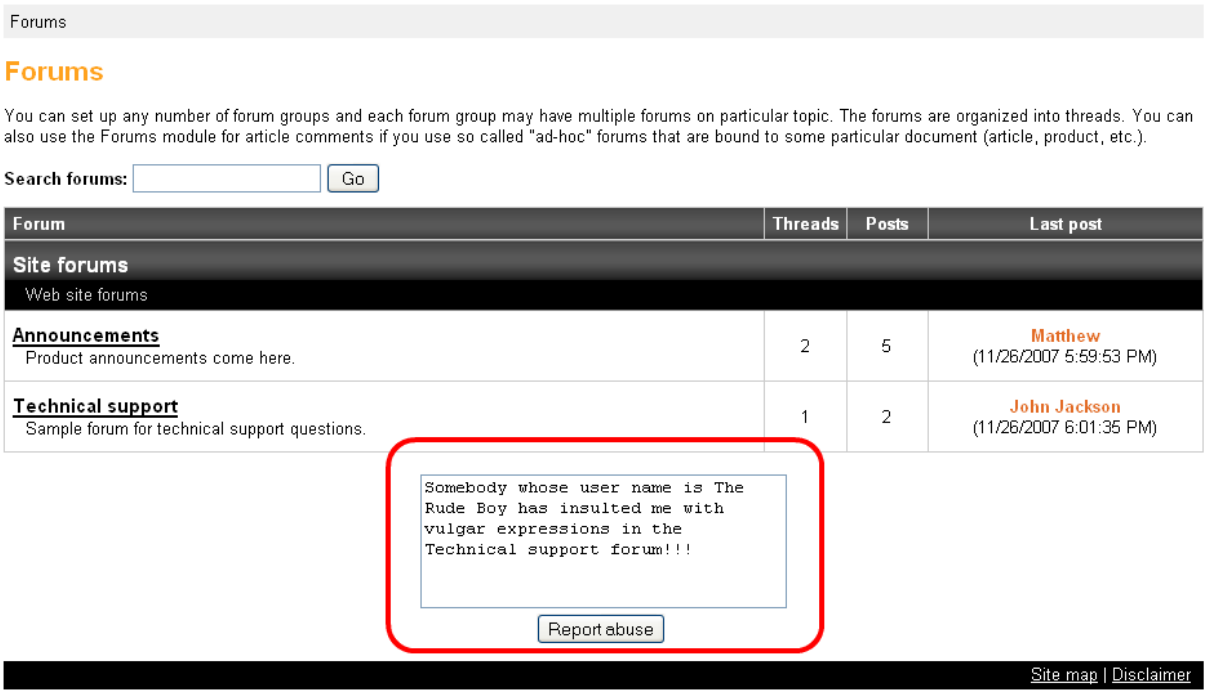
31.1.3 Using the Abuse report and In-line abuse report web parts

The **Abuse report** web part serves site visitors to report web site 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 web site. In the web part selection dialog, you can find it under the **Abuse report** folder.

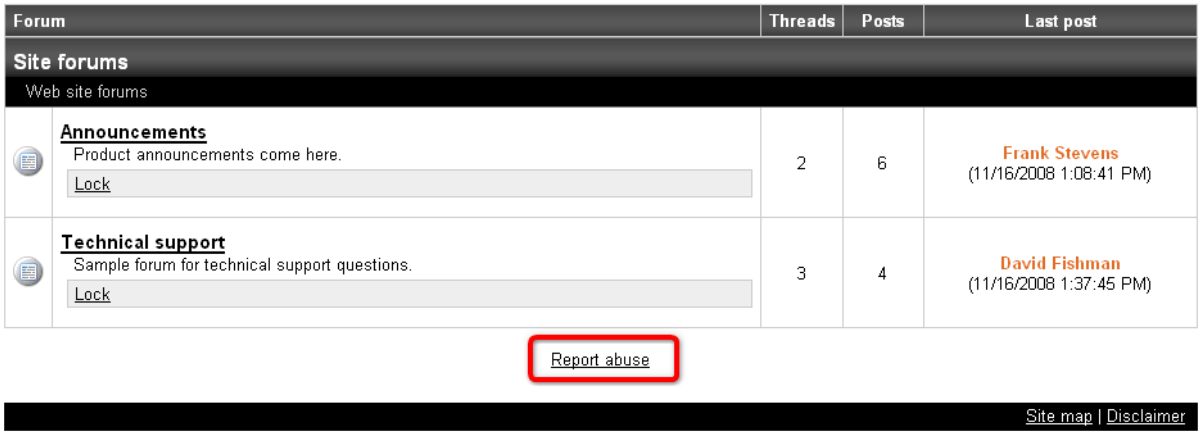
You have to set the following specific properties in order for the web part to work properly:

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**.



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 chapter Using the In-line abuse report web part in transformations.



31.1.4 Using the In-line abuse report web part in transformations

The Inline abuse report web part appears as a link with the text 'Report abuse'. 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.

© 2009 Kentico Software

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 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" %>

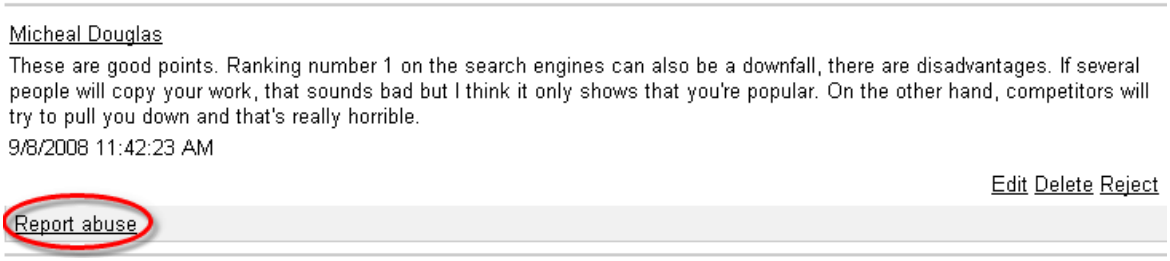
<div class="CommentDetail">
    <asp:Panel ID="pnlRating" runat="server" />
    <table width="100%">
        <tr>
            <td class="CommentUserName" style="width: 100%">
              <%# IfEmpty(Eval("MessageURL"), Eval("MessageUserName"), "<a
href=\"" + Eval("MessageURL") + "\" target=\"_blank\">" + 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="buttonpedding">
                     <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;"/>
```

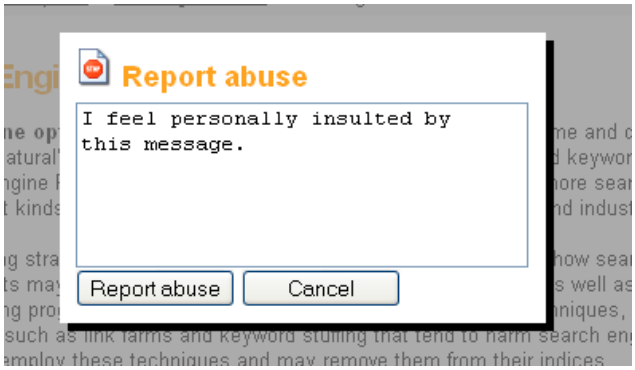
6. Click **Save**. Now if you switch to the Live site and view the message board, you should be able to see the Abuse report link below each of the messages:

© 2009 Kentico Software



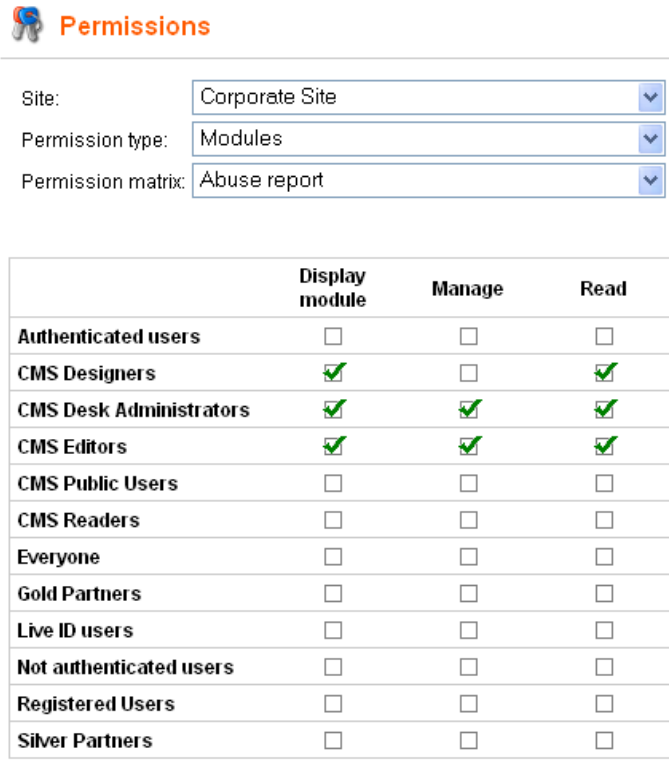
© 2009 Kentico Software

7. If you click it, the screen will become grayed out and the following dialog will pop up in the middle of it, 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**.



31.1.5 Security

Permissions for the Abuse report module can be set in **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:

Display module	The module is visible in the administration interface.
Manage	The user is allowed to manage abuse reports.

© 2009 Kentico Software

Read	The user is allowed to view the abuse reports list.

© 2009 Kentico Software

31.2 Alternative forms

31.2.1 Alternative forms module 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.

31.2.2 Creating an alternative form

This example shows how to create an alternative form to the existing **Contact us** BizForm on the sample Corporate Site. Alternatives to document types, system tables and custom tables can be created in exactly the same way as described here. The user interface for doing this is found in the following locations:

- **Site manager -> Development -> Custom tables**
- **Site manager -> Development -> Document types**
- **Site manager -> Development -> System tables**

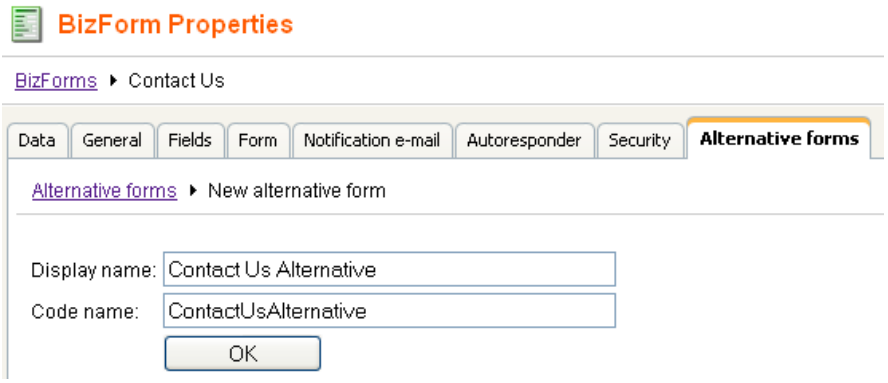
There, just choose to **Edit** () the particular item, switch to its **Alternative forms** tab and follow the instructions below from the second step.

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**.

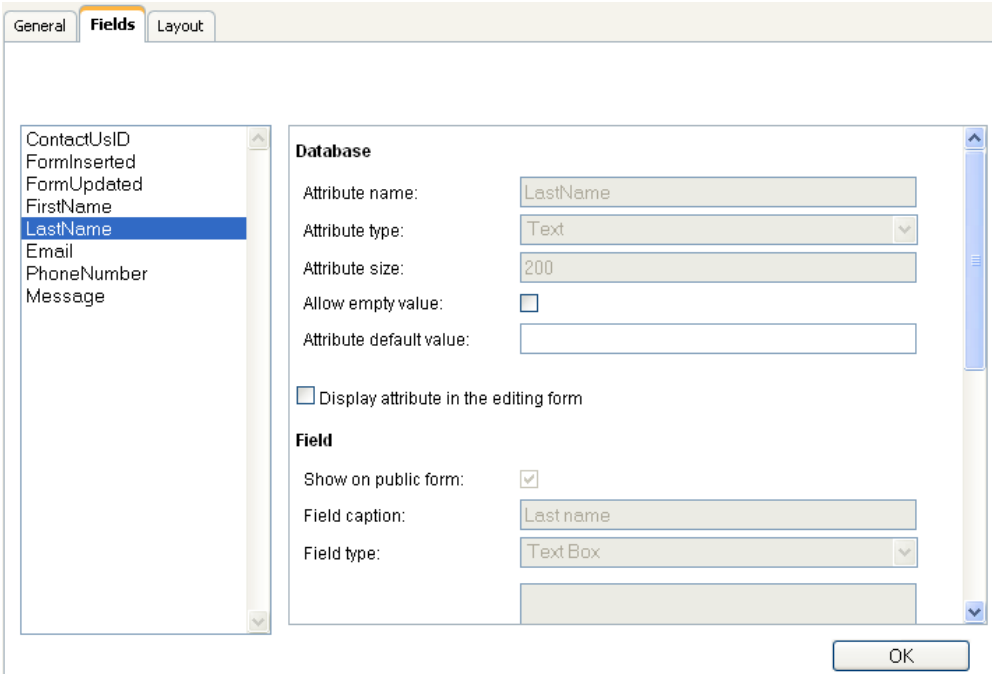
3. On the form that will be displayed, enter the following details and click **OK**.

- **Display name:** Contact Us Alternative
- **Code name:** ContactUsAlternative



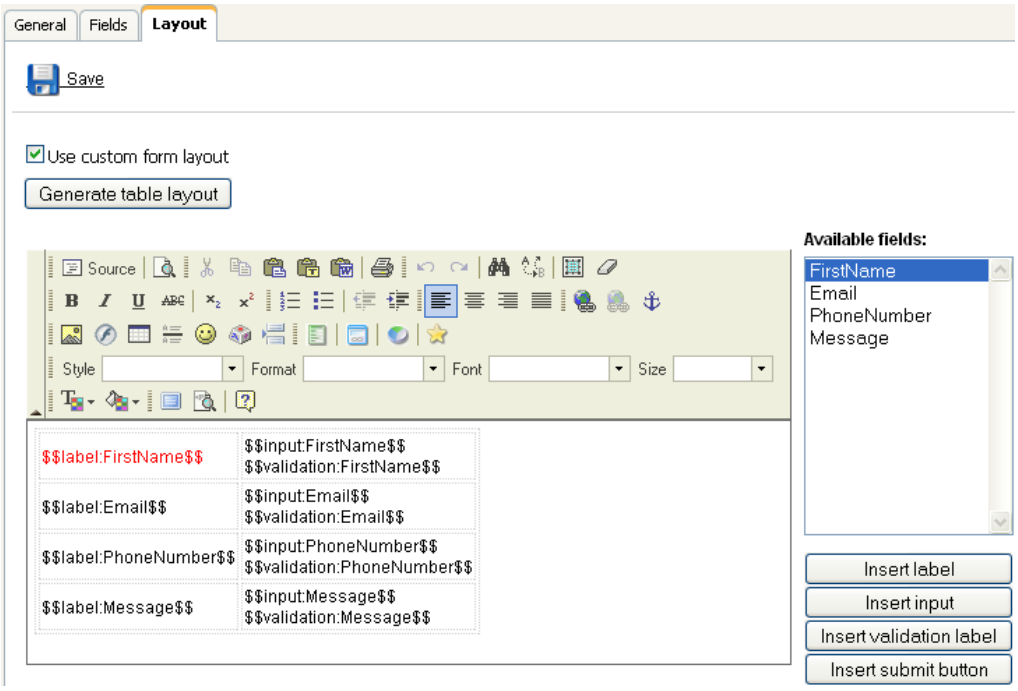
© 2009 Kentico Software

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 it's 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.

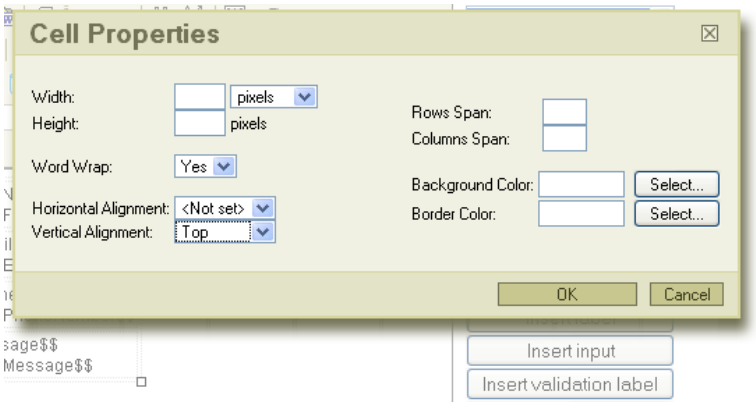


© 2009 Kentico Software

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.



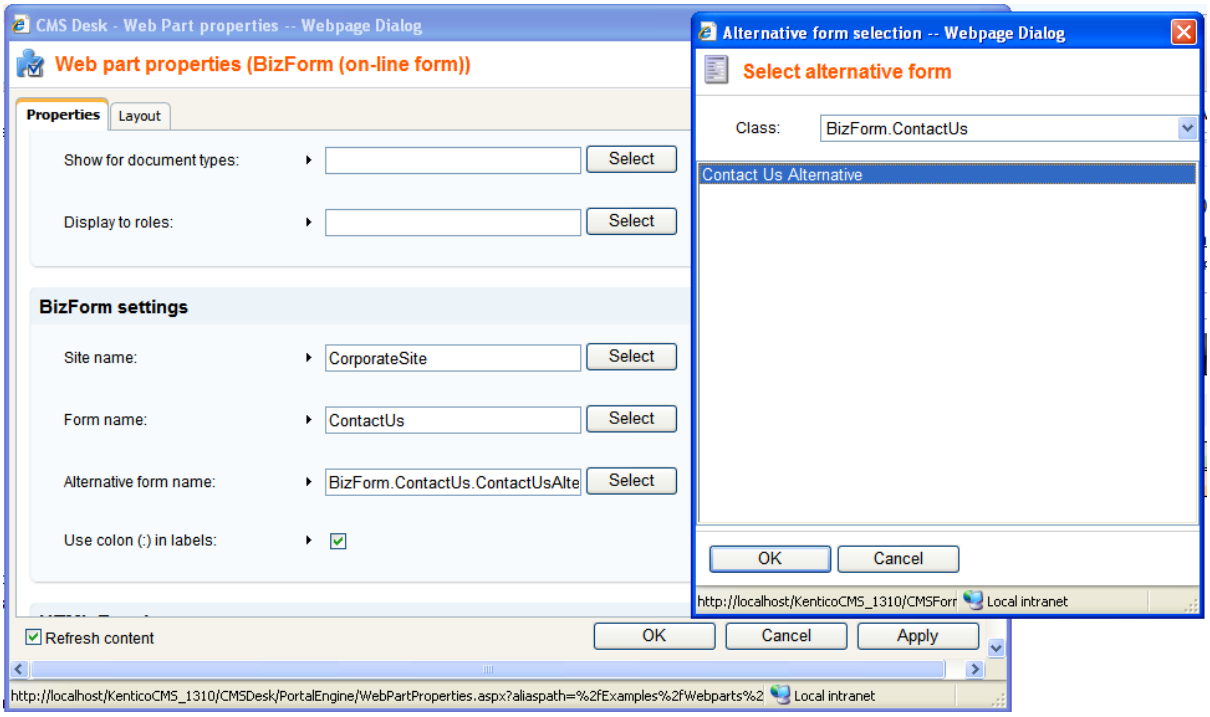
Also select the rows of the first table column, right click it and from the context menu, choose **Cell -> Cell properties**. In the displayed dialog, choose **Vertical alignment: Top** and click **OK**. This will make the labels to be aligned to their fields. Click **Save**.



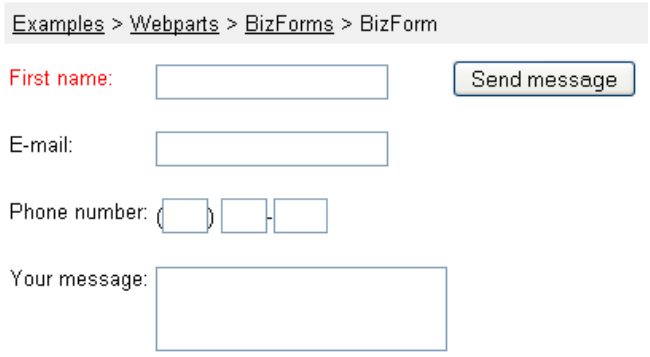
© 2009 Kentico Software

6. Let's take a look at what we've created. Switch to **Site Manager -> Content**. From the context 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 version will be displayed.

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:

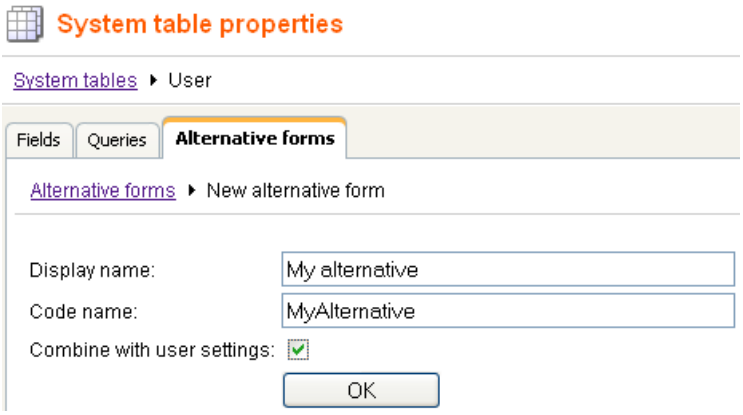


You have learned how to create an alternative form to an existing BizForm and use it on your web site.

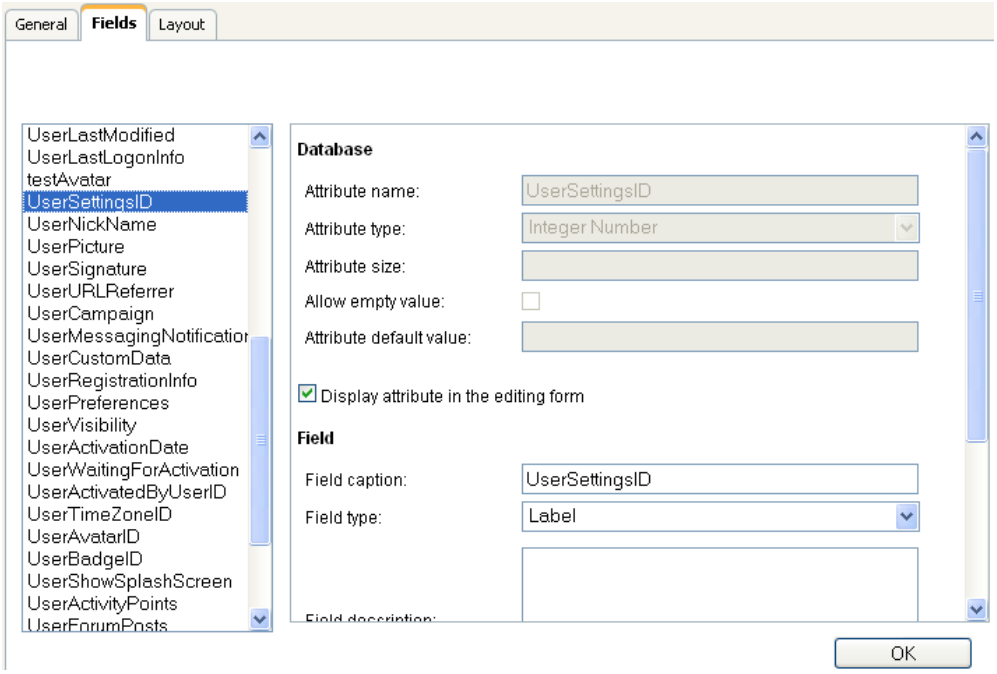
© 2009 Kentico Software

31.2.3 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 table. When creating an alternative form to 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.



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:



© 2009 Kentico Software

31.2.4 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

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

31.3 Avatars

31.3.1 Overview

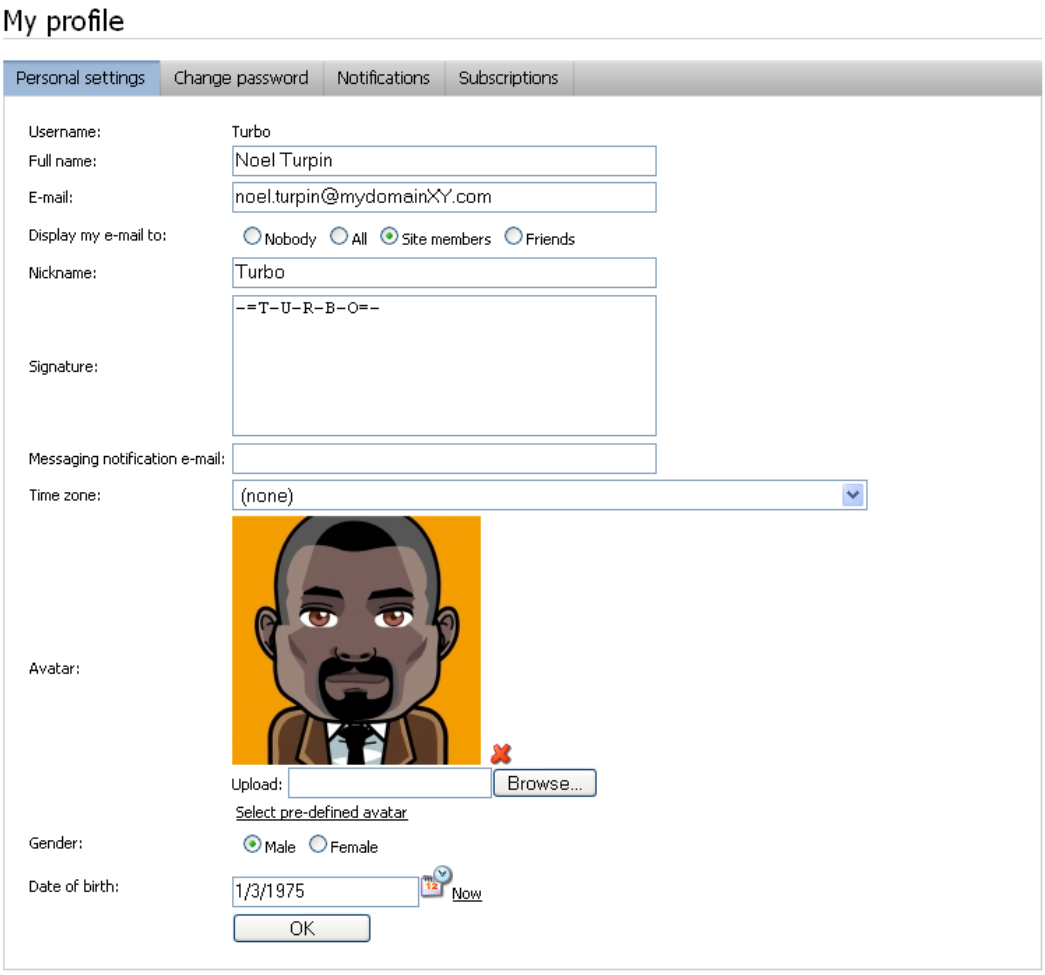
The Avatars module enables users to have an image associated with their account. This image is called 'avatar' and will be displayed on the user's public profile, in forum posts, etc. Users can either choose one from a gallery of pre-defined avatars or upload their own image from a file on their local disk.

Groups can also have avatars, while these will be displayed in the group's profile and can be beneficial to better and faster group identification, etc.

31.3.2 Changing user avatars

When a new user registers to a site, she will be assigned with the default avatar. After that, she can change her avatar using the **My account** web part. It can be done on its **Personal settings** tab, as you can see in the screenshot below.

© 2009 Kentico Software



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.



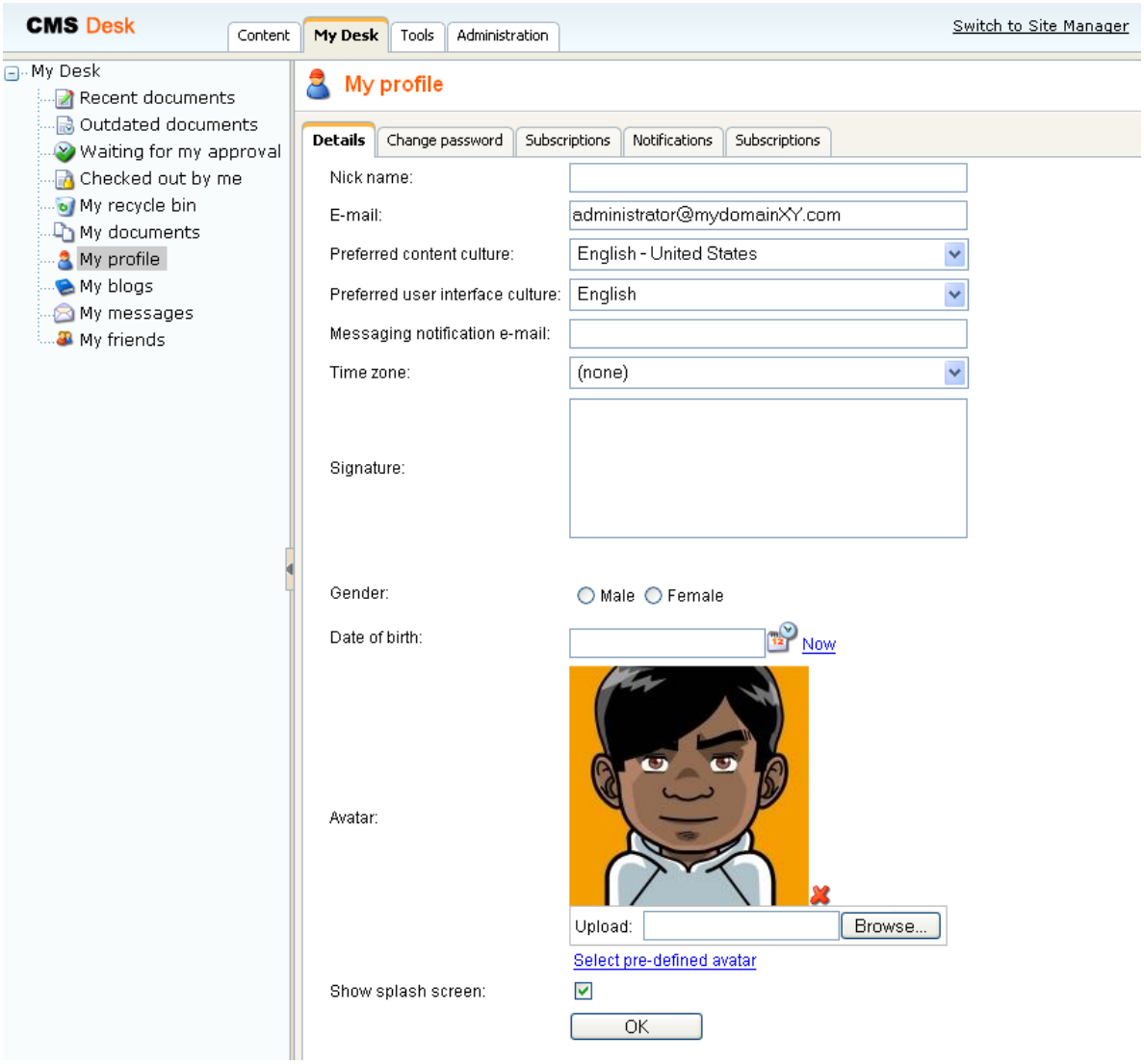
You can find a live example of this on our **Community starter site**. Just log-in as some of the pre-defined users (e.g. *Turbo* with blank password) and click the **Edit my profile** link in the **Shortcuts** menu on the right.

© 2009 Kentico Software

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 that you can easily pick one by clicking it and clicking **OK**.

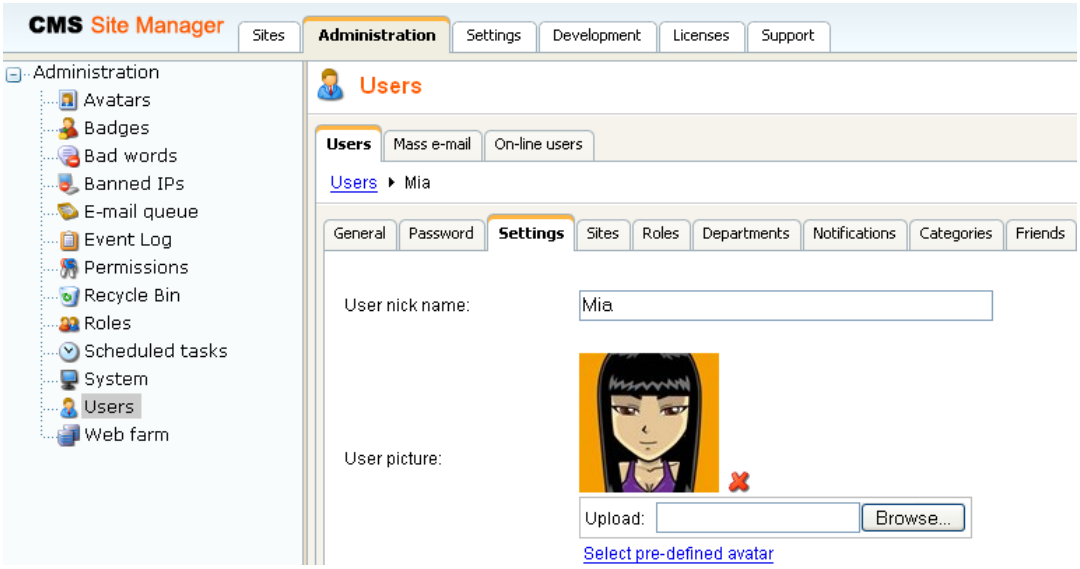


© 2009 Kentico Software

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 her **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 that you can easily pick one by clicking it and clicking **OK**.



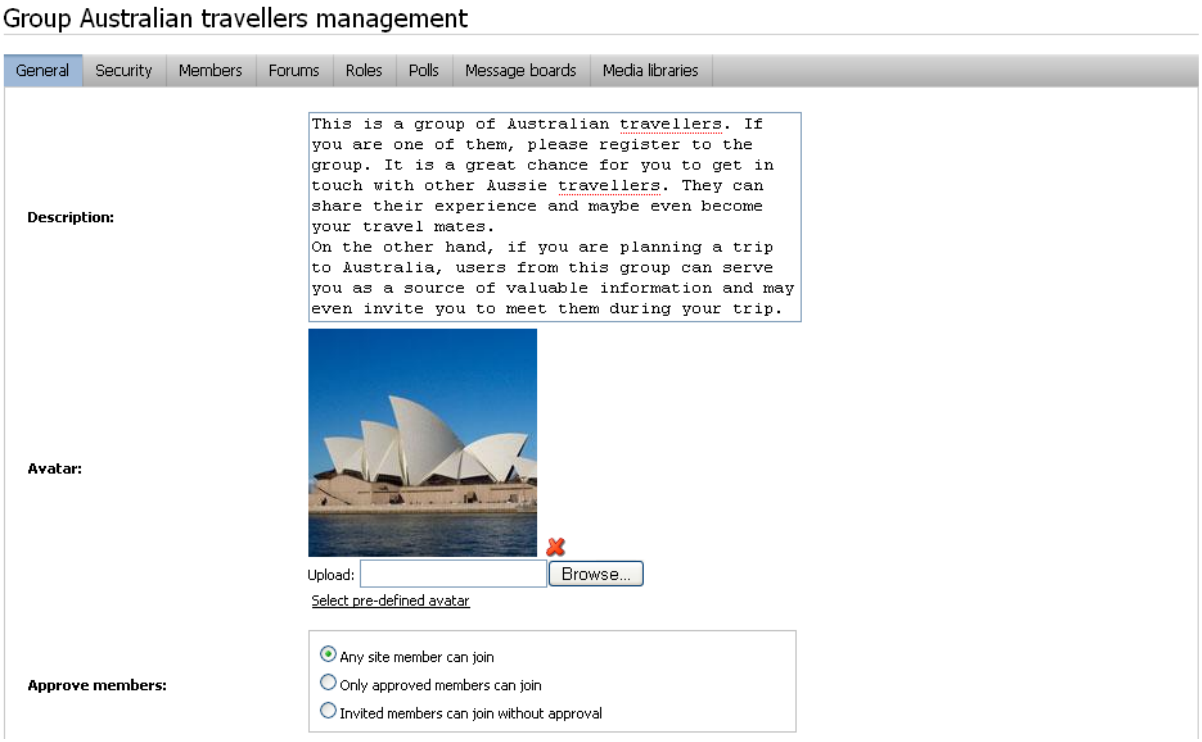
© 2009 Kentico Software

31.3.3 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.

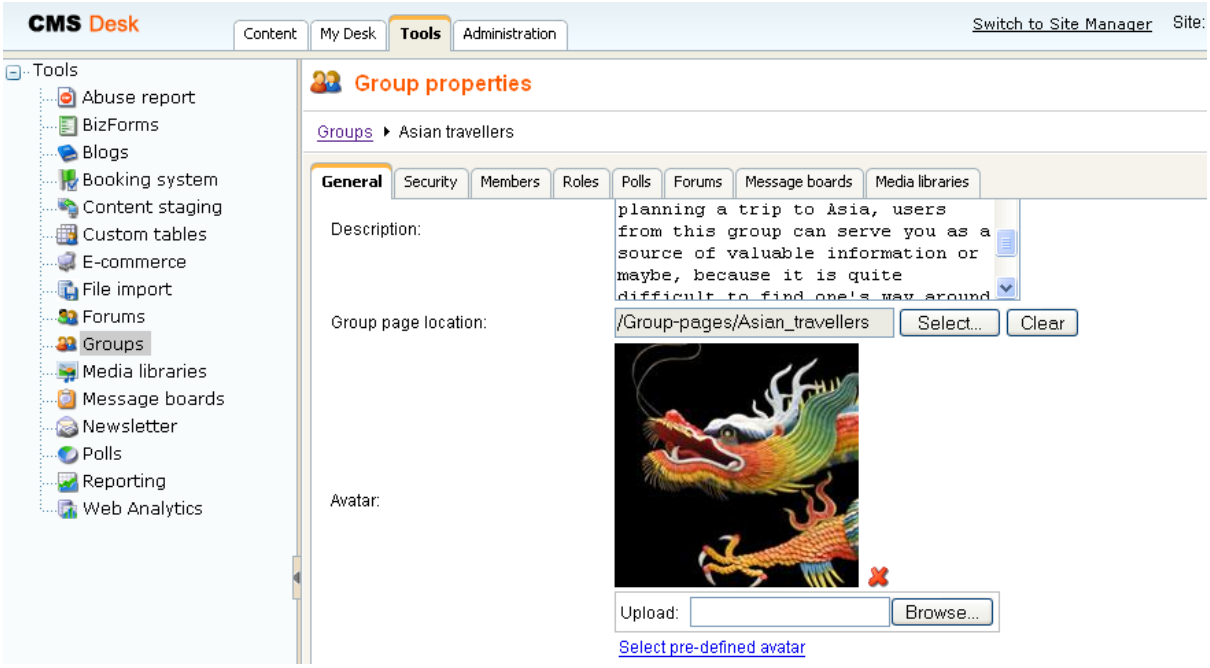
Users can **Delete** ( ) the avatar or **Upload** a custom one from a file. If pre-defined avatars are enabled in site settings, users can also click the **Select pre-defined avatar** link, which displays a gallery of pre-defined avatars.

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 **Australian travellers** group in the **My groups** section. Click it, you will be displayed with what you can see in the screenshot below.



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. Group avatar can be **Deleted** ( ), new one can be **Uploaded** from a file or selected from a gallery of pre-defined avatars (in case that it is enabled in site settings).



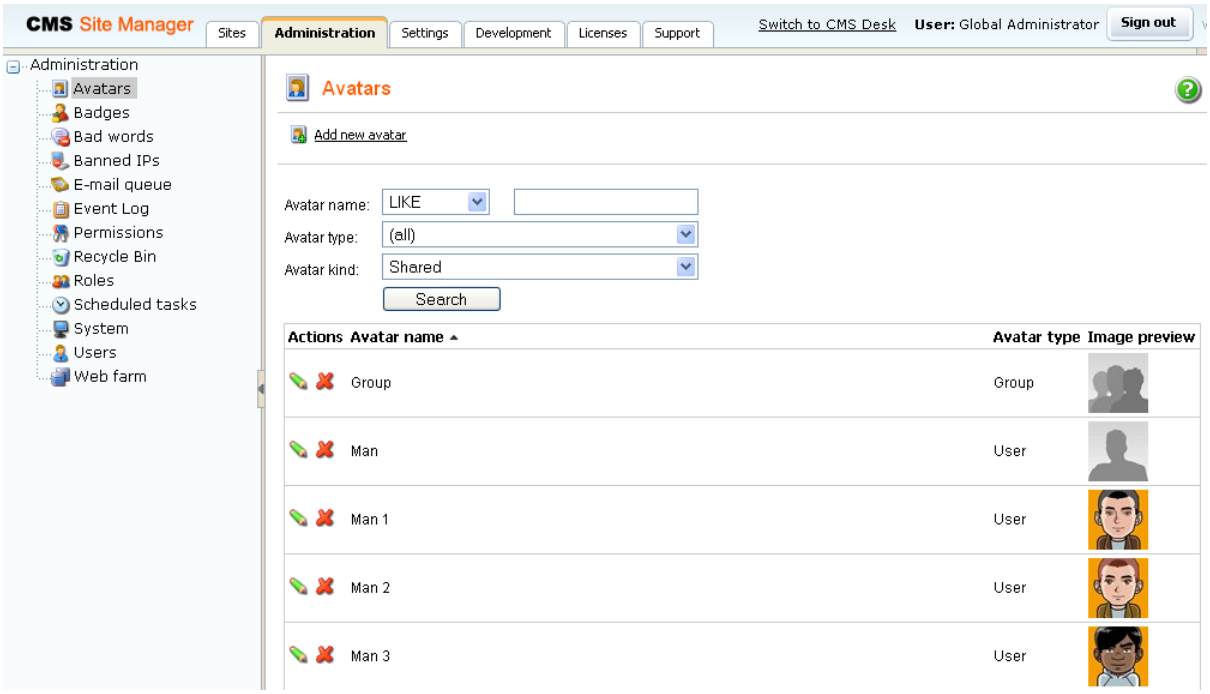
© 2009 Kentico Software

31.3.4 Managing avatars

The administration interface for avatars 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.



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.

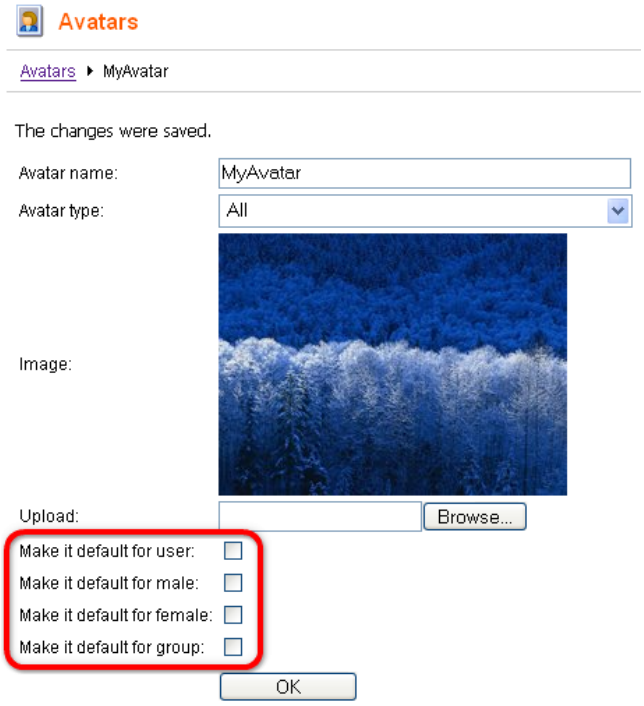


3. The avatar is now created and if you go back to the list of avatars, you should see the avatar present in the list. However, you can set the following extra properties of the avatar now or any time later when editing the avatar:

- **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

© 2009 Kentico Software

Default avatars will be assigned to a newly created users or groups automatically when the user or group is created.



© 2009 Kentico Software

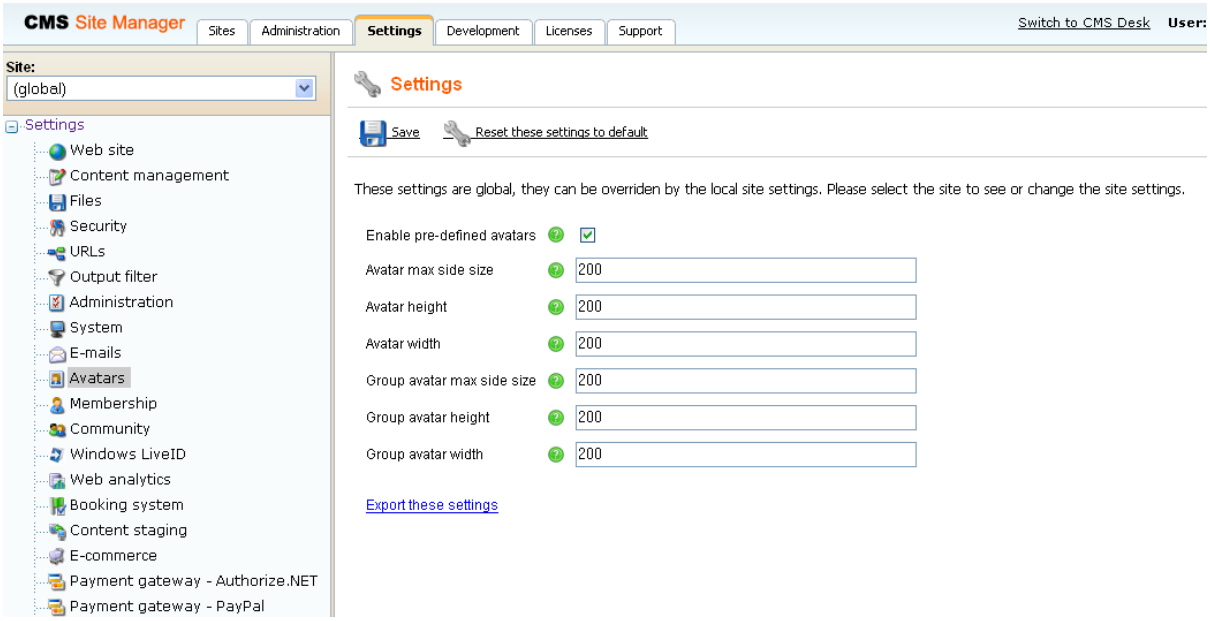
31.3.5 Settings

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



31.4 Bad words

31.4.1 Bad words module overview

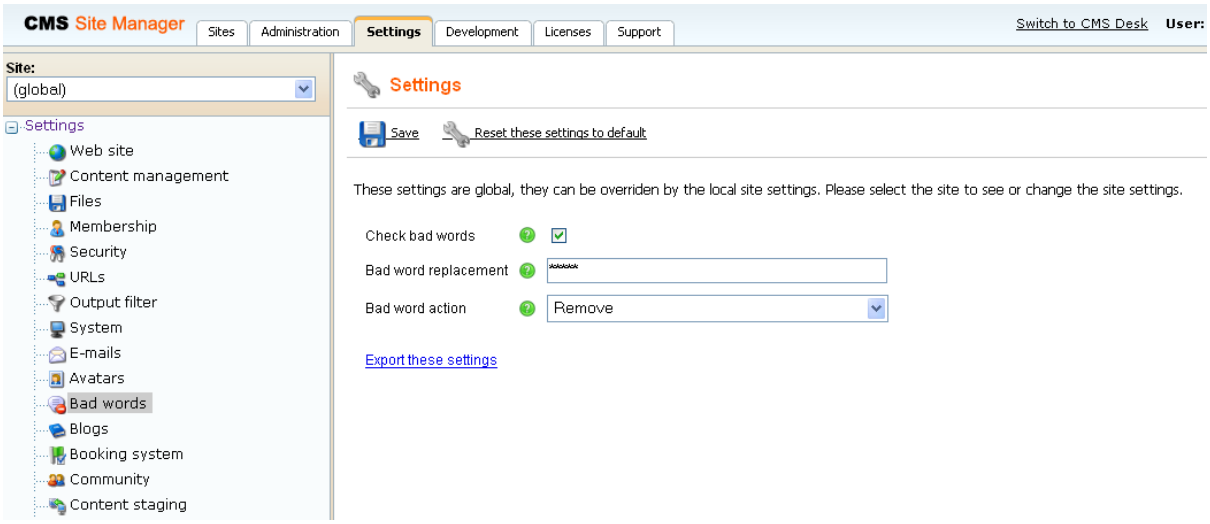
The Bad words module can be used as a filter for indecent input from web site users. The module can filter forum posts, blog comments, messages sent via the Messaging module and messages posted onto a message board. You can define an unlimited number of bad words. If a user inputs a text containing some of these words, a predefined action will be performed for the words.

31.4.2 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.

© 2009 Kentico Software

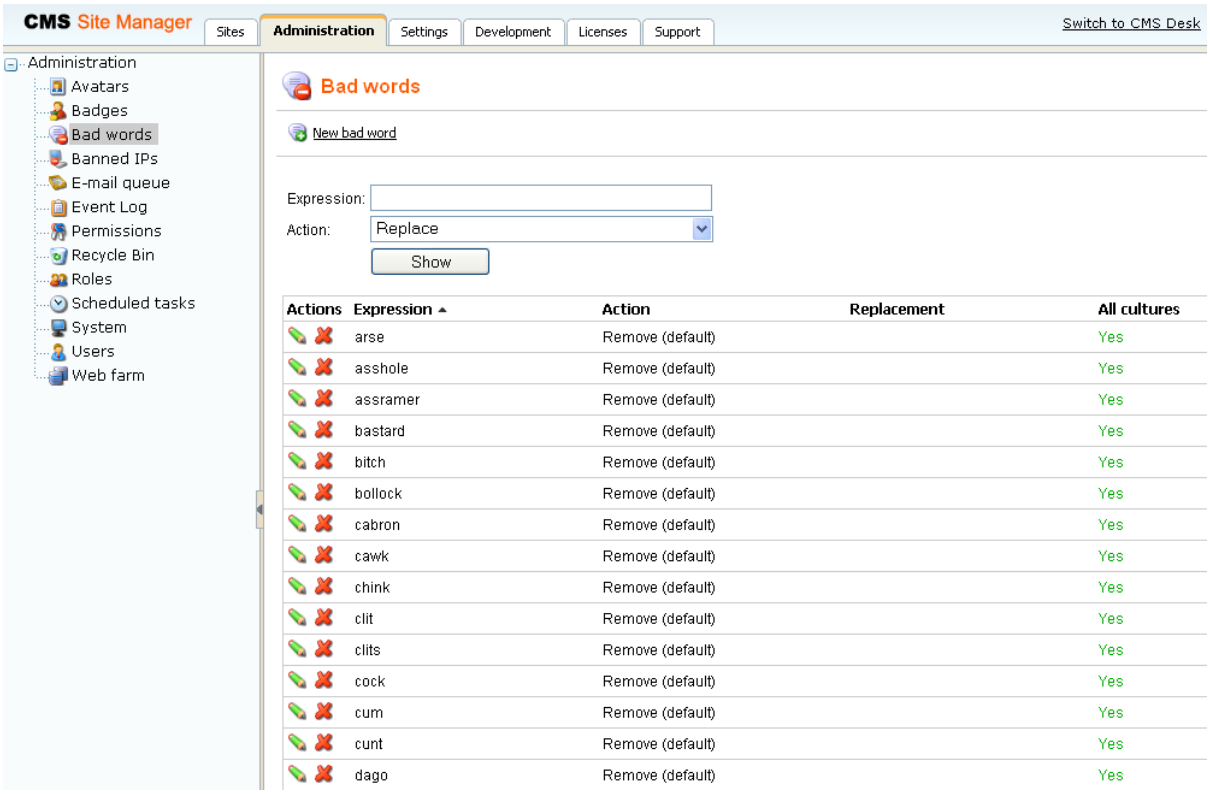
You can also set the **default action** that will be taken in case that a bad word is detected and the word has no action defined. This is done using the **Bad word action** drop-down list. Using the **Bad word replacement** property, you can define the **default replacement text** that will be used in case that a bad word is detected, has the Replace action set and has no replacement text defined.



© 2009 Kentico Software

31.4.3 Defining a bad word

The Bad words module's user interface is located in **Site Manager -> Administration -> Bad words**.



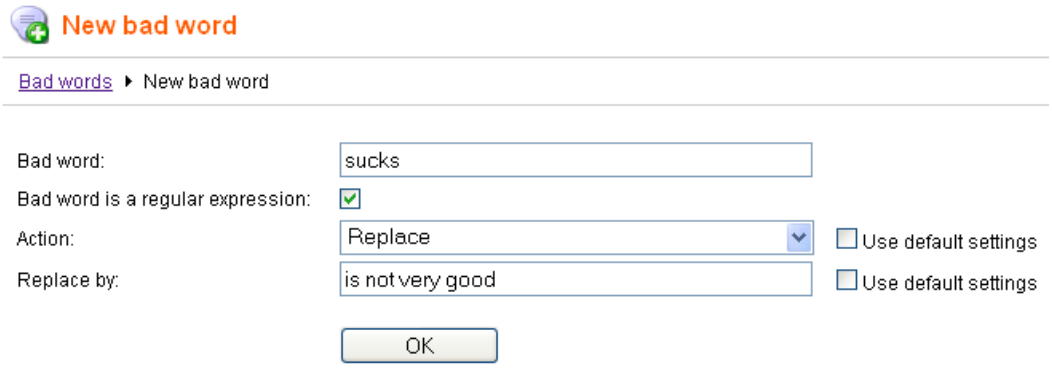
The top part of the page is a filter. Using it, you can display only those bad words that match the specified criteria. You can filter by the **Expression** and by the **Action** that has been set for it. After specifying the filtering criteria and clicking the **Show** button, only those items that 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***

© 2009 Kentico Software

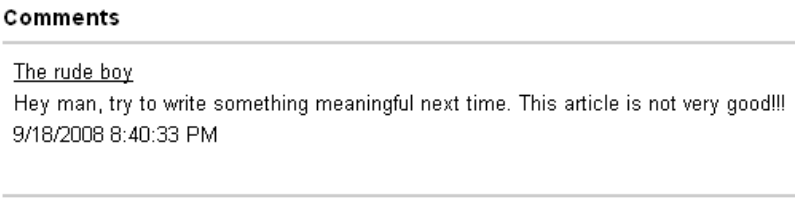
Enter the details as in the following screenshot and click **OK**.



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**.



As you can see, the last word has been replaced with its polite substitute that has been defined earlier.



© 2009 Kentico Software

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.

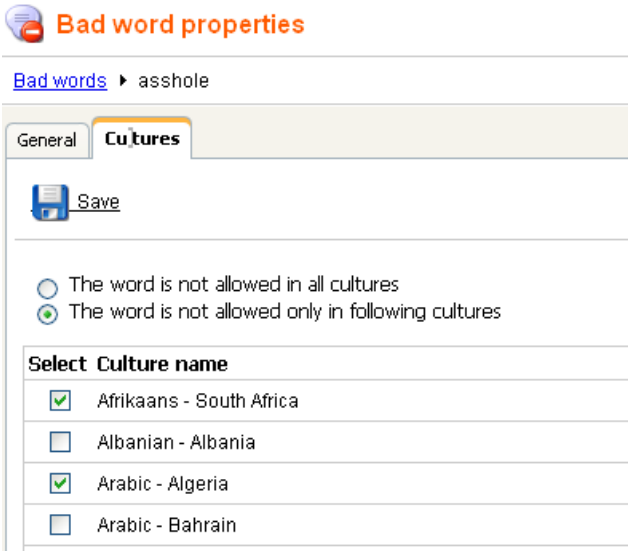
Actions	Type	Event time	Source	Event code	User name
	I	9/18/2008 5:40:33 PM	Bad words check	BADWORD	administrator
	I	9/18/2008 5:36:13 PM	Bad words check	BADWORD	administrator
	I	9/18/2008 4:28:58 PM	Authentication	AUTHENTICATIONSUCC	administrator
	I	9/18/2008 4:17:25 PM	Import objects - site 'CorporateSite'	IMPORT	public
	E	9/18/2008 4:17:15 PM	Application_End	EXCEPTION	
	I	9/18/2008 4:16:33 PM	Application_Start	INFORMATION	

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.



© 2009 Kentico Software

31.4.4 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.

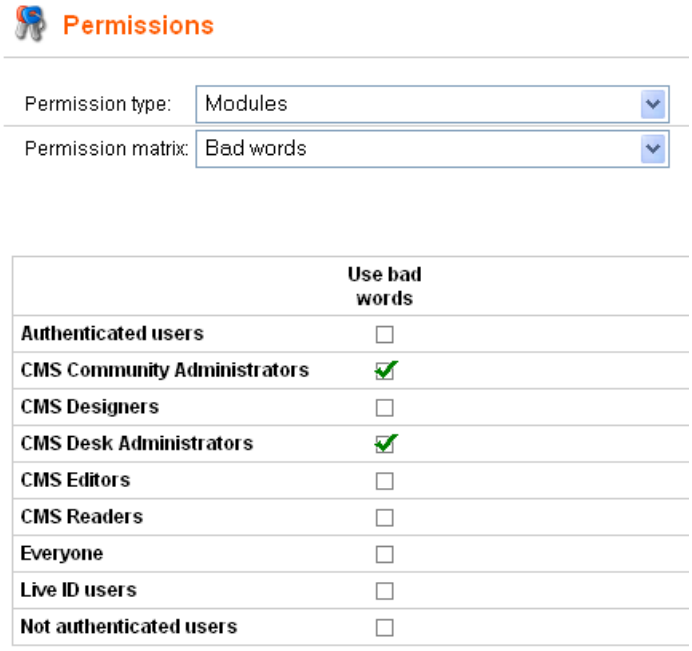
The following list shows which actions will be taken in some specific cases in order for you to easily understand their hierarchy:

- **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

© 2009 Kentico Software

31.4.5 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	Users with this permission assigned will not be checked for bad words use, they can use bad words without any limitation.

© 2009 Kentico Software

31.5 Banned IPs

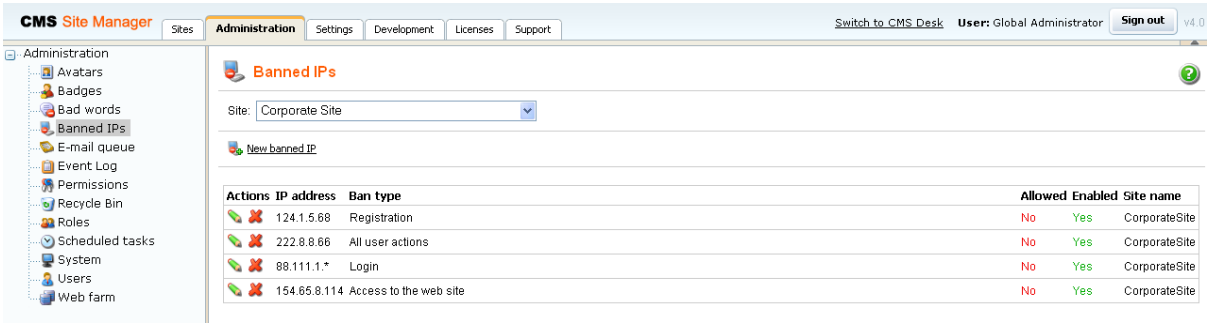
31.5.1 Banned IPs module overview

The Banned IPs module is useful when you want to prevent users from some IP addresses to access the website. This happens typically when the user enters indecent posts into a forum or when she behaves in some other unwanted way. These bans can be set either for separate web sites or globally for all web sites in the system.

31.5.2 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.

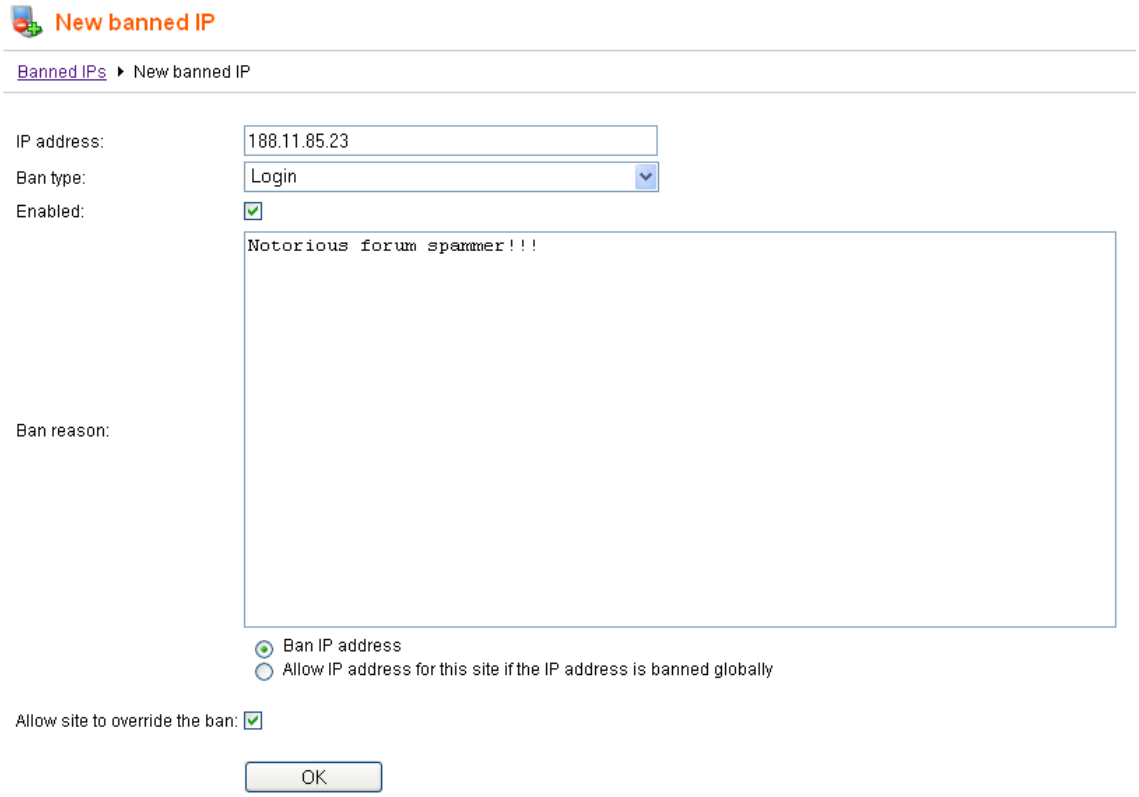


© 2009 Kentico Software

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: • Access to the web site - users cannot access the site from the entered address at all • Login - users cannot log in from the entered address • Registration - users cannot register from the entered address • All user actions - 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 override	If checked, this ban can be overridden by bans set for particular sites; can be set only for global bans.

© 2009 Kentico Software



When you have all details entered, click **OK**.

© 2009 Kentico Software

Now if you go back to the list of banned IPs, you should see the newly created record present in the list.

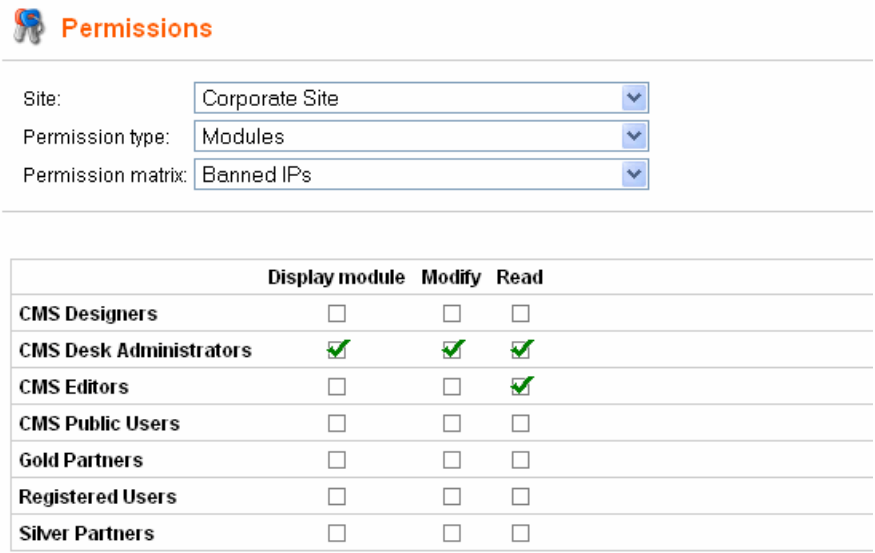
Editing an existing ban

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**.

31.5.3 Security

To enable the Banned IPs module, you have to make two security settings:

Go to **Site Manager -> Administration -> Permissions**.



The following table explains the particular permissions:

Display module	The module is visible in the administration interface.
Modify	The user is allowed to create and modify records.
Read	The user is allowed to read the records.

Grant user roles with appropriate permissions according to your needs. After doing so, the module should be displayed and changes could be made to the lists of banned IPs. However, there would still be no effect on the live site.

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. Users attempting to do an action from an IP address that is banned should get a page with the following message displayed in their browsers.



© 2009 Kentico Software

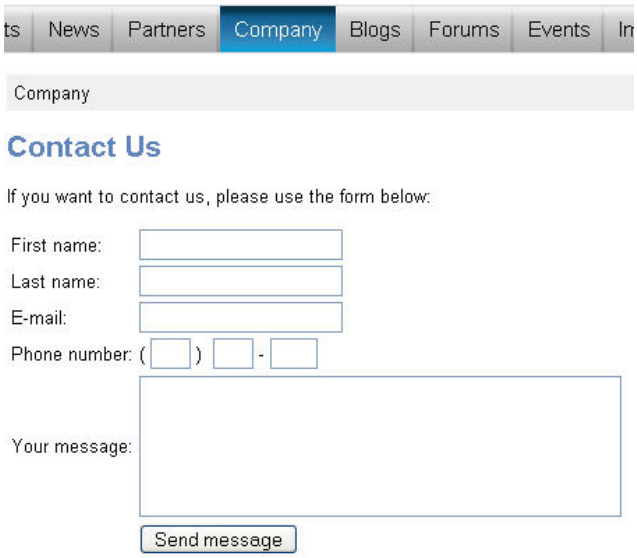
This is the default banned IPs redirect page. You can create your own page and set its URL in **Site Manager -> Settings -> Security -> Banned IP redirect URL**.

31.6 BizForms

31.6.1 BizForms module 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 web site by inserting a special macro expression into the text or using the BizForm web part.

Here's an example of such form:



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 BizForms module in **CMS Desk -> Tools -> BizForms**.

31.6.2 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:

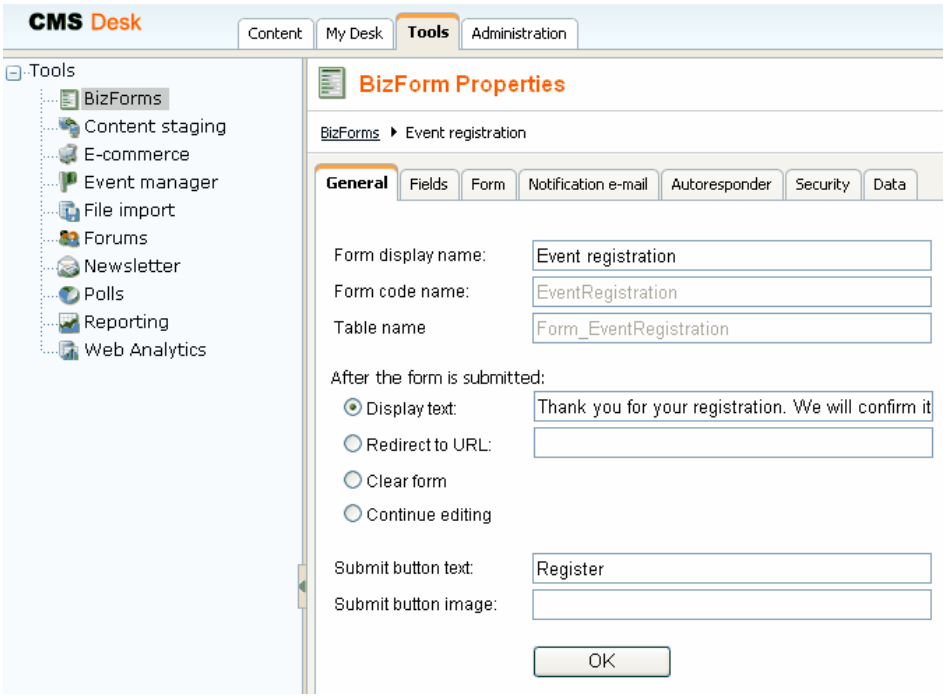
- **Display text:** Thank you for your registration. We will confirm it shortly by e-mail.

© 2009 Kentico Software

Enter the caption of the submit button:

- **Submit button text:** Register

Click **OK**.



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**

© 2009 Kentico Software

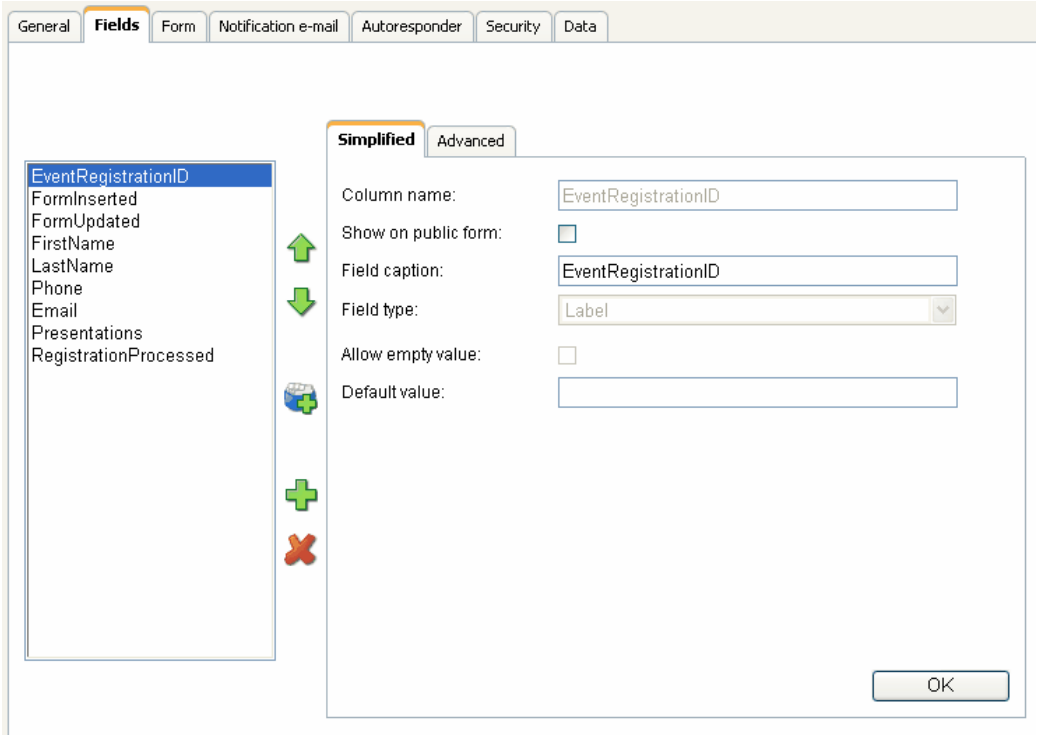
- Column name: Email
- Show on public form: yes
- Field caption: E-mail
- Field type: E-mail
- Maximum length: 100
- Allow empty value: no

- 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.



© 2009 Kentico Software

Form text localization

If you need to display the form on a multi-lingual web site, you can localize the field captions and other text strings using an expression like this:

{$myform.fullname$}

or

{$=Hello|de-de=Hallo|it-it=Ciao$}

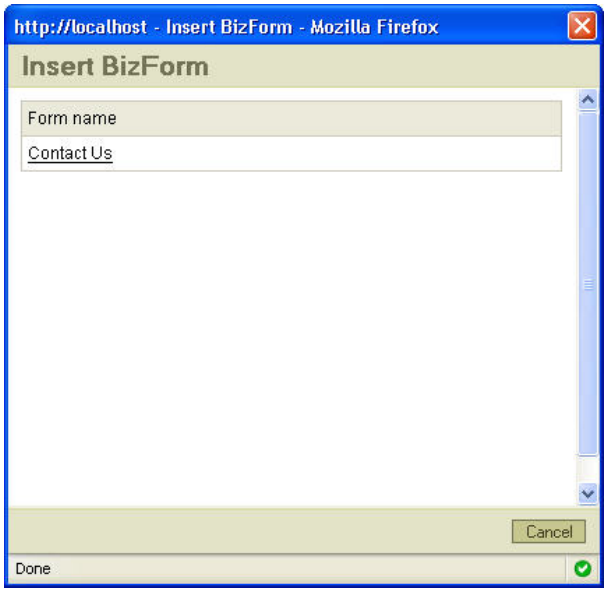
You can find more details in chapter Localization Expressions.

31.6.3 Displaying form on the web site

In order to display the BizForm on the web site, 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:



Enter some values and click the submit button to save it.

31.6.4 Sending e-mails

The BizForms module allows you to send to types of e-mails when a new record is added:

- Notification e-mail to the site owner
- Autoresponder - a notification e-mail to the person who submitted the new record in the form

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@mydomain.com *(use your e-mail here)*
- **Subject:** Event registration by {%FirstName%} {%LastName%}
- **Attach uploaded documents:** Yes
- **Use custom form 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 his/her 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.

© 2009 Kentico Software

The macro **$$value:<fieldname>$$** inserts value of the given field into the text.

You can also add attachments that are sent with 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 special expressions in format {%fieldname%} into the field value. When the form is submitted, the value is automatically merged with 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 this for **First name** "Jane":

Dear Jane, thank you for your message. We will contact you shortly.

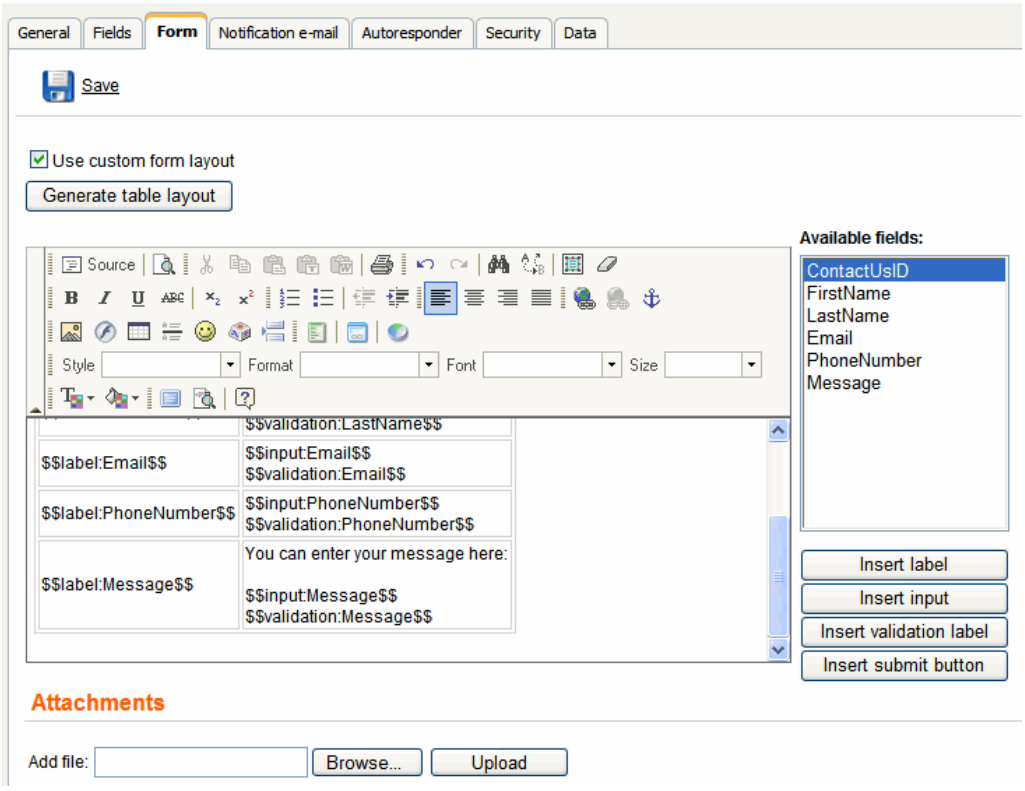
It's also useful if you need to **customize the sender address of the notification e-mail**. When the site owner replies to such e-mail, the reply will be sent to the person who submitted the form instead of sending it to some system e-mail address. All you need to do is to set the **From e-mail** value to e.g. **{%Email%}**.

© 2009 Kentico Software

31.6.5 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 **User custom form layout** box. Click **Generate table layout** to quickly generate the fields into the form. Alternatively, you can click 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:



Click **OK** to save the form.

Now the form looks like this:



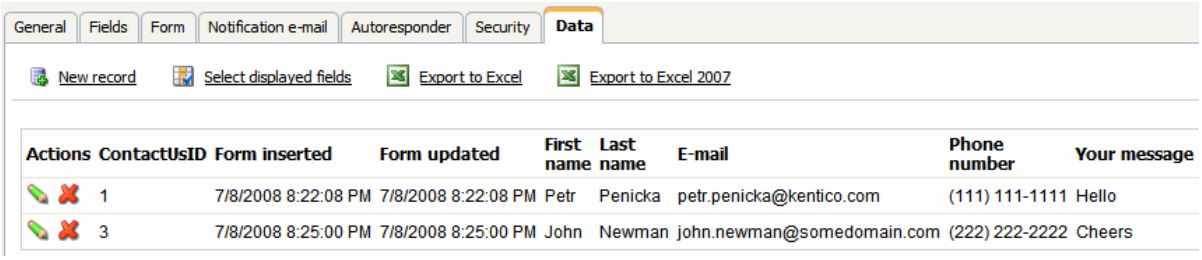
© 2009 Kentico Software

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.

31.6.6 Managing data

The entered data can be managed on the **Data** tab:



Actions	ContactUsID	Form inserted	Form updated	First name	Last name	E-mail	Phone number	Your message
	1	7/8/2008 8:22:08 PM	7/8/2008 8:22:08 PM	Petr	Penicka	petr.penicka@kentico.com	(111) 111-1111	Hello
	3	7/8/2008 8:25:00 PM	7/8/2008 8:25:00 PM	John	Newman	john.newman@somedomain.com	(222) 222-2222	Cheers

Here you can add, edit and delete records. You can also export data into Excel.

31.6.7 Security

The access to the BizForms module can be managed in **CMS Desk -> Administration -> Permissions**, after you select **Modules -> BizForms** permission matrix:



	Create form	Delete data	Delete form including data	Display module	Edit data	Edit form	Read data	Read form
CMS Designers	☐	☐	☐	☐	☐	☐	☐	☐
CMS Desk Administrators	☑	☑	☑	☑	☑	☑	☑	☑
CMS Editors	☑	☑	☐	☑	☑	☑	☑	☑
CMS Public Users	☐	☐	☐	☐	☐	☐	☐	☐
CMS Readers	☐	☐	☐	☐	☐	☐	☐	☐
Everyone	☐	☐	☐	☐	☐	☐	☐	☐
Gold Partners	☐	☐	☐	☐	☐	☐	☐	☐
Registered Users	☐	☐	☐	☐	☐	☐	☐	☐
Silver Partners	☐	☐	☐	☐	☐	☐	☐	☐

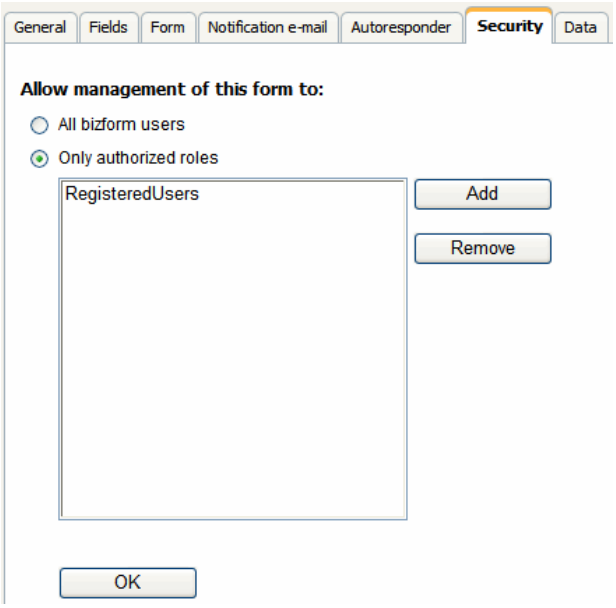
© 2009 Kentico Software

The following table explains particular permissions:

Create form	The user is allowed to create a new form.
Delete data	The user is allowed to delete entered records.
Delete form including data	The user is allowed to delete the form including data.
Display module	The module is displayed to the users in the user interface.
Edit data	The user is allowed to create and edit records.
Edit form	The user is allowed to edit form configuration, fields and layout.
Read data	The user is allowed to read entered records.
Read form	The user is allowed to read form configuration, field settings and layout.

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:



The form will be hidden to other roles then.

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.

© 2009 Kentico Software

31.6.8 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, updated and delete form data using .NET code:

© 2009 Kentico Software

Creating a new record

[C#]

```
using CMS.FormEngine;
using CMS.SettingsProvider;
using CMS.DataEngine;
using CMS.GlobalHelper;

...

        string bizFormName = "TestingSiteContactUs";
        string siteName = "CMSTestingSite";

        // Read BizFrom 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);
            }
        }
```

© 2009 Kentico Software

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.ExecuteQuery(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.";
```

© 2009 Kentico Software

```
                }
            }
            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.ExecuteQuery(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.
```

© 2009 Kentico Software

```
                    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.";
            }
        }
    }
```

31.6.9 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.

31.7 Blogs

31.7.1 Blogs 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 web site, 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 web site:

© 2009 Kentico Software



Blogs > My blog

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

Symbian S60 3rd realesed

Symbian series 60 3rd Edition operating system has been realesed. 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. Unfortunatelly, applications for your previous versions of the Symbian operating system are not compatible with the new one.

Posted: 8/10/2007 12:58:04 PM by **Global Administrator** | with 0 comments

Which cell phone are you using?

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.

Posted: 7/22/2007 12:50:04 PM 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.

My favourite websites

www.Nokia.com

Recent posts

Nokia 6120
Symbian S60 3rd realesed
Which cell phone are you using?

Syndication

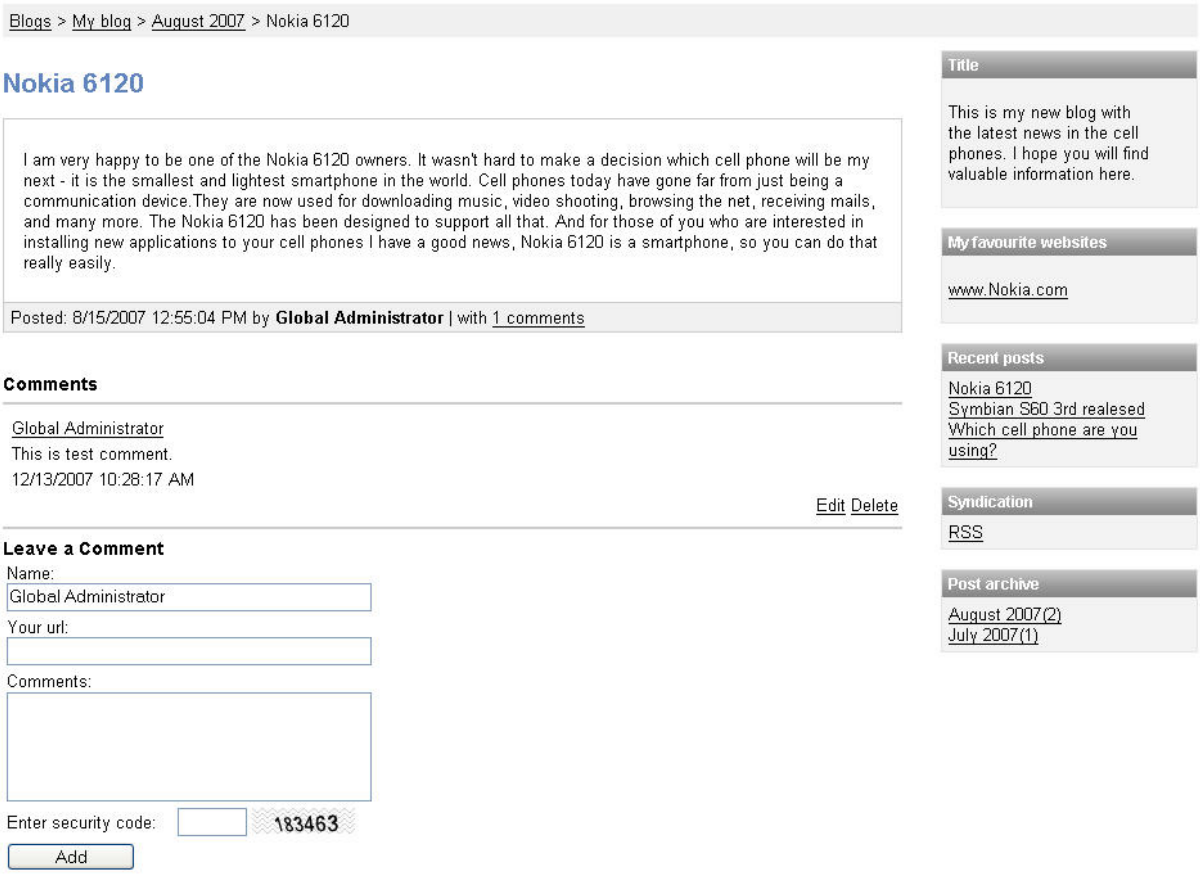
RSS

Post archive

August 2007(2)
July 2007(1)

© 2009 Kentico Software

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 web sites 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:



31.7.2 Adding a blog to your site

In this sample, 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 web sites...
- **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)

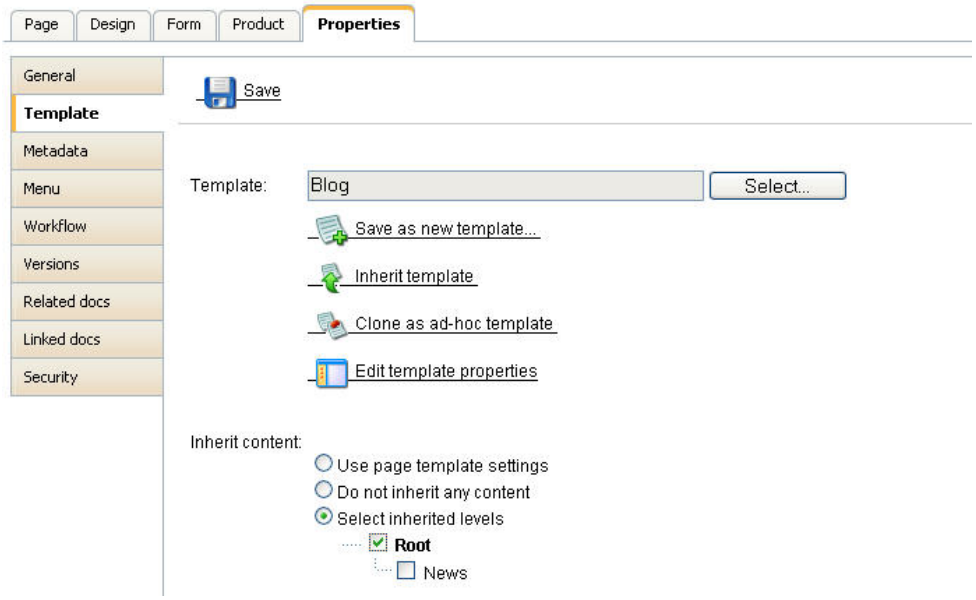
© 2009 Kentico Software

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 unsubscripiton 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 value **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**.

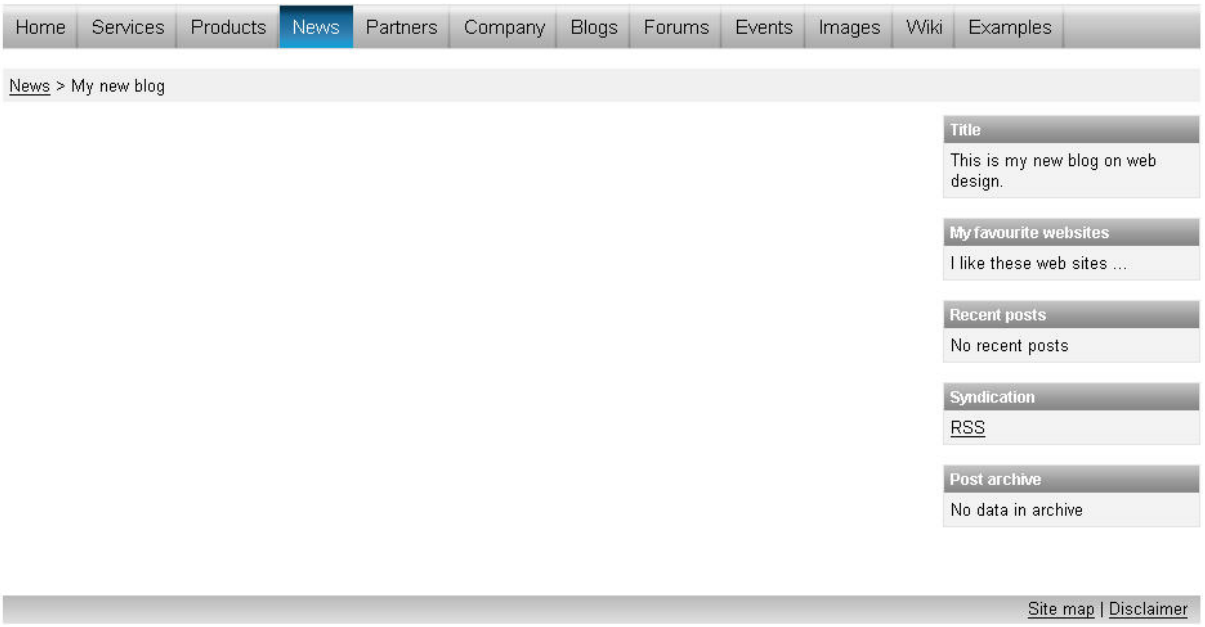
2. Choose the **root** in the content tree and switch to the **Design** tab. Configure the **menuMain** web part and set the **Document types** value to this:

```
cms.menuitem;cms.blog
```

Click OK. It ensures that the main menu contains a link to your blog.

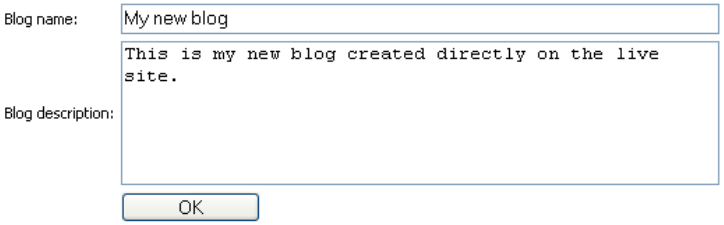
© 2009 Kentico Software

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:



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.



© 2009 Kentico Software

31.7.3 Adding posts to your blog

You can add new posts to your blog in two ways:

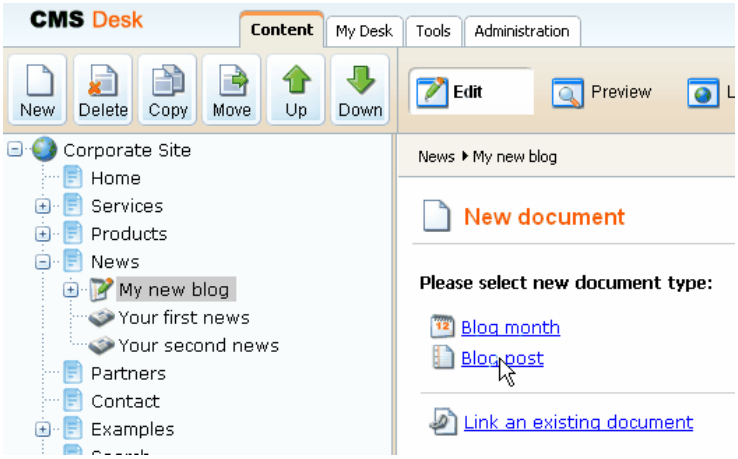
1. From the CMS Desk -> My Desk -> My blogs dialog

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**.

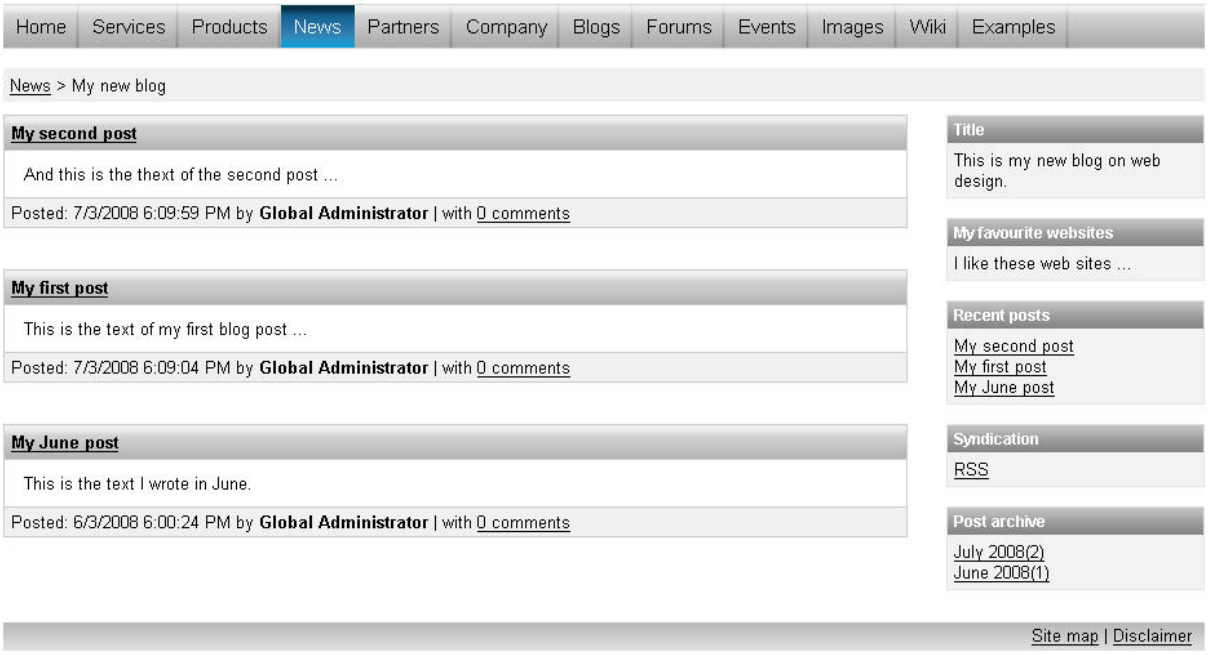
© 2009 Kentico Software

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:



© 2009 Kentico Software

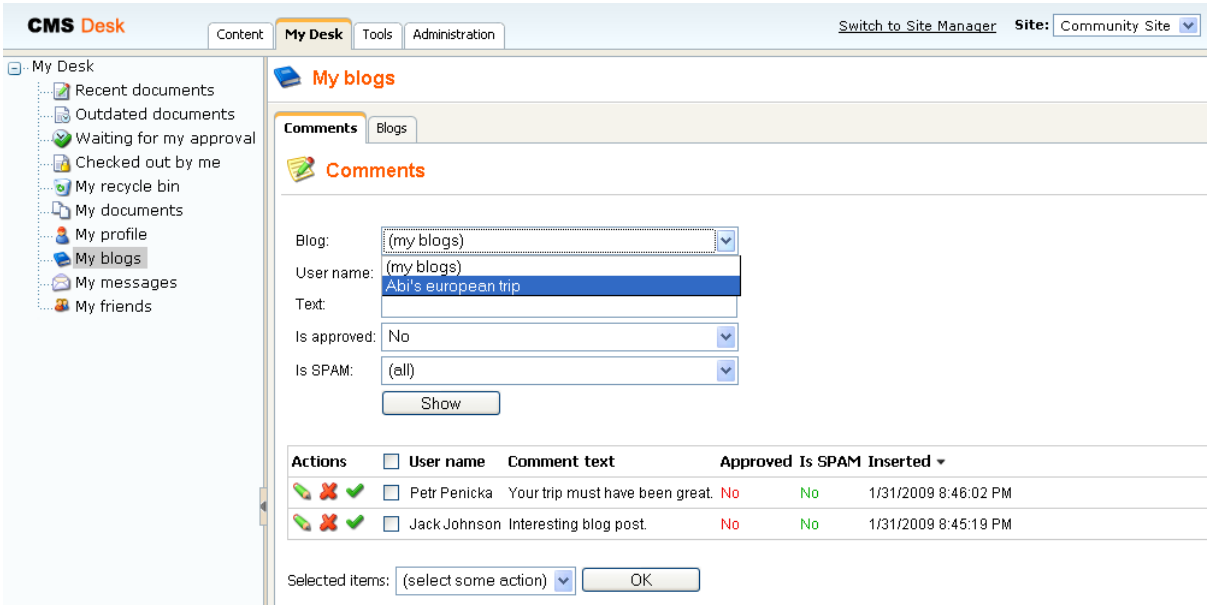
31.7.4 Moderating comments

The comments can be moderated in tree ways:

1. In the My Desk -> My blogs section

In this section, the currently logged-in user can manage comments at all her 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**.



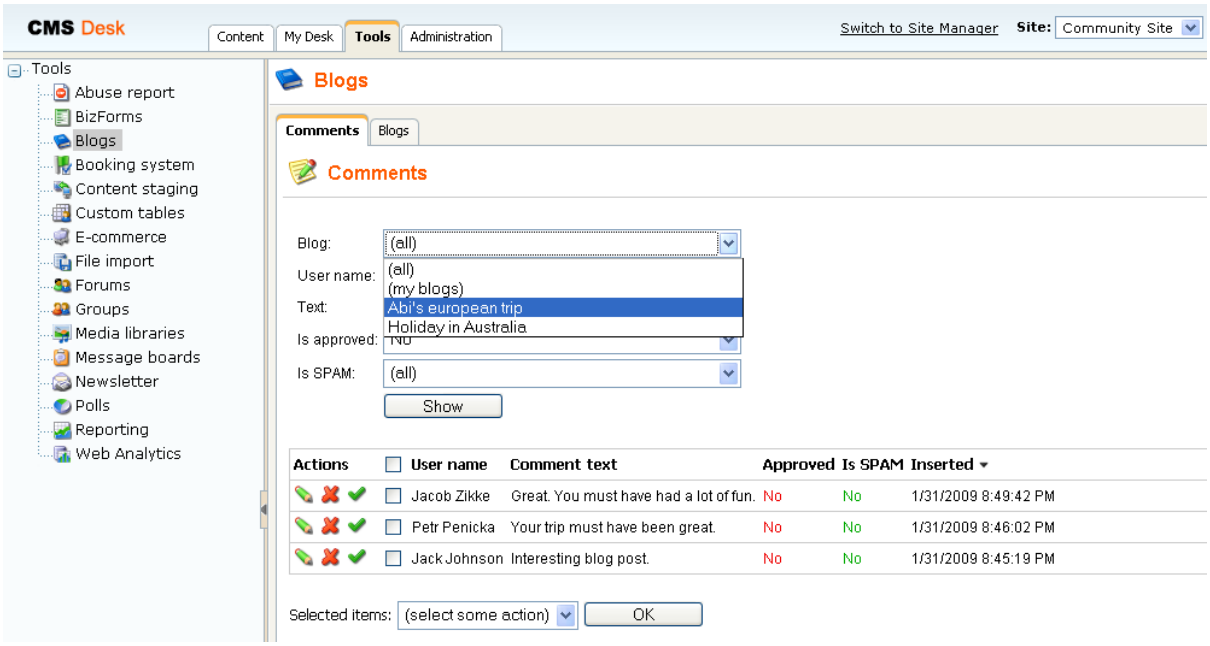
2. In the CMS Desk -> Tools -> Blogs section

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.

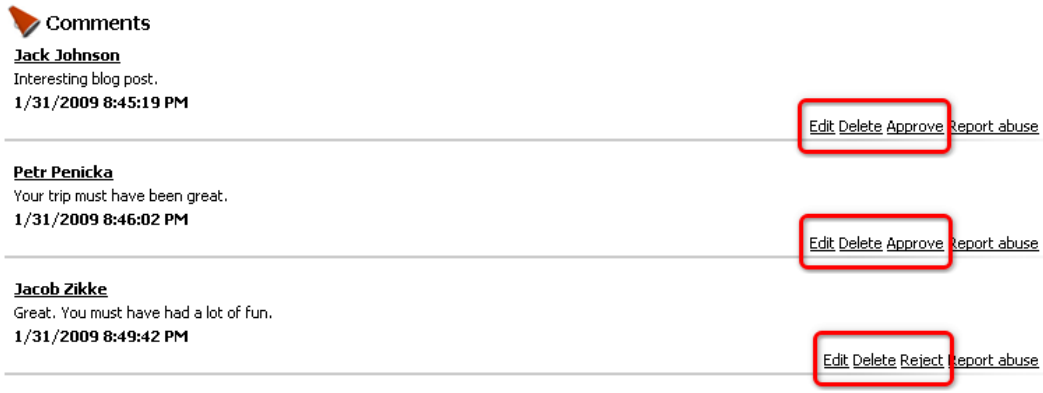
© 2009 Kentico Software

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**.



3. On-site management

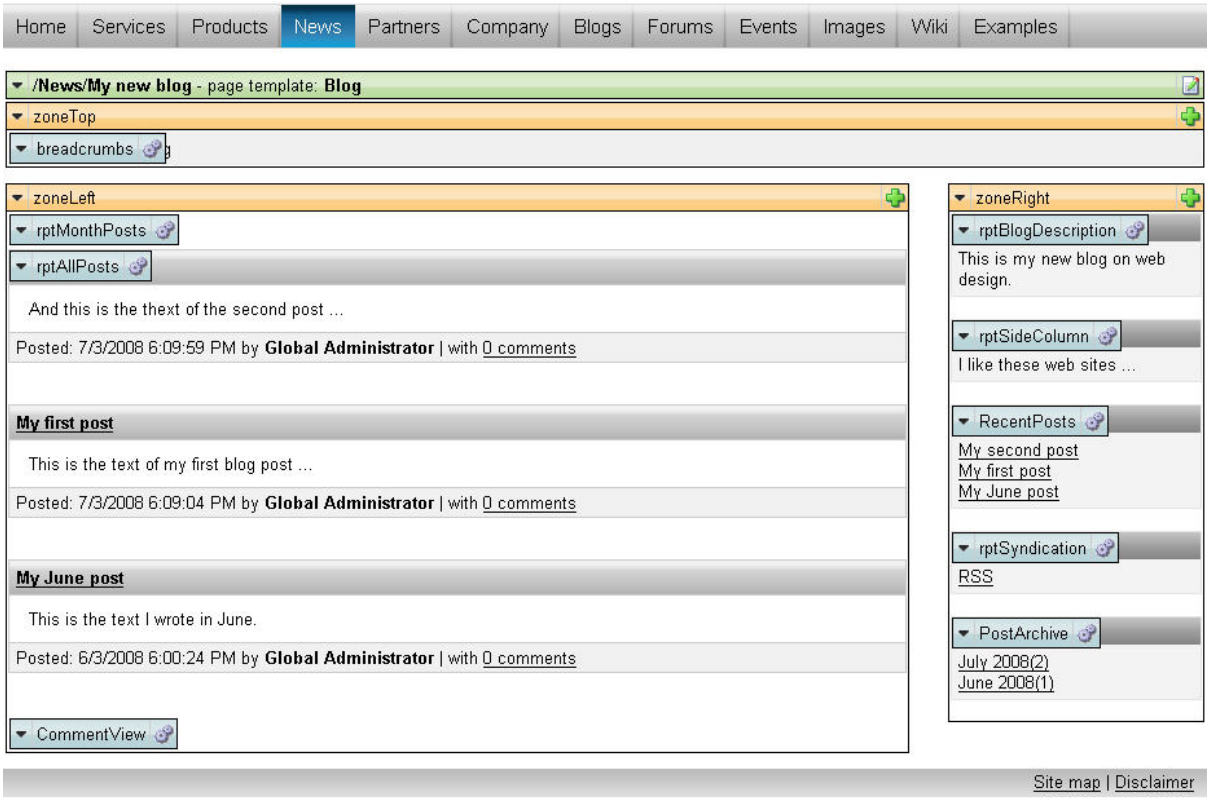
When you're signed in and are entitled to manage the comments for the given blog, you are displayed with **Edit**, **Delete**, **Approve** and **Reject** buttons. These buttons are displayed to **blog owner**, **moderators** of the current blog, **global administrators** and users with the **Manage comments** permissions for the Blogs module.



© 2009 Kentico Software

31.7.5 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

© 2009 Kentico Software

31.7.6 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 underlaying 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

© 2009 Kentico Software

be displayed, letting blog owners edit the properties of the blog.



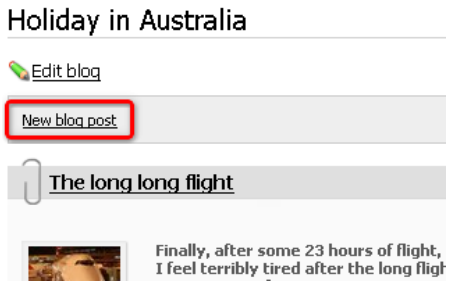
Add new blog posts

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.



Edit or delete blog posts

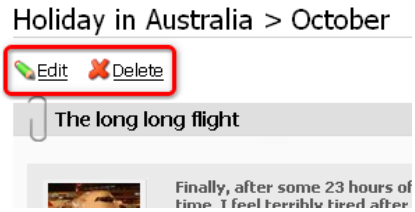
1. Create an **alternative form** for the **Blog post** document type, which will contain the fields that you want to let users modify. If you are not familiar with the Alternative forms concept, please refer to the Alternative forms chapter first.

2. Add the **Edit contribution** web part to the blogs section title page and set its following properties:

© 2009 Kentico Software

- **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.

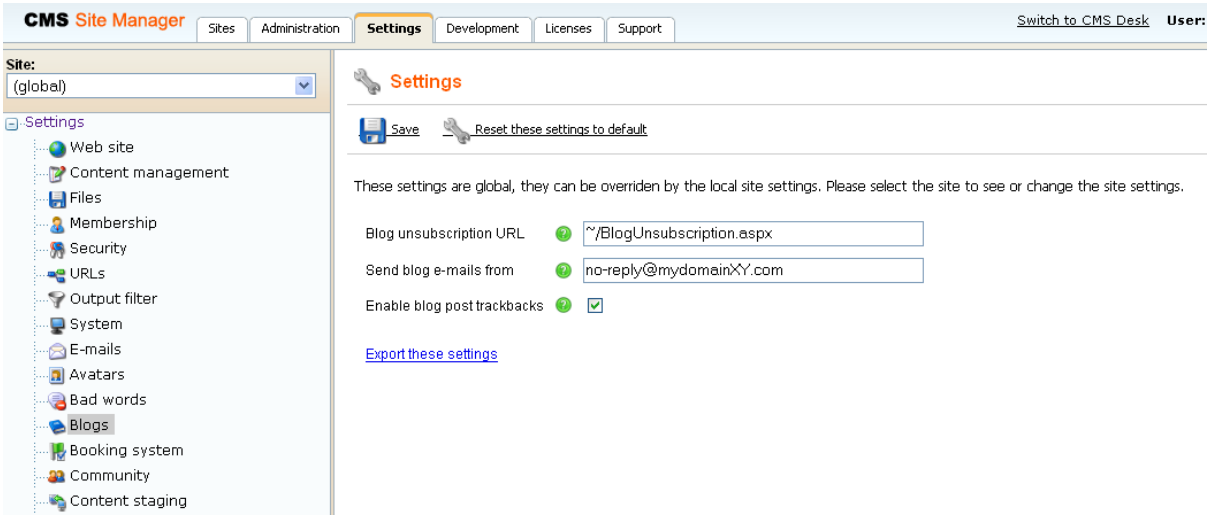


© 2009 Kentico Software

31.7.7 Settings

Settings of the Blogs module can be done in **Site Manager -> Settings -> Blogs**. The following settings are available:

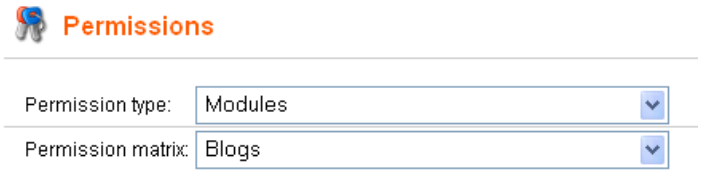
- **Blog unsubscription URL** - URL of a page on that the **Blog post unsubscription** web part is placed; this is a special web part used for handling unsubscriptions from receiving notifications about new blog posts
- **Send blog e-mails from** - e-mail address that will be used as the Sender ('From') 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



© 2009 Kentico Software

31.7.8 Security

The Blogs module leverages the standard security used for all documents. You can find more details in chapter Permissions for modules and documents.



	Display module	Manage comments	Read
Authenticated users	☐	☐	☐
CMS Community Administrators	☑	☑	☑
CMS Designers	☐	☐	☐
CMS Desk Administrators	☑	☑	☑
CMS Editors	☑	☑	☑
CMS Readers	☑	☐	☑
Everyone	☐	☐	☐
Live ID users	☐	☐	☐
Not authenticated users	☐	☐	☐

You can manage the posts if you are either owner of the blog, blog moderator, global administrator or if you are granted with the **Manage comments** for the **Blogs module** in the **Administration -> Permissions** dialog. The **Display module** permission enables the Blogs module in the user interface.

The blogs in the **My Desk -> My blogs** dialog are displayed only to the blog document owner.

© 2009 Kentico Software

31.7.9 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);
              }
```

© 2009 Kentico Software

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);
                    }
                }
            }
```

© 2009 Kentico Software

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);
               }
            }
        }
```

© 2009 Kentico Software

31.7.10 Trackbacks

31.7.10.1 Trackbacks overview

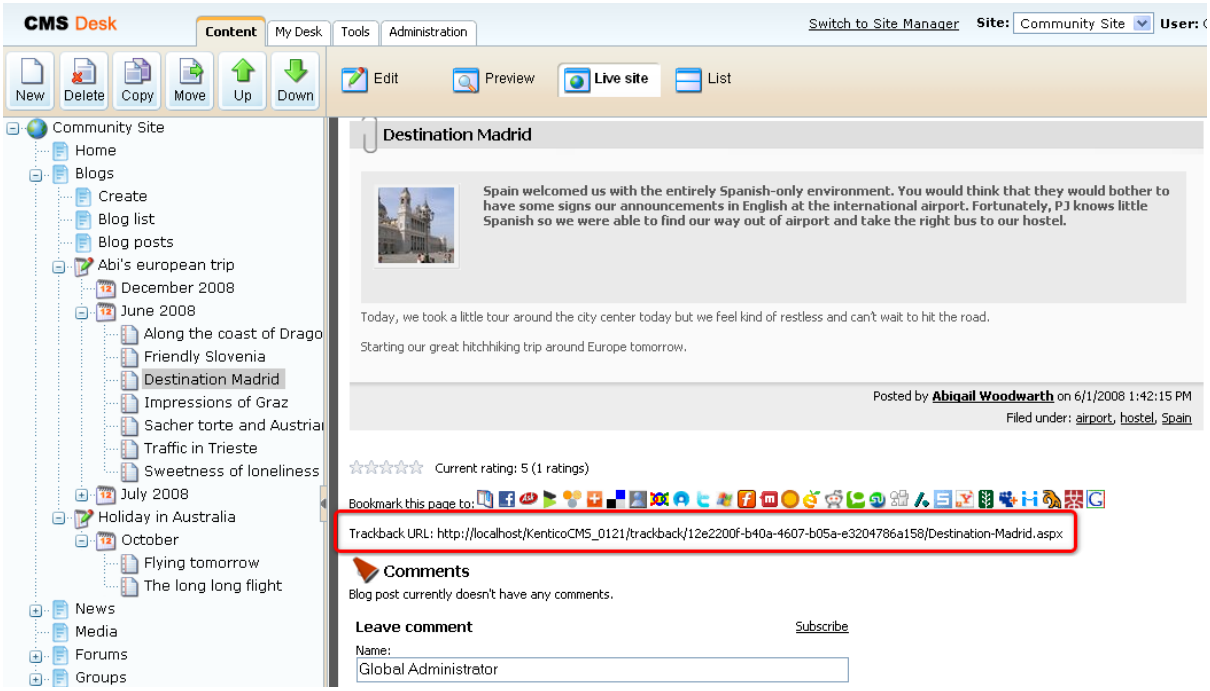
The Trackbacks feature allows sending of blog post links to other blogs when a new blog post is created. The link is typically, but not always, added as a blog comment on in the target blog, as implemented in Kentico CMS. This can be performed not only within the same site, but also to completely different 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

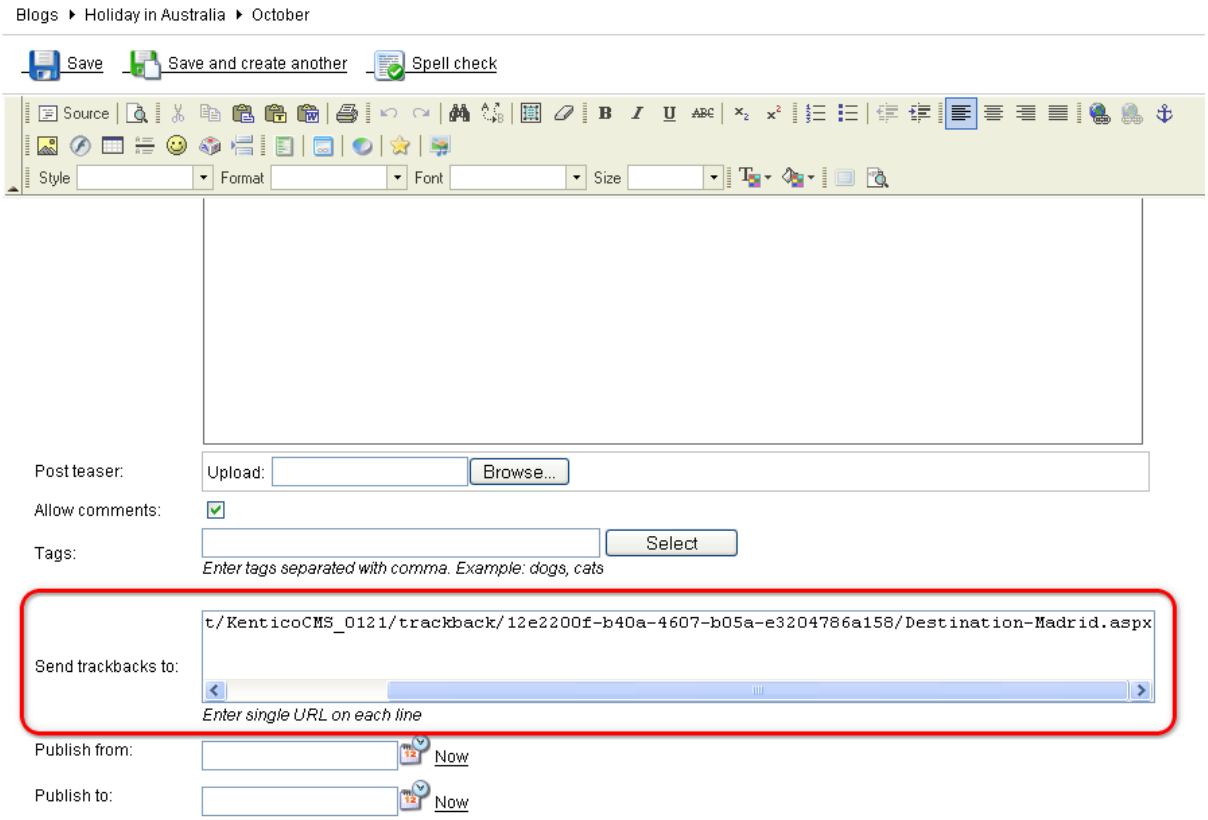
Read here to learn how to enable trackbacks on your site.

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.

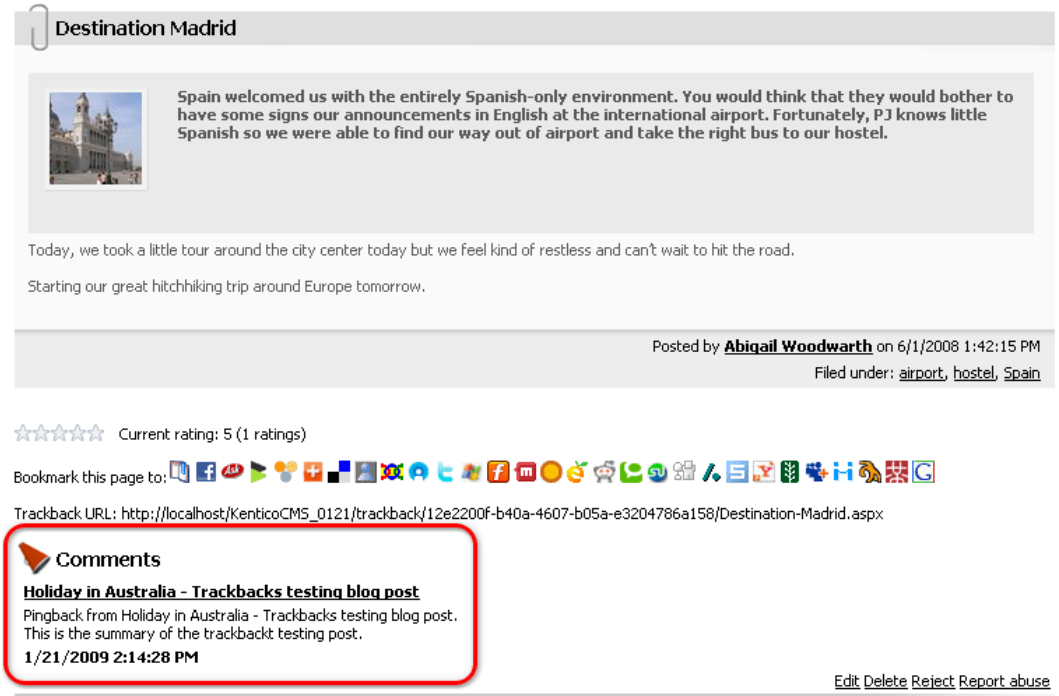


2. When users are creating a new blog post, they can add such URLs into the **Send trackbacks to** field. More than one trackback URLs can be entered, each on a new line.



© 2009 Kentico Software

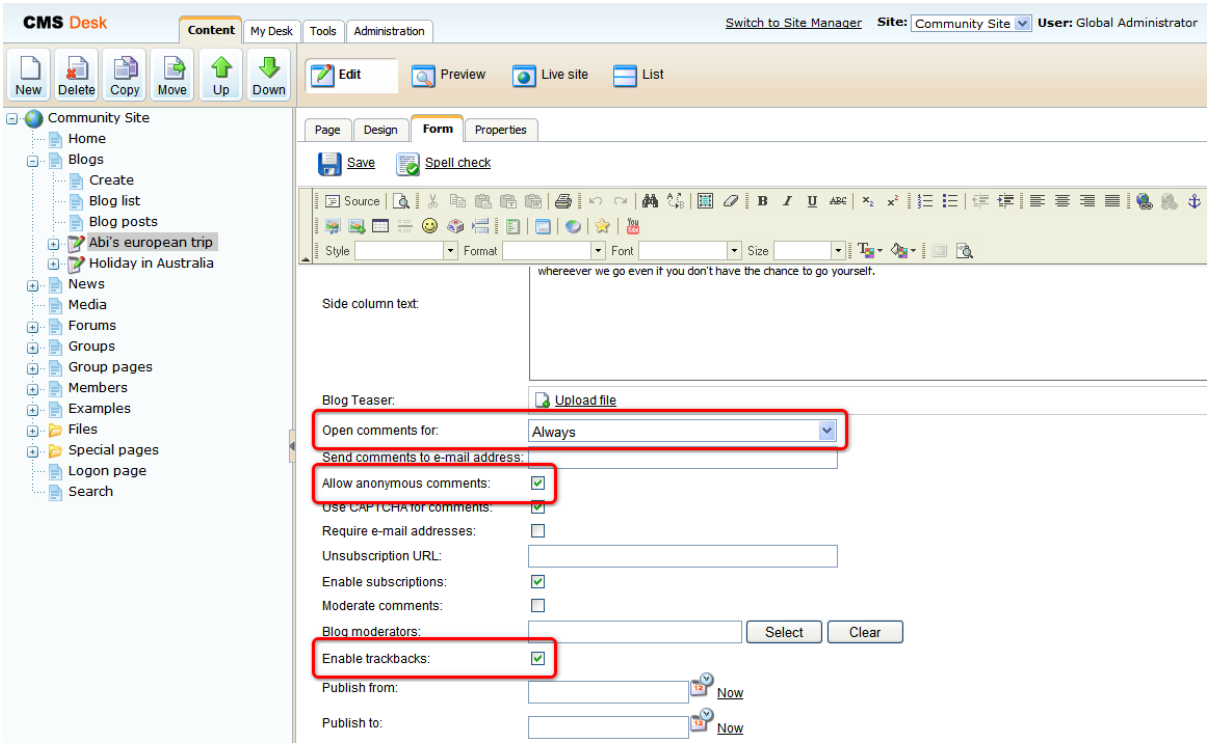
3. When the blog post is submitted, trackback ping is sent to the trackback URLs. If everything is configured correctly at the other blogs, a blog comment is added with the blog post link, title and summary, as you can see in the screenshot below.



31.7.10.2 Enabling trackbacks

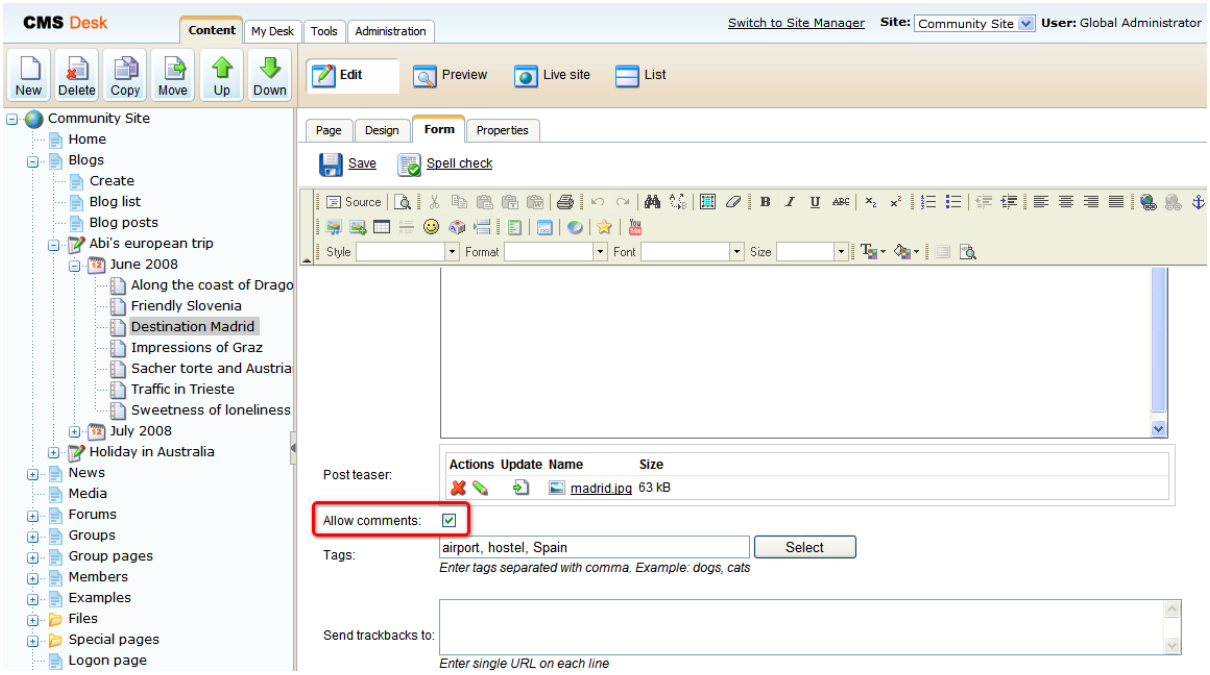
For the trackbacks to be functional in a particular blog, you need to enable the following options on the blog's **Form** tab:

- **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



© 2009 Kentico Software

The **Allow comments** option must also be enabled on the pined blog post's **Form** tab so that the comment can be inserted.



31.7.11 Blog comments notifications

31.7.11.1 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 her e-mail 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 her e-mail 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 her e-mail 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

© 2009 Kentico Software

31.7.11.2 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.



2. Users can also subscribe without leaving a comment, by clicking the **Subscribe** link at the top of the Leave comment form.



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.

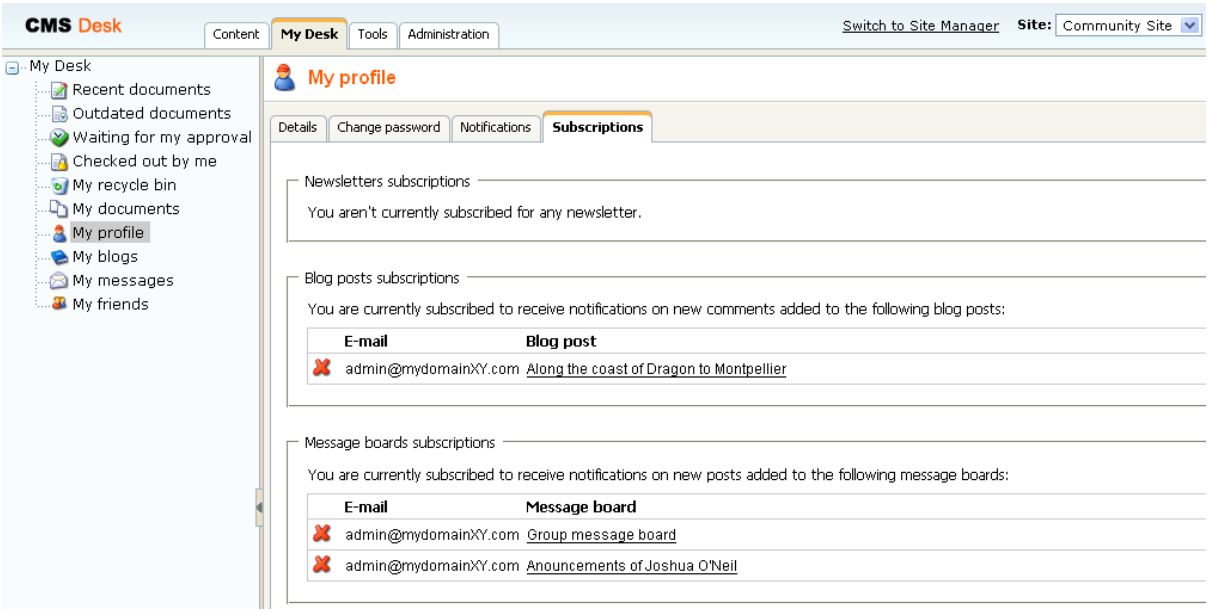


© 2009 Kentico Software

Subscriptions management

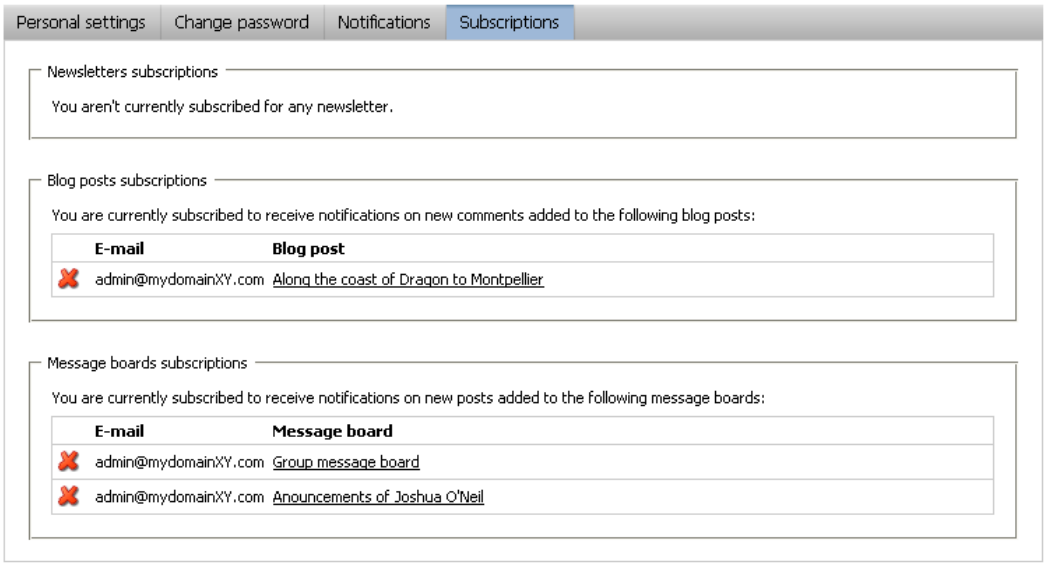
Users can view their subscriptions and eventually **unsubscribe** using the **Delete** ( ) icon at the following two places:

1. Users with access to **CMS Desk** can view their subscriptions on the **My Desk -> My profile -> Subscriptions** tab.



© 2009 Kentico Software

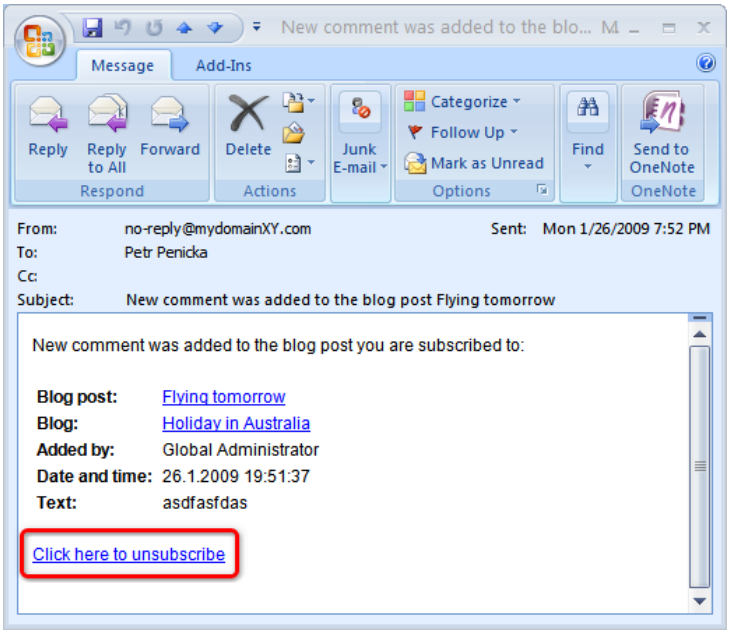
2. On live site, users can view their subscriptions in the **My account** web part. The **Display subscriptions** property of the web part must be enabled for this to be possible.



© 2009 Kentico Software

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.

31.7.11.3 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

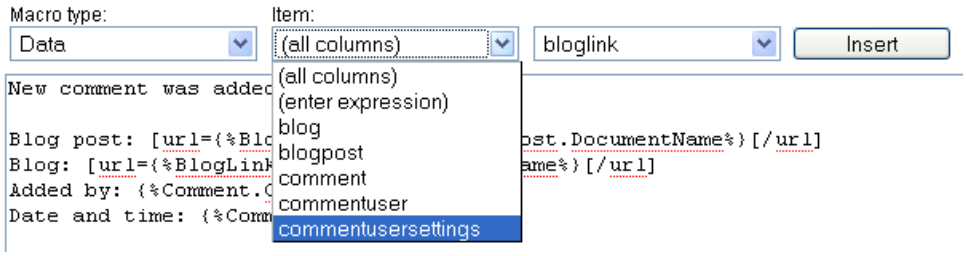
© 2009 Kentico Software

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%}



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%}



© 2009 Kentico Software

31.8 Booking system

31.8.1 Booking system 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.

31.8.2 Publishing the events

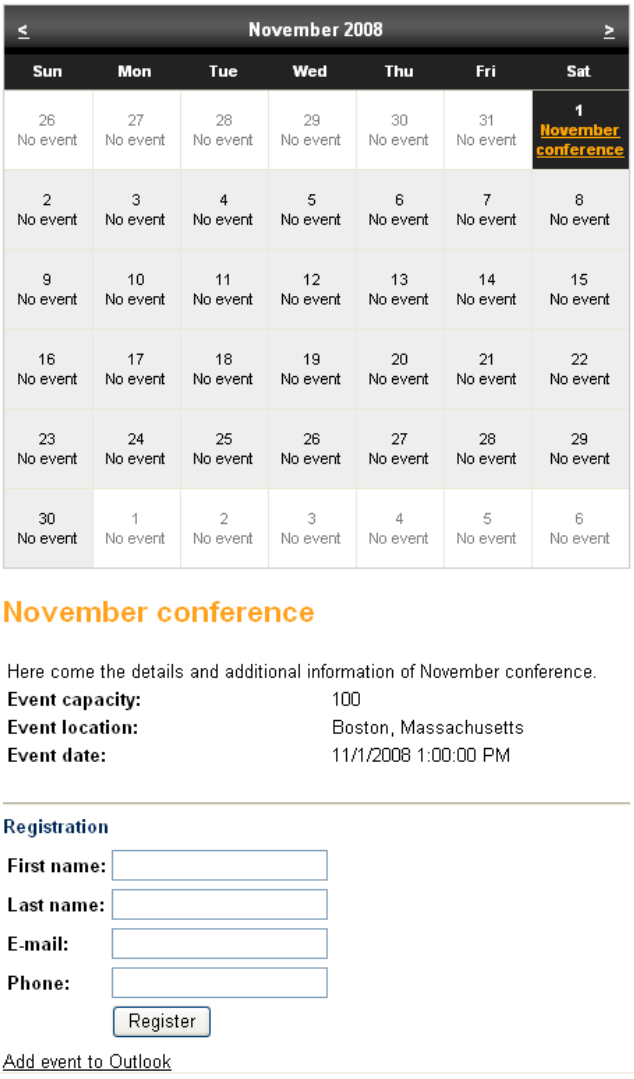
The events managed by the Booking system are actually documents of type **Event (booking system)**. The Event document uses the following fields:

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.

© 2009 Kentico Software

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.



<	November 2008					>
Sun	**Mon**	**Tue**	**Wed**	**Thu**	**Fri**	**Sat**
26 No event	27 No event	28 No event	29 No event	30 No event	31 No event	1 November conference
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 No event	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	1 No event	2 No event	3 No event	4 No event	5 No event	6 No event

November conference

Here come the details and additional information of November conference.

Event capacity: 100
Event location: Boston, Massachusetts
Event date: 11/1/2008 1:00:00 PM

Registration

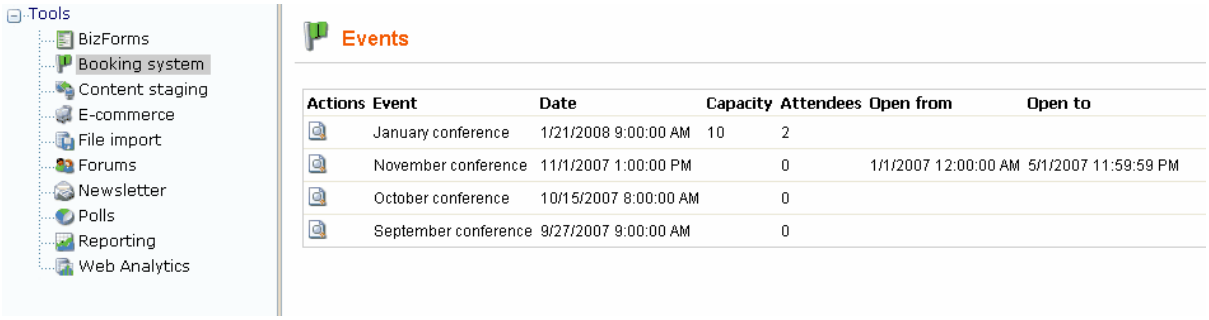
First name:
Last name:
E-mail:
Phone:
Register

Add event to Outlook

© 2009 Kentico Software

31.8.3 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.



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.

© 2009 Kentico Software

31.8.4 Security

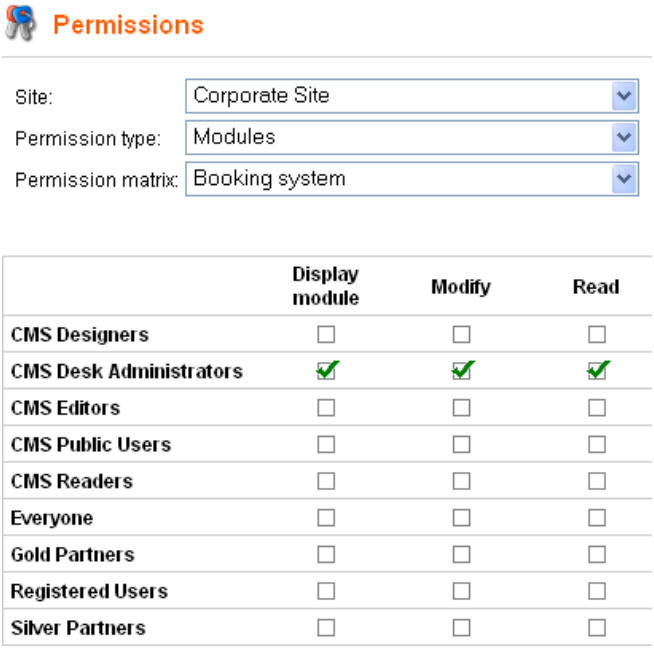
The security is split into two sections:

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 and the user need to be granted with permissions for this module in the **Administration -> Permissions** section.



You can configure the following permissions:

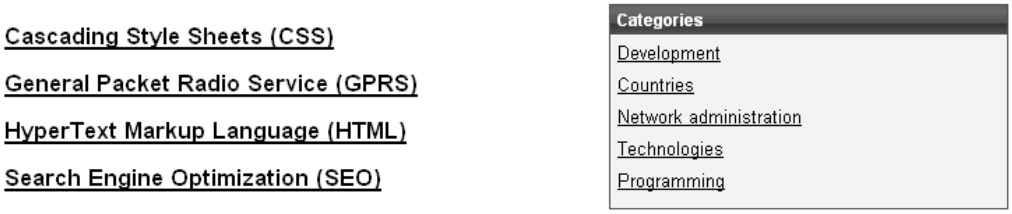
- **Display module** - enables the module in the user interface
- **Modify** - allows users to modify (add, update, delete) the list of attendees and their details
- **Read** - allows users to read the list of attendees, resend messages and send mass e-mail

© 2009 Kentico Software

31.9 Categories

31.9.1 Categories module 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.



31.9.2 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. her own ones; only the user who created such category can use it

Custom categories

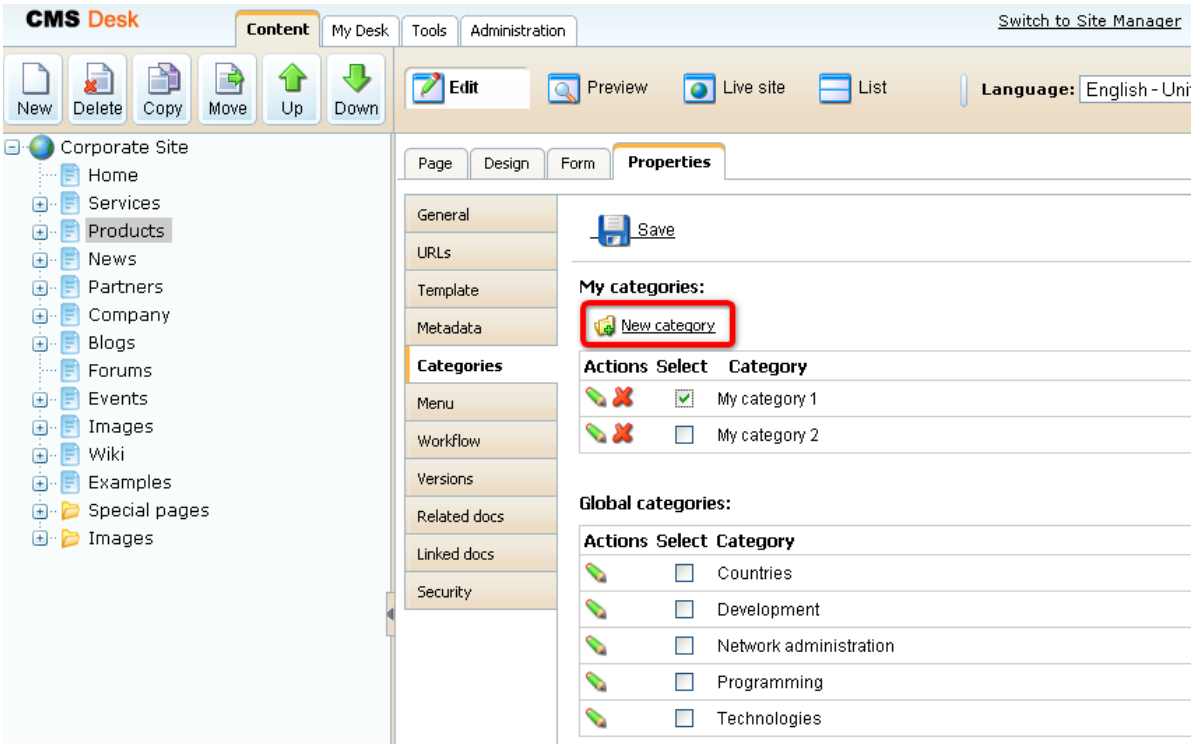
Each user can create her own categories and assign documents to them. This can be done in **CMS Desk**, after selecting a document from the content tree and switching to it's **Properties -> Categories** tab.

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.

© 2009 Kentico Software

To create a new custom category, just follow these three easy steps:

1. Click the **New category** link.

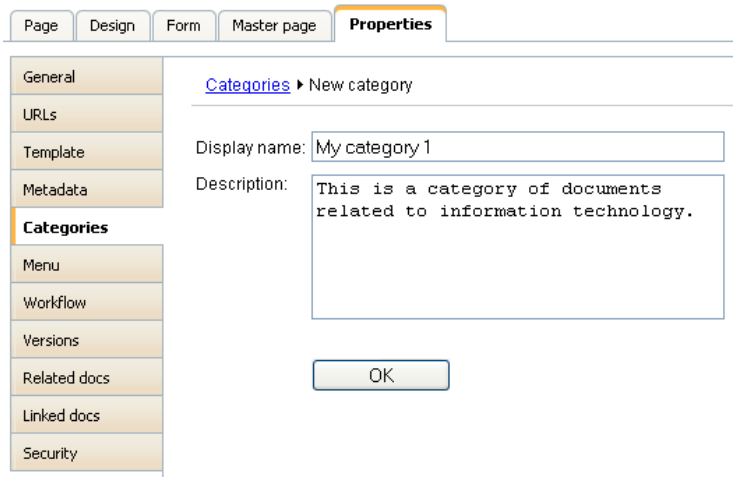


2. Enter the required details:

Display name	Display name of the category.
Description	Text describing of the category.

© 2009 Kentico Software

And click **OK**.



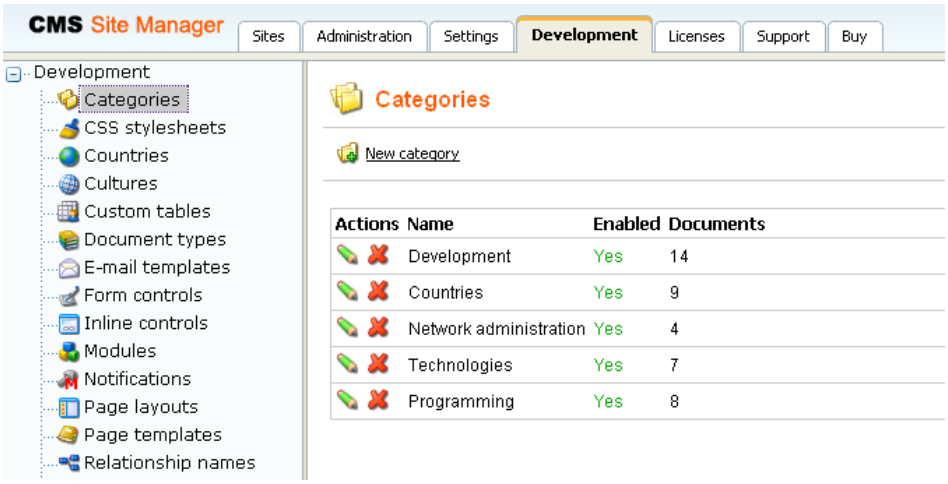
3. You should be redirected back to the list where your new custom category should be visible.



© 2009 Kentico Software

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.



To create a new global category, just follow these three easy steps:

1. Click the **New category** link.



© 2009 Kentico Software

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.

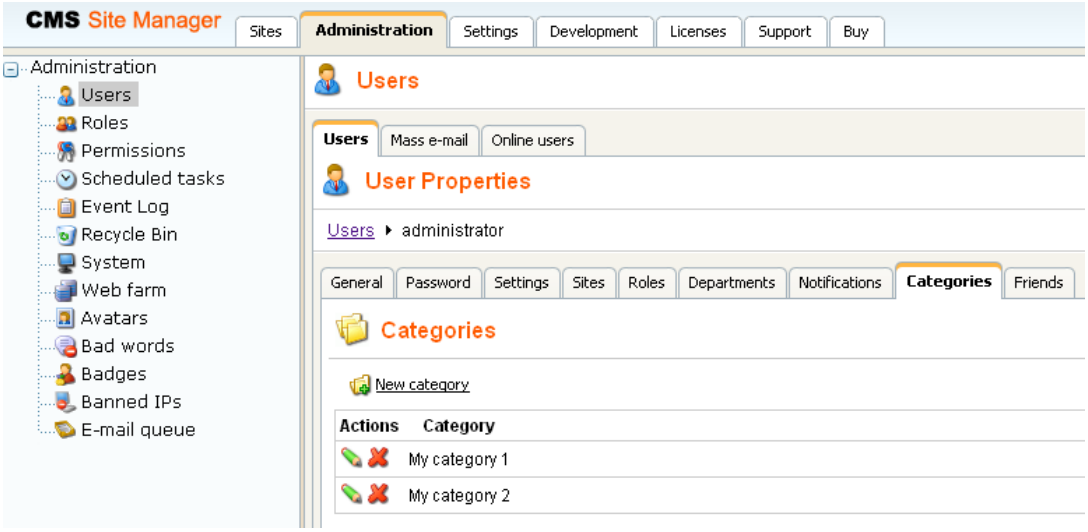
3. Click **Save**. The category has just been created and should be visible in the categories list.

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.



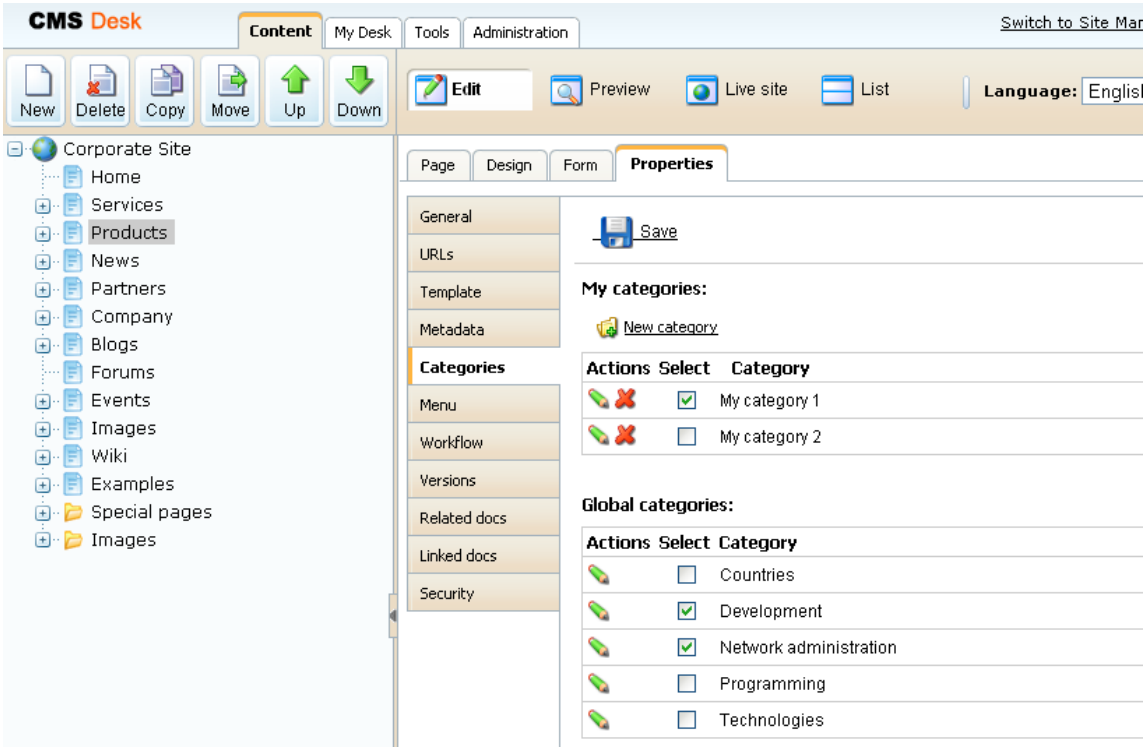
© 2009 Kentico Software

31.9.3 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**.

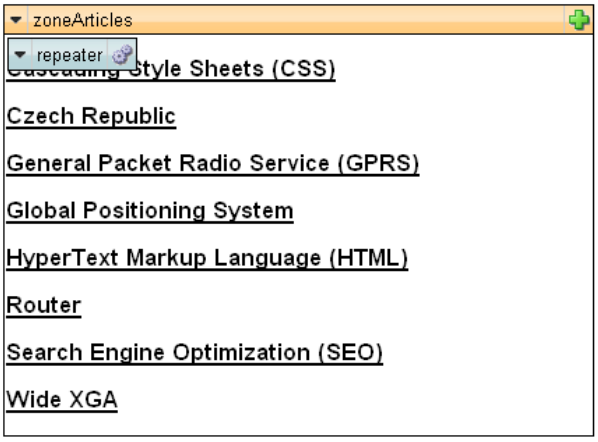
© 2009 Kentico Software

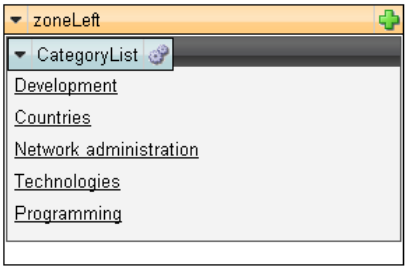
31.9.4 Using the Category list web part

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, she 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.**





© 2009 Kentico Software

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?}' ))
```

© 2009 Kentico Software

31.10 Content rating

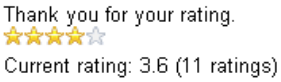
31.10.1 Overview

The content rating module can be used to give users the possibility of rating any document on your web site. The module's main part is the Content rating web part. You can place this web part on any page of your web site 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.

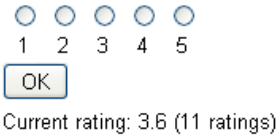
31.10.2 How to enable content rating on the web site

The content rating web part gives users the possibility of rating a document. It has three default appearance modes:

Stars



Radio-buttons



Drop-down



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**.

© 2009 Kentico Software

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 after the user submits her 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 **NodeID**s 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.

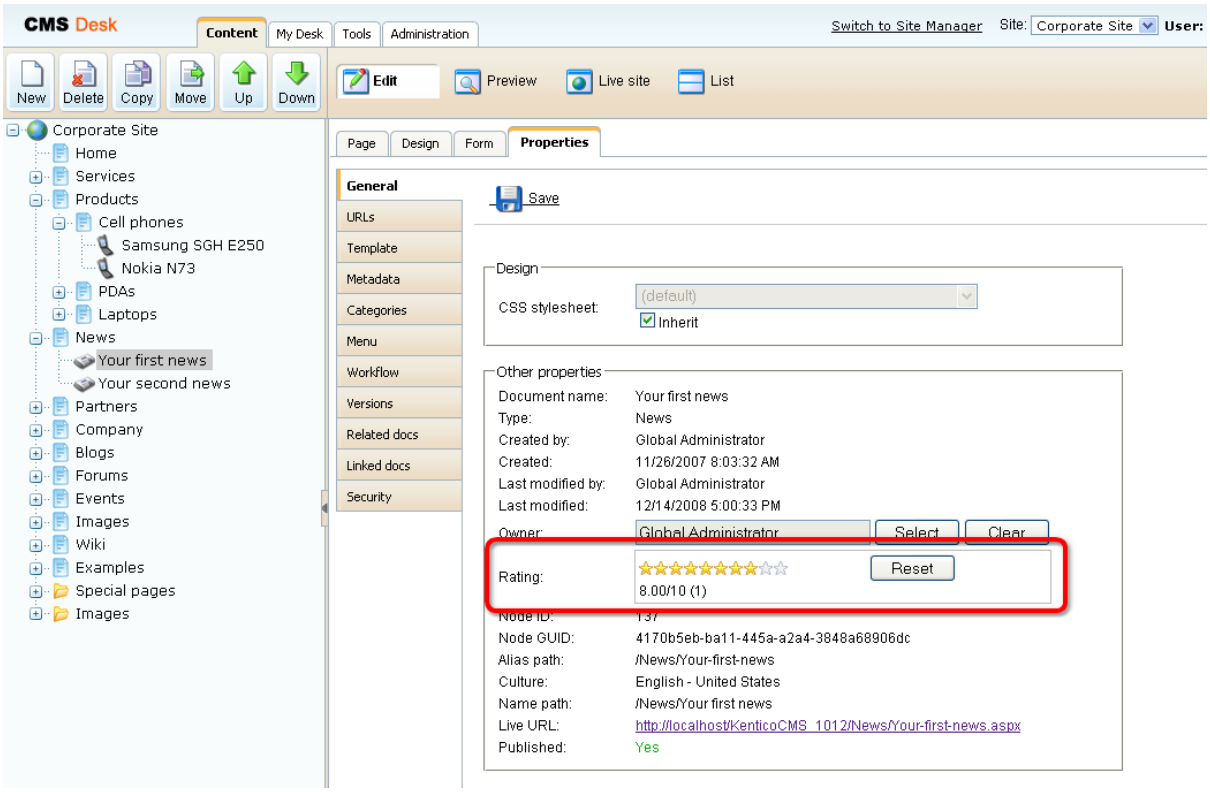
Enter the values and click **OK**.

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!



© 2009 Kentico Software

5. If you switch back to **CMS 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 ratings and even cheat-rate by simply clicking the stars on this page.



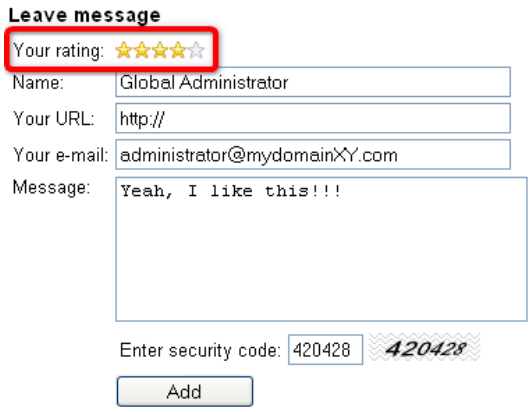
© 2009 Kentico Software

31.10.3 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.



31.10.4 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" %>

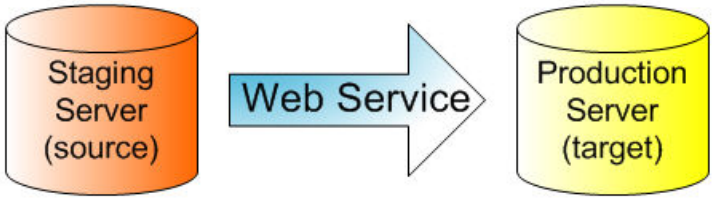
<cms:RatingControl ID="elemRating" runat="server" Enabled="false"
RatingType="Stars" ExternalValue='<%# Convert.ToString(CMS.GlobalHelper.
ValidationHelper.GetDouble(Eval("DocumentRatingValue"), 0)/((CMS.GlobalHelper.
ValidationHelper.GetDouble(Eval("DocumentRatings"), 0) == 0?1:CMS.GlobalHelper.
ValidationHelper.GetDouble(Eval("DocumentRatings"), 1)))) %>' />
```

© 2009 Kentico Software

31.11 Content staging

31.11.1 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**

The Staging module **does not support** synchronization of the following data:

- **BizForms data**, the forms themselves are synchronized
- **Custom tables data**, the tables 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**
- **Media libraries physical files files**, the DB records are synchronized
- **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.

© 2009 Kentico Software

31.11.2 Content staging configuration

Configuration of the Content staging module consists of two parts: the source and target server configuration.

Microsoft WSE Configuration

Open the **bin** folder under your web project and rename the file **Microsoft.Web.Services3.dll.rename** to **Microsoft.Web.Services3.dll**.

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 checked, the synchronization tasks are automatically generated when the content is modified.
Log object changes	If checked, the synchronization tasks are automatically generated when objects are modified.

Now you need to configure the target server(s). Go to **CMSDesk –> Tools –> Content staging -> Servers**. Here 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 web site instance (in the same database).

To add a new server, click **New server**, enter the target server properties and save them:

Server display name	Server display name displayed to the users.
Server code name	Server name used in web site 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.asmx, so the URL should look like this: http://www.targetserver.com/CMSPages/syncserver.asmx
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. The default user name is **admin** and the default password is **pass**.

© 2009 Kentico Software



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

You can configure the target server synchronization web service in **Site Manager -> Settings -> Content staging**. By default, the staging web service is disabled.

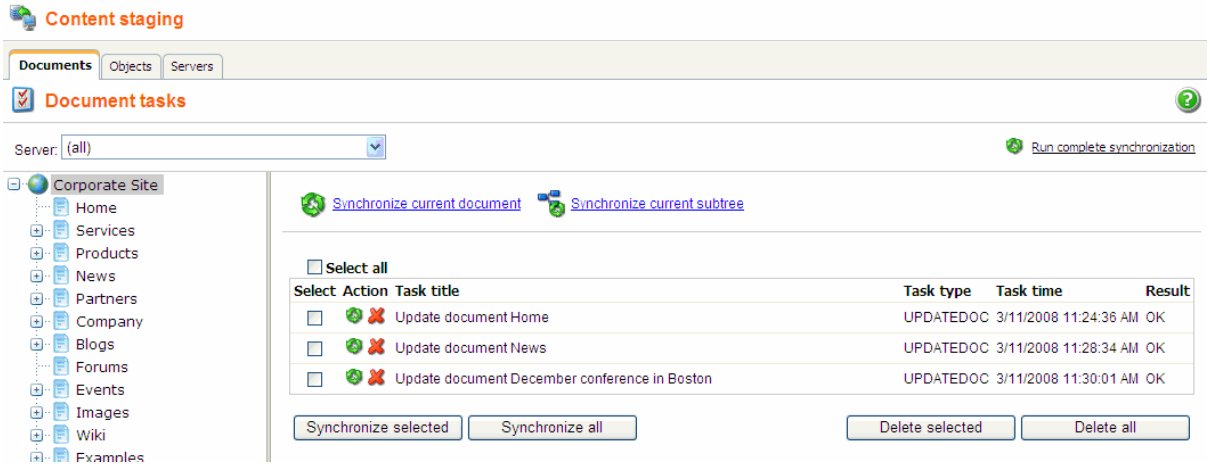
Enable staging service	If checked, the staging service is enabled for the given site.
Staging service authentication	Staging service authentication type. You can choose from the following options: **USERNAME** – username/password authentication (fast, recommended for the data without high security requirements) **X509** – X509 Certificate authentication (more secure, slower, requires certificates) It's recommended that you choose to use USERNAME authentication to configure the staging first, test the synchronization and then you can optionally configure the site for X509 certificates.
Staging service password Staging service username	Username and password for the USERNAME authentication.
Server key ID and Client key ID	Certificates keys for the X509 authentication, the certificates need to be stored within Local computer – Personal certificate store.

© 2009 Kentico Software

31.11.3 Synchronizing the content

All changes made to the documents and objects are tracked in the database, in the synchronization log. You can view them in the **CMS Desk –> Tools –> Content Staging** dialog, under the **Documents** and **Objects** tabs.

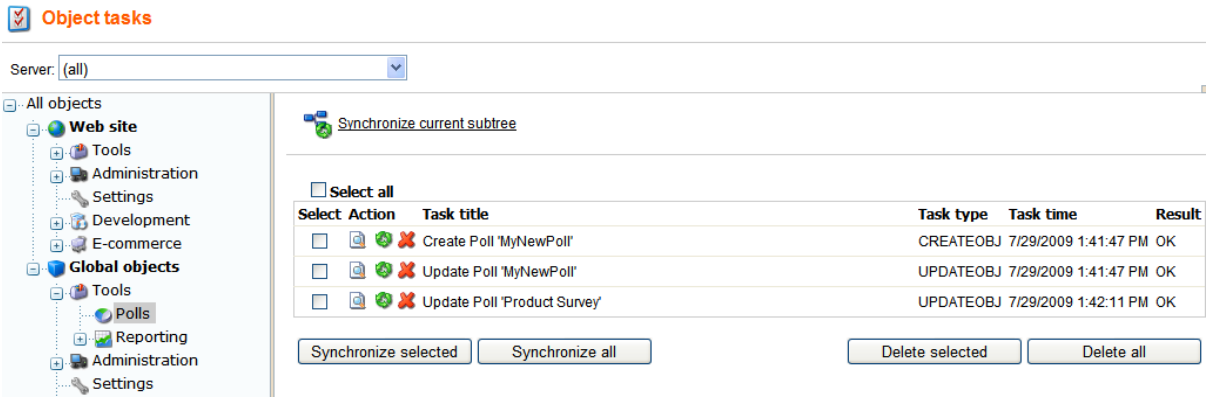
In the screenshot below, you can see the **Documents** tab. By clicking the website tree root in the tree view on the left side of the screen, you can view a list of all changes (synchronization tasks) made to all the documents of the website. By clicking a particular document, you can view only the changes made to it.



© 2009 Kentico Software

In the following screenshot, you can see the **Objects** tab. Compared to the **Documents** tab, you can't view all the changes made to all objects at once. You can view these separately, sorted by object categories or particular object types, just as listed in the tree view on the left side of the screen.

The main categories are Web site, Tools, Administration and Development. The first category contains object changes connected to the current website, whilst the other three contain object changes for global objects.



Executing both document and object synchronization tasks is done the same way, but some functionalities are available only for one of the two categories.

Choosing target servers to be synchronized

You can choose to synchronize only selected or all target servers using the **Server** drop-down list.

Running complete synchronization (documents only)

If you click the **Run complete synchronization** link, all documents are synchronized to the target server(s). In case you made any changes to content on the target servers in the meantime, these changes will be overwritten. Extra documents will not be deleted on the target server. This option synchronizes all documents even if there are no synchronization tasks listed.

Synchronizing current document (documents only)

This option synchronizes the selected document, even if there are no synchronization tasks listed.

Synchronizing current sub-tree

This option synchronizes all documents/objects in the selected sub-tree, even if there are no synchronization tasks listed. For objects, this option is displayed only when some particular object category is selected.

Synchronizing selected tasks

You can choose the document/object synchronization tasks to be executed using the check-boxes in the list and then clicking the **Synchronize selected** button. By clicking the **Synchronize all** button, all listed synchronization tasks will be performed, no matter which of them are currently selected.

Deleting synchronization tasks

© 2009 Kentico Software

If you do not wish to synchronize some changes, you can delete them using the **Delete selected** or **Delete all** buttons. The first one deletes the tasks selected by the check-boxes in the list, the other one deletes all listed tasks, no matter which of them are currently selected.

When the task fails

You can see the reason why some of the synchronization tasks failed by clicking the **Failed** link in the **Result** column.

31.11.4 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 2000 and 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 2000 and Windows XP) or the user NT Authority\Network Service (for Windows Server 2003) with **READ** permission for this file.

© 2009 Kentico Software

© 2009 Kentico Software

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.

© 2009 Kentico Software

31.11.5 Using API to synchronize documents

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 overriden 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);
      }
    }
  }
}
```

© 2009 Kentico Software

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);
     }
   }
 }
```

31.11.6 Configuration of automatic synchronization

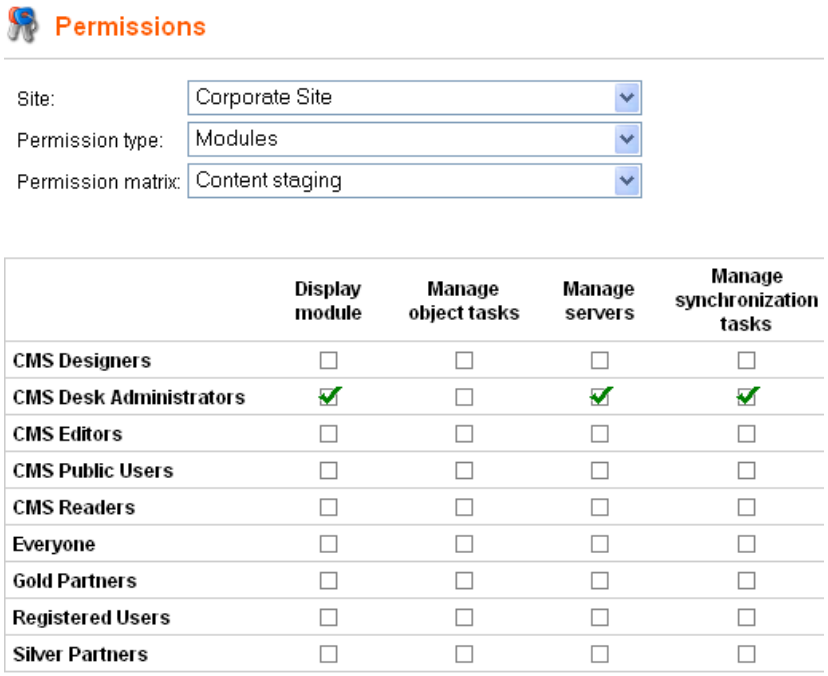
Automatic synchronization is available only for synchronizing document changes. Object changes cannot be synchronized this way. Manual synchronization remains the only way to perform object synchronization tasks.

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.

© 2009 Kentico Software

31.11.7 Security

You can control the access to the Content staging module in **Administration -> Permissions ->** select the **Modules -> Content staging** permissions matrix.



	Display module	Manage object tasks	Manage servers	Manage synchronization tasks
CMS Designers	☐	☐	☐	☐
CMS Desk Administrators	☑	☐	☑	☑
CMS Editors	☐	☐	☐	☐
CMS Public Users	☐	☐	☐	☐
CMS Readers	☐	☐	☐	☐
Everyone	☐	☐	☐	☐
Gold Partners	☐	☐	☐	☐
Registered Users	☐	☐	☐	☐
Silver Partners	☐	☐	☐	☐

The module recognizes the following permissions:

- **Display module -** enables the module to be visible in the user interface
- **Manage servers** - allows user to manage target server configurations
- **Manage object tasks** - allows user to synchronize documents content or delete document synchronization tasks
- **Manage synchronization tasks** - allows user to synchronize objects or delete object synchronization tasks

© 2009 Kentico Software

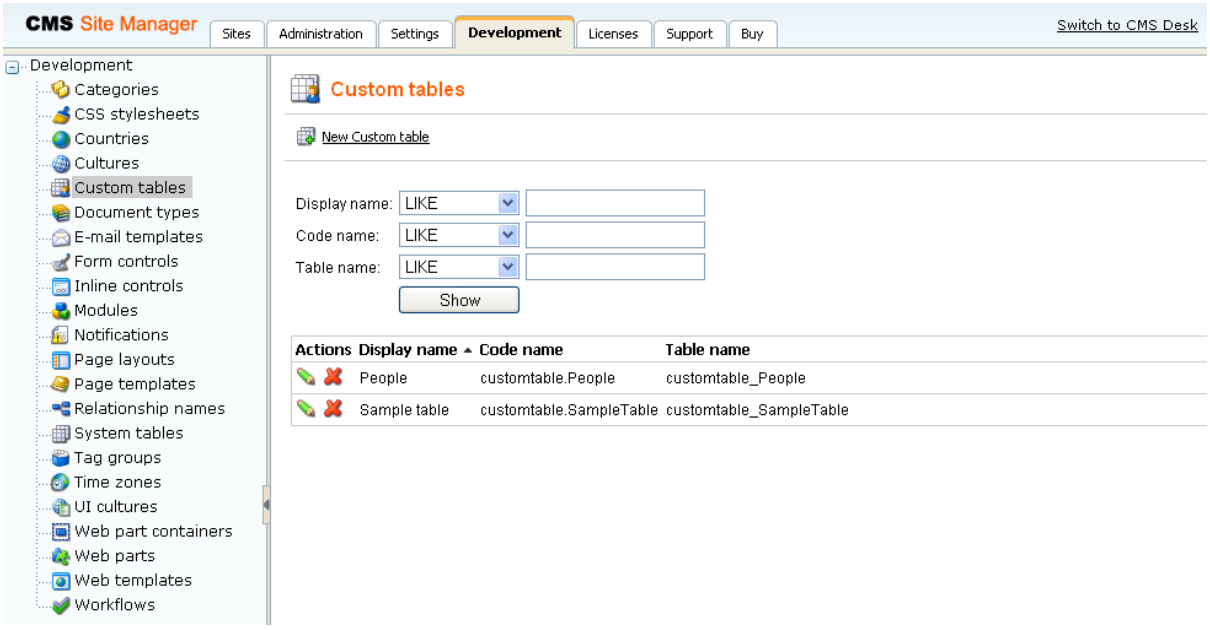
31.12 Custom tables

31.12.1 Custom tables module 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.

31.12.2 Managing custom tables

The administration interface for custom tables management is located in **Site Manager -> Development -> Custom tables**.



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**.

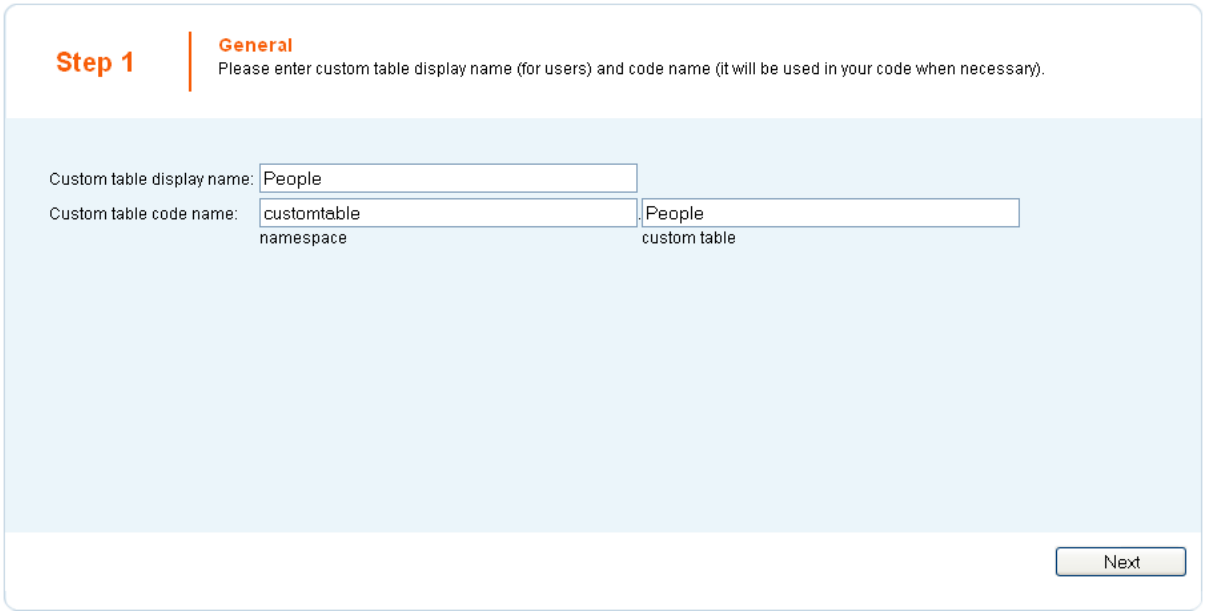
2. Click the **New Custom table** link.

© 2009 Kentico Software

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.

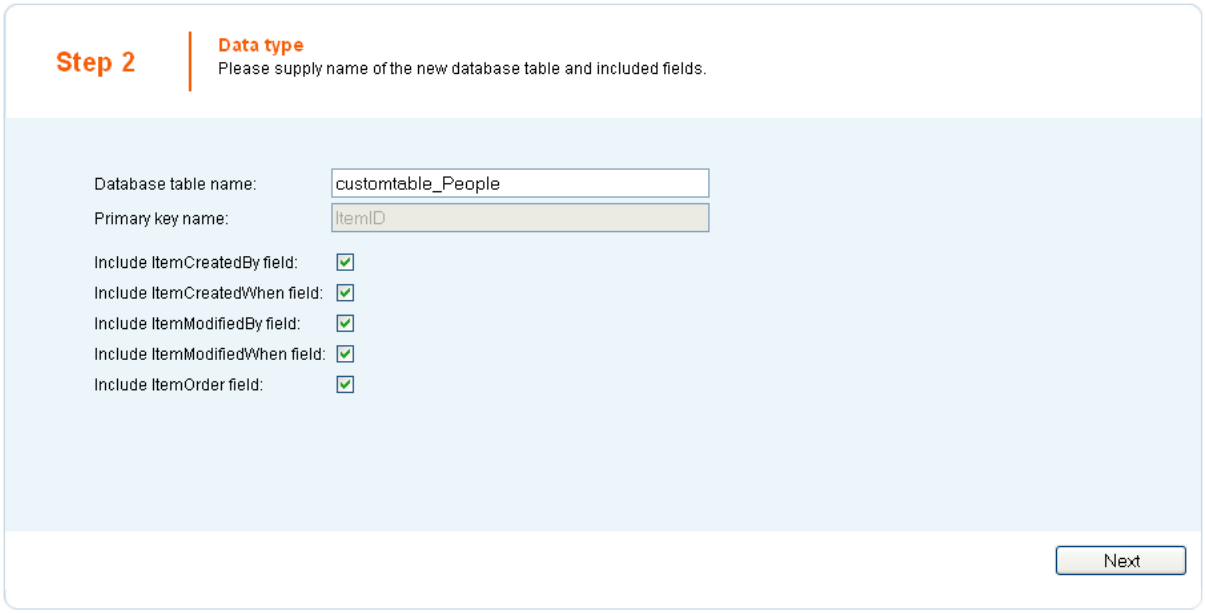


© 2009 Kentico Software

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.



© 2009 Kentico Software

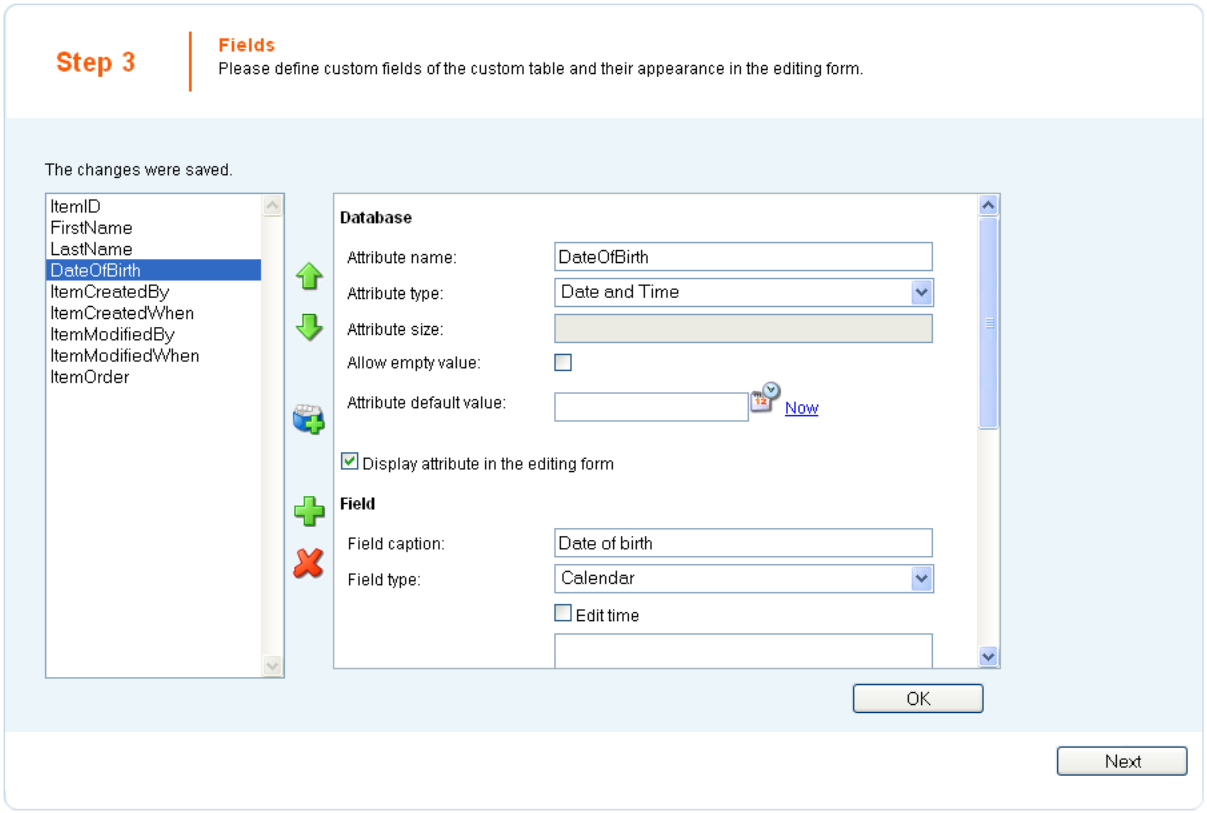
5. In the third step, the field editor that you should be already familiar with is displayed. Create three fields with the following parameters:

- **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

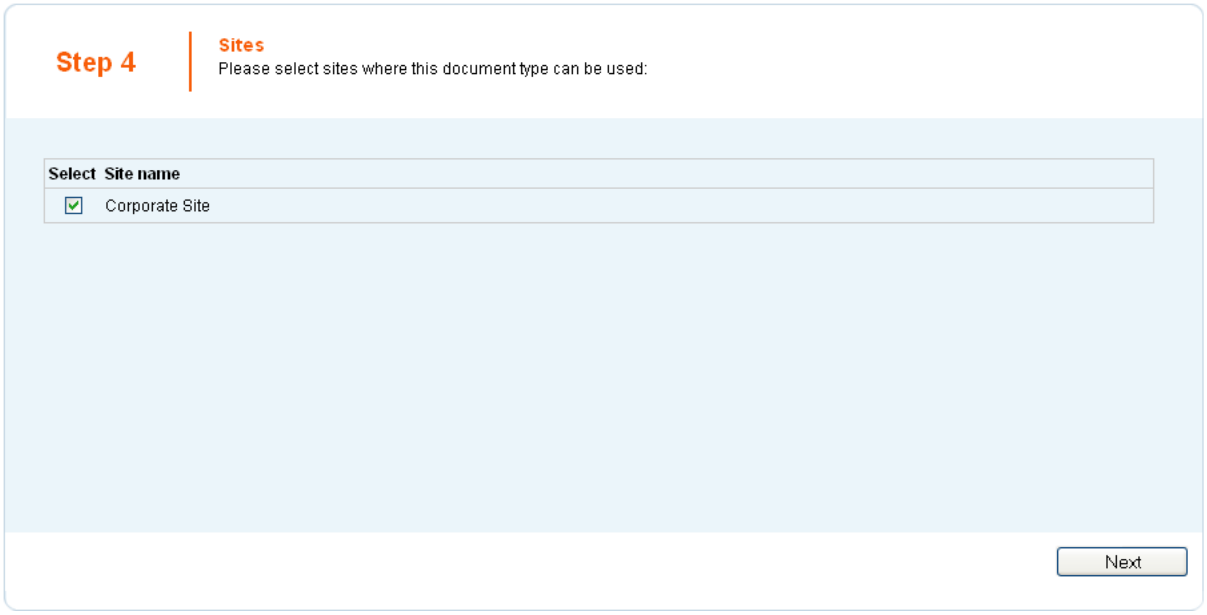
- **Attribute name:** DateOfBirth
- **Attribute type:** Date and Time
- **Field caption:** Date of birth
- **Field type:** Calendar
- **Edit time:** unchecked

When you are finished, click **Next** to continue to the following step.

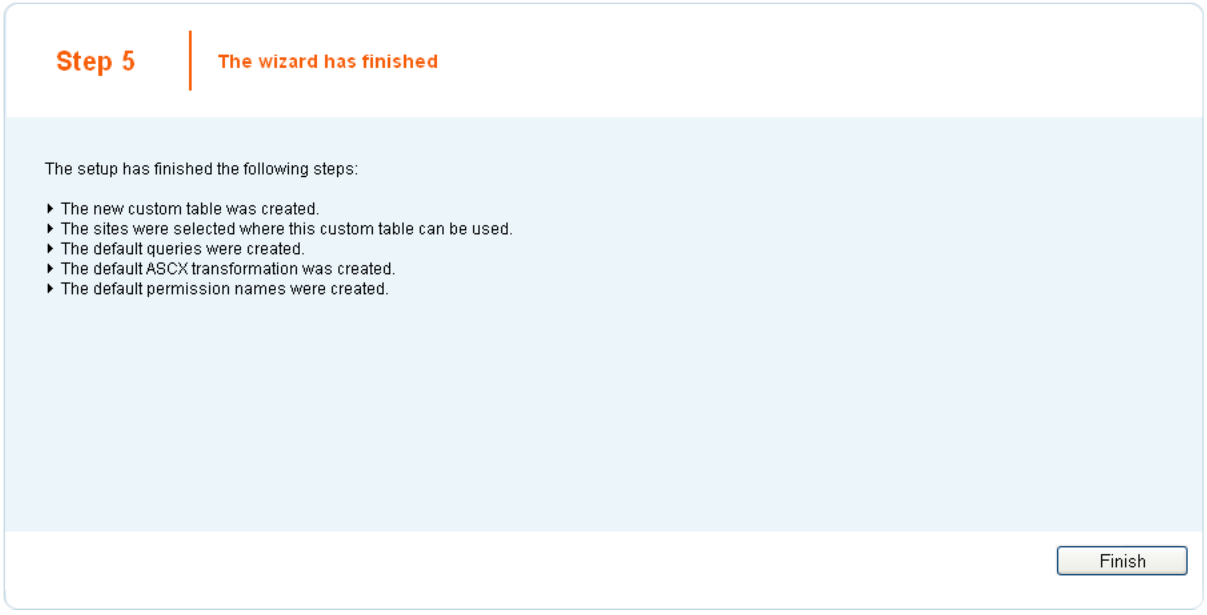


© 2009 Kentico Software

6. On Step 4, you only have to select by which sites will the custom table be used. Check the **Corporate Site** check-box and click **Next**.



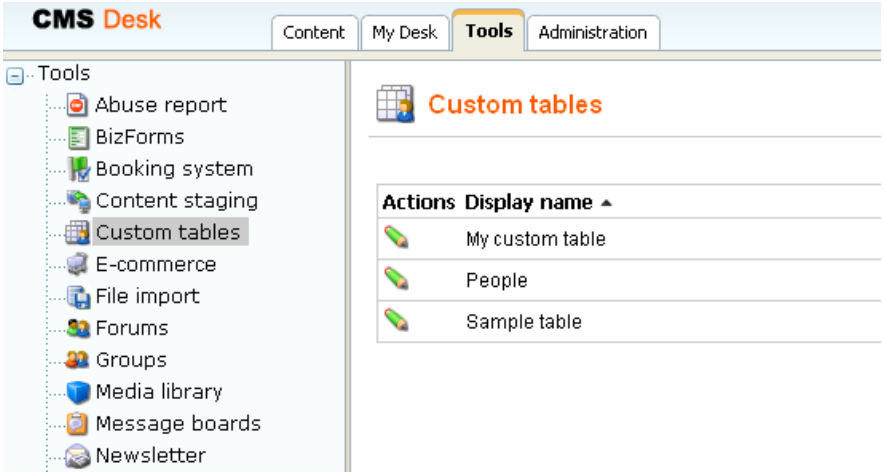
7. The fifth step gives you an overview of what has been done automatically. To finish the wizard, click **Finish**. You will be redirected back to the list of custom tables in **Site Manager -> Development -> Custom tables**.



© 2009 Kentico Software

31.12.3 Adding items into custom tables

The administration interface for adding data into custom tables is located in **CMS Desk -> Tools -> Custom tables**.

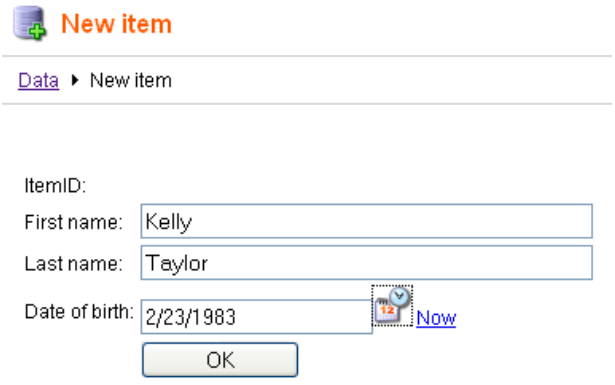


In the following example, you will learn how to add data into the sample **People** custom table we have created in the previous chapter (read here):

1. Click the **Edit** ( ) icon next some of the listed tables. 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**.

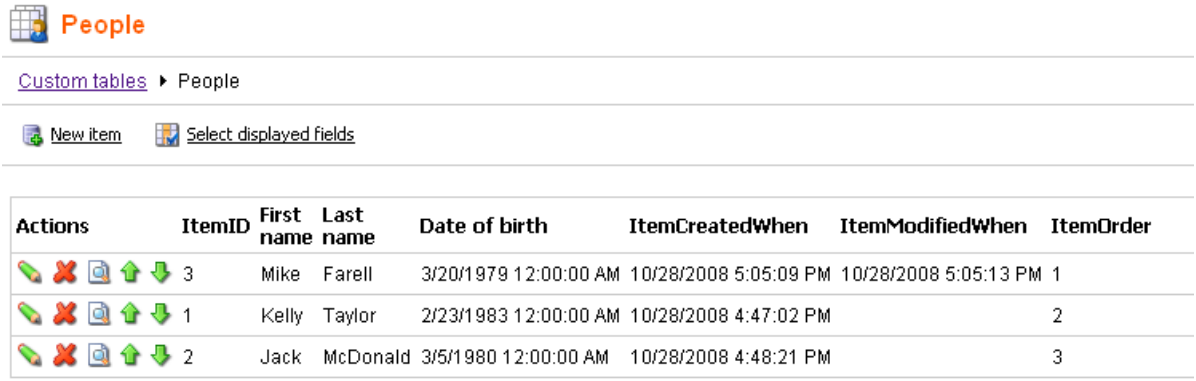


3. The data you entered has just been saved into the custom table. You can edit it now or use the Create another link to create another record. Try creating at least two other records.

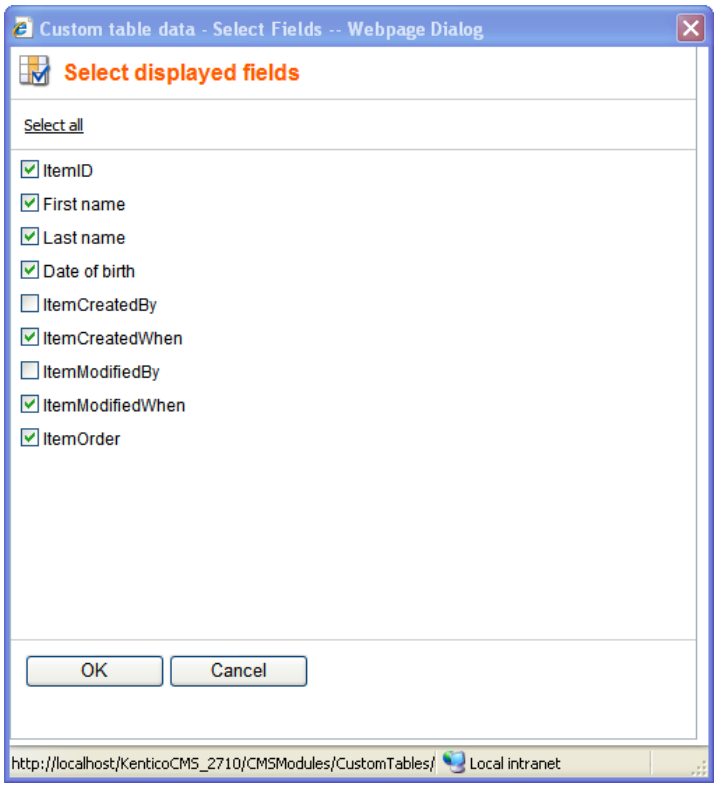
4. When you're finished, switch back to the **Custom tables** list in **CMS Desk -> Tools** and choose to

© 2009 Kentico Software

Edit ( ) the **People** custom table. You should see the list of entries where the blank page was before entering the records.

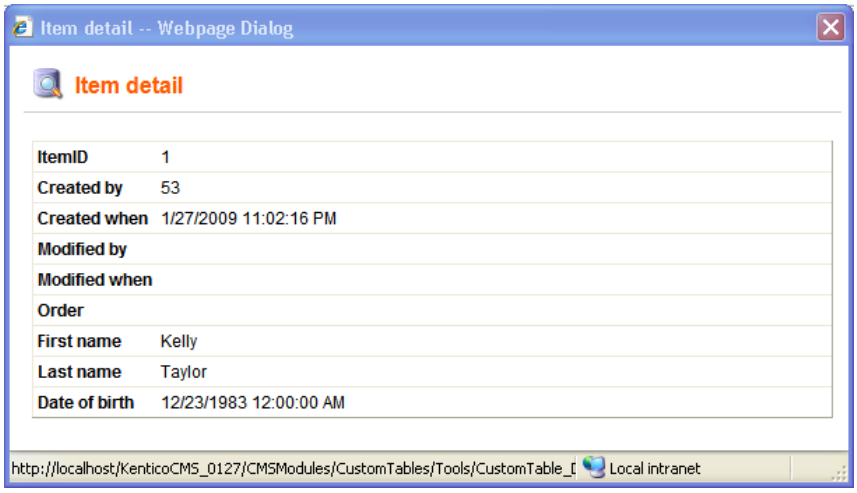


5. You can choose which fields are to be displayed by clicking the **Select displayed fields** link. The window depicted in the following screenshot will be displayed. Using the check-boxes, you can determine which fields are to be displayed and which are not. When you make the selection and click **OK**, you should see the result immediately.



© 2009 Kentico Software

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.

© 2009 Kentico Software

31.12.4 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
Jack	McDonald	3/5/1980 12:00:00 AM
Kelly	Taylor	2/23/1983 12:00:00 AM
Mike	Farell	3/20/1979 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
Last name: Taylor
Date of birth: 2/23/1983 12:00:00 AM

First name: Jack
Last name: McDonald
Date of birth: 3/5/1980 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: Jack
Last name: McDonald
Date of birth: 3/5/1980 12:00:00 AM

First name: Mike
Last name: Farell
Date of birth: 3/20/1979 12:00:00 AM

31.12.5 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.

© 2009 Kentico Software

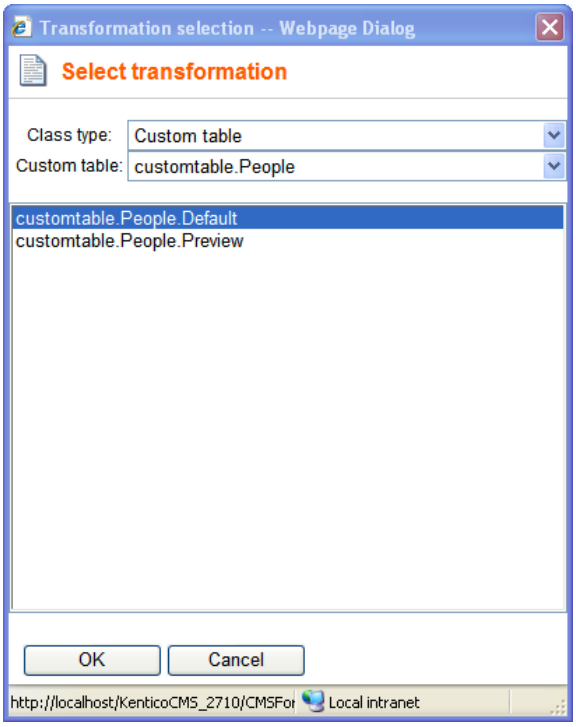
1. Go to **CMS Desk**, switch to **Edit** mode and select **Examples -> Webparts -> Custom tables -> Custom table repeater**. The repeater is bound to the **Sample table** that is a part of the Corporate site by default. It should appear as in the following screenshot:

Examples > Webparts > Custom tables > Custom table repeater

Item text: Sample text 1
Item text: Sample text 2
Item text: Sample text 3

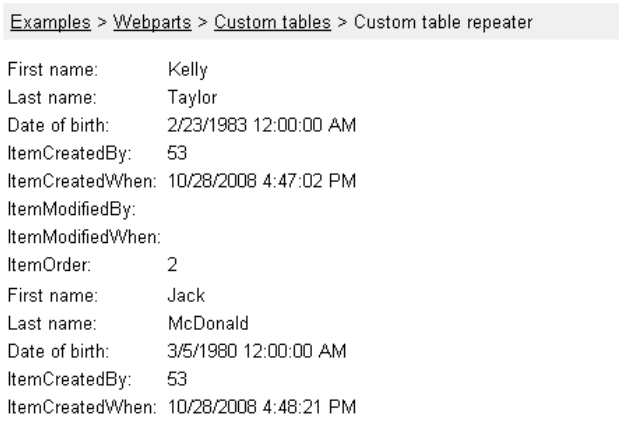
2. Switch to the **Design** tab and choose to **Configure** () the repeater's properites. First, select the custom table from that the data will be displayed. It is done by the **Custom table** drop-down list. Choose the **People** custom table.

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.



© 2009 Kentico Software

4. Now if you switch to the Live site, you should see that the repeater is displaying something like the following:



5. As you probably wouldn't want to have all the empty fields displayed and the table to be unformated on your real web site, 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/>
```

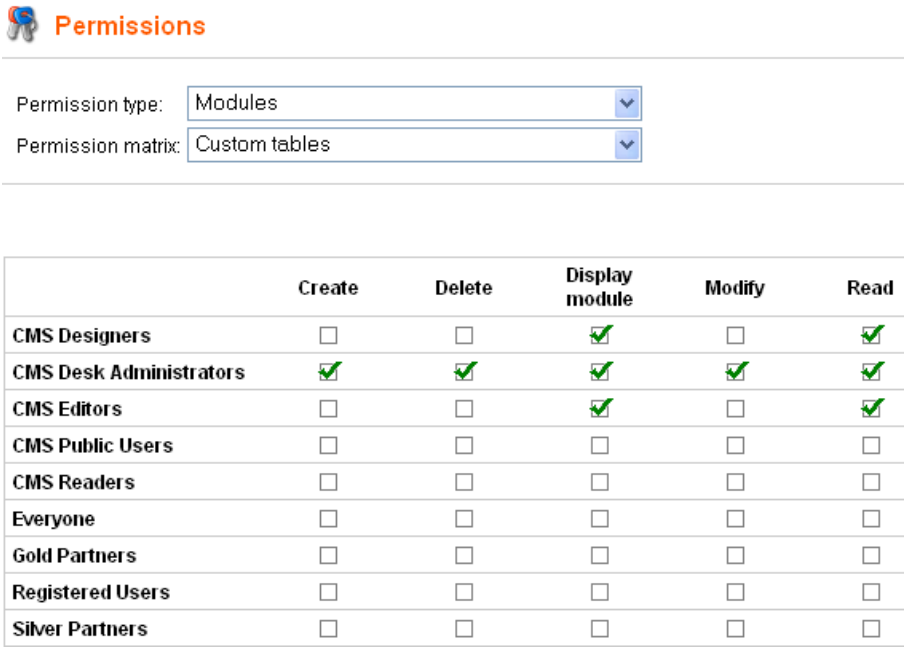
© 2009 Kentico Software

6. Click **Save**. Now if you go to the live site, you should see that the data is displayed in a formated way, as you can see below.



31.12.6 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:

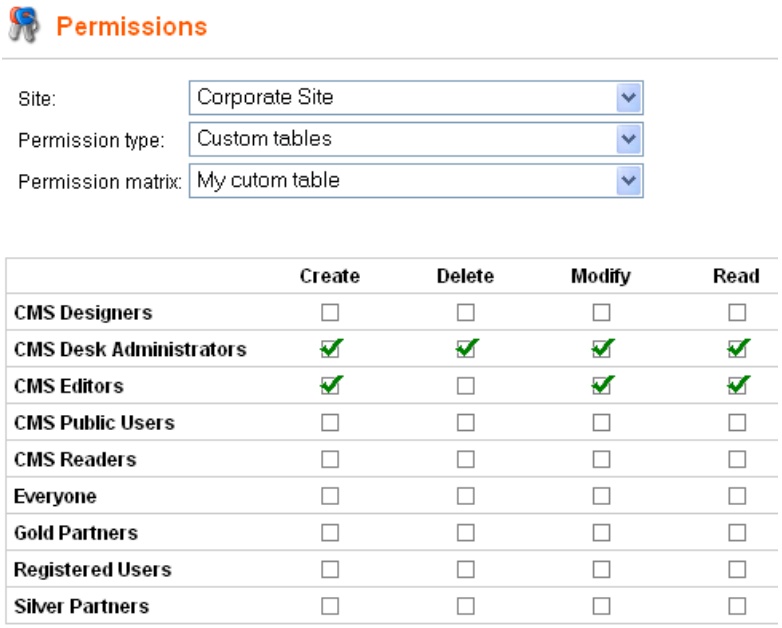


The following permissions can be assigned to the particular user roles:

- **Create** - users are allowed to create data in any custom table
- **Delete** - users are allowed to delete data in any custom table
- **Display module** - makes the module visible in the user interface
- **Modify** - users are allowed to modify data in any custom table
- **Read** - users are allowed to read any custom table data

© 2009 Kentico Software

You can also set 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** - users are allowed to create new records into the table
- **Delete** - users are allowed to delete records from the table
- **Modify** - users are allowed to modify existing records in the table
- **Read** - users are allowed to read data stored in the custom table

© 2009 Kentico Software

31.12.7 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 = "custom.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();
       }
}
```

© 2009 Kentico Software

Adding an item into a custom table

[C#]

```
using CMS.SettingsProvider;
using CMS.SiteProvider;
using CMS.DataEngine;
using CMS.CMSHelper;

string customTableClassName = "custom.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 = "custom.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.");
}
```

© 2009 Kentico Software

```
// 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 = "custom.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
}
```

© 2009 Kentico Software

31.13 E-commerce

31.13.1 Overview

For more information about the **E-commerce** module please refer to **Kentico CMS E-commerce Guide** .

© 2009 Kentico Software

31.14 E-mail queue

31.14.1 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.

31.14.2 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:

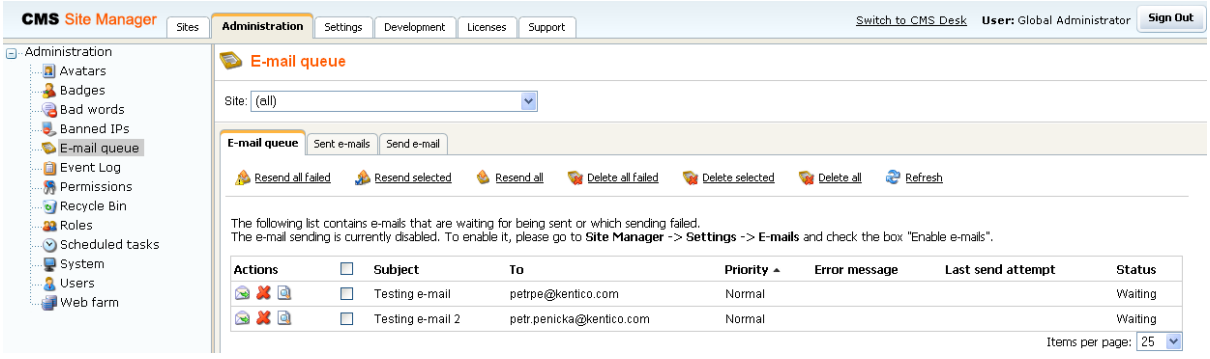
E-mail queue tab

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



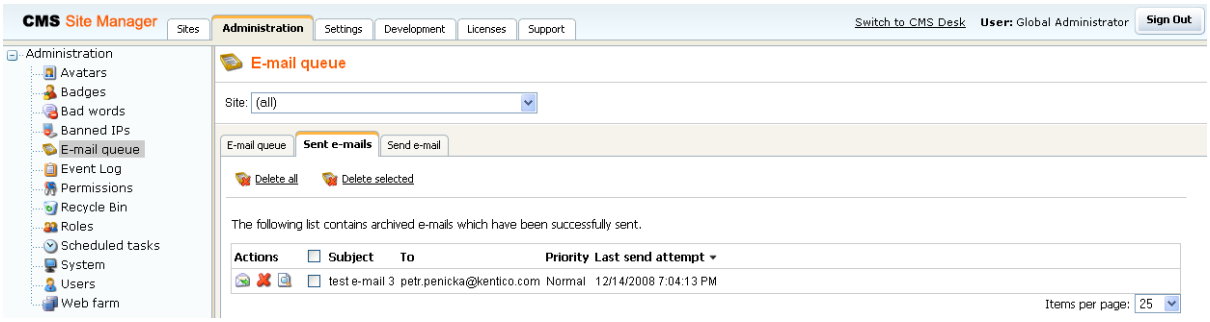
© 2009 Kentico Software

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



Send e-mail tab

From this tab, you can easily send a single e-mail to a specified recipient (not only the site users).

© 2009 Kentico Software

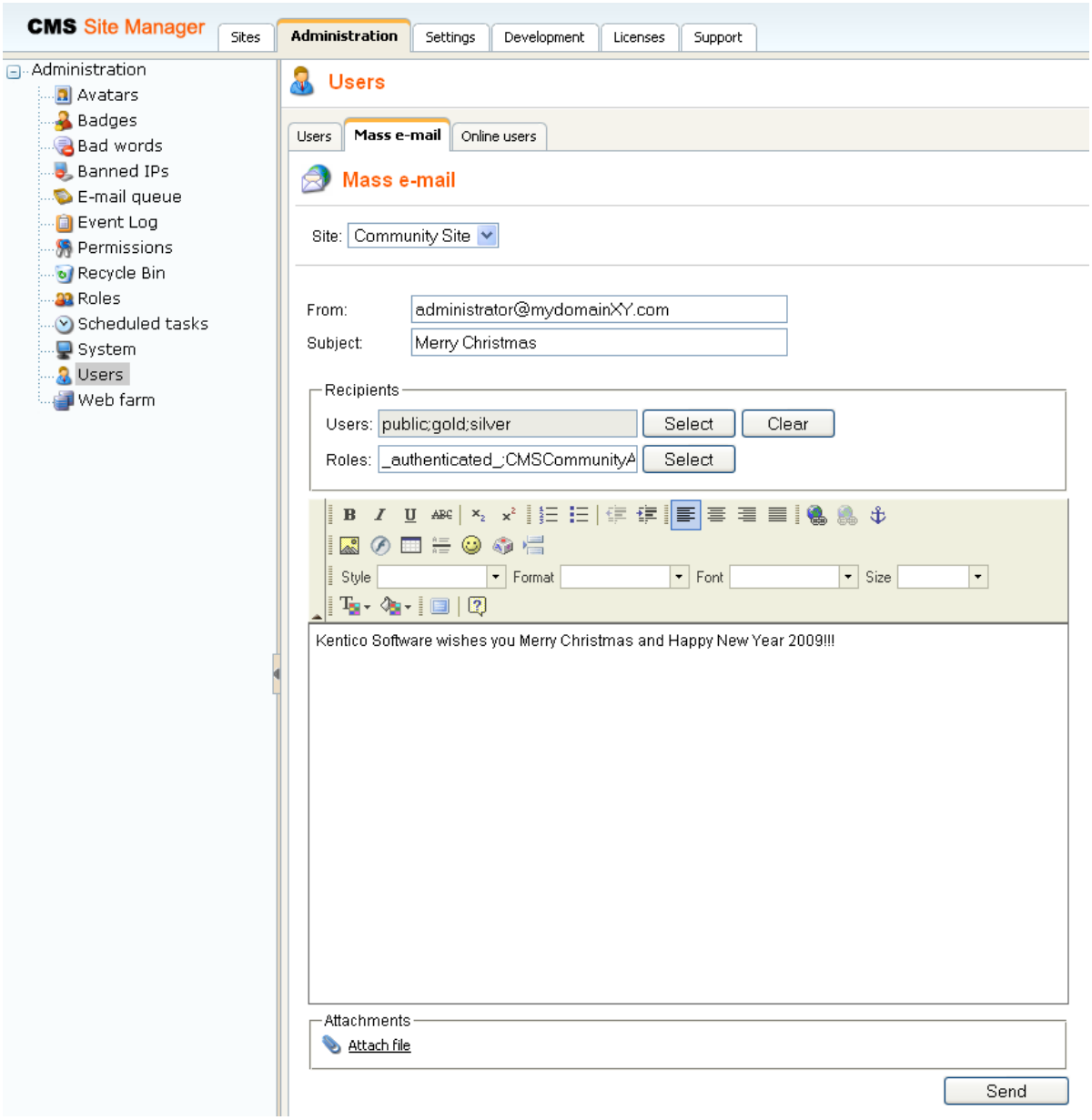
31.14.3 Sending mass e-mails

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.

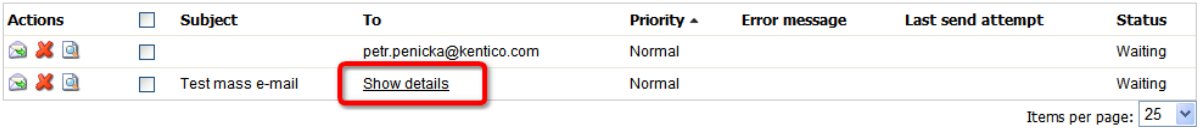
You can also add some attachment to the mail using the **Attach file** link.



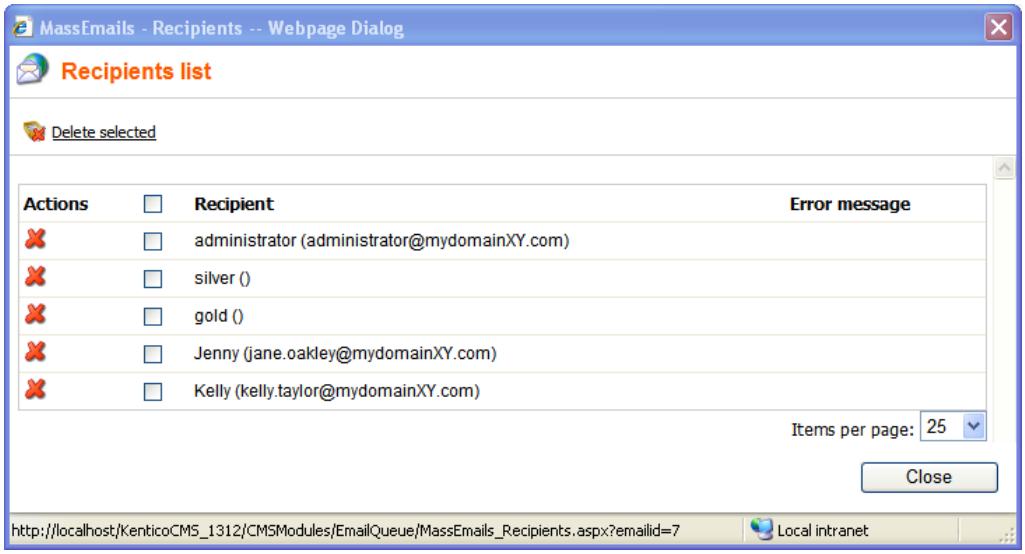
© 2009 Kentico Software

© 2009 Kentico Software

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.



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** (✘) icons or by selecting more recipients using the check-boxes and clicking the **Delete selected** link.

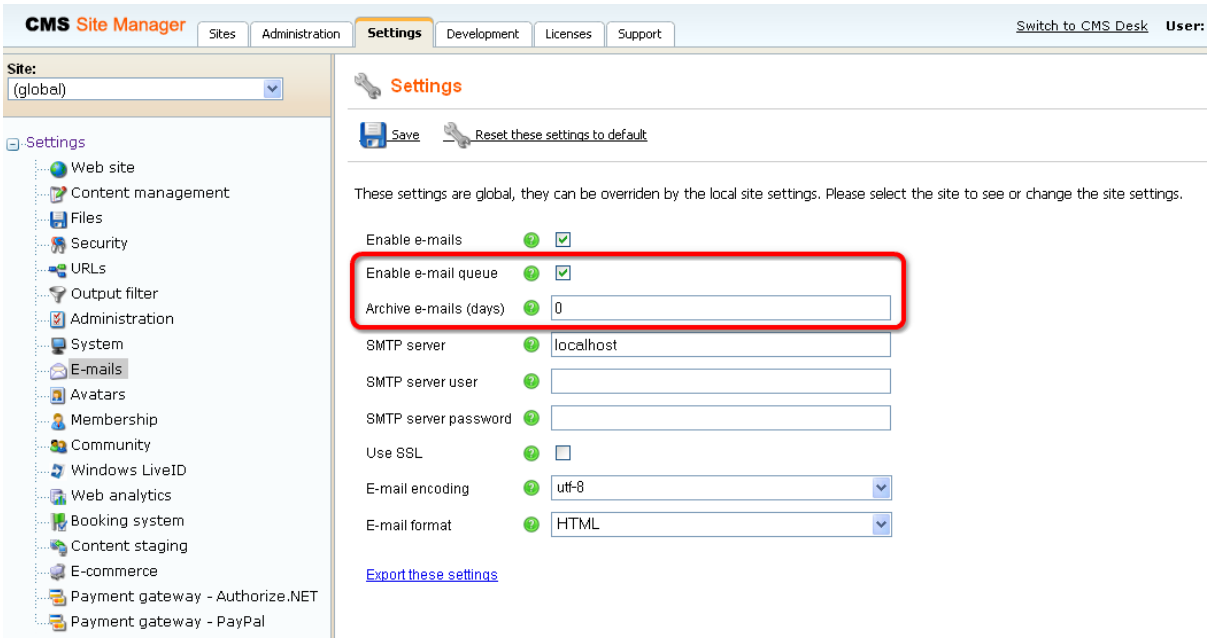


© 2009 Kentico Software

31.14.4 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

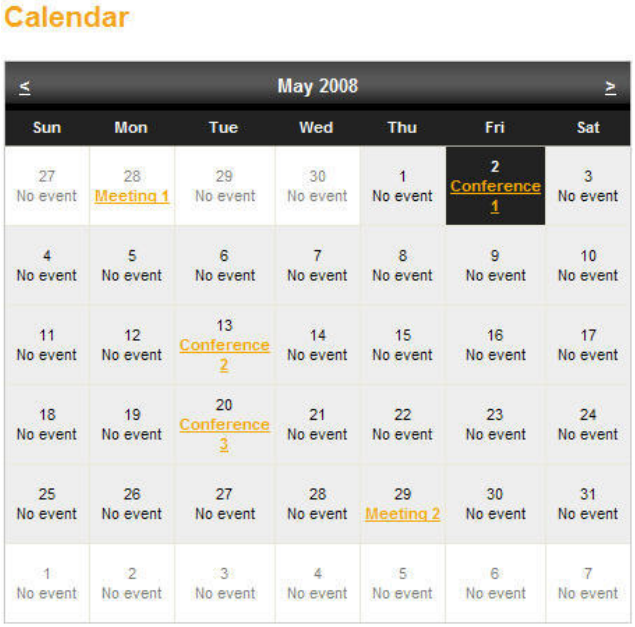


© 2009 Kentico Software

31.15 Event calendar

31.15.1 Event calendar module 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.



31.15.2 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**.

© 2009 Kentico Software

The web part properties dialog appears. Here is a list of properties specific for this web part:

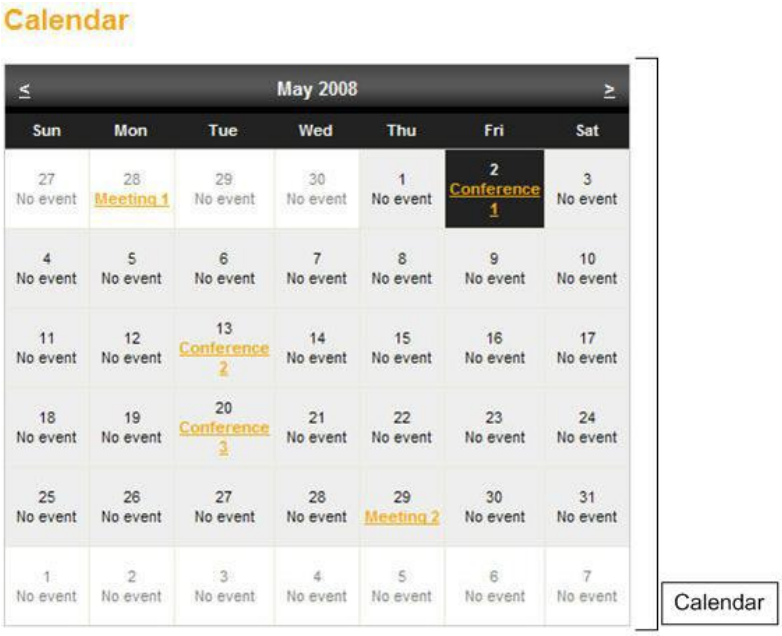
Content	
Path	Path in the content tree to the displayed documents.
Day field	Field with the date that the document will be displayed on in the calendar.
Content filter	
Document types	Document types that will be displayed in the calendar. If there is a document in the location set in the **Path** parameter 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 web site from that you want to display the content. If left empty, the current web site 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.

© 2009 Kentico Software

31.15.3 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:



© 2009 Kentico Software

31.16 File import

31.16.1 File import

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

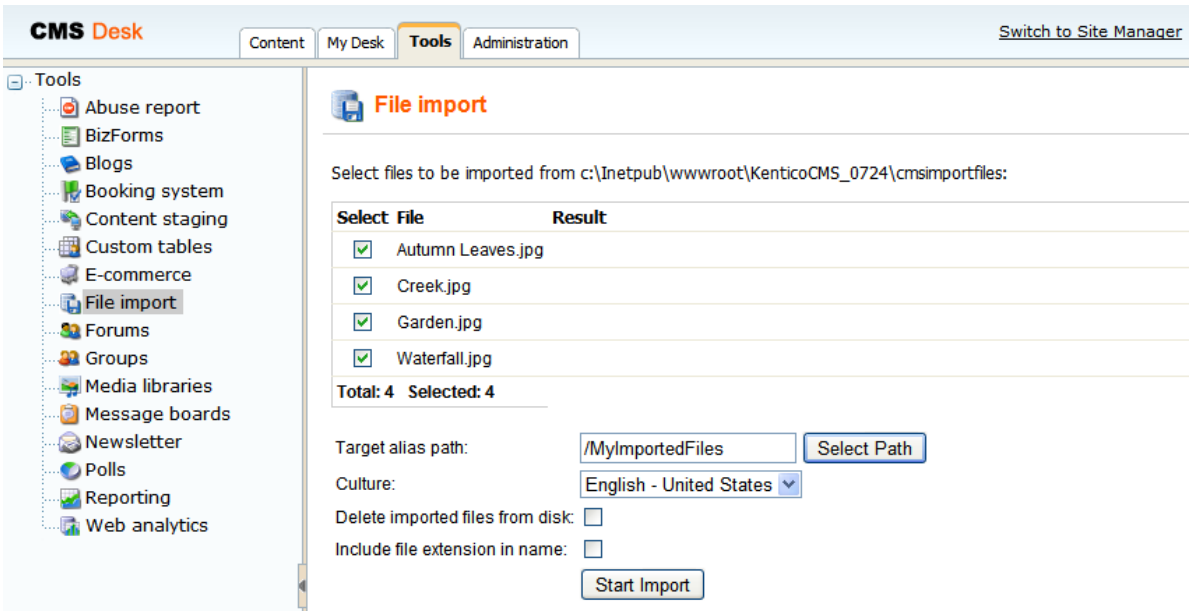
1. Copy your files into the import folder.

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

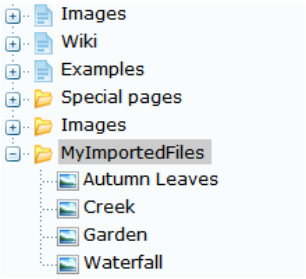
Click **Start Import**.



© 2009 Kentico Software

© 2009 Kentico Software

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.



31.16.2 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:



	Display module	Import files
CMS Designers	☐	☐
CMS Desk Administrators	☑	☑
CMS Editors	☑	☑
CMS Public Users	☐	☐
CMS Readers	☐	☐
Everyone	☐	☐
Gold Partners	☐	☐
Registered Users	☐	☐
Silver Partners	☐	☐

The following permissions can be set:

- **Display module** - the module will be displayed in the user interface
- **Import files** - importing files will be allowed to users belonging to the user group

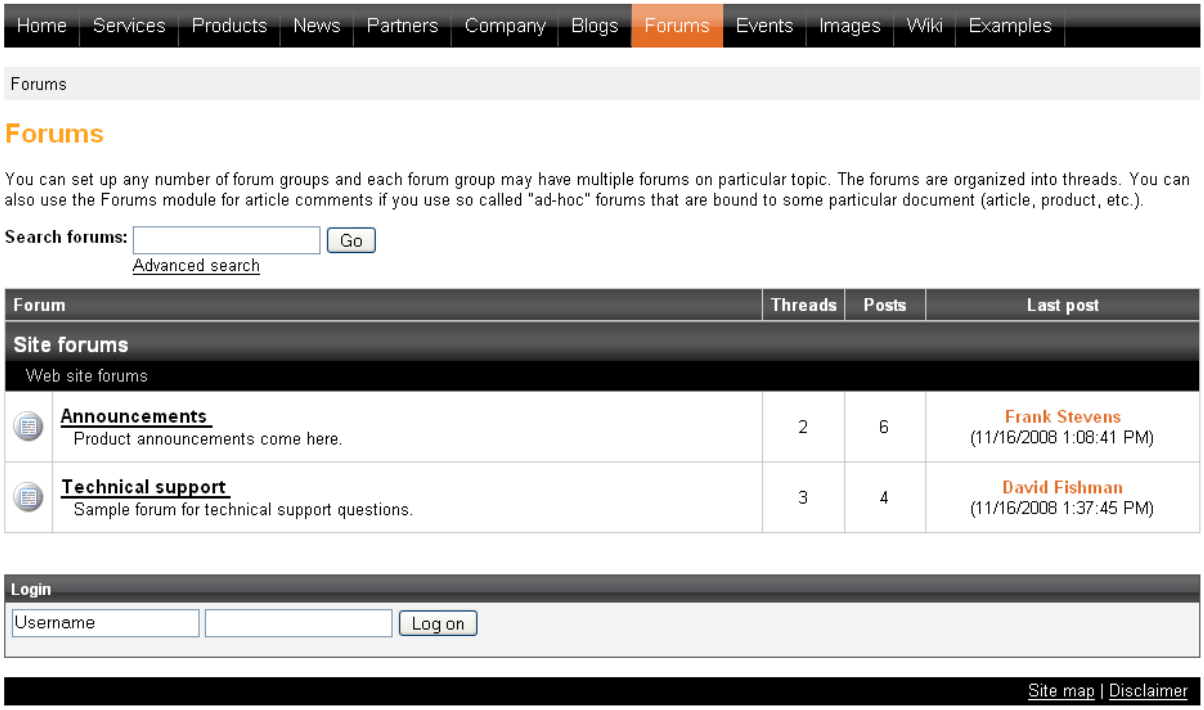
© 2009 Kentico Software

31.17 Forums

31.17.1 Forums module overview

This module allows you to integrate full-featured forums into your web site. There are two basic types of forums:

- **Pre-defined forums** - created by the administrator and then displayed on the web site.
- **Ad-hoc forums (article comments)** - created for a single document when the visitor posts the first comment to the given document.



The forums are highly configurable and allow you to:

- Organize forums into forum groups
- Open/close forums
- 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 all posts added to the forum or thread
- Enable forum only for authenticated users
- Specify user roles that are allowed to post to the forum

The Forum module can be managed in **CMS Desk -> Tools -> Forums**.

© 2009 Kentico Software

General Settings

You can configure the e-mail address from which all forum notification e-mails are sent in **Site Manager -> Settings -> Forums -> Send forum e-mails from**.

31.17.2 Creating a new forum

The **"pre-defined" forums** need to be created before you publish them on the web site. Each forum must be created within some particular forum group. A **forum group** usually contains forums related to the same topic. For example:

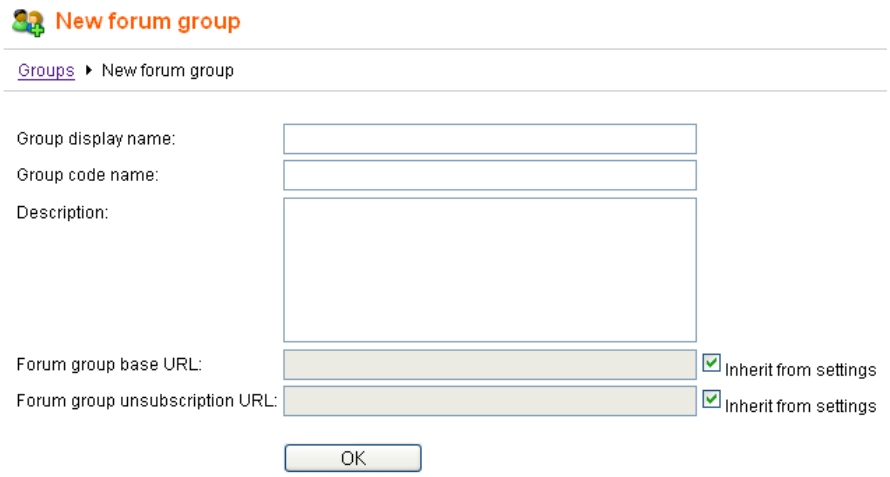
- Computers (forum group)
  - Announcements (forum)
  - Technical questions (forum)
  - FAQ's (forum)
- Web design (forum group)
  - CSS (forum)
  - XHTML (forum)

Creating a new forum group

Go to **CMS Desk -> Tools -> Forums** and click **Add forum group**. Enter for example:

- **Group display name:** the forum group name displayed on your web site
- **Group code name:** the forum group name used in your code
- **Description:** description of the forum group displayed on your web site
- **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.



© 2009 Kentico Software

Creating a new forum

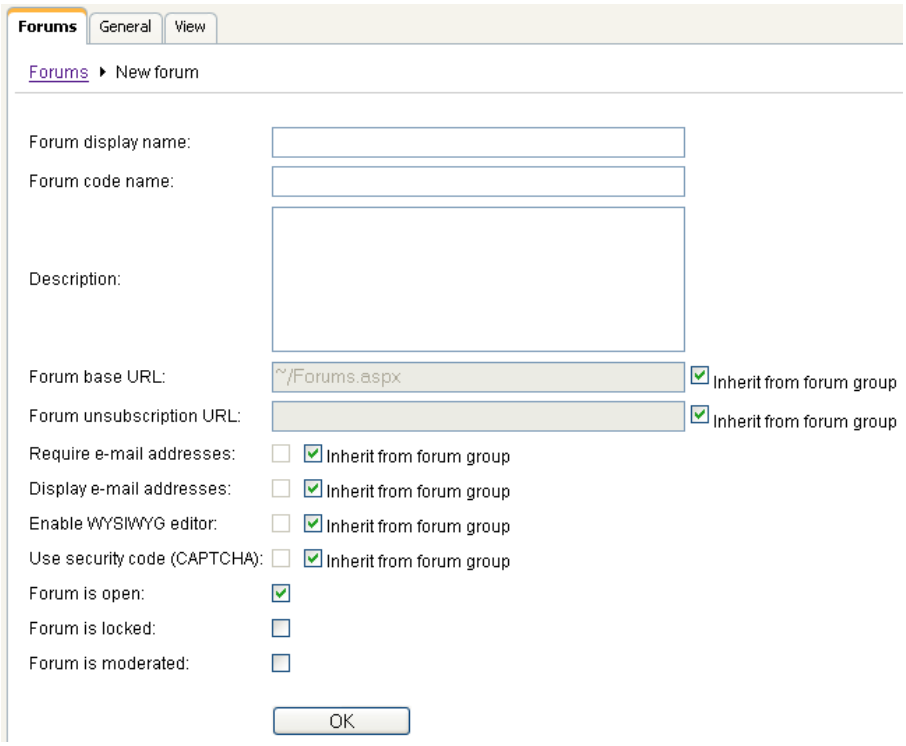
Go to **CMS Desk -> Tools -> Forums** and click **Edit** for some forum group. Go to the Forums tab and click **Add forum**. Enter for example:

- **Forum display name:** the name of the forum displayed on your web site
- **Forum code name:** the name of the forum used in your code
- **Description:** the description displayed on your web site
- **Forum base URL:** URL displayed when the user accesses the forum; *e.g. ~/MyForums.aspx*
- **Forum unsubscription URL:** URL of a 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 forum moderator

Click **OK** to save.

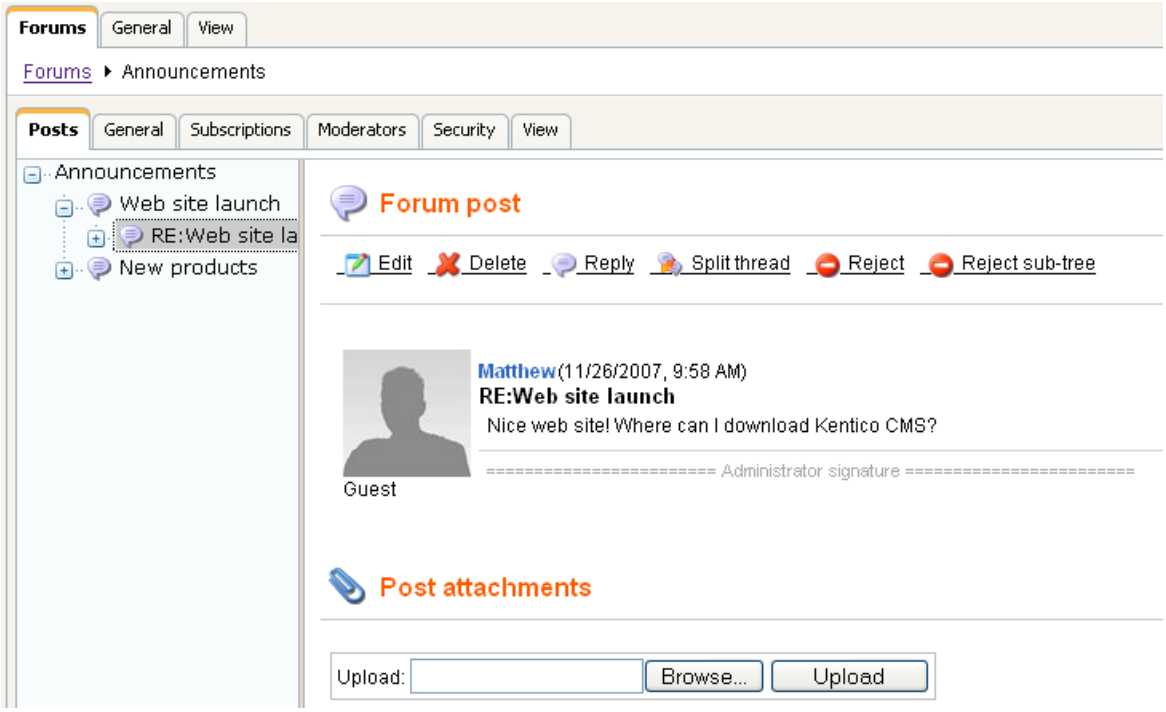


© 2009 Kentico Software

31.17.3 Managing forum posts

You can manage forum posts directly from the administration interface, in the **Posts** tab in the **Forum properties** dialog. You can perform the following actions with a post selected in the tree on the left:

- **Edit** - you can edit post text, user's name, signature, etc.
- **Delete** - you can delete the post
- **Reply** - you can send a reply to the post
- **Split thread** - you can move the post and its replies to a new thread
- **Reject** - rejects the post so that it is not displayed and needs approval to be displayed
- **Reject subtree** - performs the Reject action for the current posts and all its children



31.17.4 Subscriptions

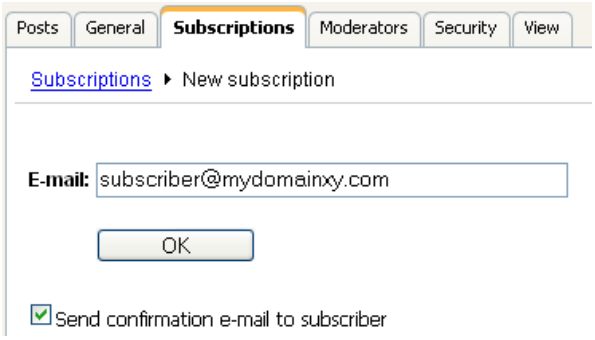
Subscriptions allow users to receive e-mail notification when a new post is added to the selected forum.

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 her that she has been subscribed. These confirmation e-mails are sent automatically when the user subscribes on-site, as described in the following two points.



© 2009 Kentico Software

2. The user clicks the **subscribe to forum** link at the top of the forum:



3. The user subscribes to particular post and sub-posts:



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 forum, including the domain.**

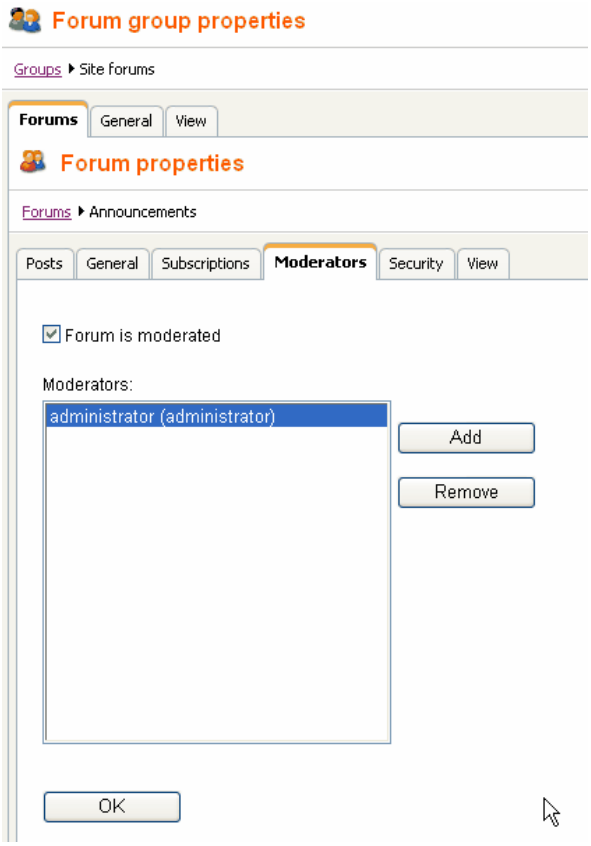
© 2009 Kentico Software

31.17.5 Forum moderation

You can configure 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.

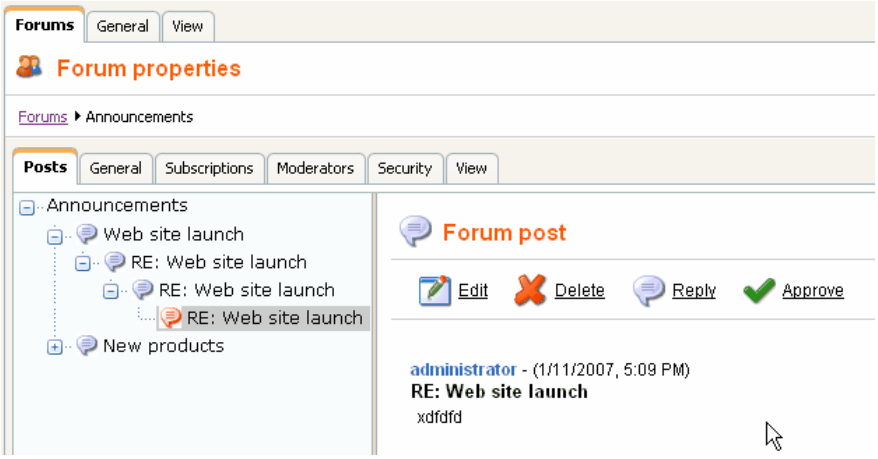
Configuring forum moderation

You can enable forum moderation and configure the list of moderators in **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.

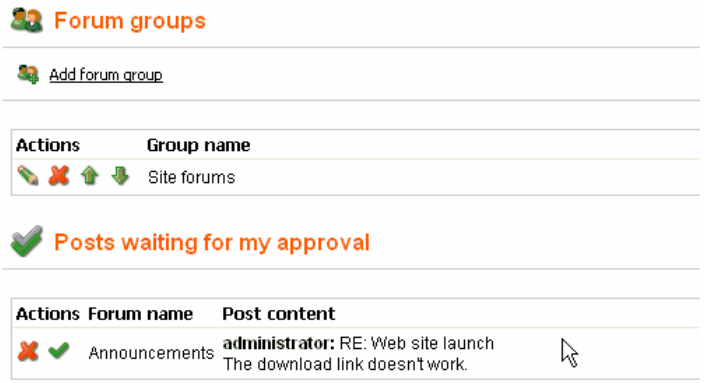


© 2009 Kentico Software

If you're a moderator, **you can moderate the forum posts either directly on the web site or in the Forum properties -> Posts** section:



... or you can find the list of all posts waiting for your approval on the **Forum groups** dialog:



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**.

© 2009 Kentico Software

31.17.6 Publishing pre-defined forum on the web

When you want to publish a forum on your web site, 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 and Controls 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 forum group on the web site

You can publish the whole forum group on the web site 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	3	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 Lock Unstick thread Move down Move up	administrator	3	259	administrator (10/19/2008 5:45:18 PM)
	New products Lock Stick thread	administrator	3	57	Frank Stevens (11/16/2008 1:08:41 PM)

1

© 2009 Kentico Software

2. As a tree of threads and posts
- set the **Forum layout** property to **Tree**



Adding forum full-text search

If you want to let users search the forum posts for 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 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`.



31.17.7 Adding 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 web site, but it will be actually created only after some visitor adds the 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.

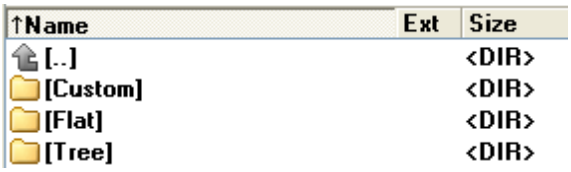
© 2009 Kentico Software

It is **deprecated** to use the following two web parts, as 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

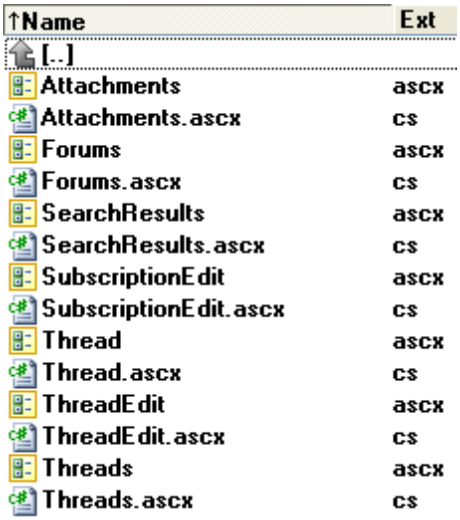
31.17.8 Customizing forum design

Forum layouts are stored in **<web project>\CMSModules\Forums\Controls\Layouts**. The folder contains three sub-folders by default.



The **Flat** and **Tree** folders contain controls for the alike 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. 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**.



31.17.9 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 attachment:

In **Site Manager -> Settings -> Forums**, you can make the following setting:

© 2009 Kentico Software

- **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:

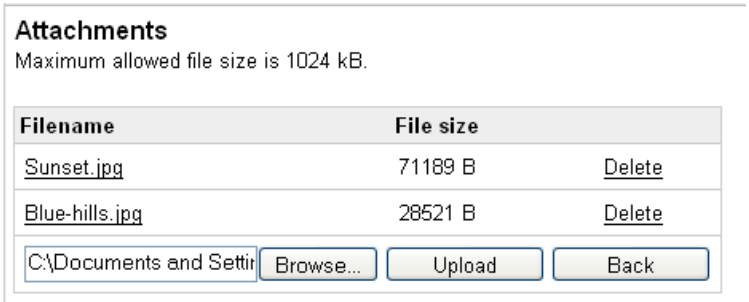
- **Attachment max. file size (kB)** - you can define the maximal size of an attached file in kB

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.

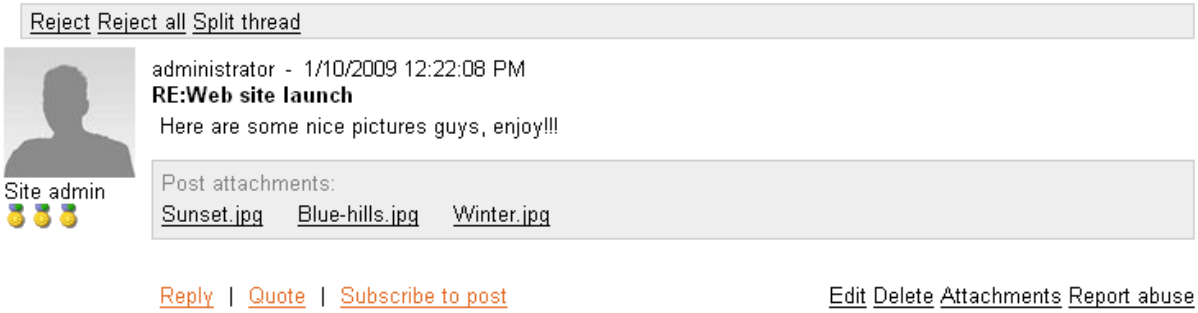


After clicking **OK**, a new dialog will be displayed, where users can upload the attachments. When all desired images are uploaded, users can click the **Back** button, which will take them back to the forum.



© 2009 Kentico Software

Back in the forum thread, links to uploaded attachments will be displayed with the post, as you can see in the screenshot below.



© 2009 Kentico Software

31.17.1 BBCode support

BBCode is a lighweight 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 in case that it is enabled. You have to allow use of BBCode in properties of the forum or forum group, both on the **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 <*width*>x<*height*> or <*max side size*>.	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 *Administrator wrote:* 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 an 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.

© 2009 Kentico Software

- **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

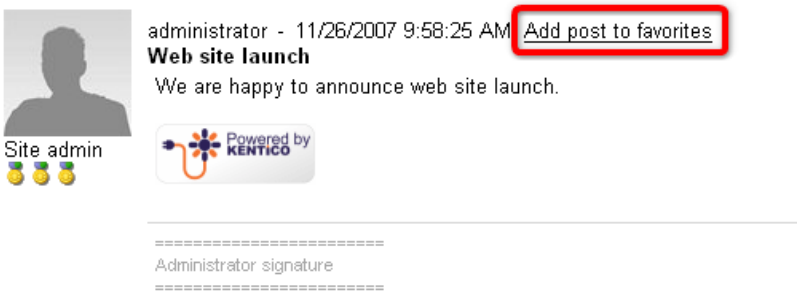
There is an easy way how to resolve macros in ASPX or codebehind code. To resolve all the macros (recommended), use method:

string **CMS.CMSHelper.CMSContext.ResolveDiscussionMacros**(string **inputText**)

Or you can use class **CMS.GlobalHelper.DiscussionMacroHelper** to resolve macros with particular settings using method **ResolveMacros** from the object of this class.

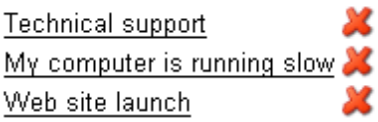
31.17.11 Forum favorites

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 user clicks this link, the post will be added to his 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.



© 2009 Kentico Software

31.17.12 Friendly URLs

Forums display content based on the current values of the **forumid** and **threadid** query string parameters. By default, URL of a forum thread might look like the following:

<domain>/Forums.aspx?forumid=3&threadid=12

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}**

© 2009 Kentico Software

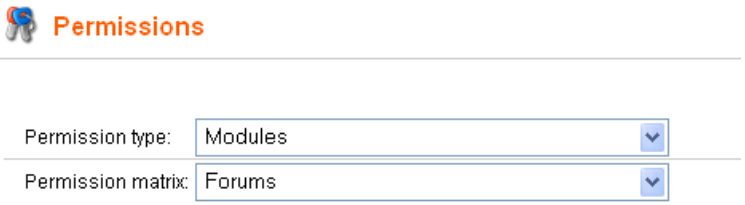
31.17.13 Security

There are two parts of the Forums module's security model:

1. The security of the Forums module administration interface.
2. The security of the forums published on the web site.

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**:



	Display module	Modify	Read
Authenticated users	☐	☐	☐
CMS Community administrators	☑	☑	☑
CMS Designers	☐	☐	☐
CMS Desk administrators	☑	☑	☑
CMS Editors	☑	☐	☑
CMS Readers	☑	☐	☑
Everyone	☐	☐	☐
Live ID users	☐	☐	☐
Non-authenticated users	☐	☐	☐

- **Display module -** the module will be displayed in the administration interface
- **Modify** - allows users to modify forum settings
- **Read** - allows users to only read forum settings

The users without any permissions who are moderators of at least one forum are allowed to access the **Posts waiting for my approval** dialog only.

© 2009 Kentico Software

Security of forums published on a web site

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:

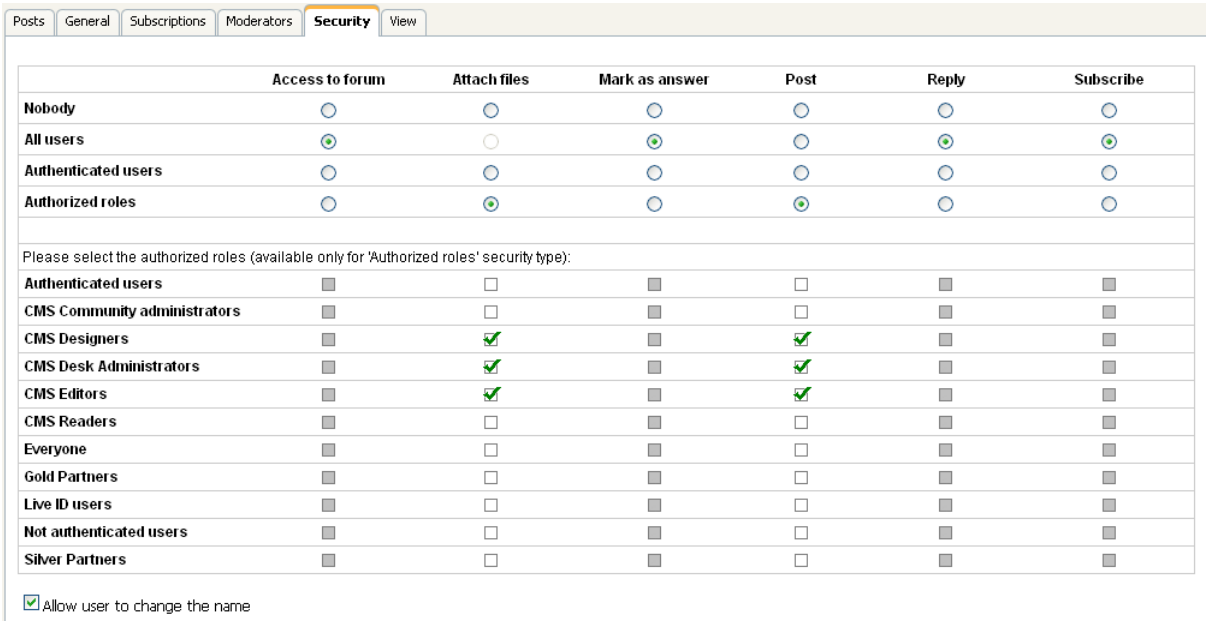
- **Access to forum** - defines who can enter the forum and view posts
- **Attach files** - defines who can attach files to forum posts
- **Mark as answer** - defines who can mark posts as answers in Question - Answer forums
- **Post** - defines who can add posts to the forum
- **Reply** - defines who 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, user name will be used



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 him in the list of forums in a forum group
- **Redirect unauthorized users** - determines whether to redirect unauthorized users to the logon page

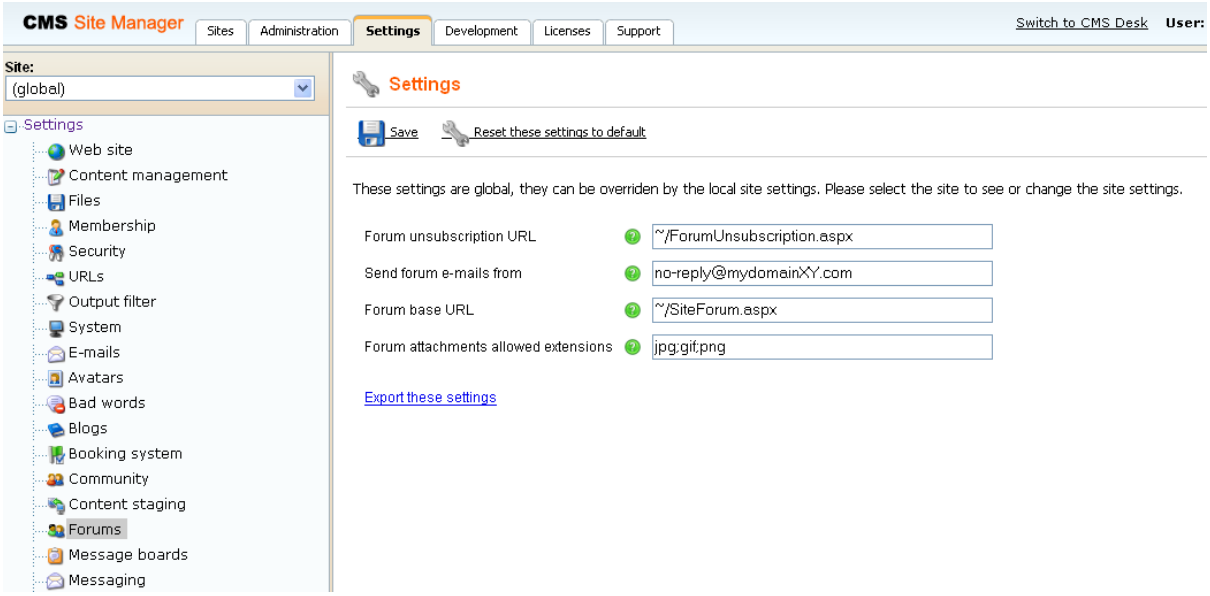
© 2009 Kentico Software

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 she is not authorized

31.17.14 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 should be 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



© 2009 Kentico Software

31.18 Friends

31.18.1 Overview

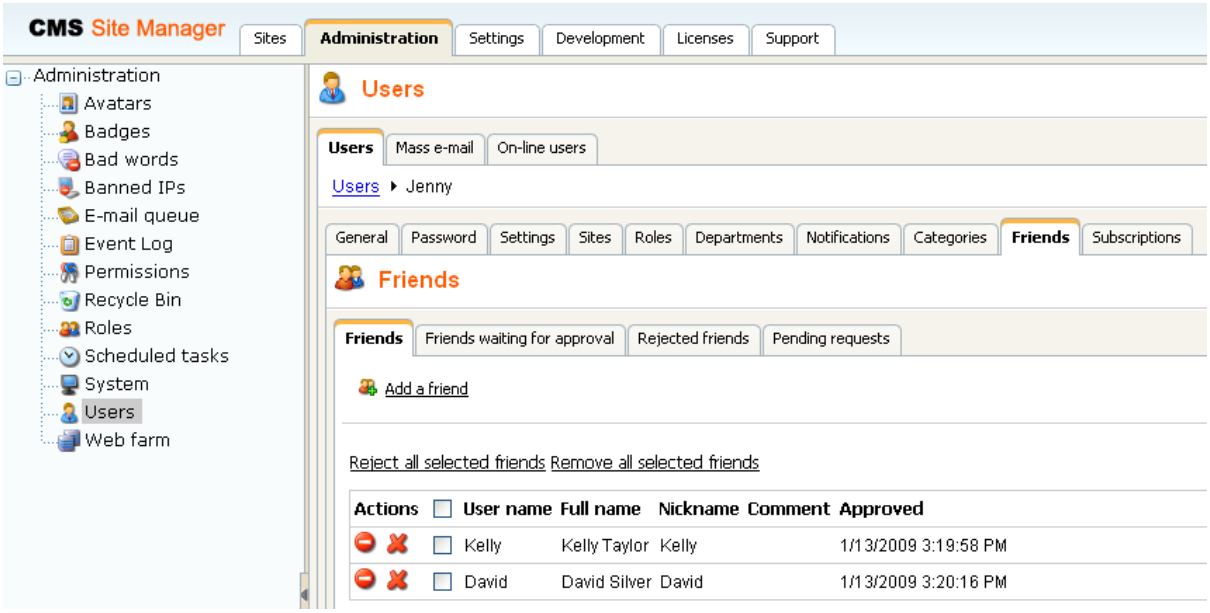
The Friends module allows site members to maintain relationships with other site members and share personal information with them.

31.18.2 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 her own friendships. Names of the tabs in **My desk -> My Friends** are stated in brackets:

Friends (My friends)

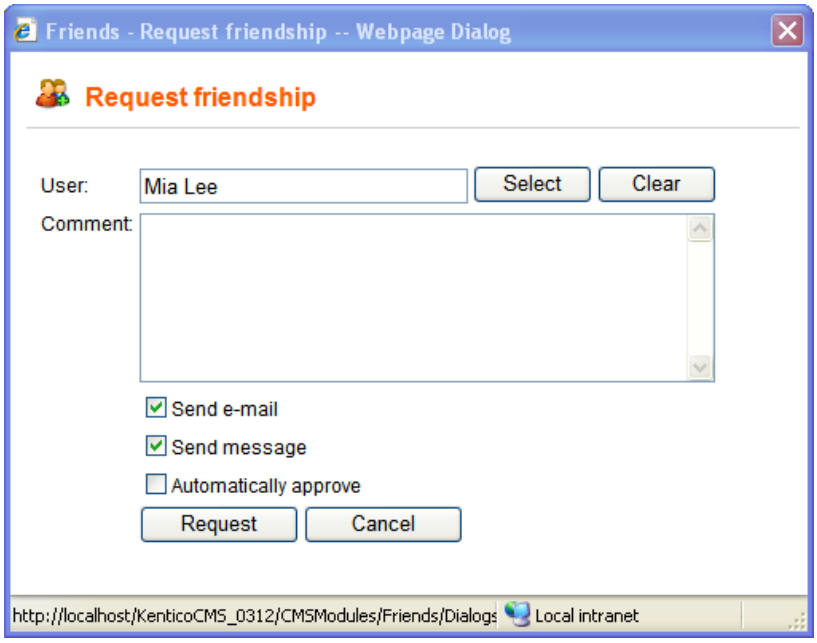
On this tab, you can see a list of all your current friends. New friendships can be requested using the **Add a friend** link. You also can **Remove** ( ) or **Reject** ( ) friends in the list. The difference between the two is that rejected friends can't request your friendship anymore while they are 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.



© 2009 Kentico Software

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 she receives the friendship request. You can also check the following check-boxes:

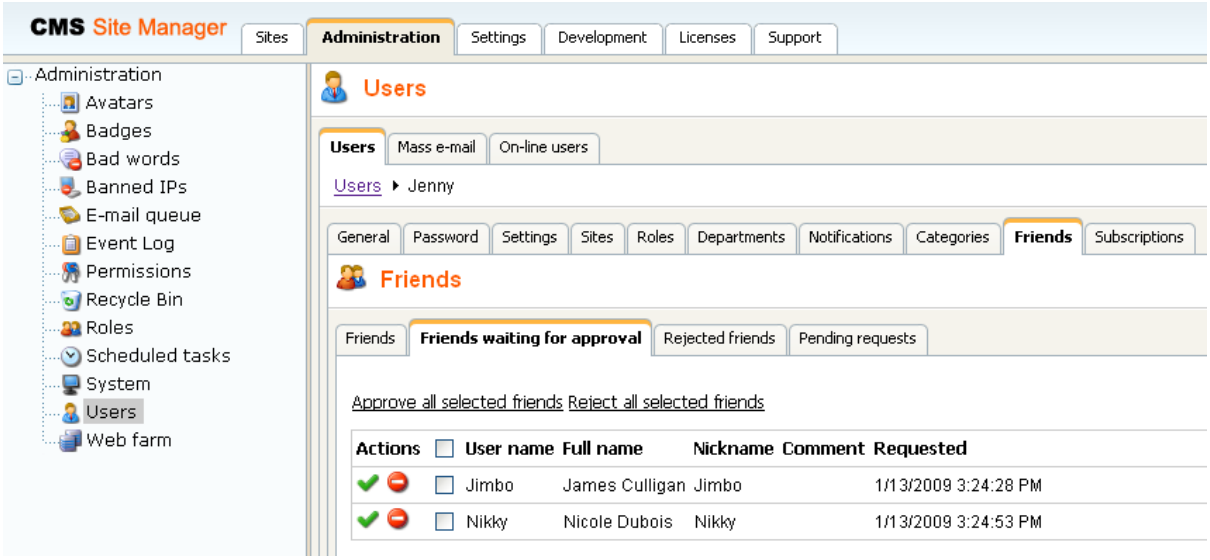
- **Send e-mail** - an e-mail with the friendship request will be sent to the user
- **Send message** - messaging module message with the friendship request will be sent to the user
- **Automatically approve** - global administrators and users with Manage permission for the Friends module can use this check-box, which creates the requested friendship without the other user's approval



© 2009 Kentico Software

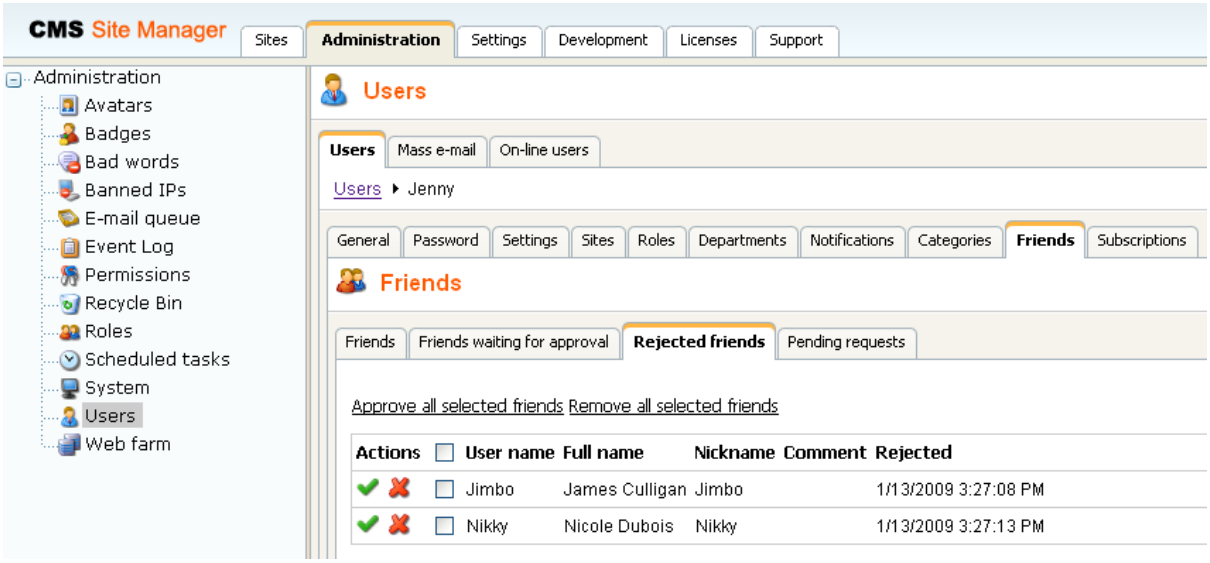
Friends waiting for approval (Friends waiting for my approval)

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.



Rejected friends

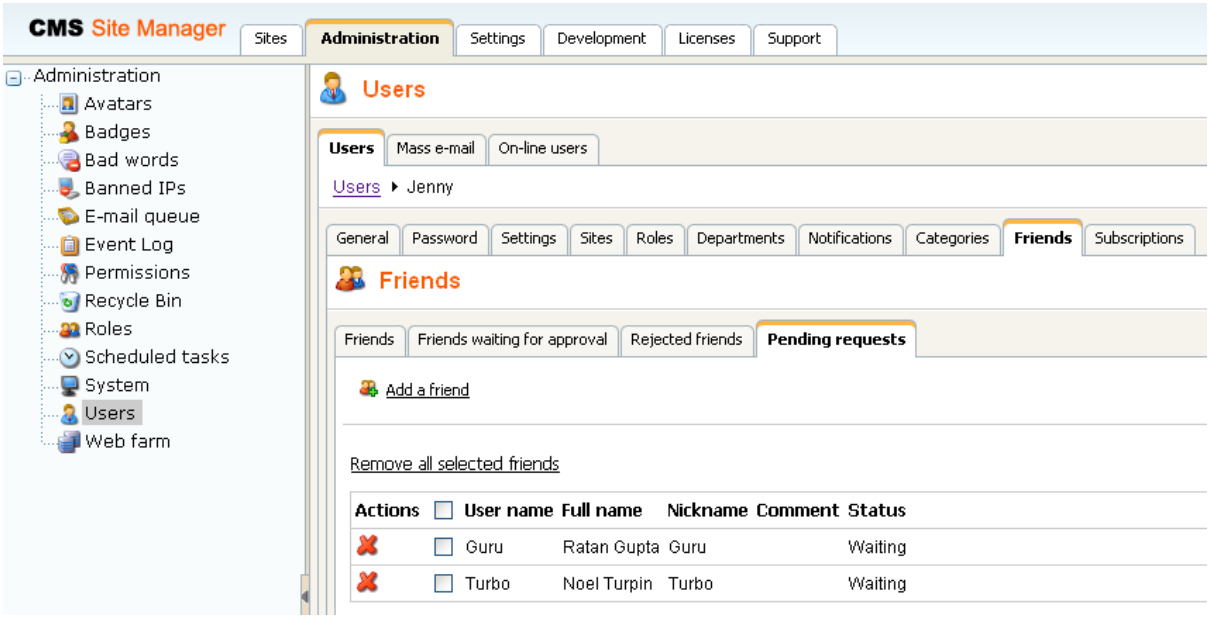
On this tab, you can see a list of all users whose friendship you rejected. Once in the rejected status, the user can't request your friendship anymore. You can either **Approve** (✔) some user's friendship, which makes her your friend, or **Remove** (✘) the user from the list of rejected, which enables her 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.



© 2009 Kentico Software

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.



31.18.3 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

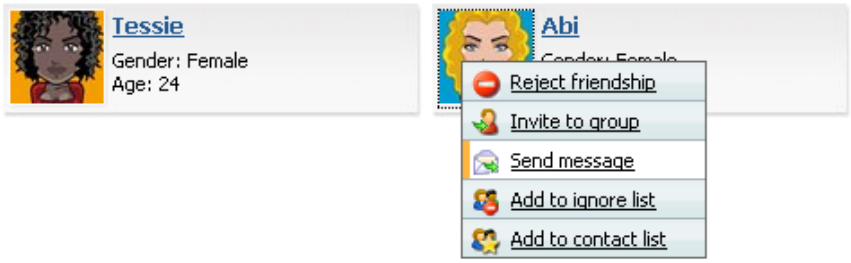
© 2009 Kentico Software

31.18.4 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 that is a part of your Kentico CMS installation and can be accessed through the Kentico CMS folder in Windows' **Start -> All programs** menu.

Friends viewer

This web part can typically be used on user's profile page for viewing her 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 chapter Friends management:

Friends list

This web part displays a list of all friends of the current user.



Friends waiting for approval

This web part displays a list of all users waiting for the current user's friendship approval.



© 2009 Kentico Software

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.



My pending requests

This web part displays a list of all users whose friendship the current user requested.



Request friendship

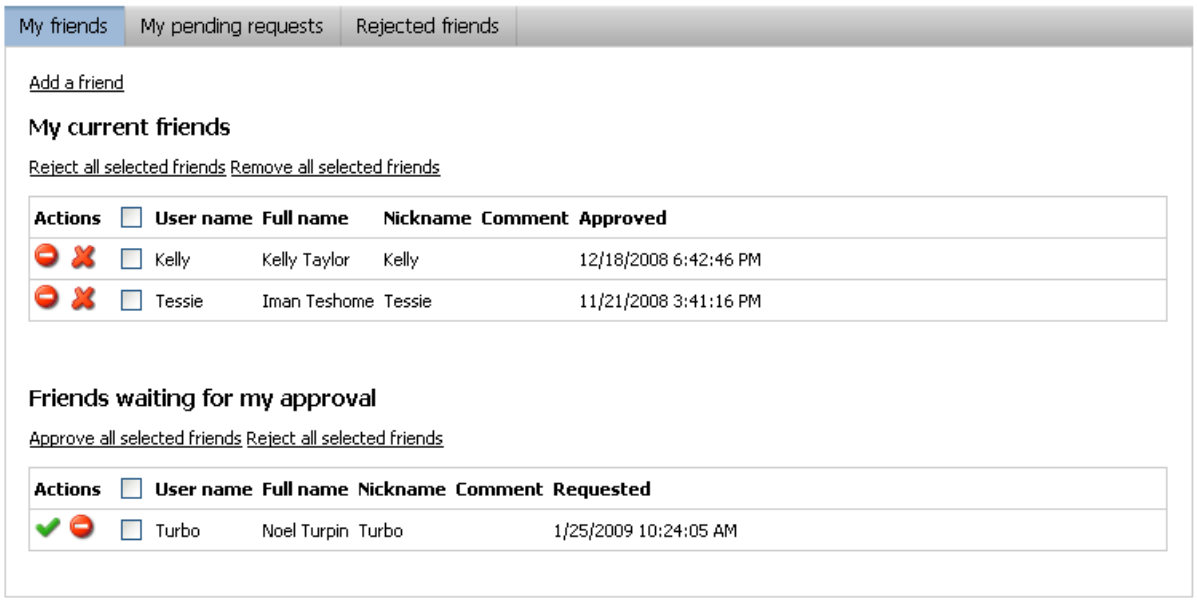
This web part displays only a link that, when clicked, opens the friendship request dialog.



© 2009 Kentico Software

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.

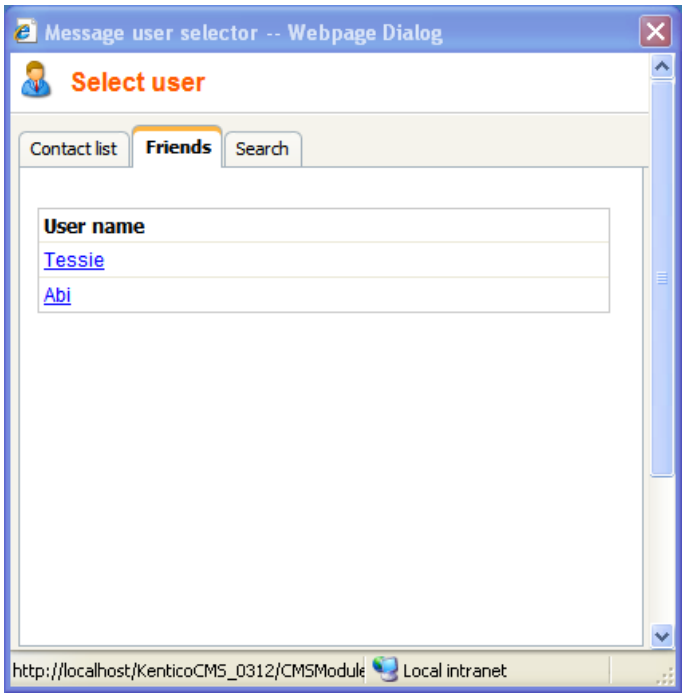


© 2009 Kentico Software

31.18.5 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 her 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 Custom fields visibility chapter.

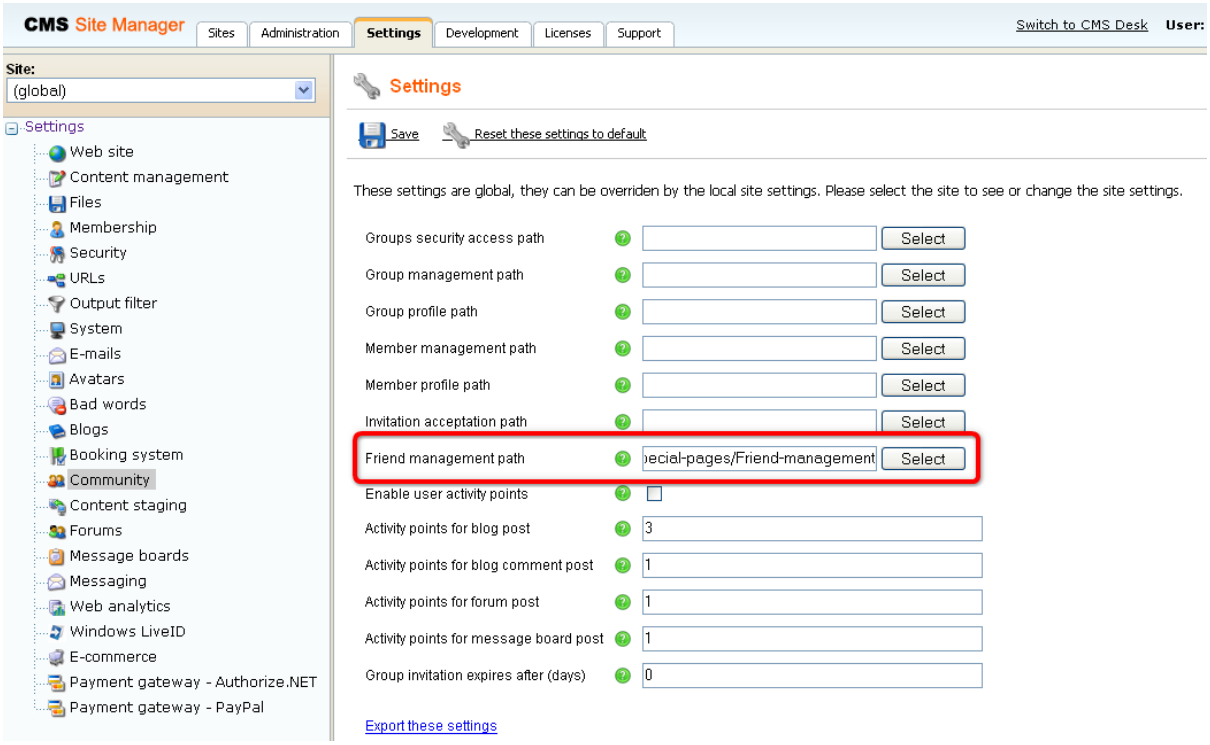
© 2009 Kentico Software

31.18.6 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.

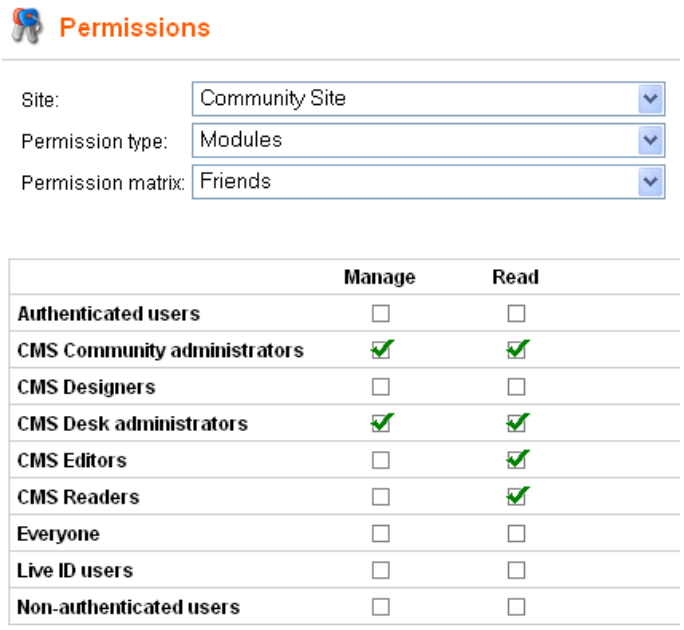
If some user receives an e-mail with friendship request, there are links for friendship approval or rejection included in the mail. When the user clicks one of the links, the she is redirected to this page and the user guid and type of action is transferred in form of querystring parameters. The Friendship management web part processes the received parameters and performs the necessary tasks for friendship approval or rejection.



© 2009 Kentico Software

31.18.7 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

© 2009 Kentico Software

31.19 GeoMapping

31.19.1 GeoMapping overview

The GeoMapping module allows you to display content on a map. It uses the Google Maps, which is a free service provided by Google available at http://www.google.com/apis/maps/gallery/mapsAPIProducts.html.

This module can be used for many scenarios when you need to display a map:
- show your offices
- show your store
- 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.

Google Maps Key

The Google Maps system requires a unique key for every domain where you display the maps. Kentico CMS contains keys for localhost and 127.0.0.1. When you move your web site to a real domain, you need to get your own key at http://code.google.com/apis/maps/signup.html and set the **Google maps key** value in the **Google Maps** web part properties.

How to get a longitude and latitude for a given place

You can use the on-line service that allows you to enter the country, city and street and it shows you to the longitude and latitude.http://world.maporama.com

31.19.2 Example: Displaying offices on the map

This example will show you how to display a list of offices and their location on the map.

Step 1 - Creating a new page with offices

Sign in as administrator to **Kentico CMS Desk -> Content** and click the root. Click **New** and choose to create a new **Page**. Enter the page name **Offices** and choose to create a **blank page** using the **Simple** layout. Click **Save**.

Now we need to add a list of offices. Switch to the Design tab and add the **Repeater** web part. Set the following properties:

- Path: /{0}/%
- Document types: cms.office
- Transformation: cms.office.simple
- Item separator:

Click **OK**.

© 2009 Kentico Software

Step 2 - Geocoding your information

Now we will create two documents of type **Office**. Click the **Offices** page and click **New**. Choose to create a new **Office** and enter the following values:

Office 1:
- Office name: Northwest Transport - New York
- Address line 1: 1290 Avenue of the Americas
- City: New York
- ZIP code: 10104
- State: NY
- Country: USA
- Phone: 123456789
- E-mail: ny@north.com
- Latitude: 40.76
- Longitude: -73.98

Click **Save and another**.

Office 2:
- Office name: Northwest Transport - San Francisco
- Address line 1: 835 Market Street
- City: San Francisco
- ZIP code: 94103
- State: CA
- Country: USA
- Phone: 123456789
- E-mail: sf@north.com
- Latitude: 37.78
- Longitude: -122.41

Click **Save**.

Please note: The Office document type already contains the **Latitude and Longitude fields**. If you're using a custom document type, you will need to define them. They must be of type **Decimal number**. You can call them as you need.

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 **Google services/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

© 2009 Kentico Software

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

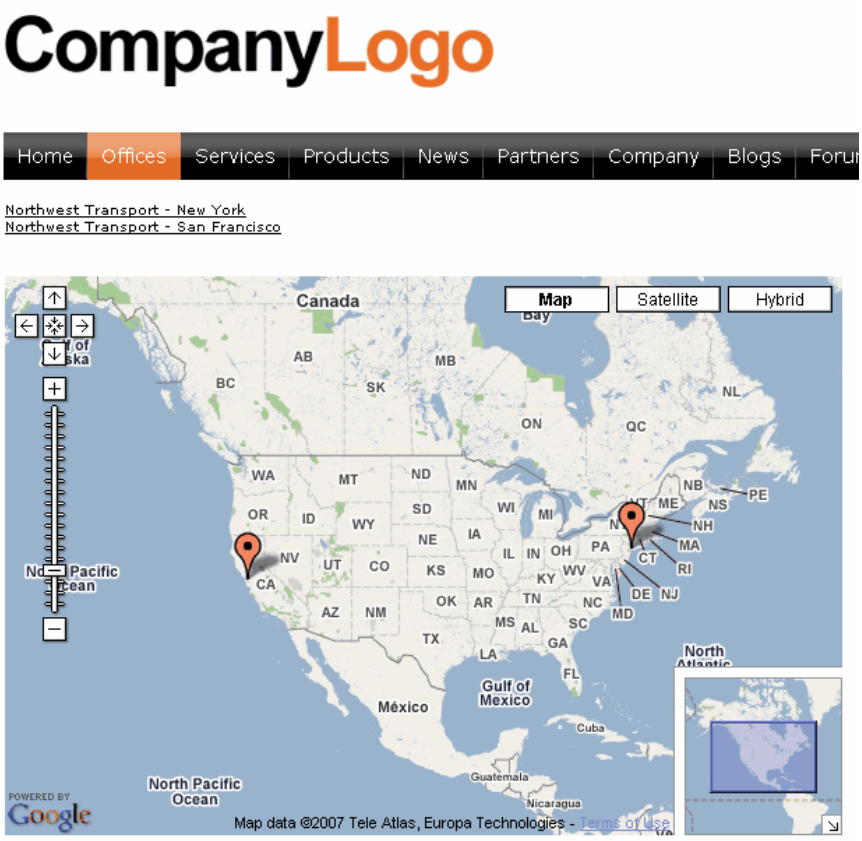
Now we set the following values that specify how the map is displayed:

- **Google maps key:** leave this value empty if you're running the web site at http://localhost or http://127.0.0.1. If you use some particular domain name, you need to get a key at http://code.google.com/apis/maps/signup.html.
- **Large view scale:** 7 (the default zoom)
- **Detailed view scale:** 10 (the zoom used when viewing the selected document)
- **Width:** 600 (in pixels)
- **Height:** 400 (in pixels)
- **Default latitude:** 39.27 (latitude of the map center when the overview map is displayed)
- **Default longitude:** -98.20 (longitude of the map center when the overview map is displayed)
- **Latitude field:** OfficeLatitude (the field containing the latitude information of the document)
- **Longitude field:** OfficeLongitude (the field containing the longitude information of the document)
- **Tooltip field:** OfficeName (the field displayed when you mouse-over a balloon representing the object on the map.

Click **OK**.

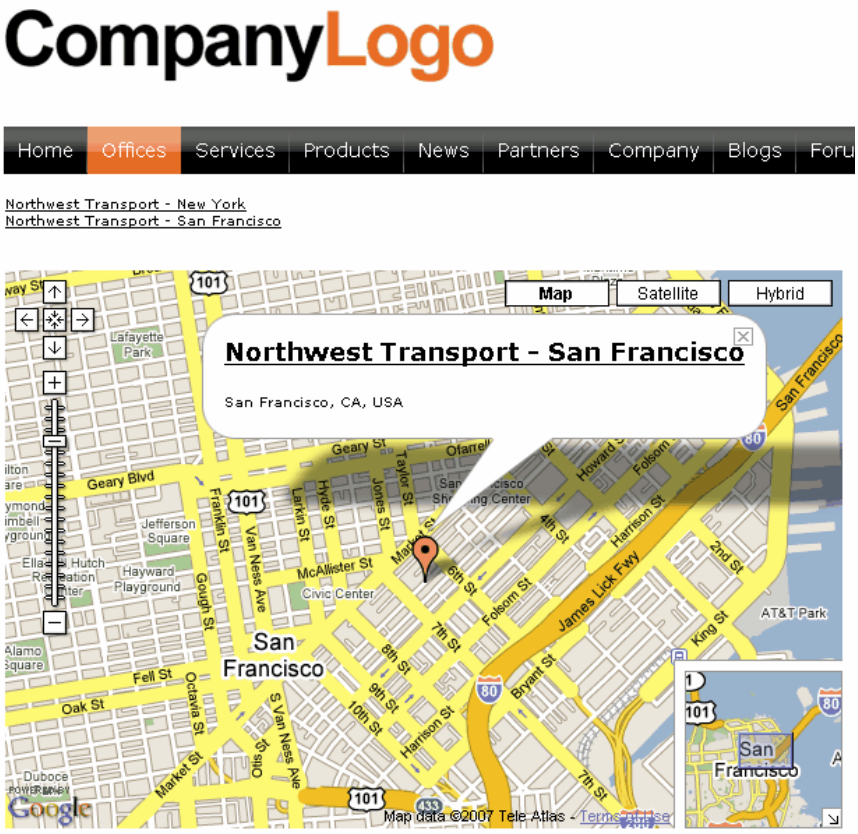
© 2009 Kentico Software

Sign out and see the page. It will look like this:



© 2009 Kentico Software

The is the overview map with balloons. 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:



© 2009 Kentico Software

31.20 Groups

31.20.1 Overview

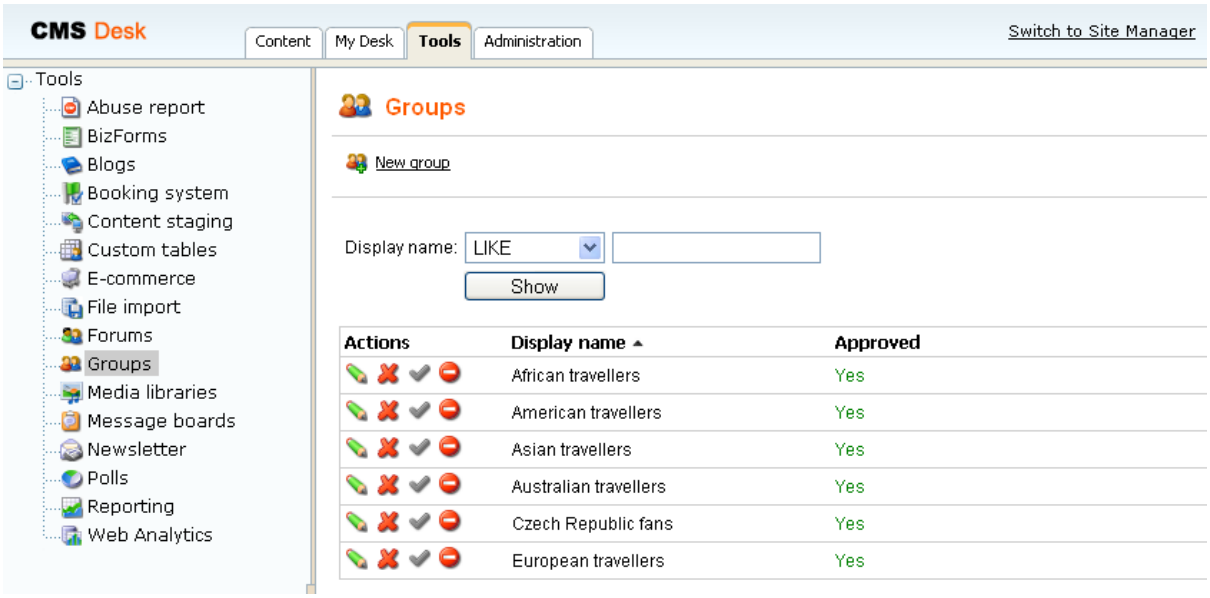
The groups module allows site users to create new groups or join existing ones. Groups are usually related to some topic or field of interest and can have their own documents' section, forums, message boards, media libraries and polls.

31.20.2 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 groups' **display name**.

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 by clicking the **New group** link at the top part of the page. Groups in the list can be **Edited** ( ) or **Deleted** ( ).

In case that 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.



© 2009 Kentico Software

31.20.3 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

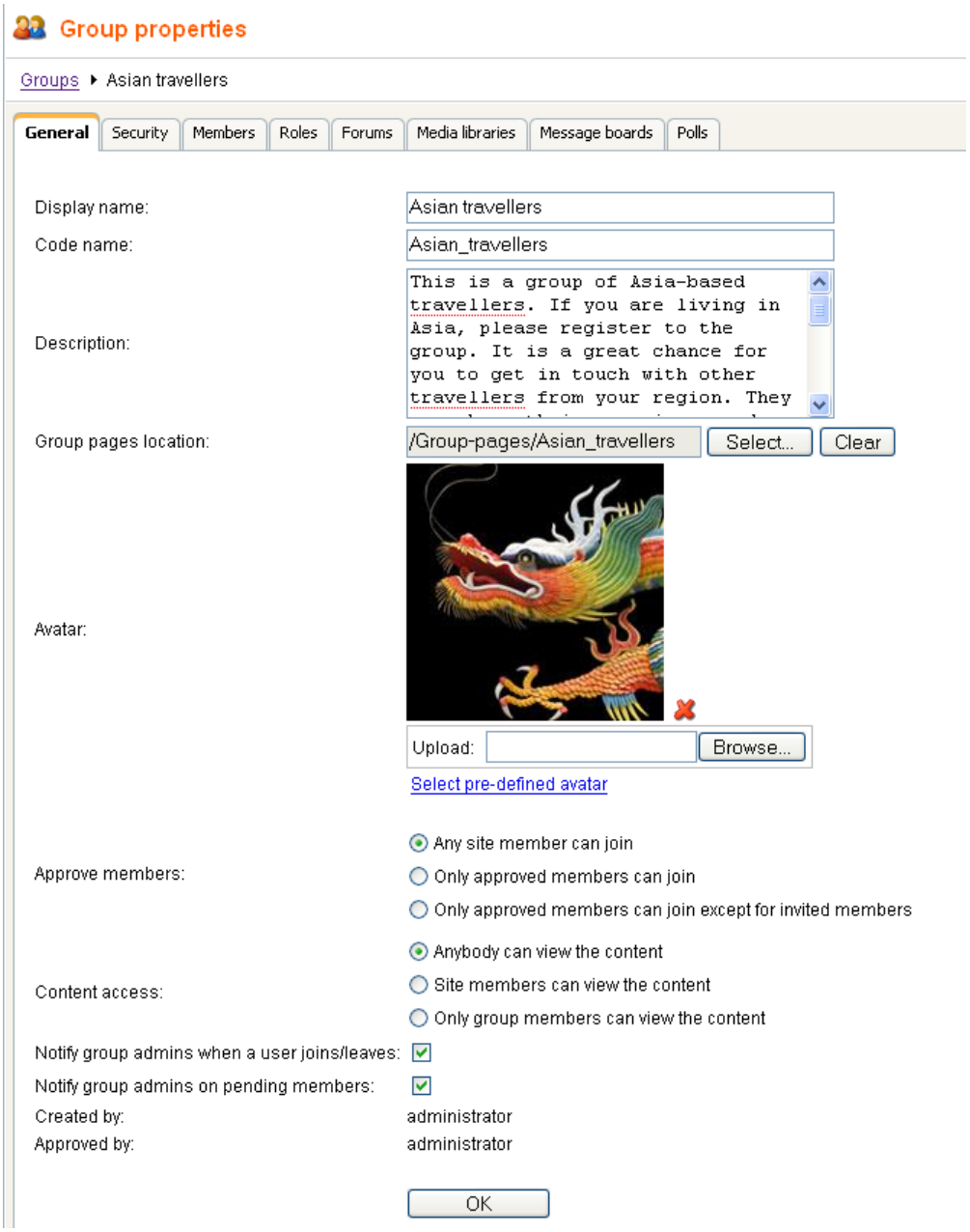
On this tab, you can set the general properties of the group:

- **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 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

© 2009 Kentico Software



© 2009 Kentico Software

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

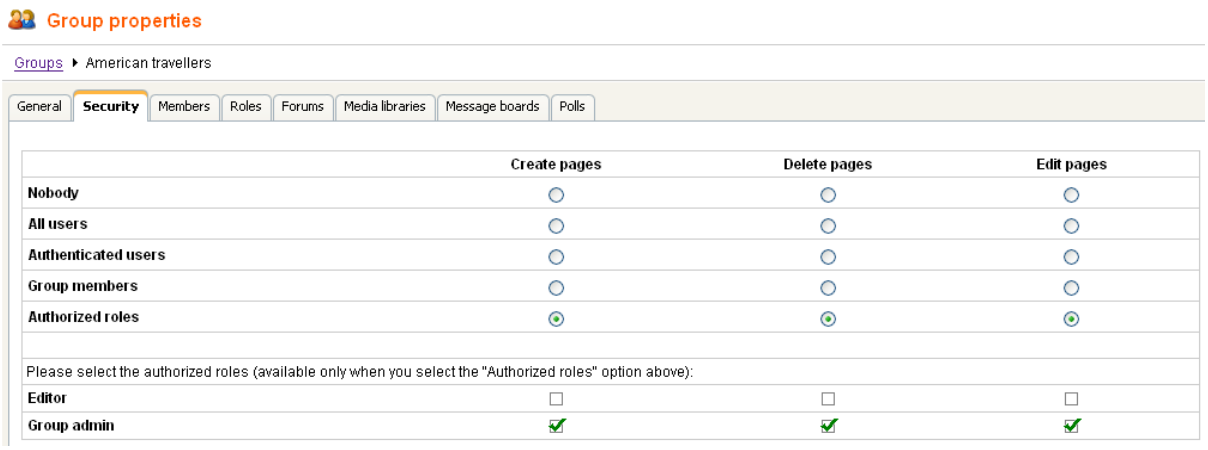
These permissions can be assigned to:

- **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

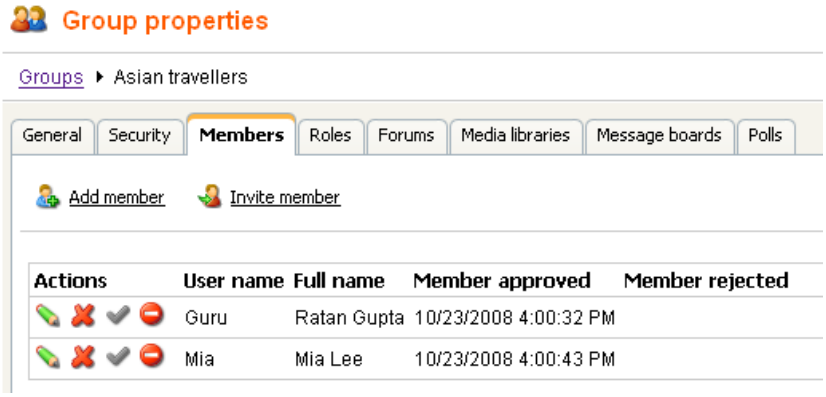
Group administrators can perform any of these actions, even if they haven't the permissions assigned.



© 2009 Kentico Software

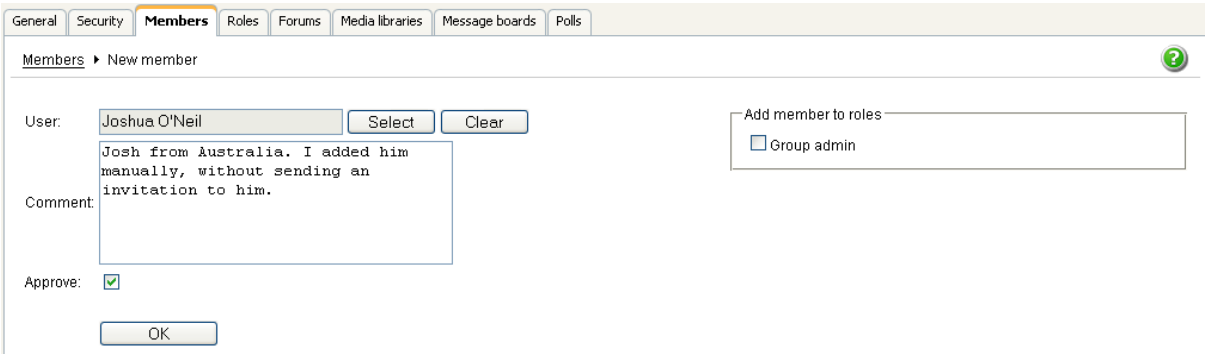
Members tab

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 she is approved again.



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 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, user will need group admin's approval before she becomes member of the group
Add member to roles - using the check-boxes, you can assign the user to group roles

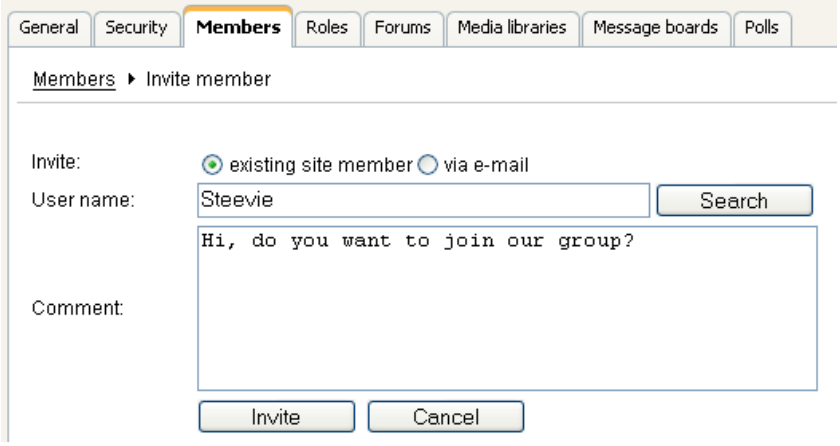


© 2009 Kentico Software

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



Roles tab

On this tab, you can see a list roles defined for the group. These roles are applicable only in the context of the group. Don't confuse them with web site roles, which can be set in Site Manager -> Administration -> Roles.

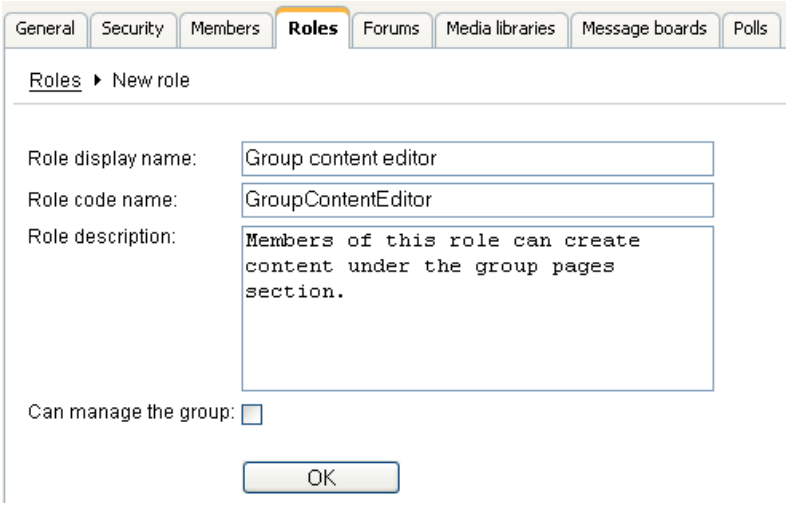
Roles in the list can be **Edited** ( ) and **Deleted** ( ).



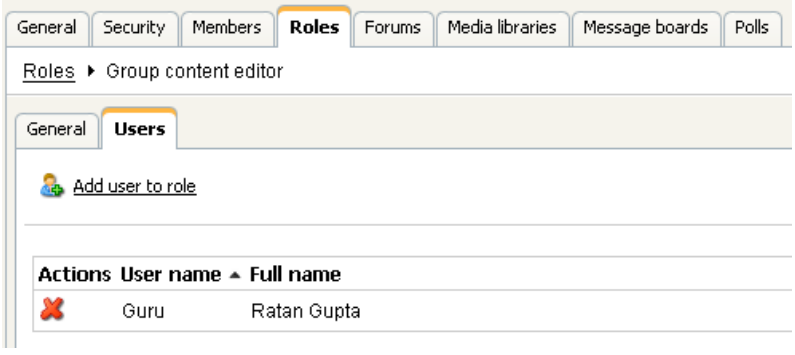
© 2009 Kentico Software

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



When **Editing** ( ) a group, two tabs are offered. On the **General** tab, you can change the details entered when creating the group, 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.



© 2009 Kentico Software

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 Module 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 Module 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 Module 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 Module Polls chapter of this guide for more information on their management.

31.20.4 Enabling users to create groups

You can enable site users to create new groups by placing the **Community -> Group registration** web part to 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

© 2009 Kentico Software

Group pages templates

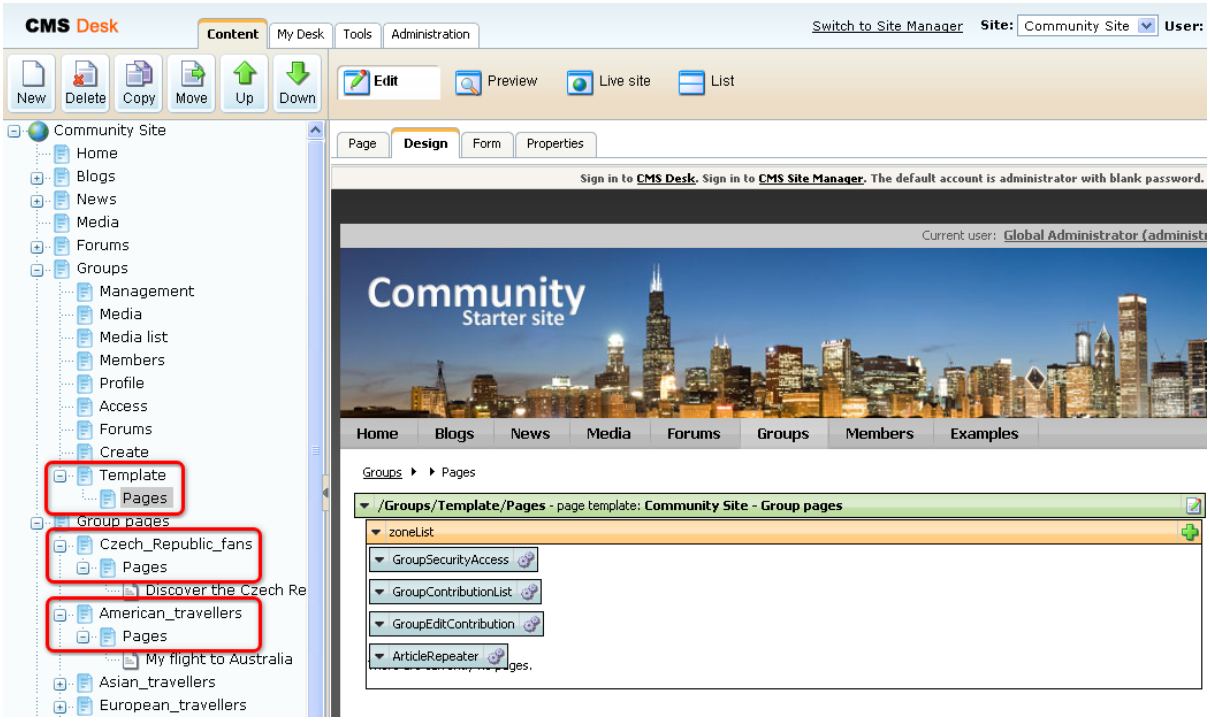
Each group has its own section on the web site where its content is stored - so called group pages. When adding the **Group registration** web part to your site, you have to specify the **Template source alias path** and **Template target alias path** properties. These two properties are essential when 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, it's 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.



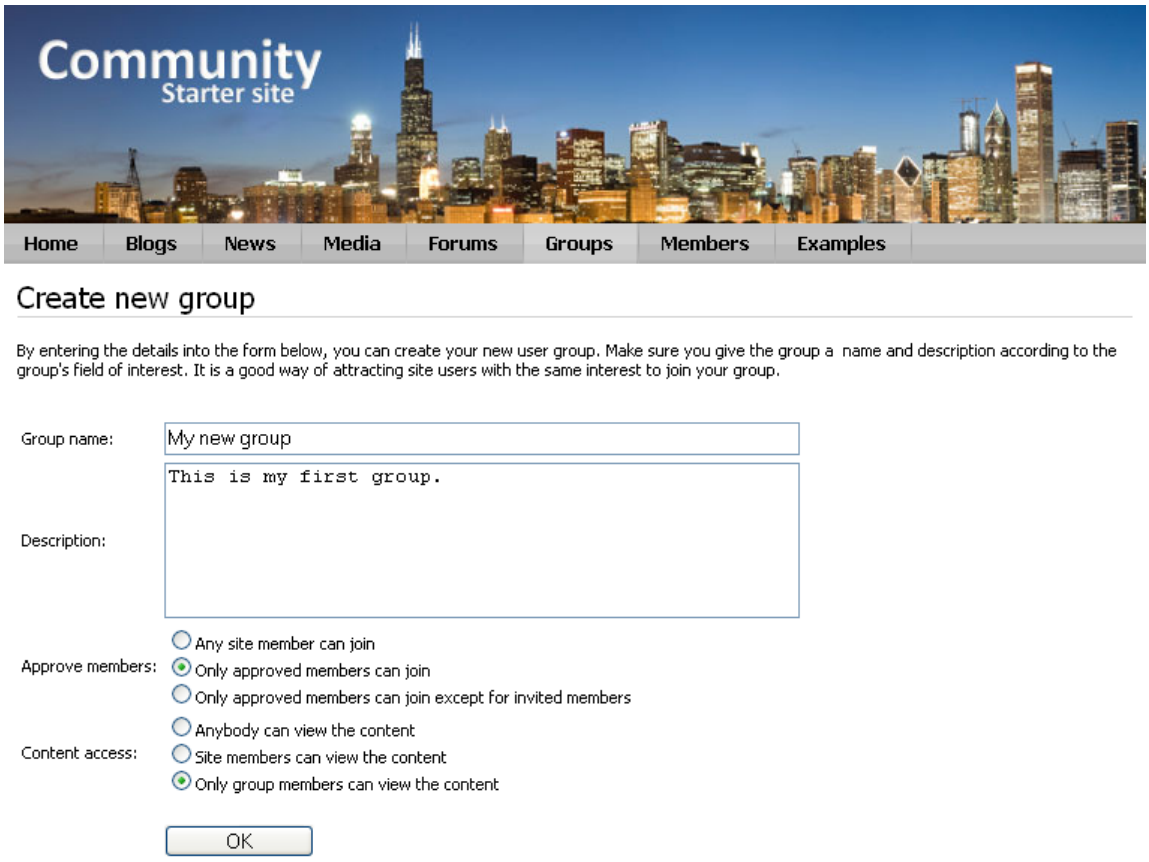
© 2009 Kentico Software

31.20.5 How site users create a new group

When a user want to create a new group on the live site using the **Group registration** web part, she has to fill in the following details:

- **Group name** - name of the group displayed in 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

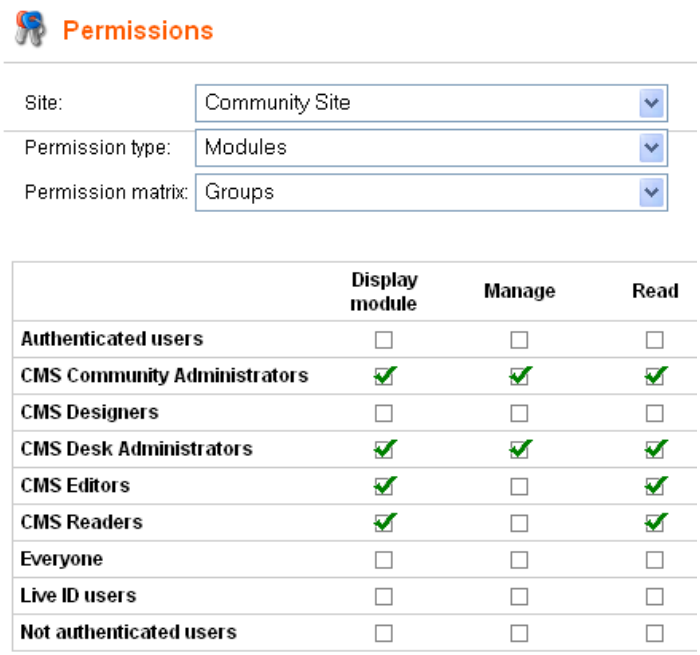
After clicking **OK**, the group will be created and group pages added to the site. In case that site administrator's approval is needed, these actions will be performed after the approval.



31.20.6 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:

- **Display module** - makes the module visible in the administration interface
- **Manage** - allows managing of groups via the administration interface
- **Read** - allows seeing the values in group settings, but does not allow to make any changes to them



© 2009 Kentico Software

Group pages permissions

- **Create pages** - users can create group pages
- **Delete pages** - users can delete group pages
- **Edit pages** - users can edit group pages

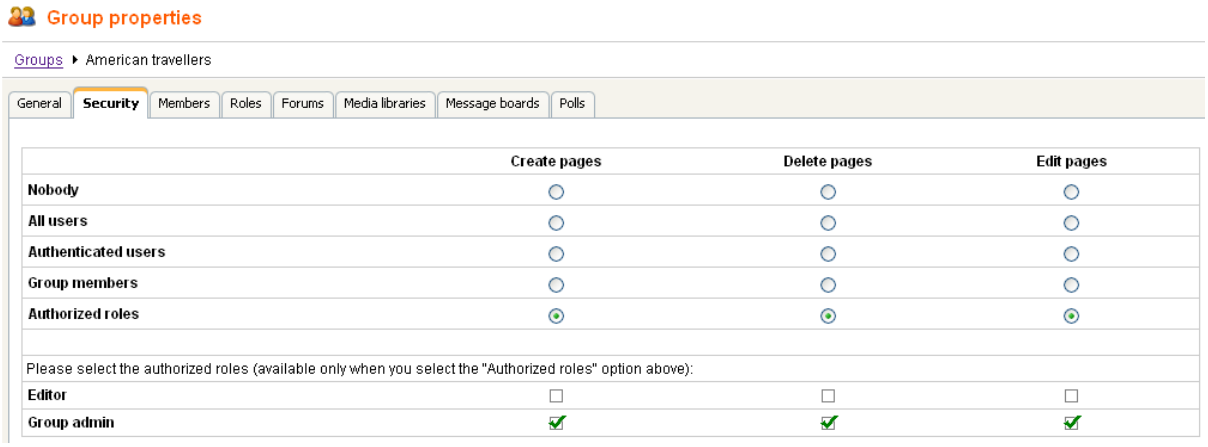
These permissions can be assigned to:

- **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.



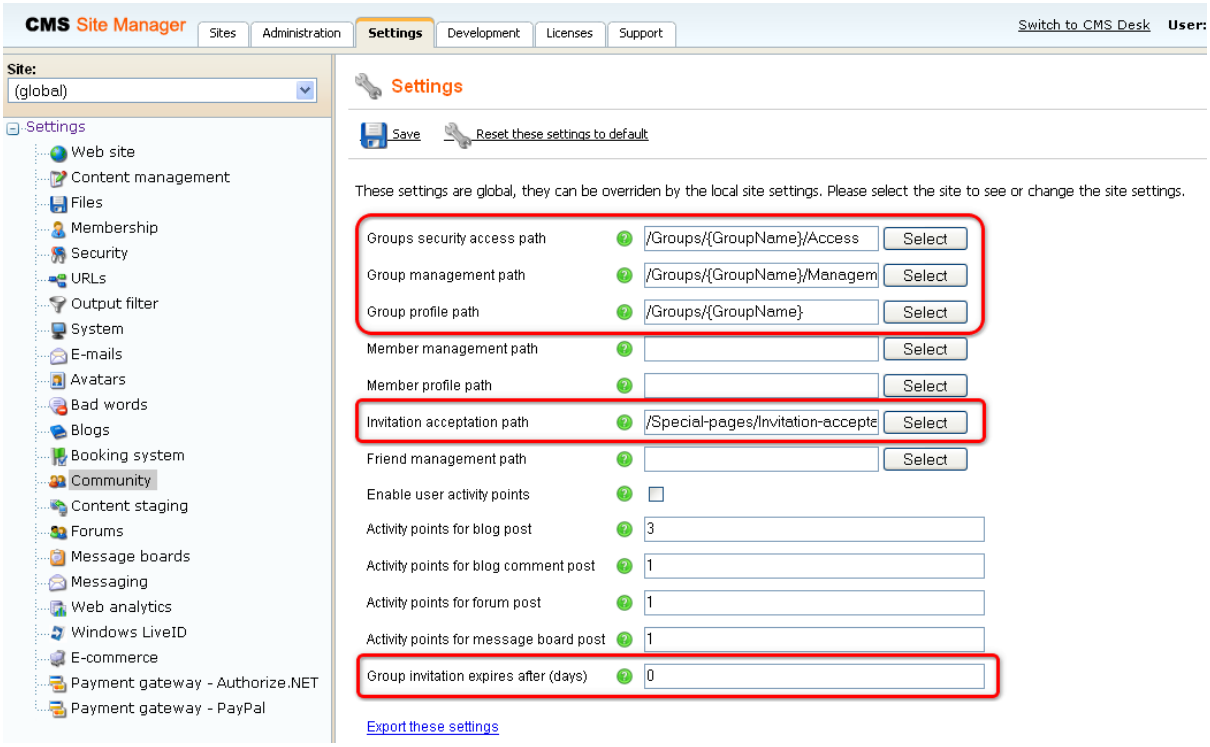
© 2009 Kentico Software

31.20.7 Settings

Setting 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 that users will be redirected when they try to access pages of a group to that 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 acceptation 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 click the joining link in group invitation e-mail; e.g. */Special-pages/Invitation-acceptation*
- **Group invitation expires after (days)** - when some user receives 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 then, the link will be no more functional; when 0 is entered, the link will be functional permanently



© 2009 Kentico Software

31.21 Image gallery

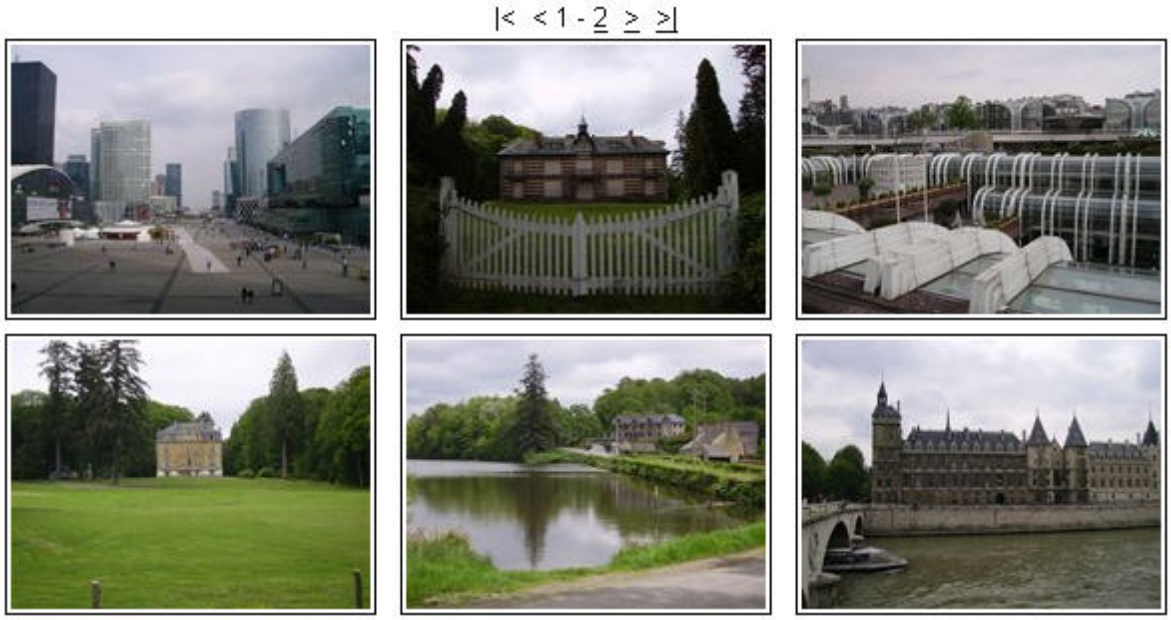
31.21.1 Overview

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.

31.21.2 Available web parts

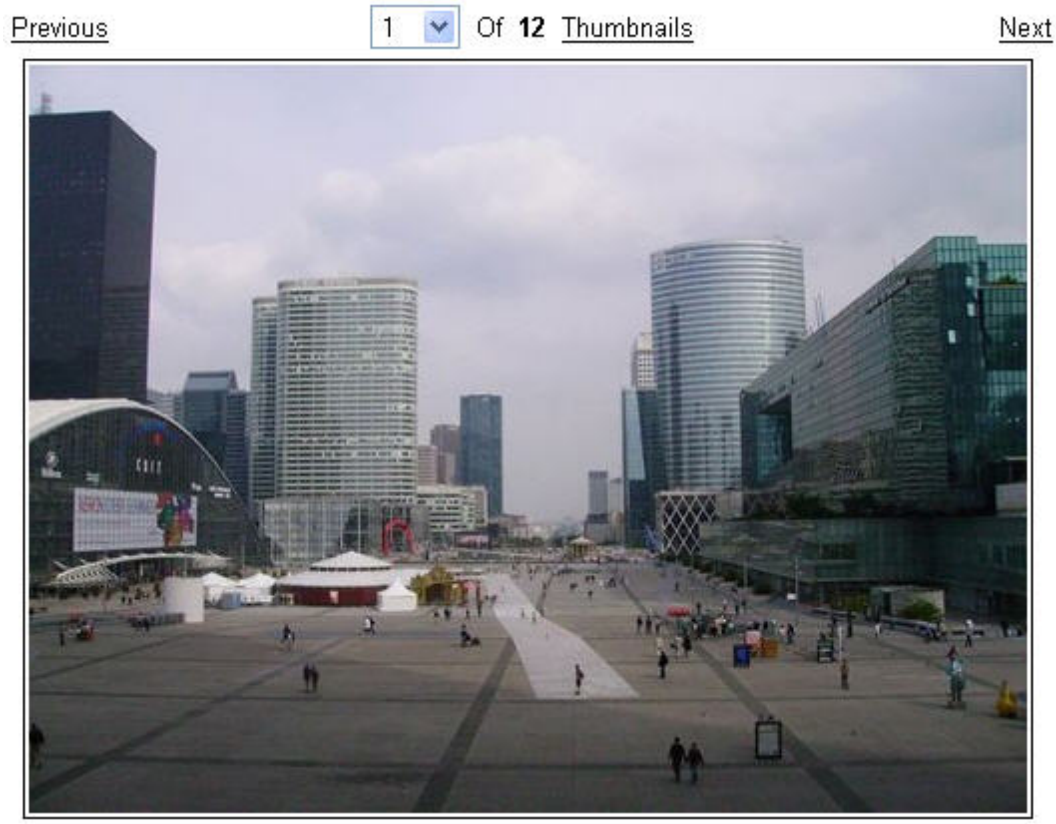
Image gallery

This is the basic web part for image galleries. In its initial view, it displays a set of picture thumbnails:



© 2009 Kentico Software

After clicking one of the thumbnails, the detail view will be displayed:



Besides the usual parameters common for all web parts, these parameters 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: Query string - the paging parameter is transferred through URL Postback - 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.

© 2009 Kentico Software

	Otherwise, they will be displayed below them.

Lightbox gallery

This web part's thumbnail view is similar to that of the Image gallery web part:

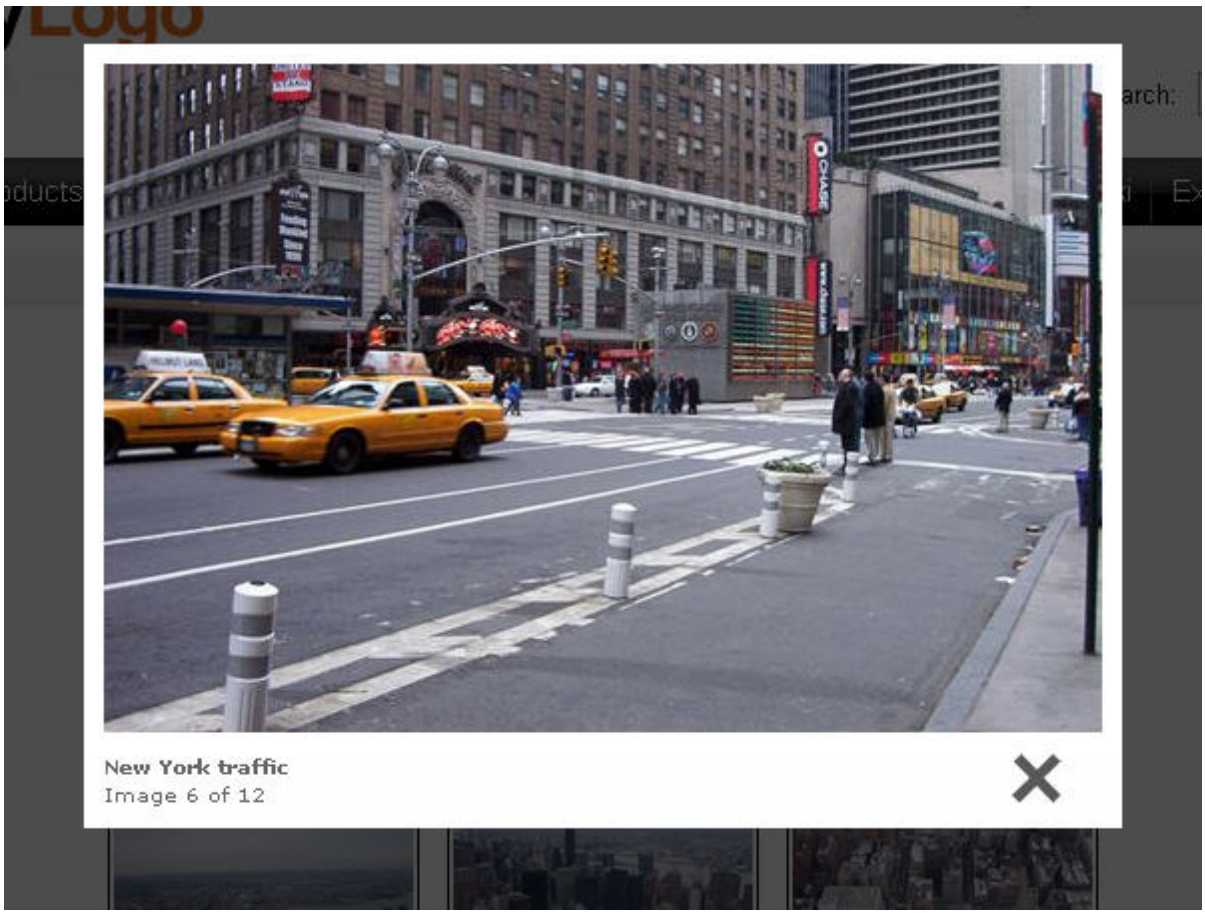


Displaying results 1-9 (of 12)

|< < 1 - 2 > >|

© 2009 Kentico Software

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 parameters specific for the Lightbox gallery 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	Sets the nested controls IDs. Use ';' as a separator; Example: myRepeaterID;myDatalistID;myRepeaterID2 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.
Layout	
Columns	Number of thumbnail columns in the thumbnail view.

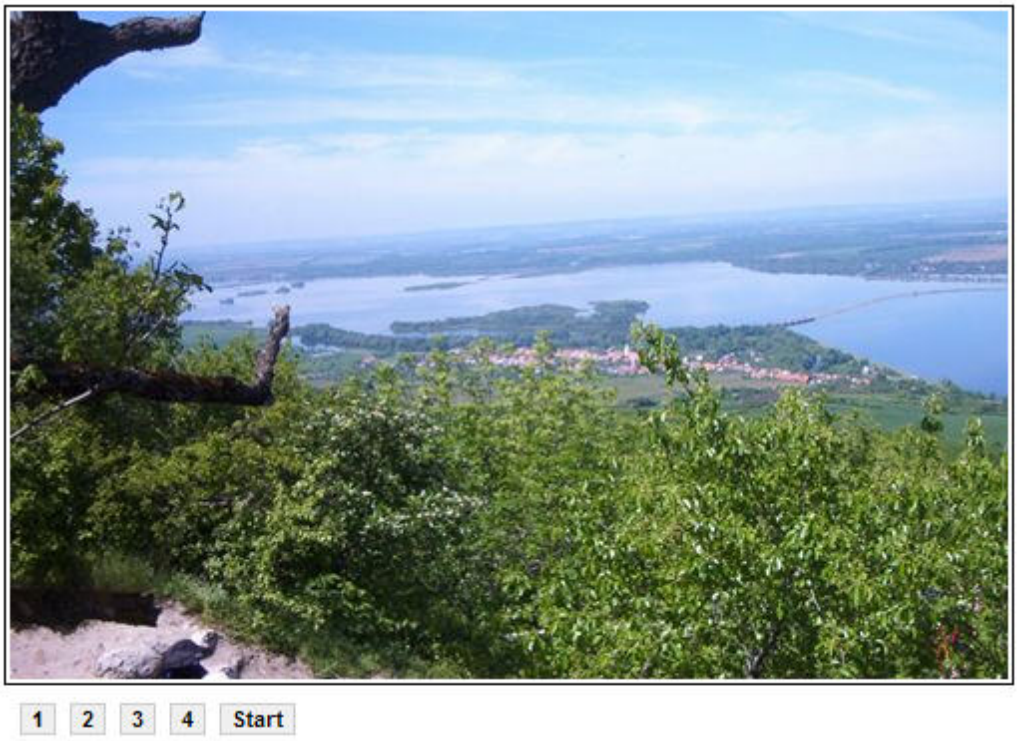
© 2009 Kentico Software

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: Query string - the paging parameter is transferred through URL Postback - the actual page is transferred through ViewState, no URL parameter is used
Pager position	Determines position of the pager. Available options are *Bottom*, *Top* and *Top and bottom.*
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.

© 2009 Kentico Software



Specific parameters 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.

© 2009 Kentico Software

31.21.3 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 **CMSDesk -> 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.

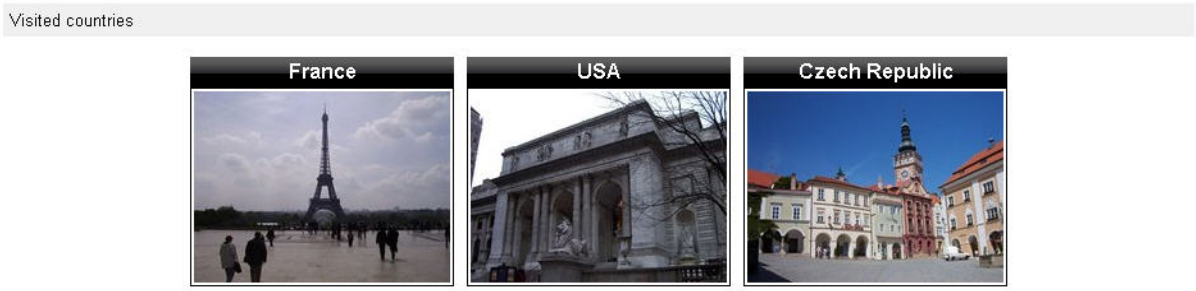


Image gallery

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 chapter Available web parts for detailed info.

Lightbox gallery

This page template uses the Lightbox gallery web part for displaying images. See chapter Available web parts for further info.

© 2009 Kentico Software

31.21.4 Importing images

Images used in galleries are imported the same way as any other files, as described in the File import chapter.

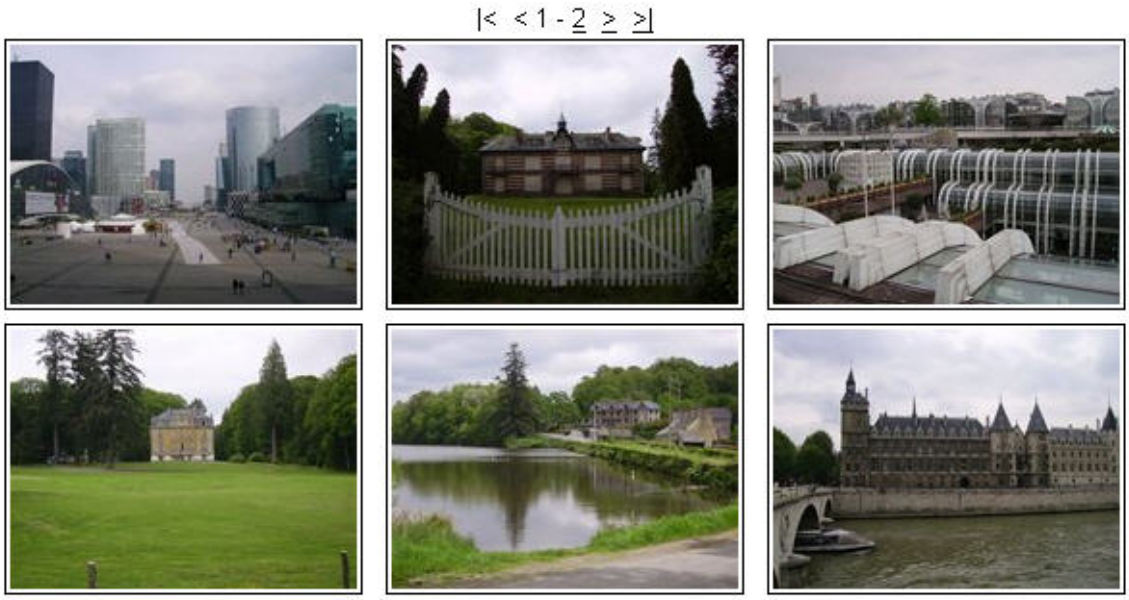
31.21.5 Transformations

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 on 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") + "?maxsidesize=180\" border=\"0\" />")
%>
</a>
```

And this is how the gallery created using this transformation looks like:

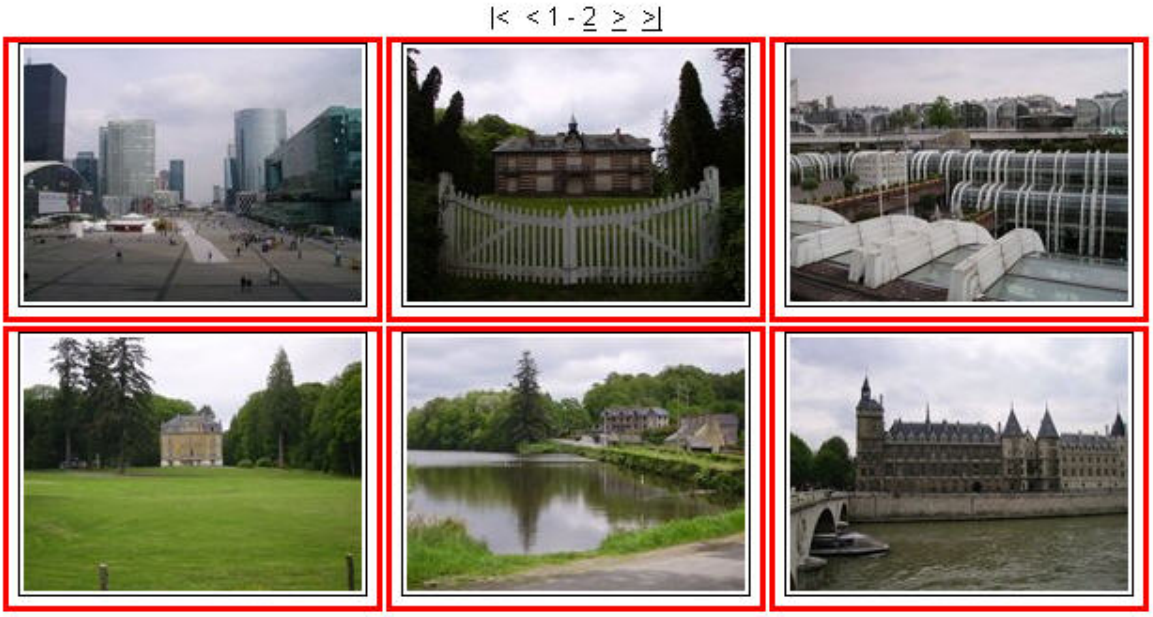


© 2009 Kentico Software

In the following example, we will add 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") + "?maxsidesize=180\" border=\"0\" />")
%>
</a>
</div>
```

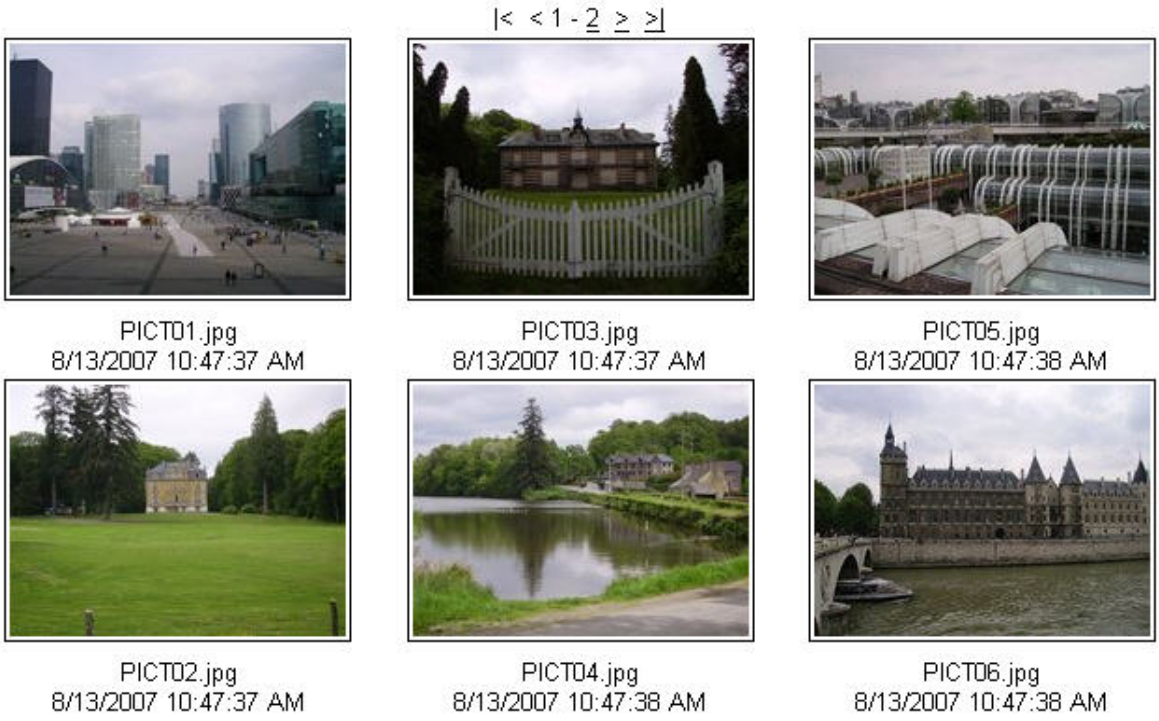
This is how the result looks like:



© 2009 Kentico Software

This example shows how to display 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") + "?maxsidesize=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.

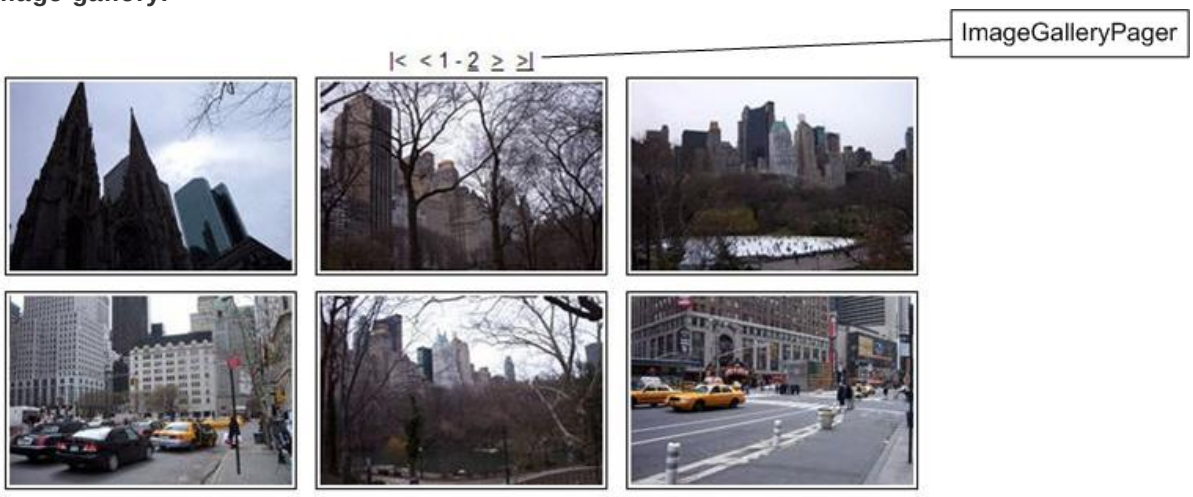
```
<a href="<%# GetDocumentUrl() %>" rel="lightbox[group]" rev="<%# Eval("NodeAliasPath") %>"
title="<%# Eval("FileDescription") %>"><img src="<%# GetFileUrl("FileAttachment") %>?
maxsidesize=150"
alt="<%# Eval("FileName") %>" /></a>
```

© 2009 Kentico Software

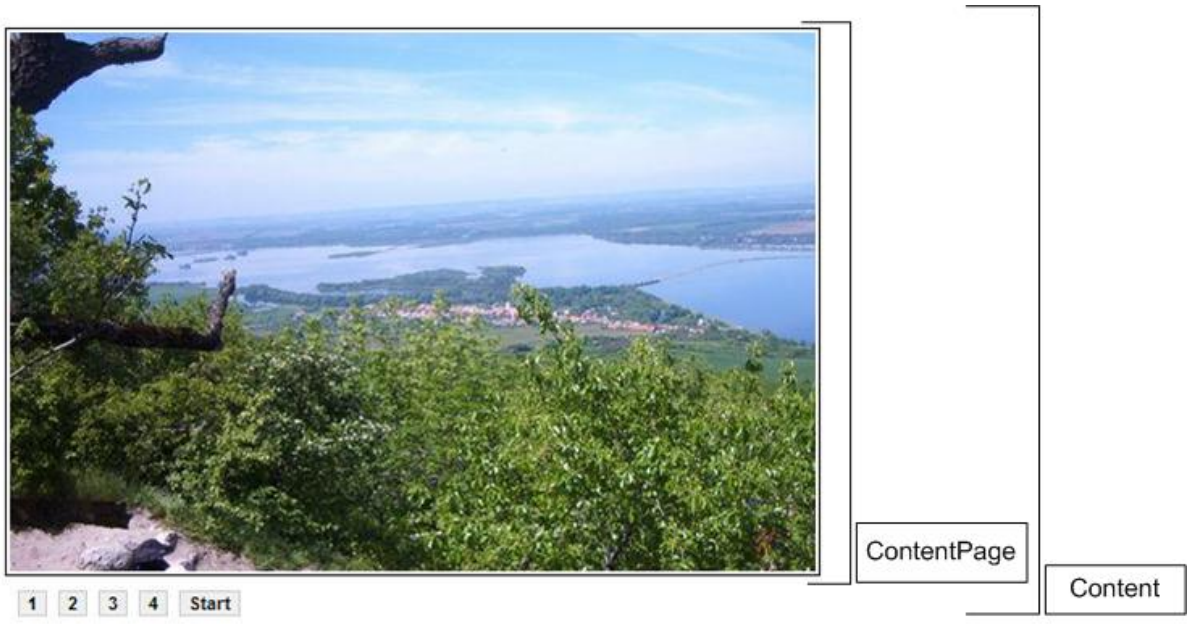
31.21.6 Design and styles

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.

© 2009 Kentico Software

31.22 Media libraries

31.22.1 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 libraries.

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. Media library belongs either to a specified group or is global for a specified site.

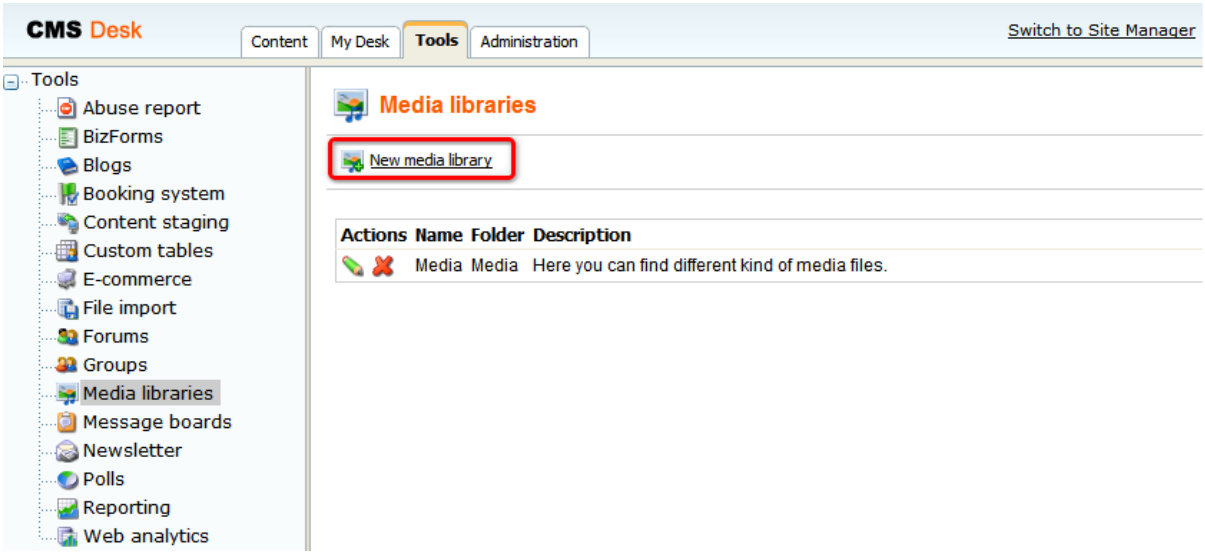
- Support for storage of large amount of files (photo galleries)
- Support for storage of large files (video files)
- Each group of users can have any number of libraries
- Files can be uploaded to the libraries externally, e.g. using FTP

31.22.2 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 groups' 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.

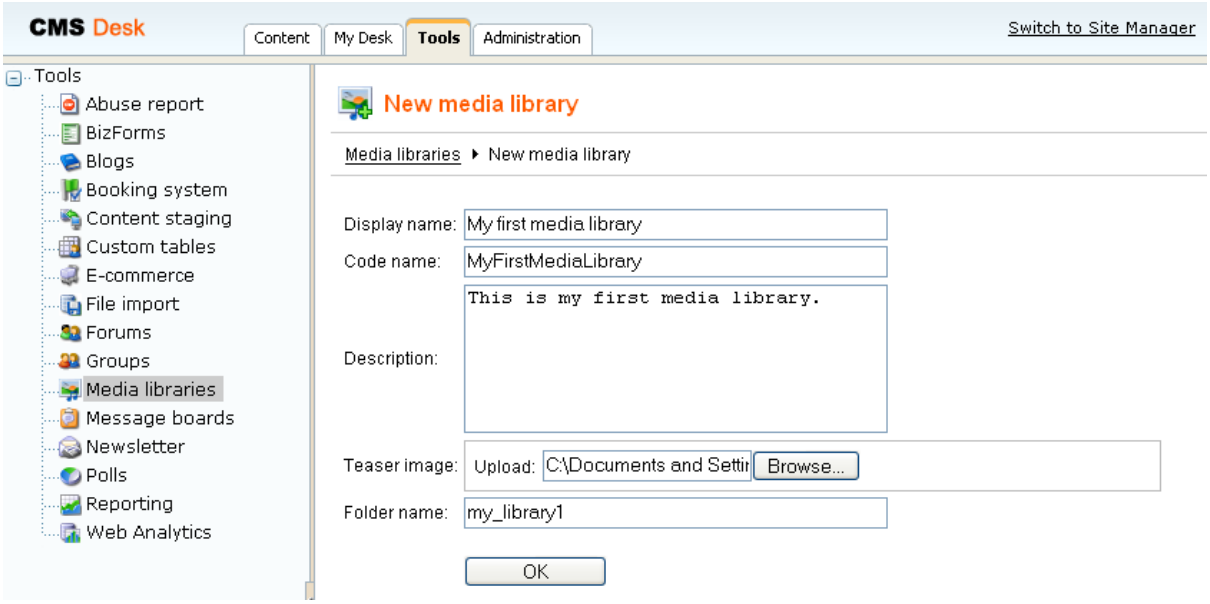


© 2009 Kentico Software

After clicking the link, the following details need to be entered:

- **Display name** - name of the group displayed in the administration interface and on the live site
- **Code name** - name of the group 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.



31.22.3 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**

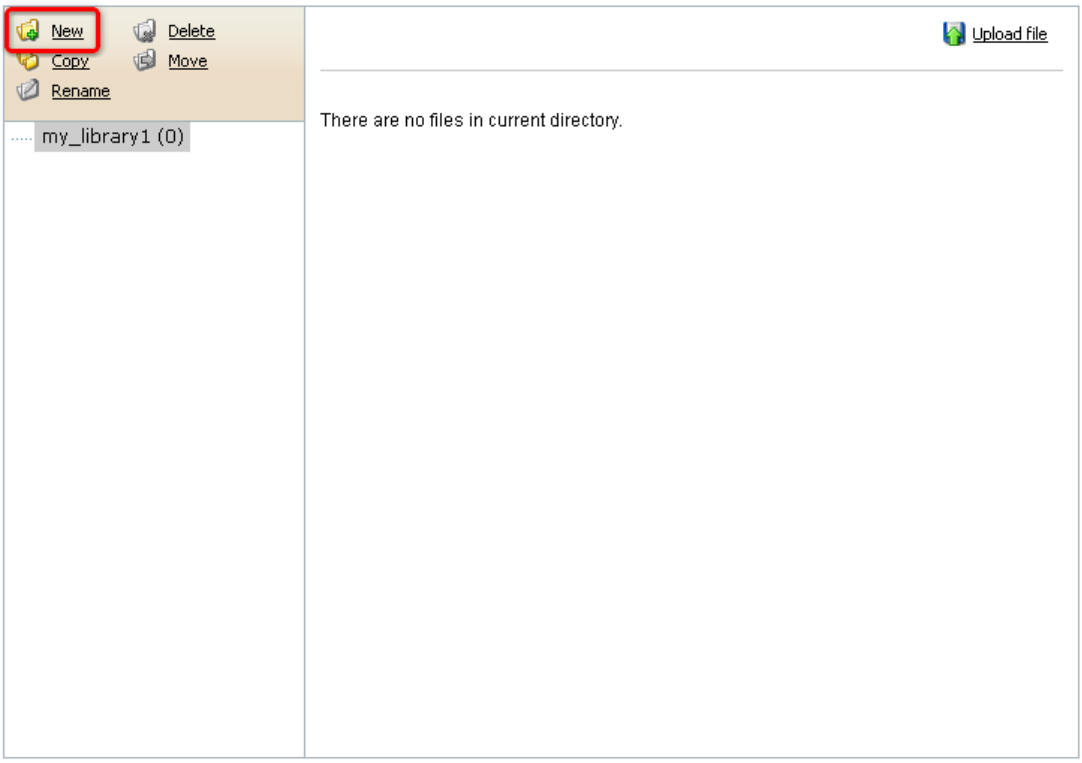
In the following examples, you will learn how to add files into media libraries via the adminstration interface, on the live site and via FTP.

Uploading files via the administration interface

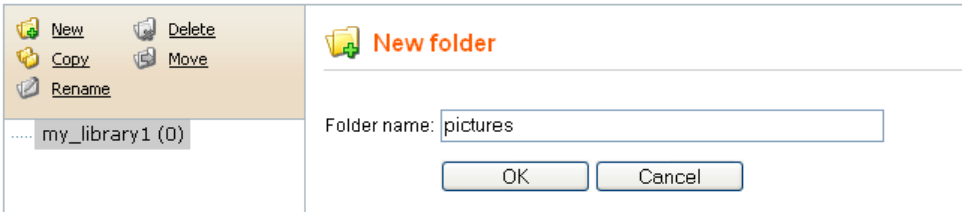
If you choose to **Edit** ( ) a media library in **CMS Desk -> Tools -> Media libraries**, you can manage files in the library on the **Files** tab.

© 2009 Kentico Software

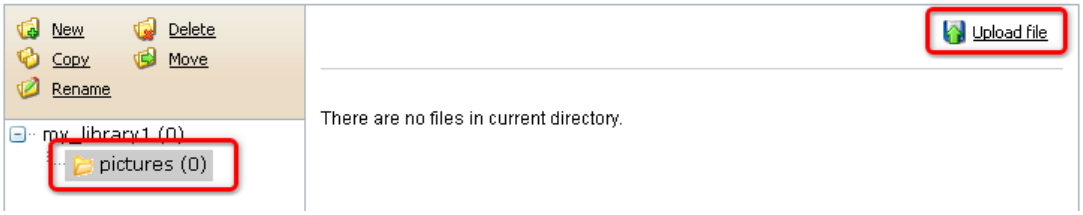
1. It is a good idea to keep your files organized in folders within the media library. To create a new folder, click the **New** link at the top left corner of the page.



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 folder by clicking the **Upload file** link at the top right corner of the page.

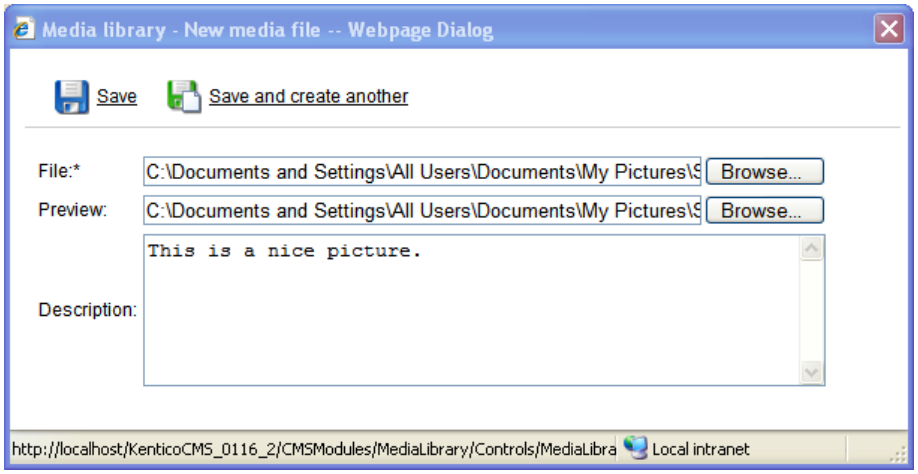


© 2009 Kentico Software

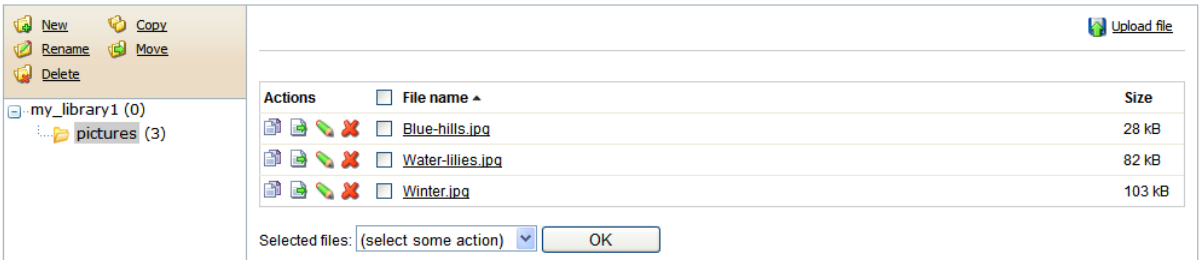
4. The following dialog appears, letting you upload the file. Enter the following details:

- **File** - path to the file you wish to upload
- **Preview** - path to the image that will be used as the file's preview; only images can be used as previews of any type of files; this field is optional
- **Description** - text describing the file

And click **Save**. If you want to upload another file right after this one, click **Save and create another**. Try uploading a few files.

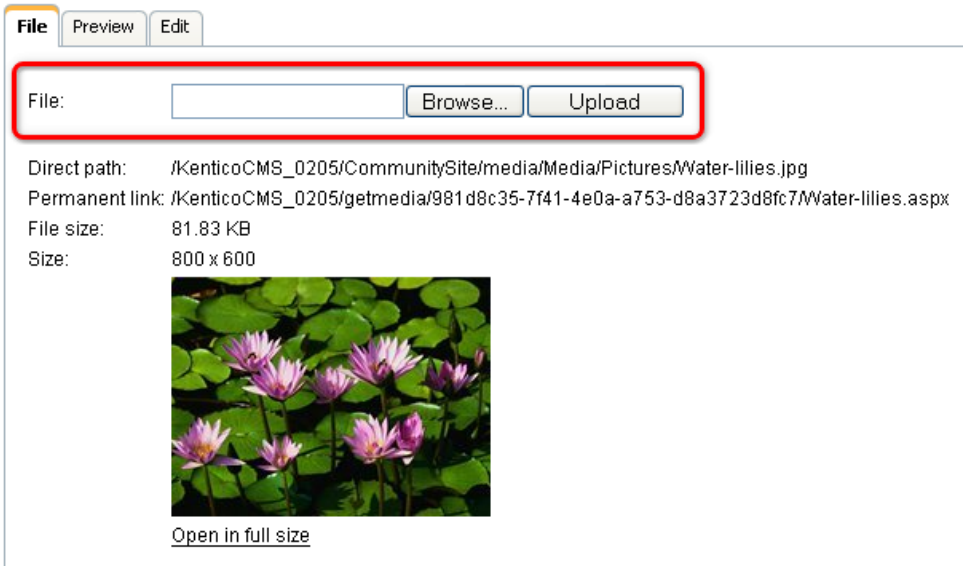


5. The files are now stored in the media library and should be displayed in the list, as you can see in the screenshot below.



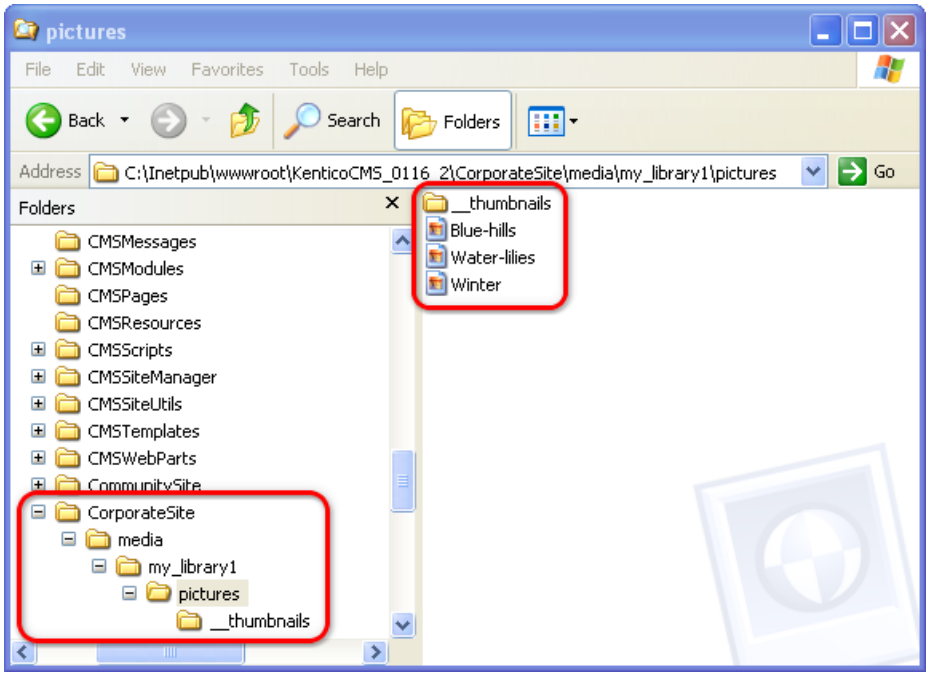
© 2009 Kentico Software

6. If you click some of the uploaded files, you can **re-upload** the file directly by the controls highlighted in the screenshot below. Like this, the original file will be deleted and replaced by the newly uploaded one.



7. You may also have noticed the Edit ( ) icon next to the listed items. This icon appears only with images and when clicked, the image gets opened in the built-in image editor.

8. 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.



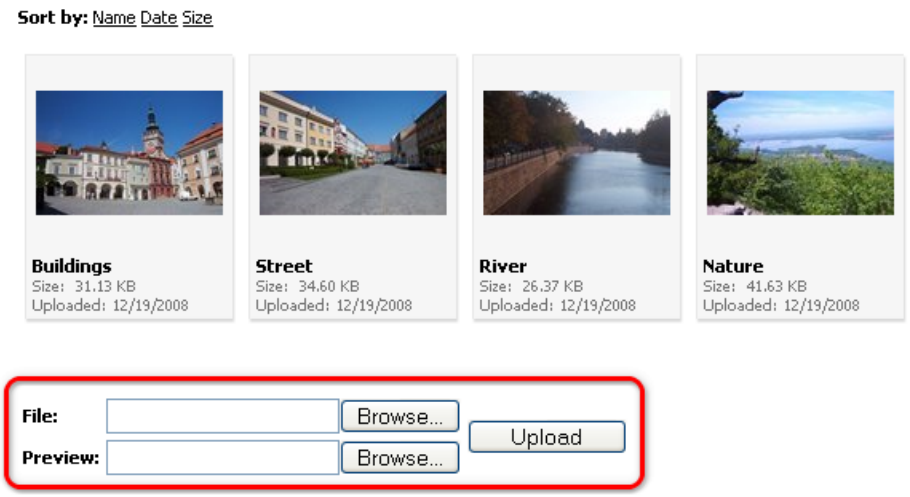
© 2009 Kentico Software

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 preview** - 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 or previews:

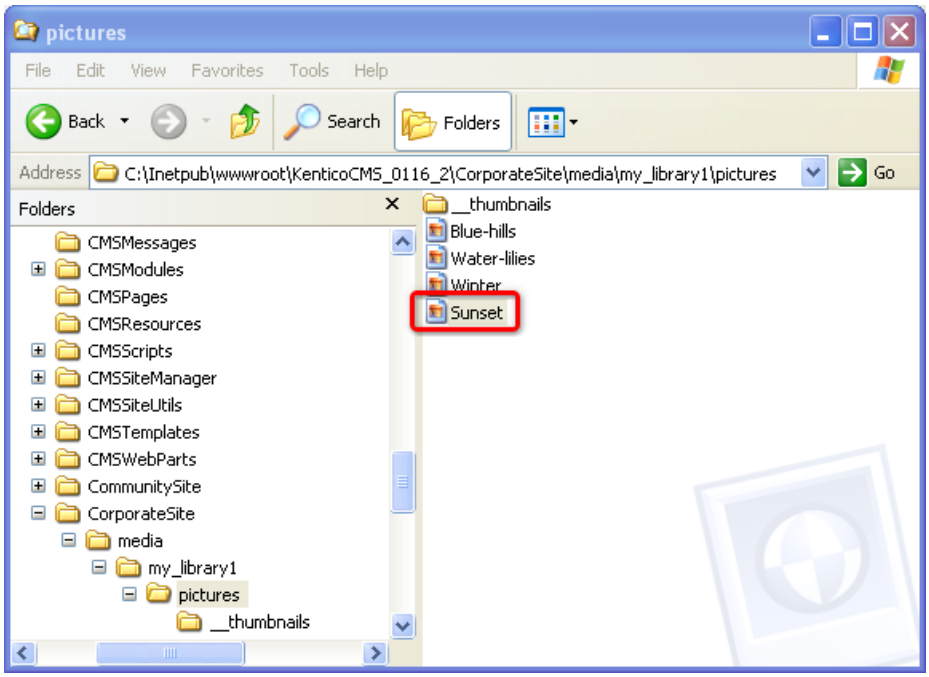


© 2009 Kentico Software

External upload

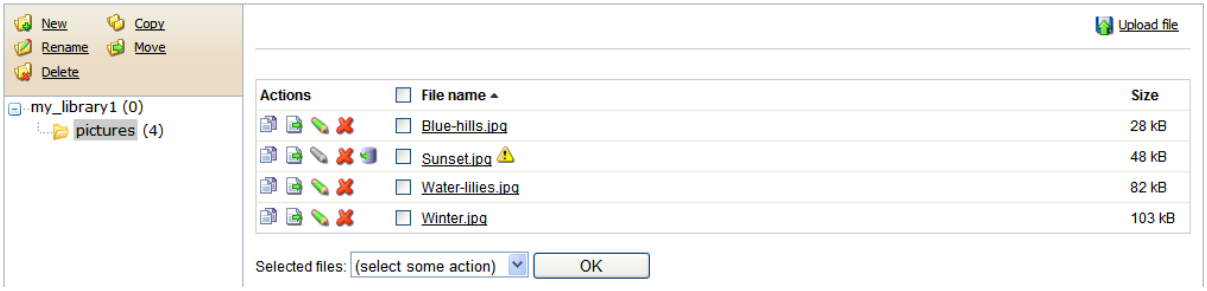
9. Files can also be uploaded **externally**, without any use of Kentico CMS administration interface or on-site web parts, e.g. using **FTP**. To do this, you simply need to copy the files into the appropriate folder of the media library.

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.



10. 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. 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. Batch file import can be done by selecting more files by the check-boxes, selecting Import from the **Selected files** drop-down list and clicking **OK**.

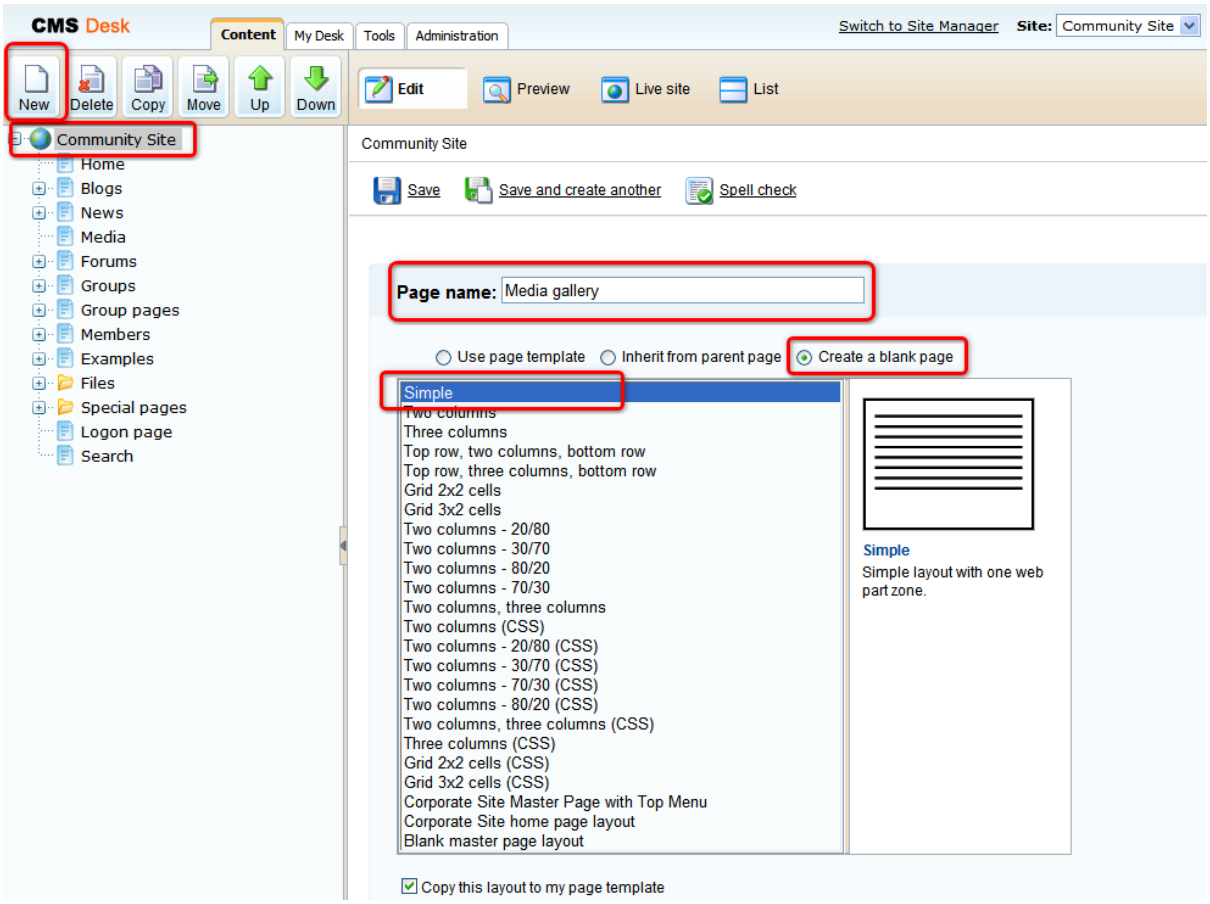


© 2009 Kentico Software

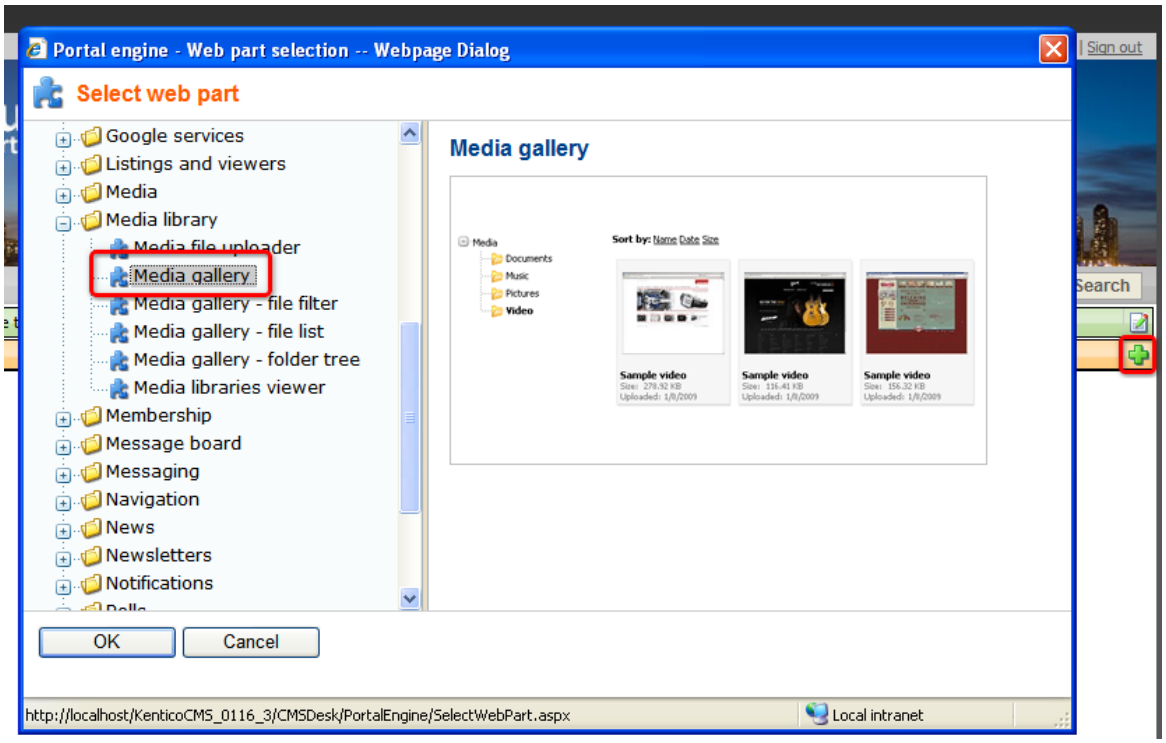
31.22.4 Displaying Media gallery content on your site

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**.

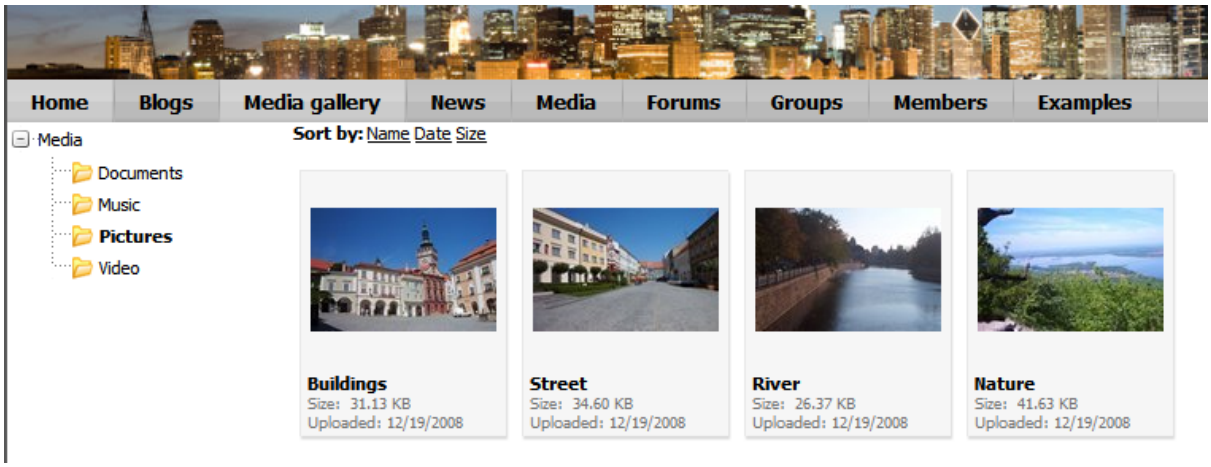


3. In the web part properties window, you only have to choose the media library that you want to display:

- **Media library** - Media

Click **OK**.

4. And that's it! If you switch to the live site, you should see the web part displaying content of the selected media library.



© 2009 Kentico Software

31.22.5 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.

31.22.6 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 uploder**: 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**

31.22.7 Supported file types

The following file types are supported and can be played or displayed on your site by default:

- **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

© 2009 Kentico Software

- **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.

© 2009 Kentico Software

31.22.8 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.

You may also want to add the extension to the **Site Manager -> Settings -> Media libraries -> Files upload extensions** enumeration, which will allow upload of these files as CMS.File documents and document attachments.

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 web site 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.

```
protected void Page_PreRender(object sender, EventArgs e)
{
    if (this.Type.TrimStart('.').ToLower() == "flv")
    {
        CreateFlvObject();
    }
    else if (MediaHelper.IsFlash(this.Type))
    {
        CreateFlash();
    }
    else if (ImageHelper.IsImage(this.Type))
    {
        CreateImage();
    }
    else
    {
        CreateMedia();
```

© 2009 Kentico Software

```
    }
}
```

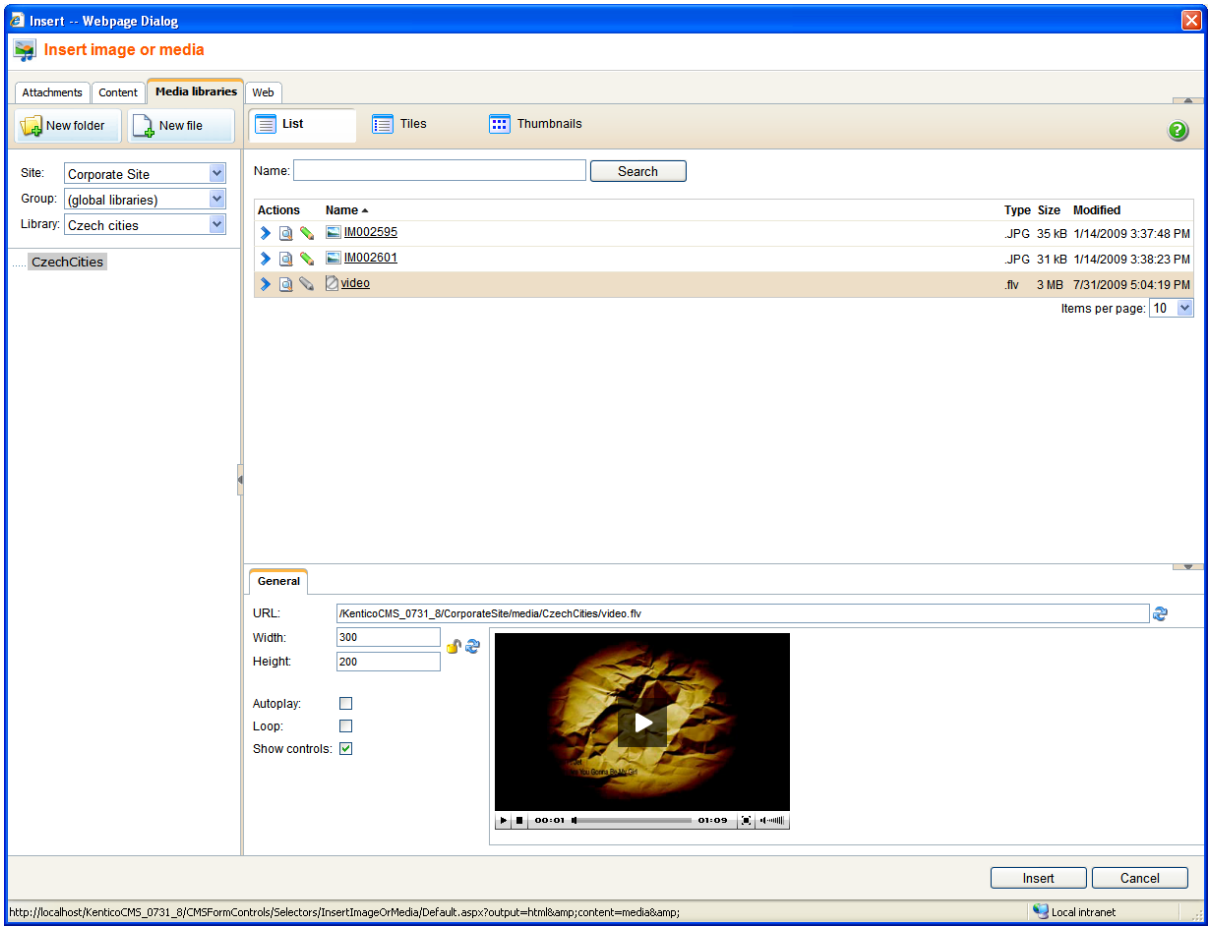
6. The last thing that we need to do is to add the **CreateFlvObject()** private method to the control, in this example, it looks as the code sample below.

The method creates a new DIV tag for the FLV player, with ID generated in stored the divID variable. It also handles the player URL in a special way - the URL must be absolute and must be ending with "flv". Support for the Autoplay and Loop properties of the player is also ensured.

```
private void CreateFlvObject()
{
    string divID = Guid.NewGuid().ToString();
    string flvUrl = UrlHelper.UpdateParameterInUrl(
              UrlHelper.GetAbsoluteUrl(this.Url), "ext", "flv");
    if (this.Loop)
    {
        flvUrl = UrlHelper.AddParameterToUrl(flvUrl, "repeat", "always");
    }
    if (this.AutoPlay)
    {
        flvUrl = UrlHelper.AddParameterToUrl(flvUrl, "autostart", "true");
    }
    string flvCode = "<script type='text/javascript' src='" +
              ResolveUrl("~/FLVPlayer/swfobject.js") + "'></script>";
    flvCode += "<div id='flv_" + divID + "'></div>";
    flvCode += "<script type='text/javascript'>";
    flvCode += "var s1 = new SWFObject('" +
              ResolveUrl("~/FLVPlayer/player.swf") + "','ply','" +
              this.Width + "','" + this.Height + "','9','#ffffff');";
    flvCode += "s1.addParam('allowfullscreen','true');";
    flvCode += "s1.addParam('allowscriptaccess','always');";
    flvCode += "s1.addParam('wmode','opaque');";
    flvCode += "s1.addParam('flashvars','file=" + flvUrl + "');";
    flvCode += "s1.write('flv_" + divID + "');";
    flvCode += "</script>";
    this.ltlMedia.Text = flvCode;
}
```

© 2009 Kentico Software

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 and Insert link dialogs, as you can see in the screenshot below.



© 2009 Kentico Software

31.22.9 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 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.Script.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.Script.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>
```

© 2009 Kentico Software

```
</configuration>
```

© 2009 Kentico Software

31.22.1 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

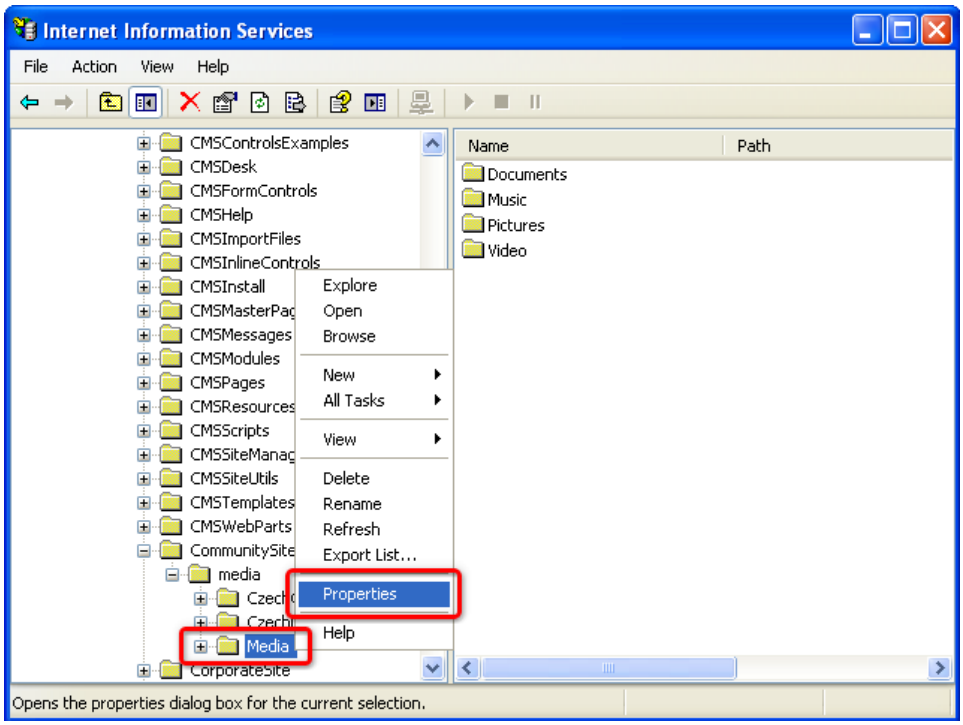
Secured media libraries allow viewing of their content only to members of authorized roles or only to authenticated users, based on the settings made on the library's Security tab. Secured libraries are also slower than the non-secured ones, as permission checking involves some processing overhead.

To set up a media library to behave as a secured library, you have to take the following steps:

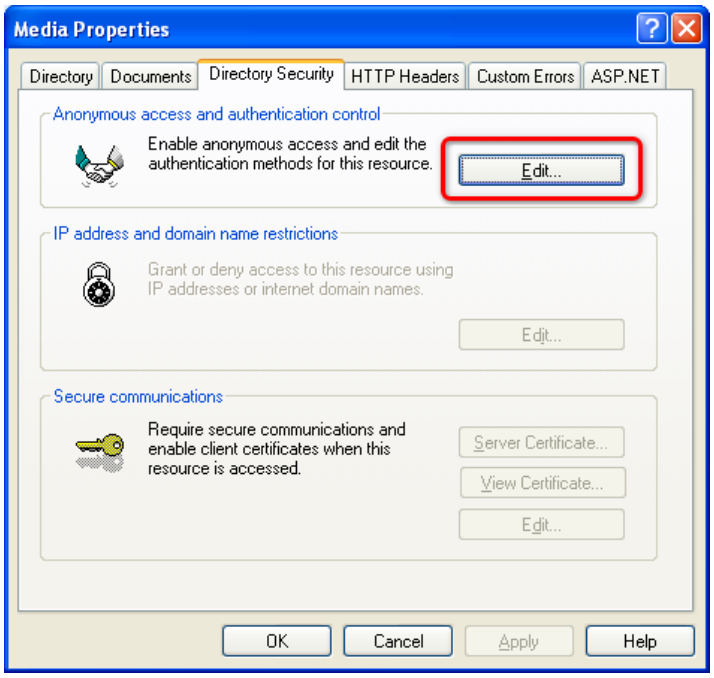
1. IIS setup

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.

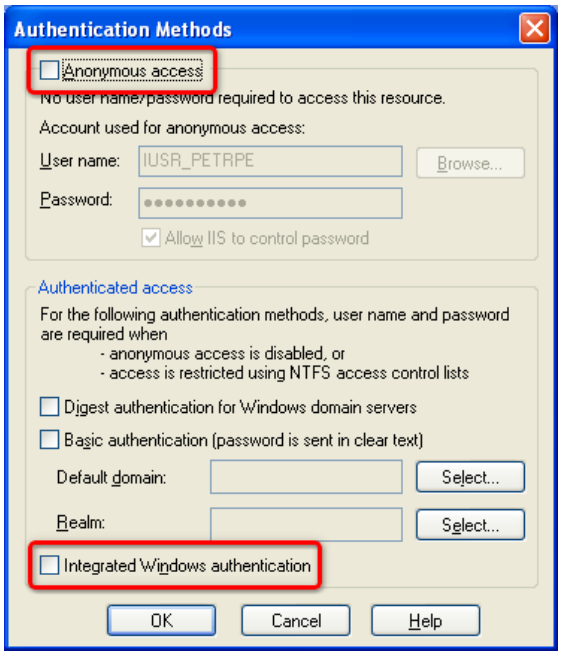
a) Locate the media library folder in IIS tree, right-click it and choose **Properties**.



b) Switch to the **Directory security** tab and click **Edit**.



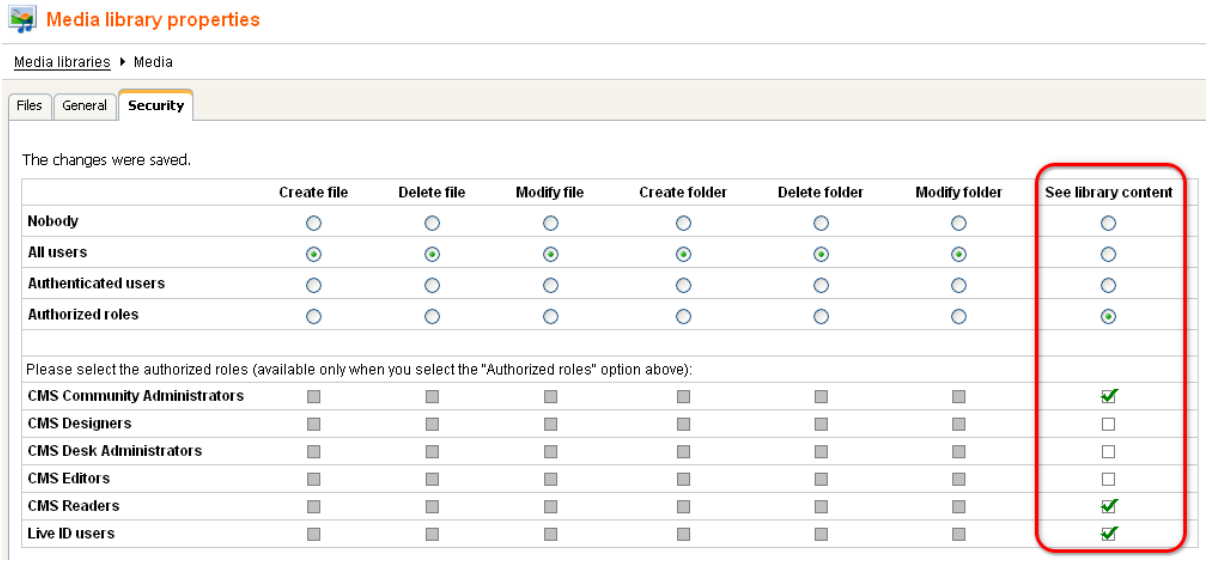
c) Uncheck the **Anonymous access** and **Integrated windows authentication** check-boxes and click **OK**.



© 2009 Kentico Software

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.



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:

```
<cc1:MediaFilePreview ID="filePreview" runat="server" maxsidesize="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

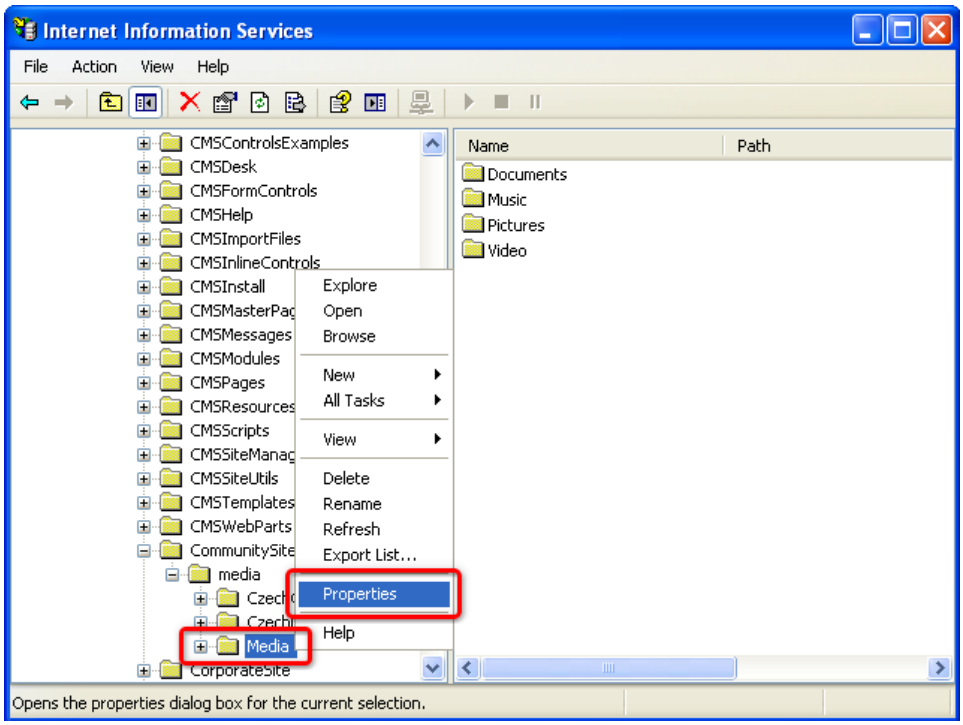
© 2009 Kentico Software

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.

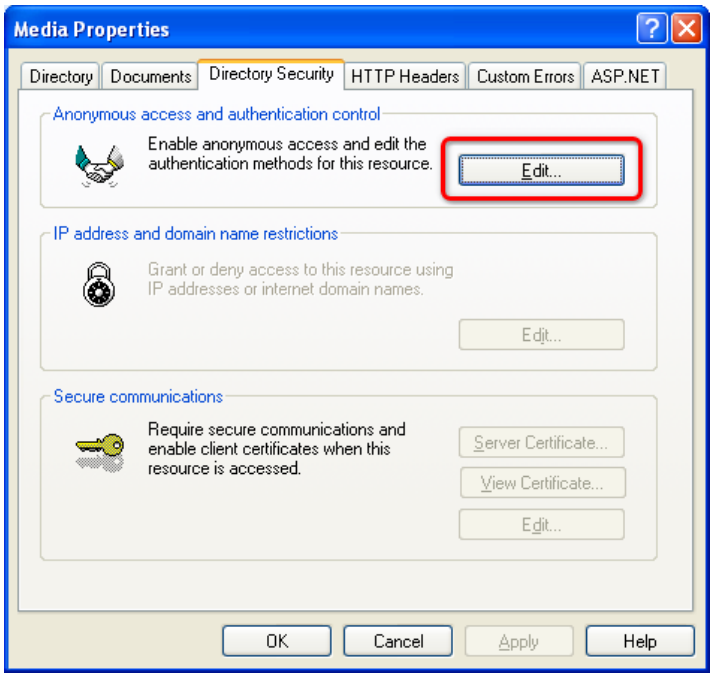
1. IIS setup

You have to **set up your IIS** so that files in the library can be accessed directly by anonymous users.

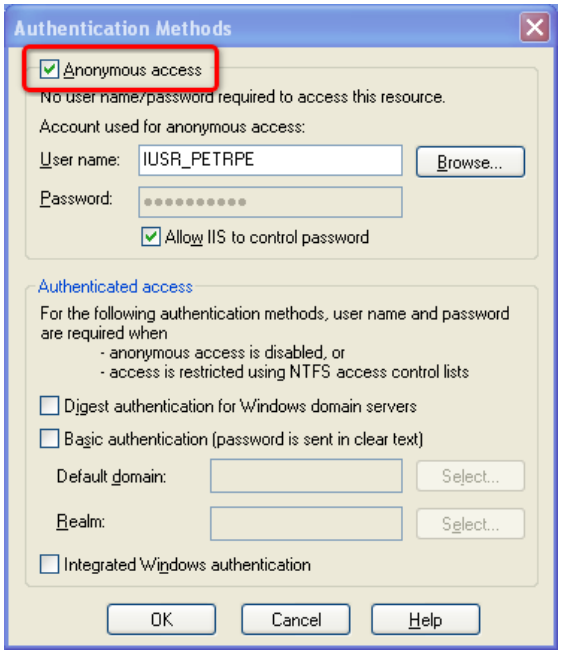
a) Locate the media library folder in IIS tree, right-click it and choose **Properties**.



b) Switch to the **Directory security** tab and click **Edit**.



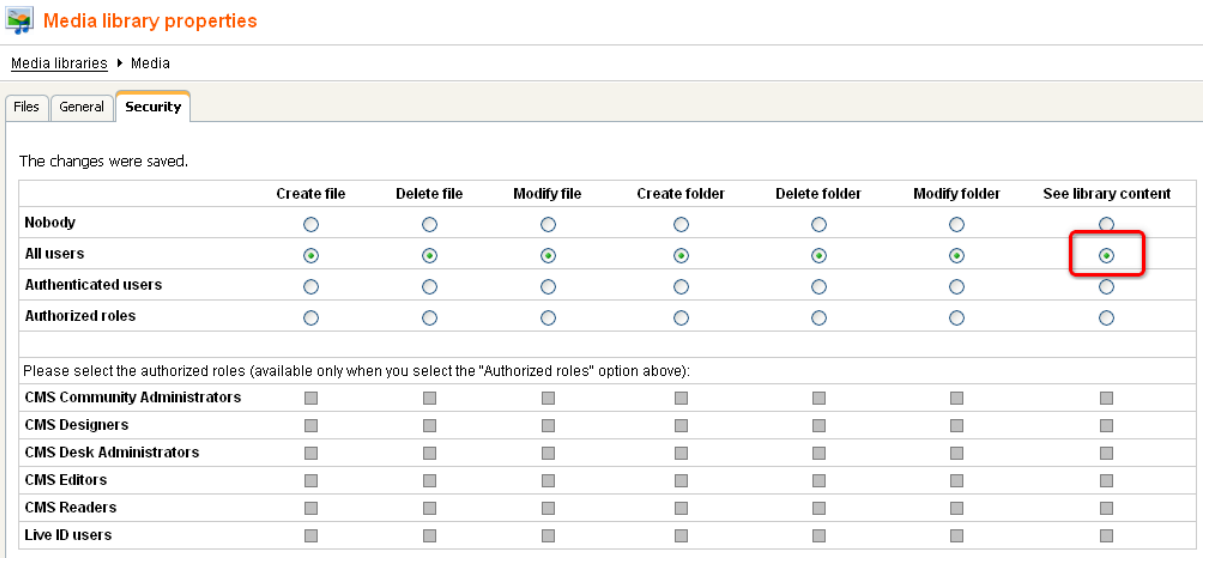
c) Make sure that the **Anonymous access** check-box is enabled and click **OK**.



2) Media library security settings

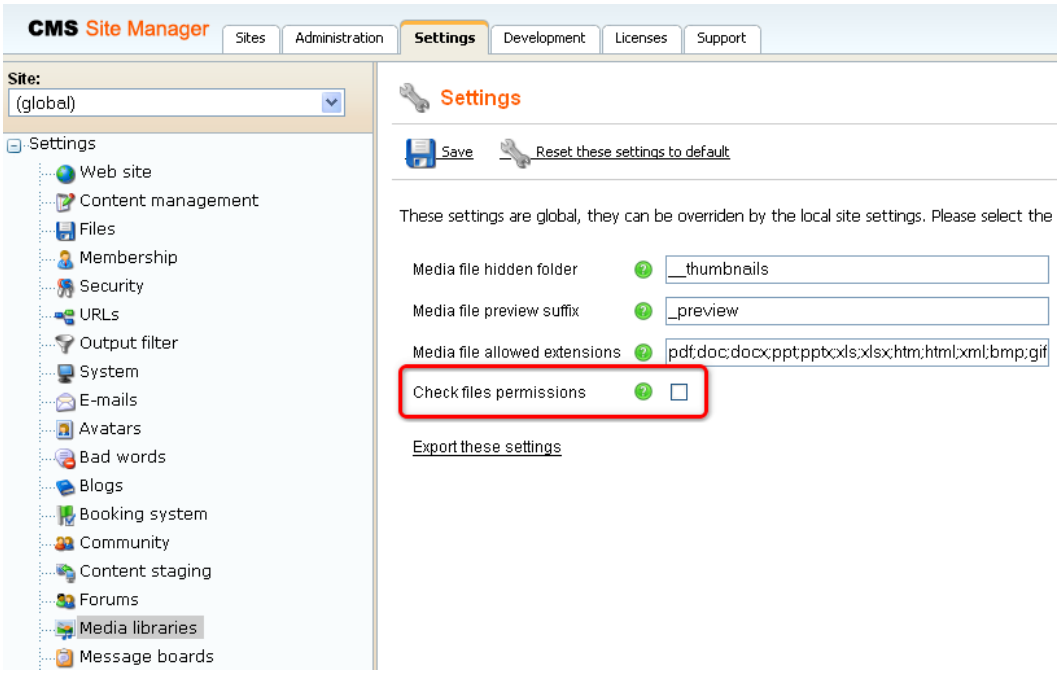
You have to assign the **See media library content** permission to **All users** on the media library's **Security** tab.

© 2009 Kentico Software



© 2009 Kentico Software

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 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:

```
<cc1:MediaFilePreview ID="filePreview" runat="server" maxsidesize="117" />
```

Other file types' previews and **details** should can be obtained using direct links. **Download links** can be obtained directly too.

© 2009 Kentico Software

31.22.11 Defining custom media libraries folder

The default location of all libraries of a particular site is **~/<sitename>/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"/>

© 2009 Kentico Software

31.22.12 Names of files and previews

When a file is being uploaded to a media library, users can upload the file itself and its preview. The **preview** will be displayed in the files list in the **Media gallery** web part. Previews are typically used if you want to upload some non-image file and attach an image which will be displayed as the file's preview in the file list. For image files, the preview can, bud doesn't have to be done as the image itself will be used for this purpose.

When the preview image or the image itself is larger than the required preview image size, its **thumbnail** will be created with the required size. Both previews and thumbnails 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

- **Files**: <filename>.<fileextension>
- **File thumbnails**: <hidden folder>/<filename>_<fileextension>_<width>_<height>.<extension>

- **Previews**: <hidden folder>/<filename>_<fileextension><previewsuffix>.<previewextension>
- **Preview thumbnails**: <hidden folder>/<filename>_<fileextension><previewsuffix>_<width>_<height>.<previewextension>

Example

If you upload the following files:

- **Uploaded file**: MyImage.jpg
- **Uploaded preview**: MyPhoto.bmp

with the following settings defined in **Site Manager -> Settings -> Media libraries**:

- **Media file hidden folder**: __thumbnails
- **Media file preview suffix**: _preview

the uploaded files will be stored in the following locations in the media library folder, with the following names:

- **File**: MyImage.jpg
- **File thumbnail**: __thumbnails/MyImage_jpg_100_200.jpg

- **Preview**: __thumbnails/MyImage_jpg_preview.bmp
- **Preview thumbnail**: __thumbnails/MyImage_jpg_preview_20_30.bmp

© 2009 Kentico Software

31.22.13 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 -> Media libaries -> 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"*>)

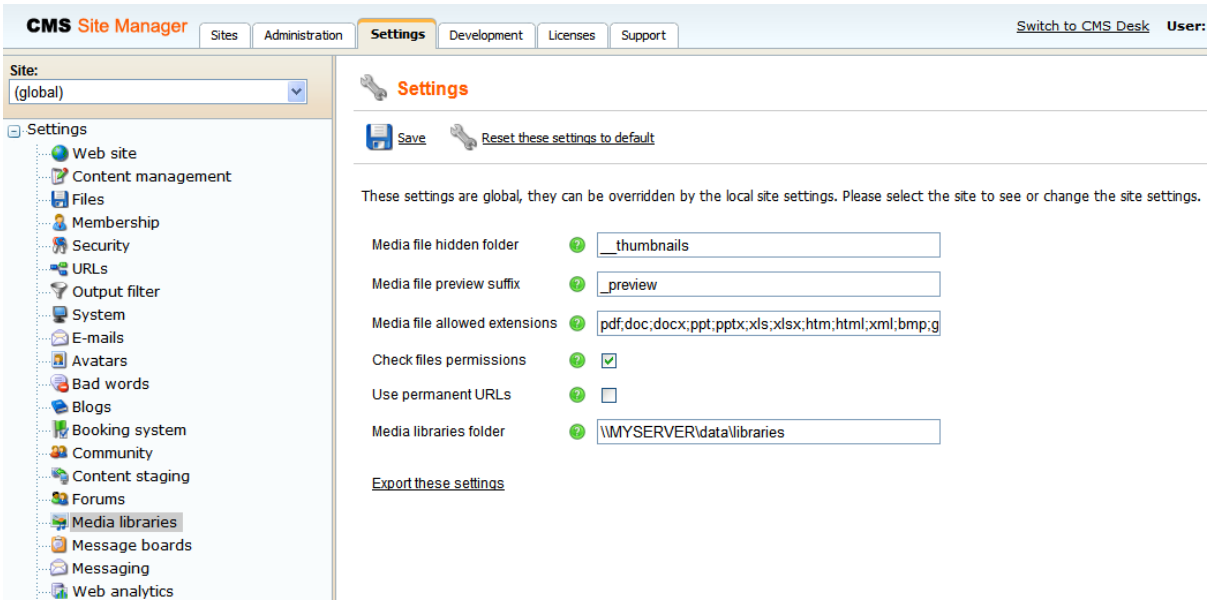
Because of this, it is highly recommended to allow performing of these actions only to system administrators or to the least possible number of users. The recommended practice is for the site administrators to pre-define the folder structure of the libraries when they are created and don't allow users to further modify it.

© 2009 Kentico Software

31.22.1 Settings

Settings related to the Media libraries module are located in Site Manager -> Settings -> Files. The following settings are related to the module:

- **Media file preview suffix** - suffix added to preview files; preview files' names are in the following format: *< file name >_< file extension >< preview suffix >.< preview extension >*
- **Media file hidden folder** - name of the folder where thumbnails of media files will be stored; this folder is hidden in the file system by default and thumbnails are generated within it
- **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>.<file extension>.<files friendly URL extension>*), otherwise direct path to the file will be used (e.g.: *~/MySite/Media/MyLibrary/MyImage.jpg*)
- **Media libraries folder** - physical path to the folder where the root folders of all media libraries are stored; more info here

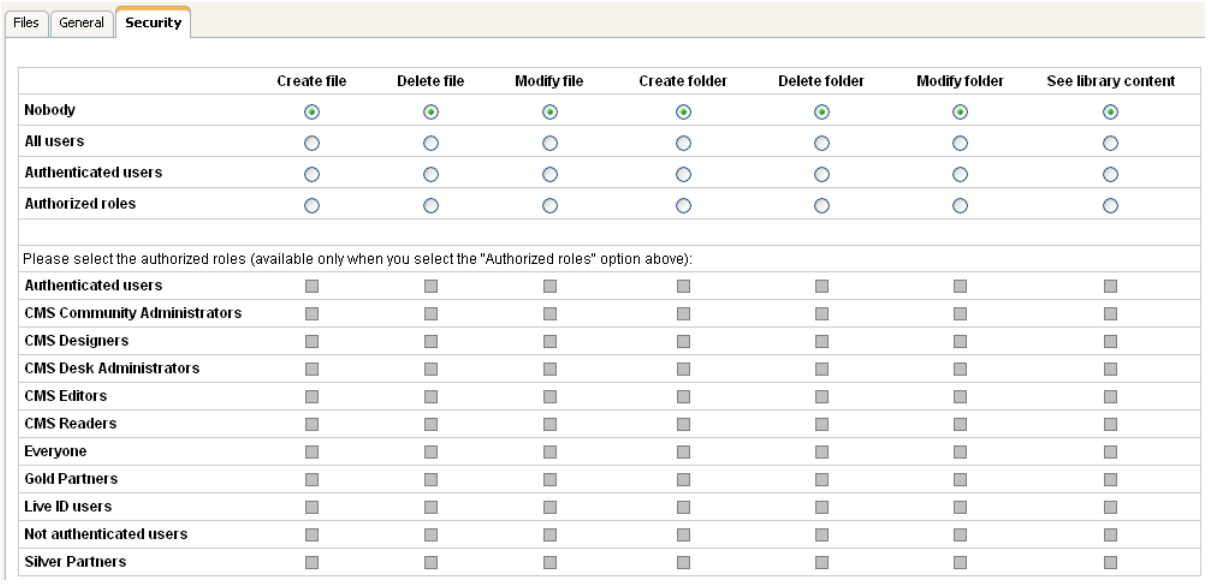


© 2009 Kentico Software

31.22.1 Security

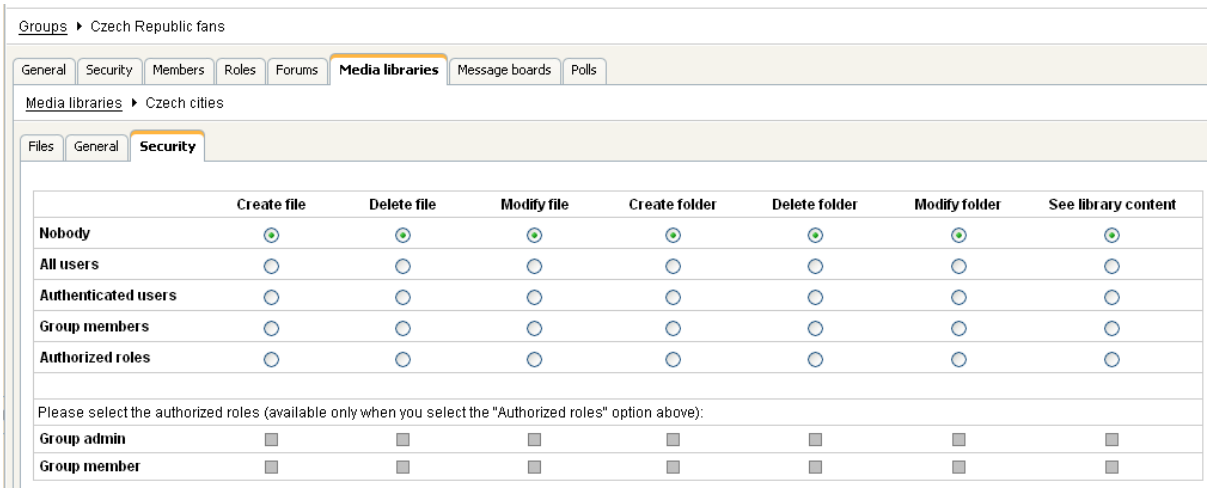
On the Security tab of each media library, you can assign permissions for particular actions to:

- **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



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



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 she is the group administrator.

Action/Permission				File			Folder			
	Read	Manage		Create	Delete	Modify	Create	Delete	Modify	See library content
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						

© 2009 Kentico Software

Module permissions

The following permissions can be set in **Site Manager -> Administration -> Permissions,** when you choose the **Modules -> Media libraries** permission matrix:

- **Display module** - makes the module visible in the administration interface
- **Manage** - allows managing of groups via the administration interface
- **Read** - allows seeing the values in group settings, but does not allow to make any changes to them

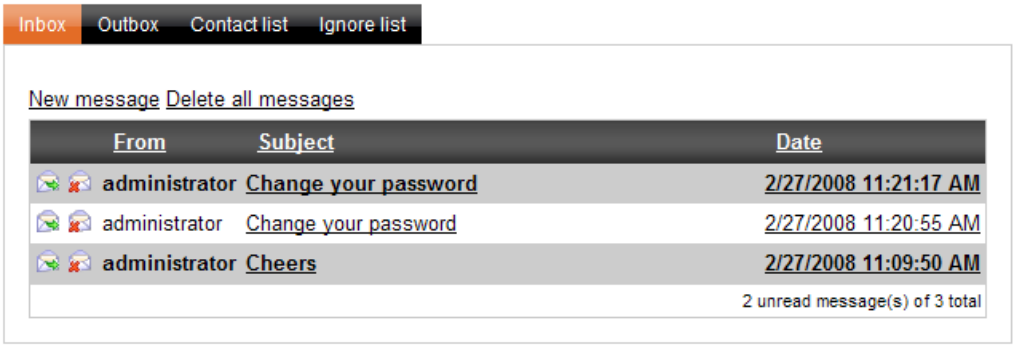
	Display module	Manage	Read
Authenticated users	☐	☐	☐
CMS Community Administrators	☑	☑	☑
CMS Designers	☐	☐	☐
CMS Desk Administrators	☑	☑	☑
CMS Editors	☑	☐	☑
CMS Readers	☑	☐	☑
Everyone	☐	☐	☐
Live ID users	☐	☐	☐
Not authenticated users	☐	☐	☐

© 2009 Kentico Software

31.23 Messaging

31.23.1 Messaging module 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.

31.23.2 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.

© 2009 Kentico Software

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.

© 2009 Kentico Software

31.23.3 Security

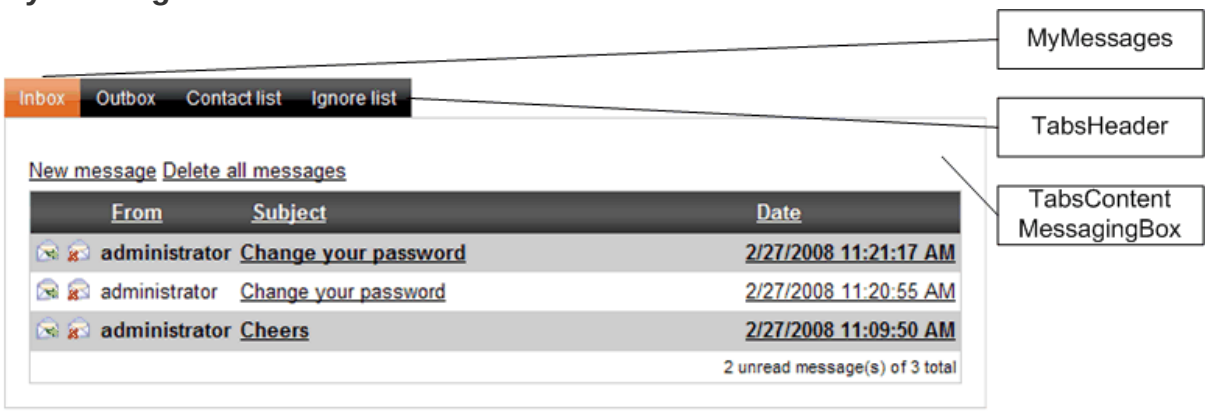
Anonymous users

Even unregistered users can send messages to registrated users of your website. This is possible only from the separate **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 -> Design** 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.

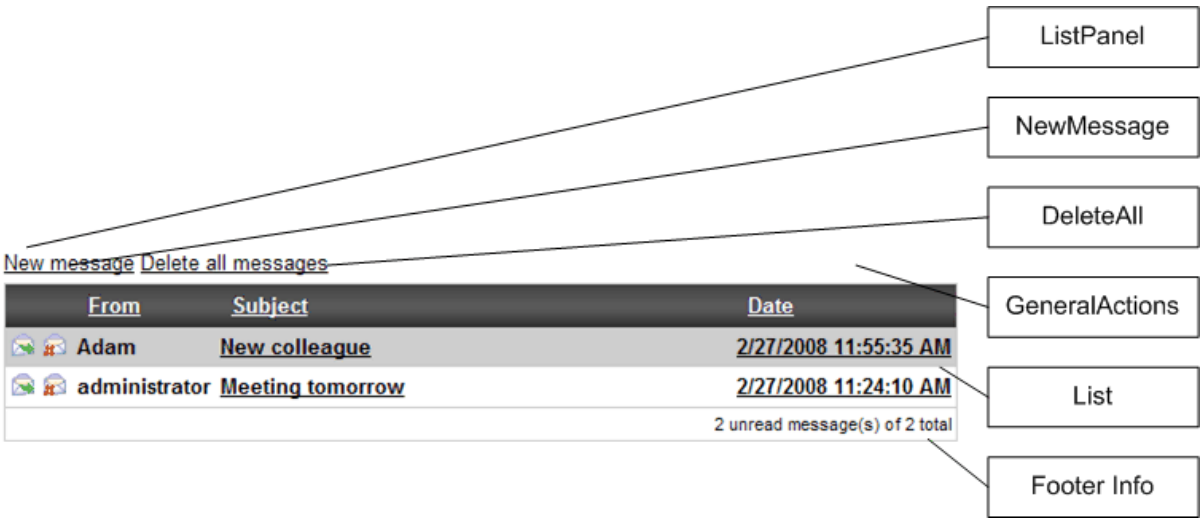
31.23.4 Design and Styles

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:

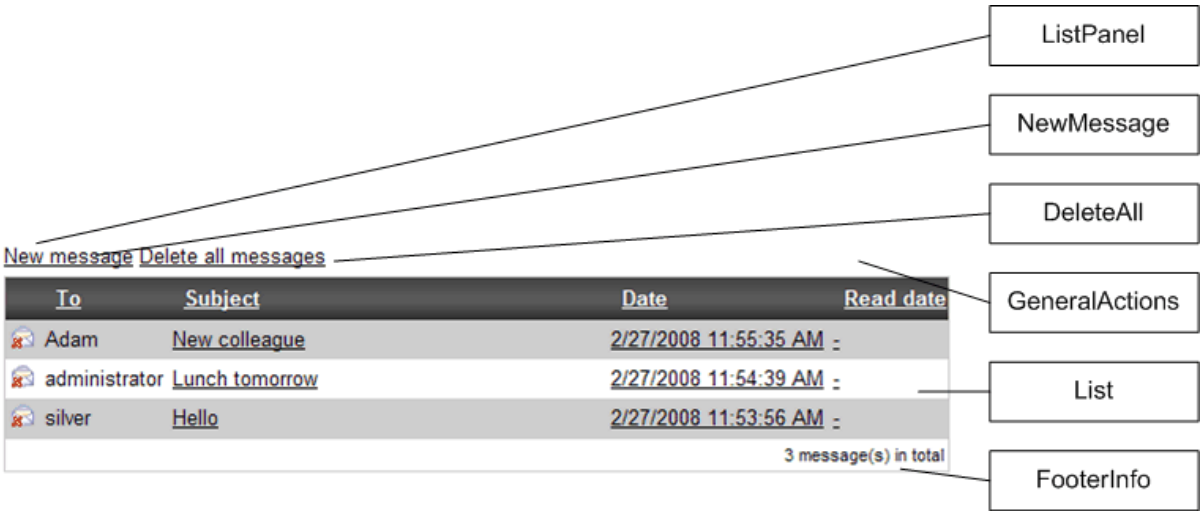


Inbox:

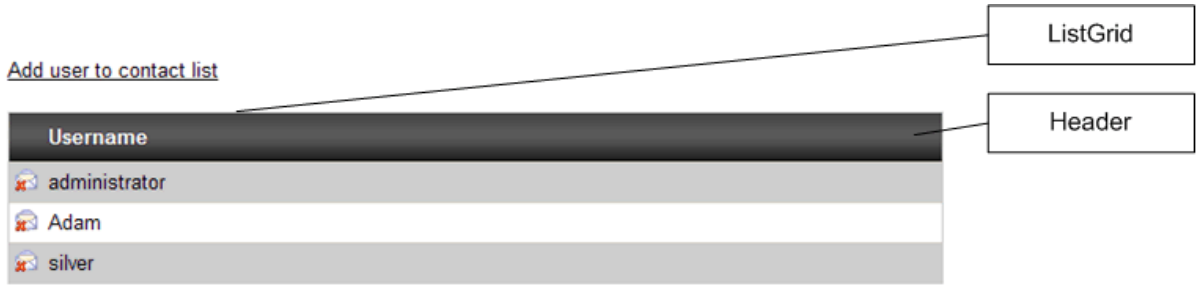


© 2009 Kentico Software

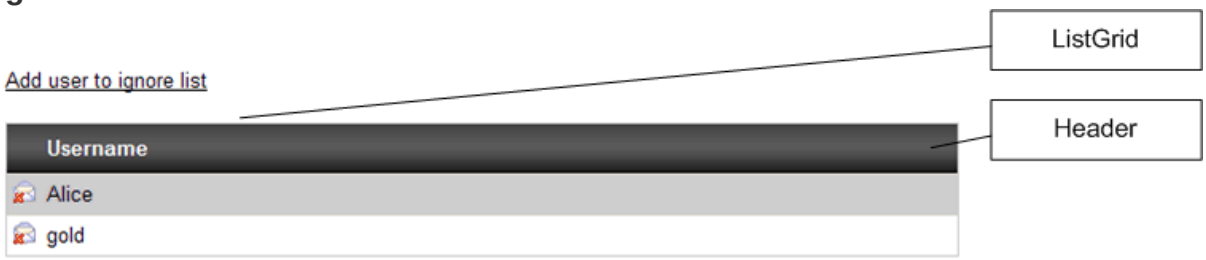
Outbox:



Contact list:

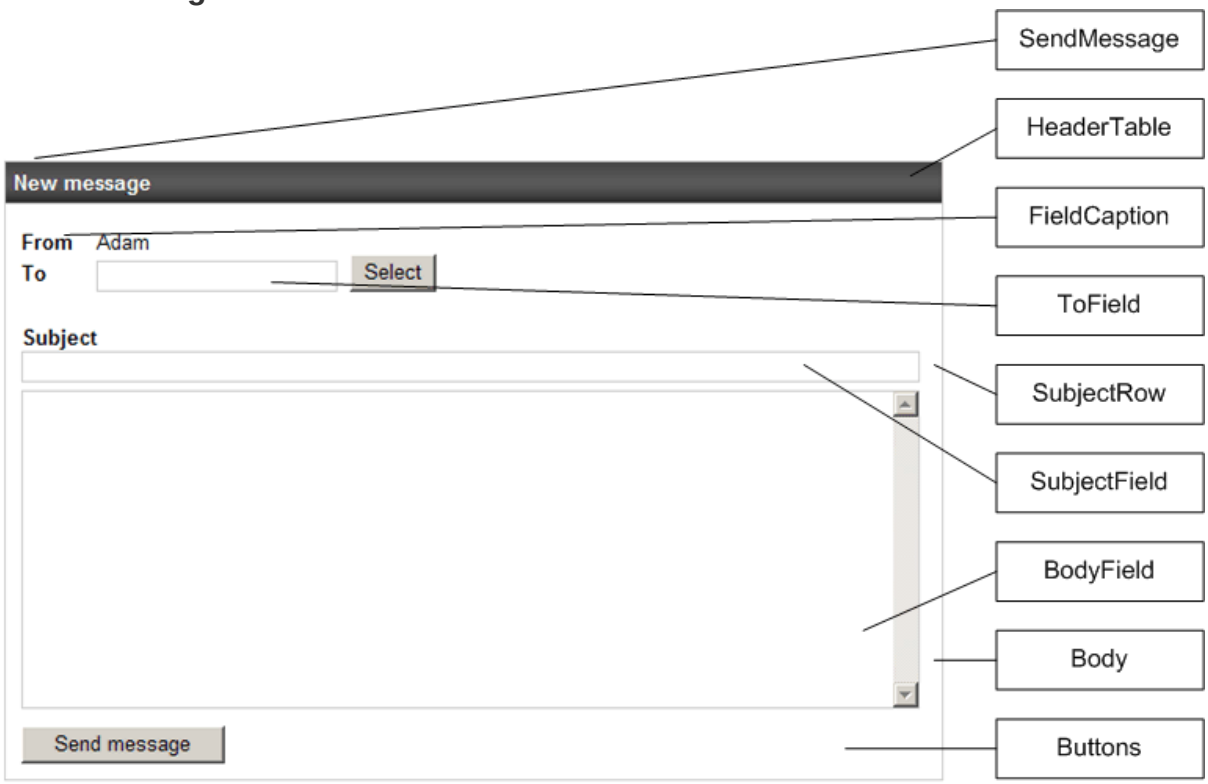


Ignore list:

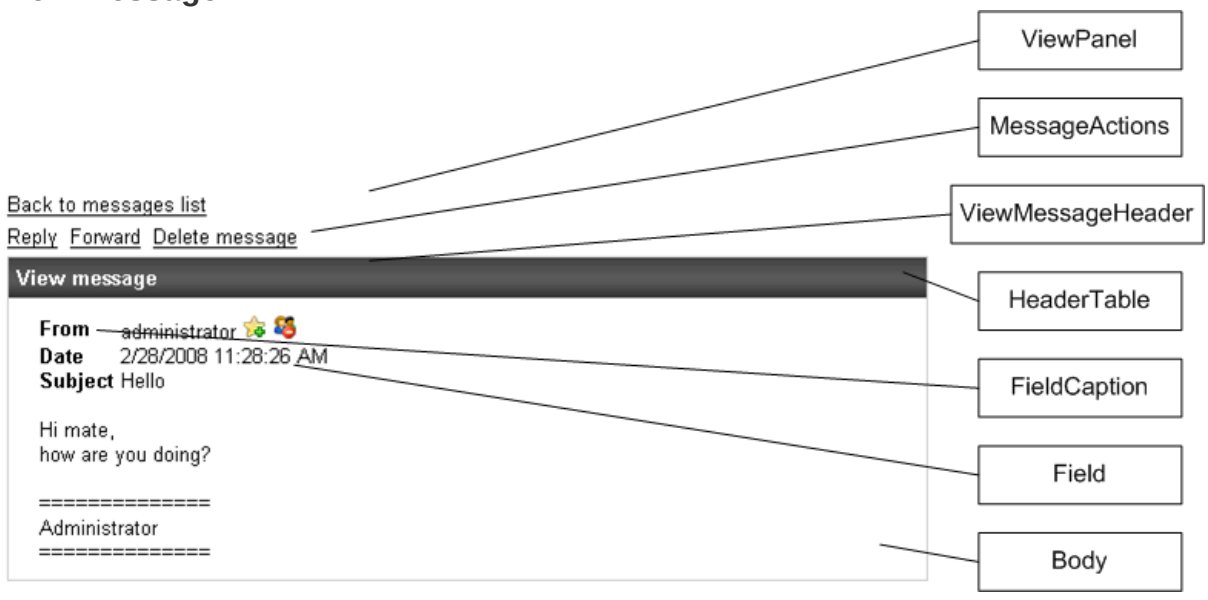


© 2009 Kentico Software

Send message:



View message:

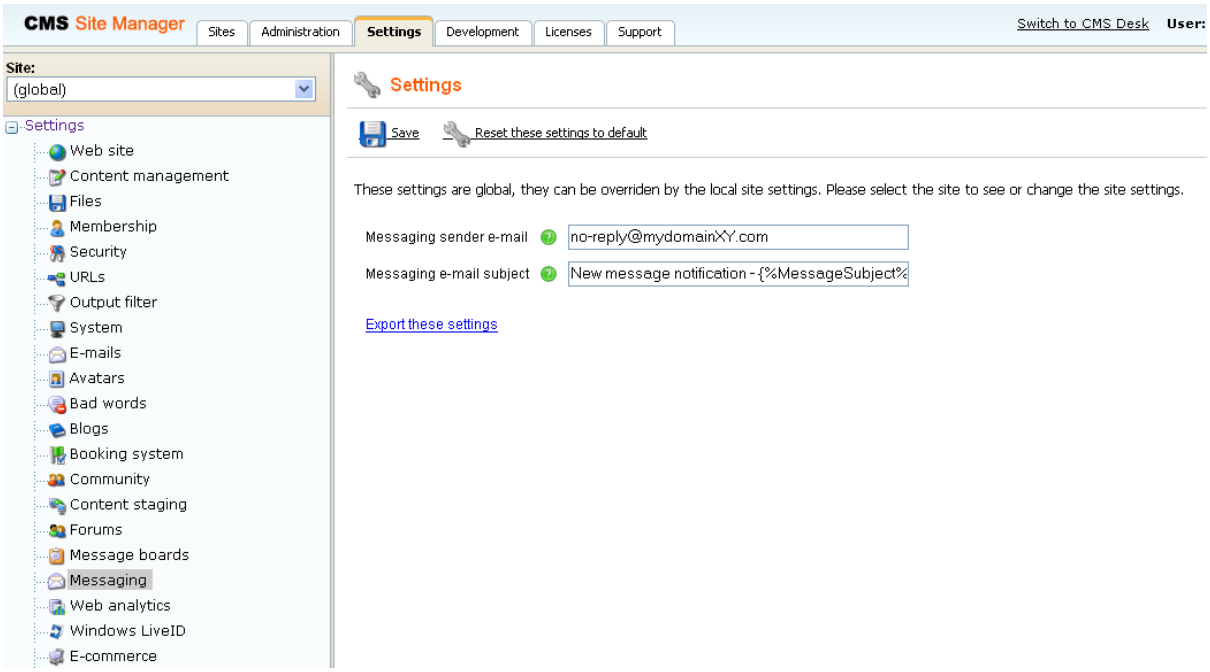


© 2009 Kentico Software

31.23.5 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 a 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



31.23.6 Messaging API and Internals

31.23.6.1 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.

© 2009 Kentico Software

31.23.6.2 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);
```

31.23.6.3 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);
```

© 2009 Kentico Software

31.23.6.4 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);
```

31.23.6.5 Removing a user form 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);
```

© 2009 Kentico Software

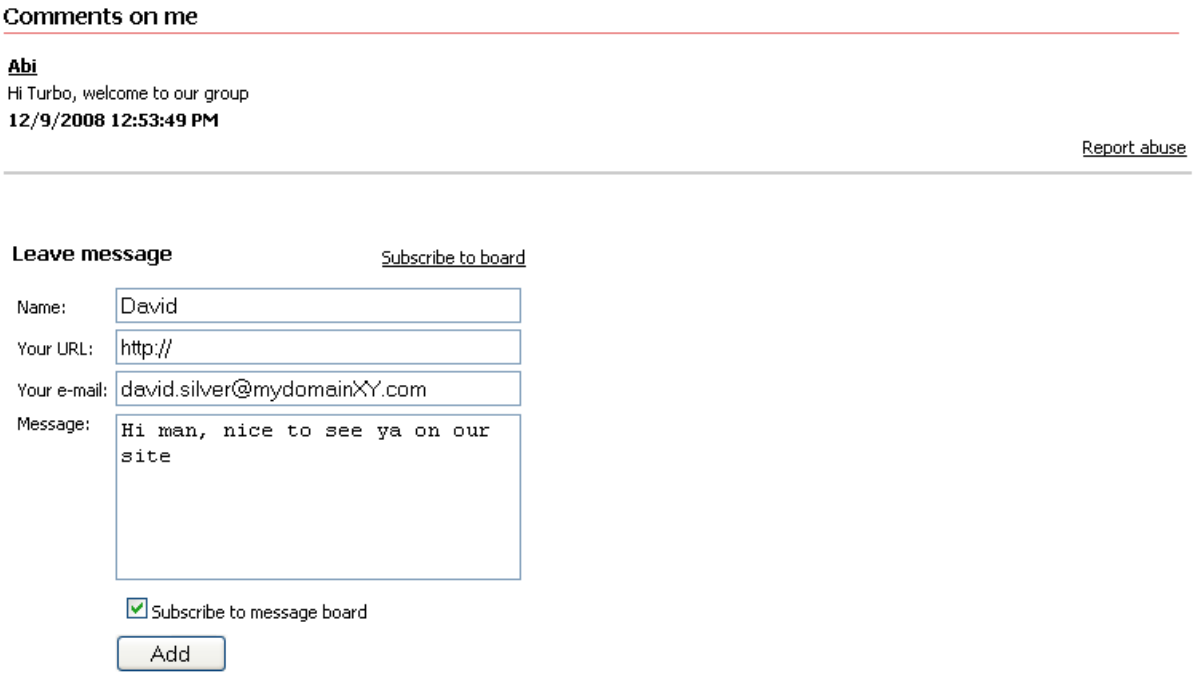
31.24 Message boards

31.24.1 Overview

The Message boards module enables site visitors to comment 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 that 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.



© 2009 Kentico Software

31.24.2 Using the Message board web part

Message board can be placed on any page (document) on your web site. 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, which can be accessed via Kentico CMS folder in Windows' Start menu.

- **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.

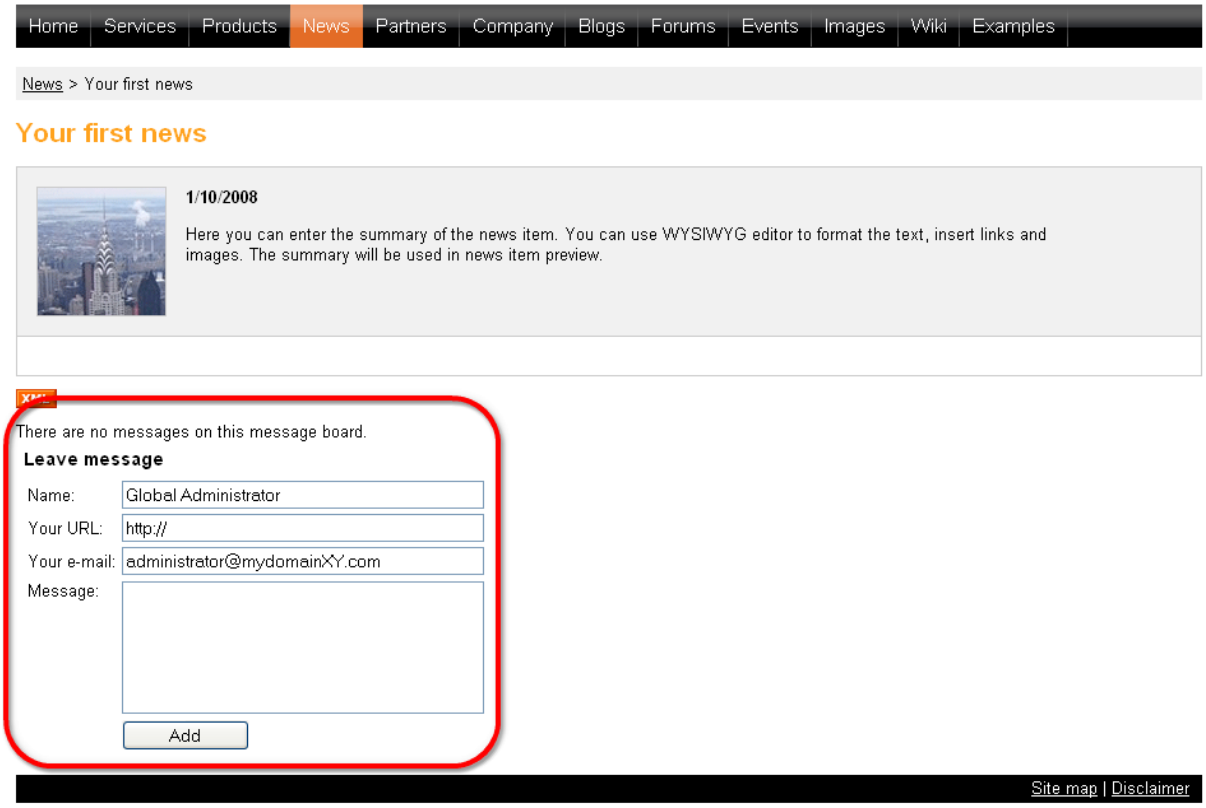


!! Board default settings !!

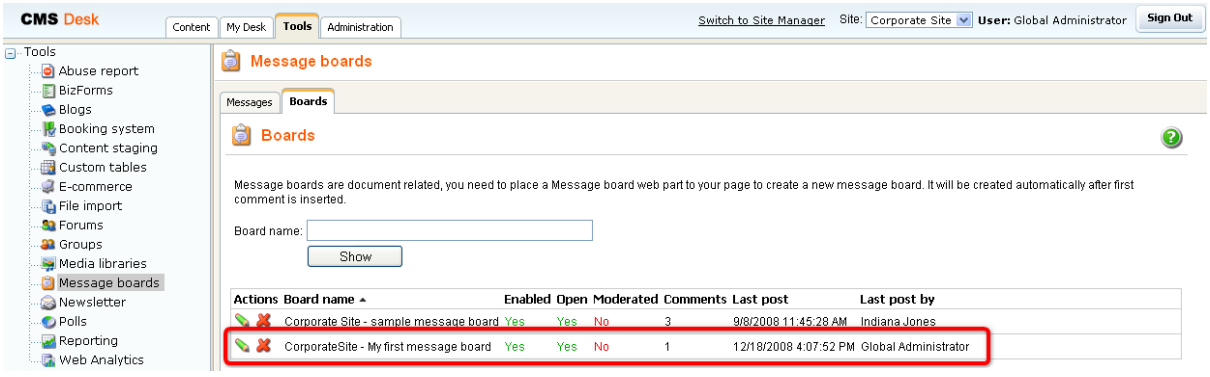
Properties in the **Board default settings** section will be used when the message board is created (after first message or subscription). Thereafter, changes made to the web part properties will take no effect. To change some of these properties, you will have to edit the message board in **CMS Desk -> Tools -> Message boards -> Boards tab**.

© 2009 Kentico Software

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.



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.



© 2009 Kentico Software

31.24.3 Administrating message boards

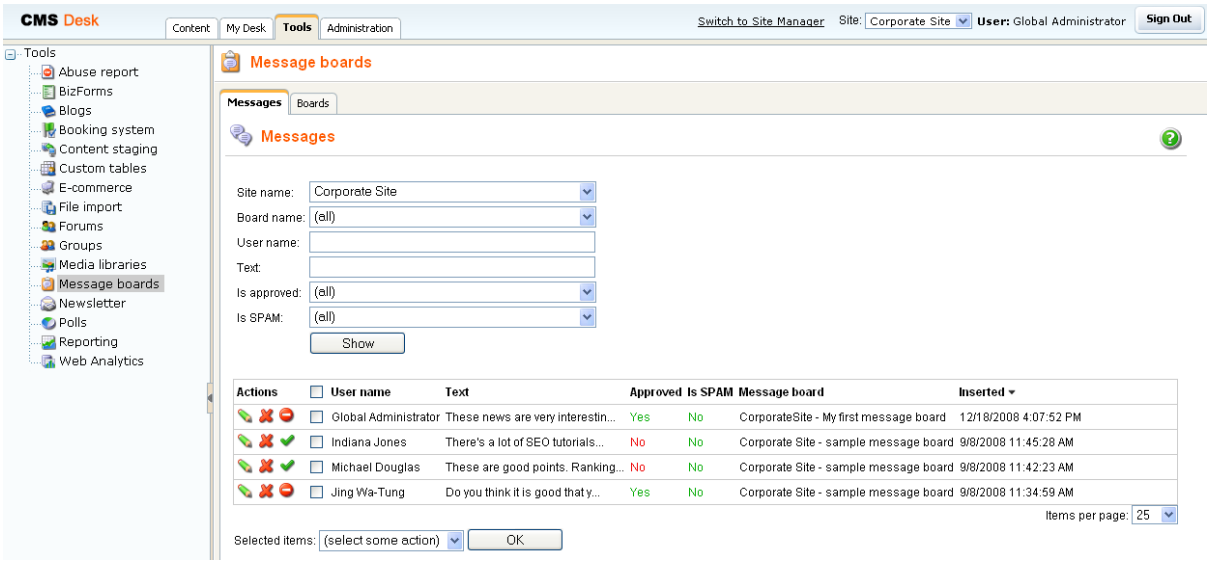
Message boards administration can be performed in **CMS Desk -> Tools -> Message boards**. The section is divided into two tabs.

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 aren't approved, they won't be displayed on the message board. Rejected messages won't be displayed too.

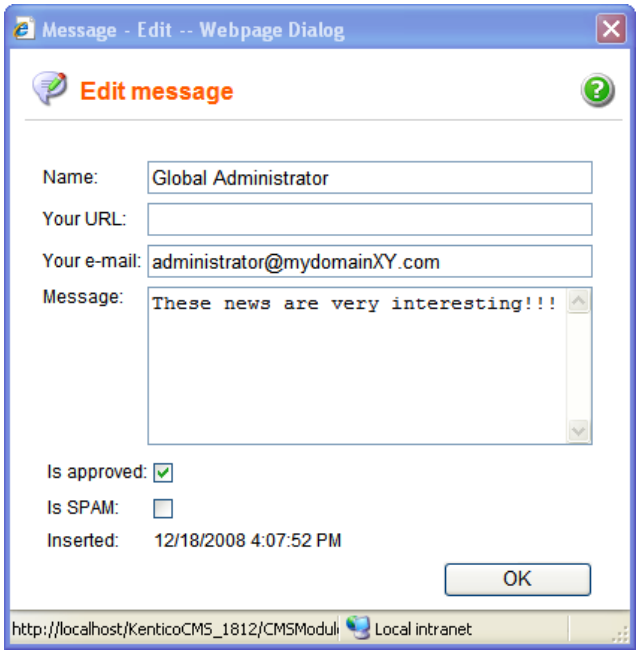
Using the filter above the list, you can determine which messages you want to display. The following filtering parameters are available:

- **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



© 2009 Kentico Software

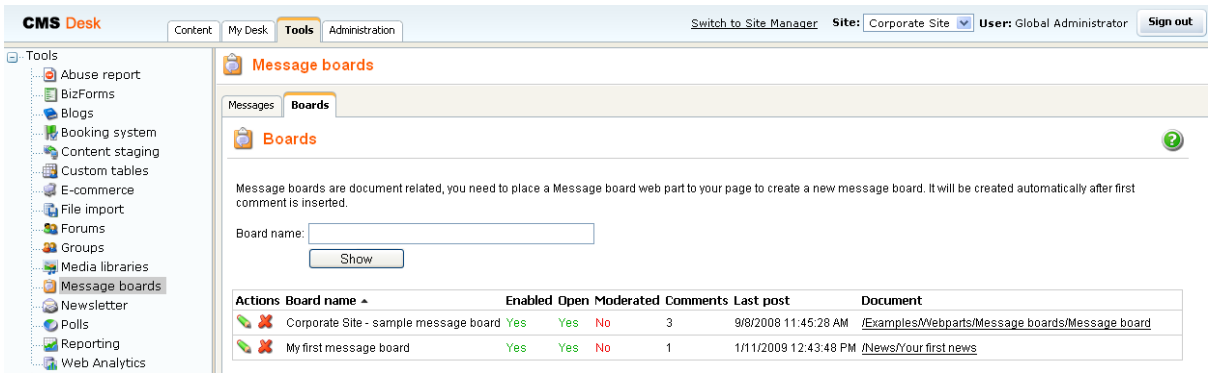
Messages in the list can be **Approved** (), **Rejected** (), **Deleted** () or **Edited** (). If you choose to edit a message, the following window pops-up, letting you make changes to it. You can also select more messages using the check-boxes and perform one of these actions for all of them using 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.



© 2009 Kentico Software

31.24.4 Editing message boards

You can edit message boards' properties **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!

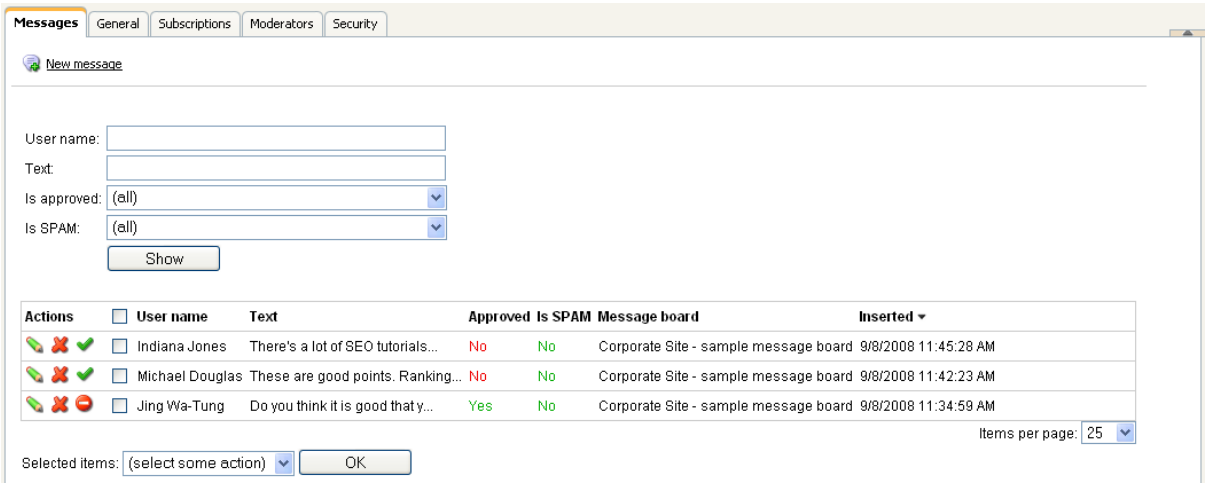
The administration interface for editing message boards is divided into five tabs:

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.

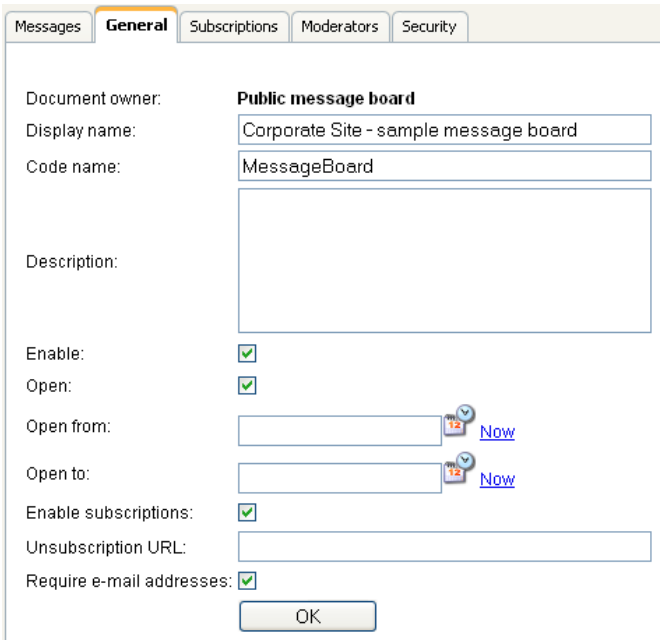


© 2009 Kentico Software

General tab

On the general tab, you can specify the following properties of the message board:

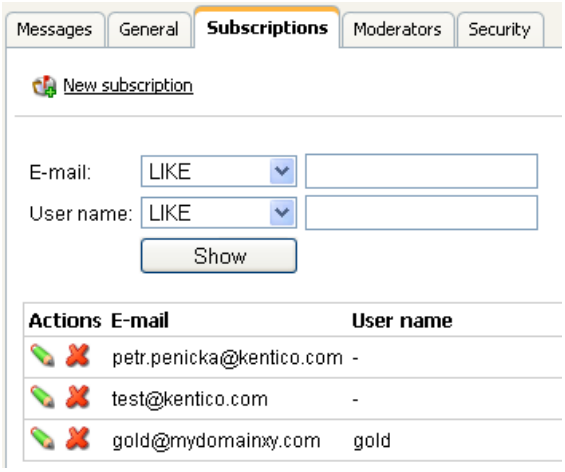
- **Display name** - display name of the message board
- **Code name** - code name of the message board
- **Description** - text describing the message board
- **Enable** - if unchecked, the message board will be hidden; if checked, the message board works normally
- **Open** - if checked, adding messages 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



© 2009 Kentico Software

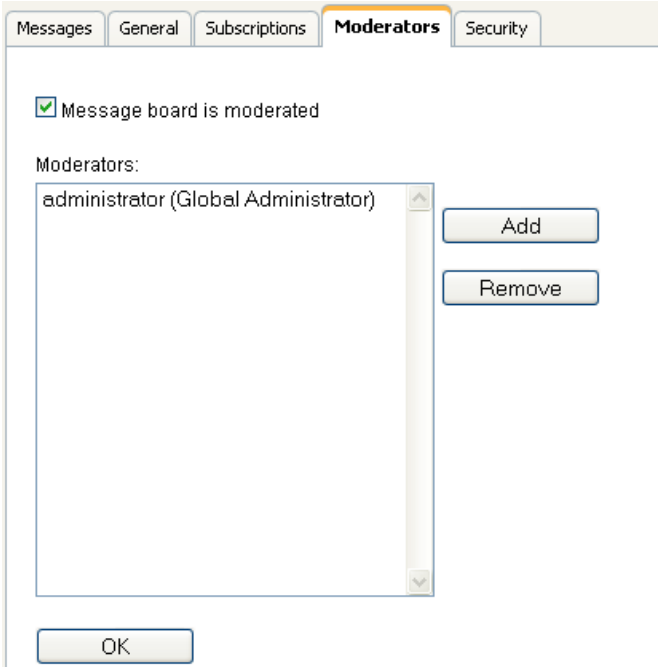
Subscriptions tab

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.



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.



© 2009 Kentico Software

Security tab

On this tab, you can set security-related properties of the message board.

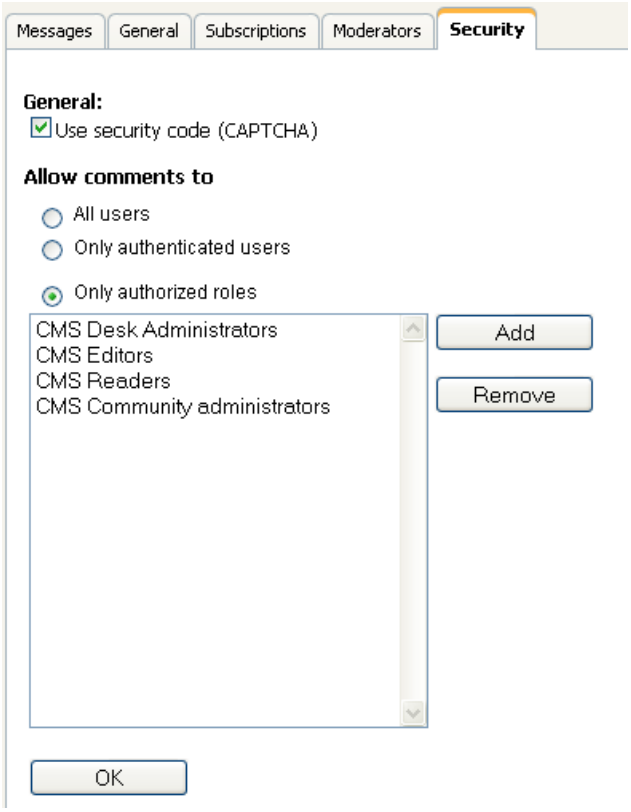
If the **Use security code (CAPTCHA)** check-box is checked, users will have to retype the CAPTCHA security code before adding a new message.

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



© 2009 Kentico Software

31.24.5 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/{%SiteContet.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 the **Board base URL** directly in web part properties, for example like this:

```
~/Groups/{%CommunityContext.CurrentGroup.GroupName%}.aspx
```

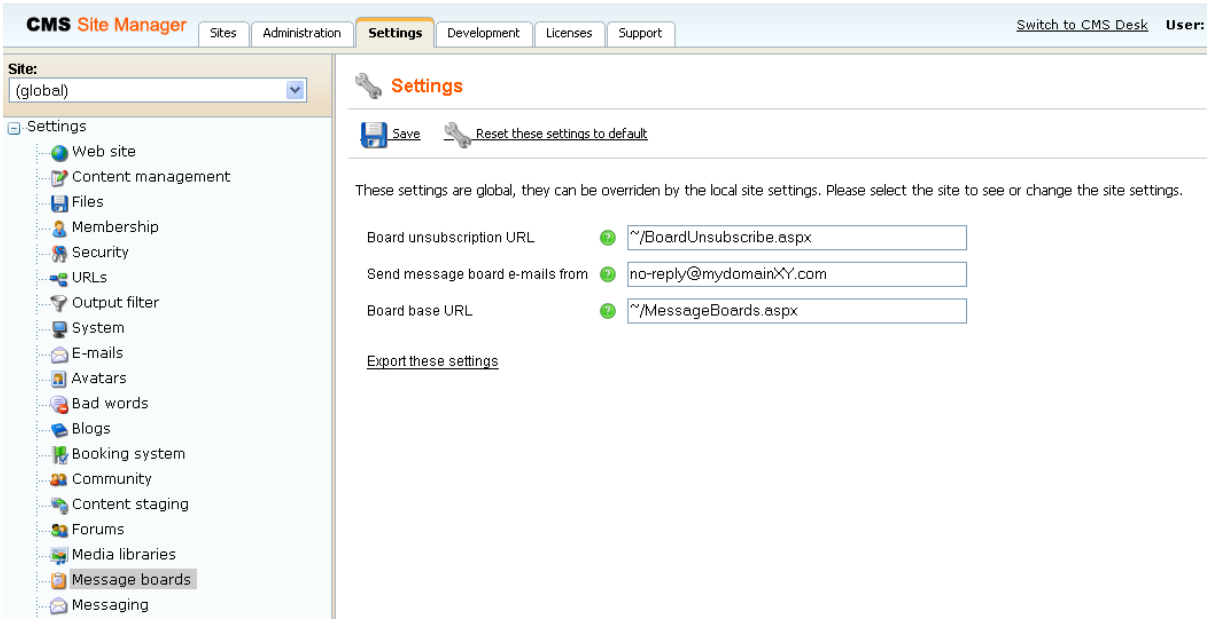
3. When you create a public message board, which is a board placed on any document without a wildcard URL, the Board base URL property needn't be set.

© 2009 Kentico Software

31.24.6 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



31.24.7 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 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**.

© 2009 Kentico Software

The following table explains which users 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. User boards are typically used on user profiles, as you can see on the sample **Community starter site**, on the **Members -> Profile** page.

Access	Message board owner	Anonymous user	Authenticated user	Authorized role	Owner	Owner in authorized role
All users	Public board	Yes	Yes	Yes	Yes	Yes
Authenticated users	Public board		Yes	Yes	Yes	Yes
Authorized roles	Public board			Yes		Yes
Owner	Public board					
All users	User	Yes	Yes	Yes	Yes	Yes
Authenticated users	User		Yes	Yes	Yes	Yes
Authorized roles	User			Yes		Yes
Owner	User				Yes	Yes

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

© 2009 Kentico Software

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.

- **Display module** - the module is visible in the administration interface to members of the selected roles
- **Modify** - selected roles' members are allowed to modify the records
- **Read** - selected roles' members are allowed to read the records



	Display module	Modify	Read
Authenticated users	☐	☐	☐
CMS Community administrators	☑	☑	☑
CMS Designers	☐	☐	☐
CMS Desk administrators	☑	☑	☑
CMS Editors	☑	☐	☑
CMS Readers	☑	☐	☑
Everyone	☐	☐	☐
Live ID users	☐	☐	☐
Non-authenticated users	☐	☐	☐

© 2009 Kentico Software

31.24.8 Message board notifications

31.24.8.1 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

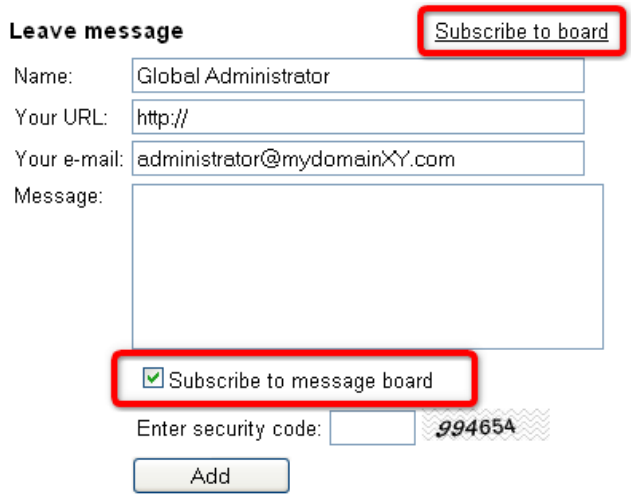
31.24.8.2 User subscriptions

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.

© 2009 Kentico Software

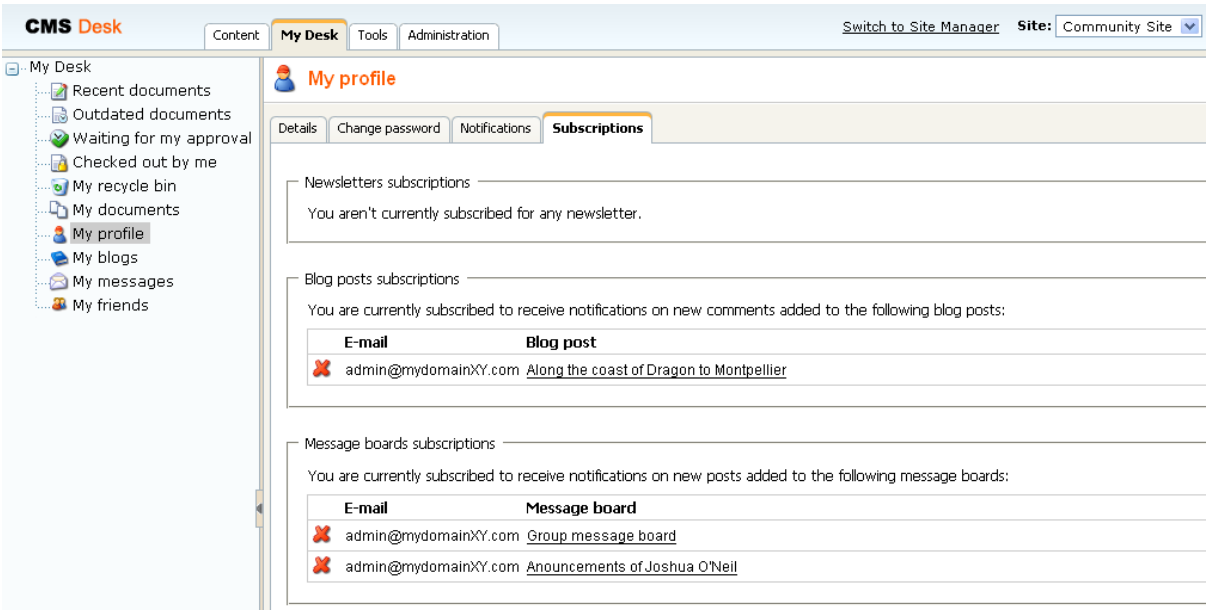
The subscription itself can be done two ways. Users can either check the **Subscribe to message board** check-box, which subscribes them along with adding the message. They can also click the **Subscribe to board** link, which displays only one **E-mail** field. After entering their address and clicking the **Subscribe** button, they can subscribe to notifications about this board without leaving any message.



Subscriptions management

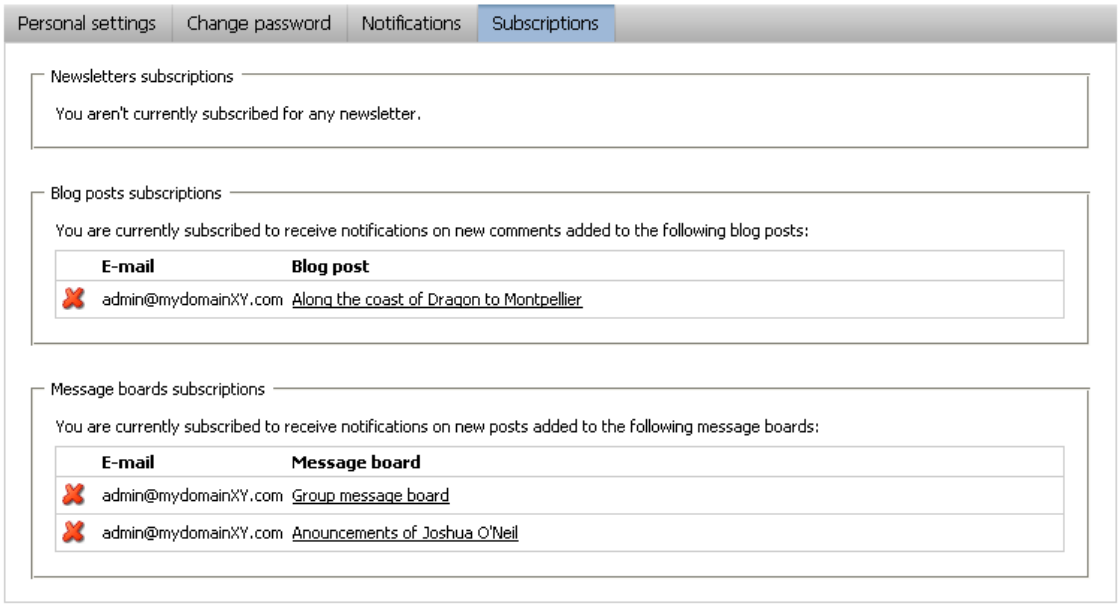
Users can view their subscriptions and eventually **unsubscribe** using the **Delete** ( ) icon at the following two places:

1. Users with access to **CMS Desk** can view their subscriptions on the **My Desk -> My profile -> Subscriptions** tab.



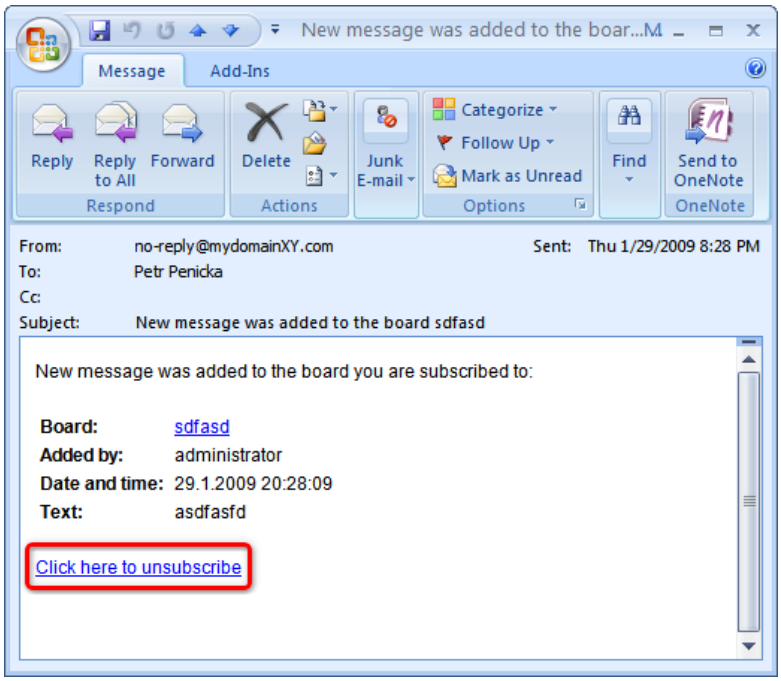
© 2009 Kentico Software

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.



© 2009 Kentico Software

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.

31.24.8.3 E-mail templates

There are two different e-mail templates that can be used when sending notifications to subscribers and board moderators:

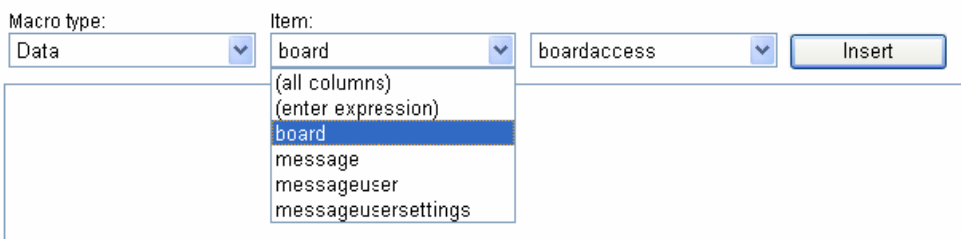
Subscribers - e-mails are based on the **Boards - Notification to board subscribers** template
Moderators - e-mails are based on the **Boards - Notification to board moderators** template

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%}

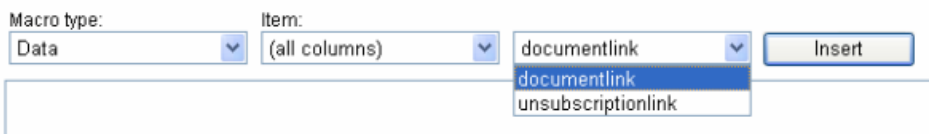


© 2009 Kentico Software

Source macros

DocumentLink - link to the document where the board is placed
UnsubscriptionLink - unsubscription link

Example:: {%DocumentLink %}



© 2009 Kentico Software

31.25 Newsletters

31.25.1 Newsletter module 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.

© 2009 Kentico Software

31.25.2 Creating a static newsletter

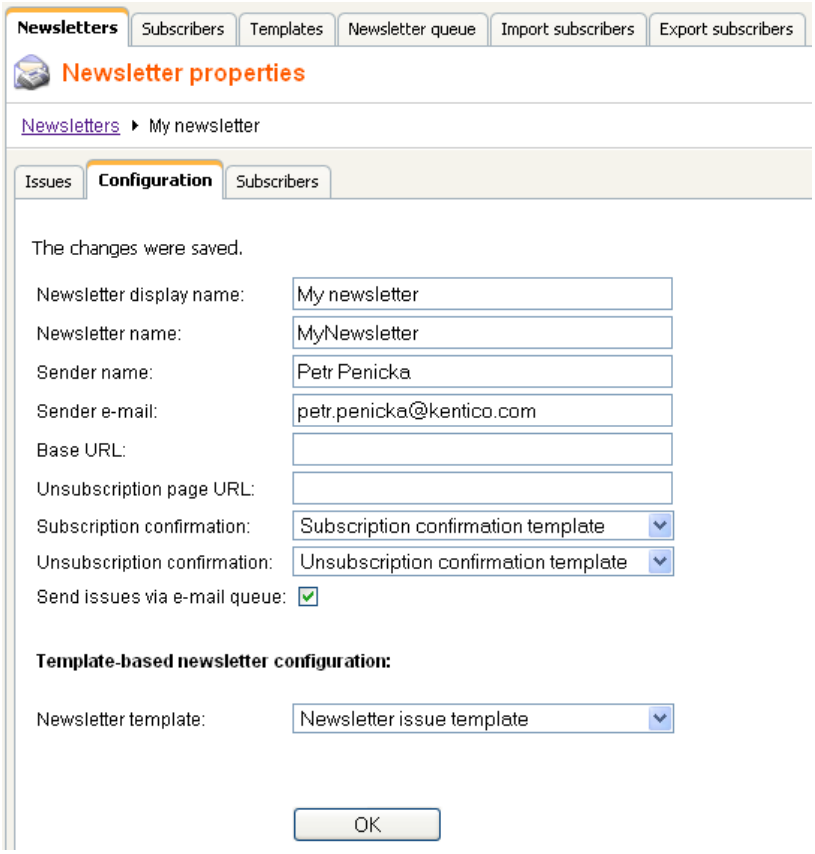
In this chapter, you will learn how to create a static newsletter and author your first newsletter issue.

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:

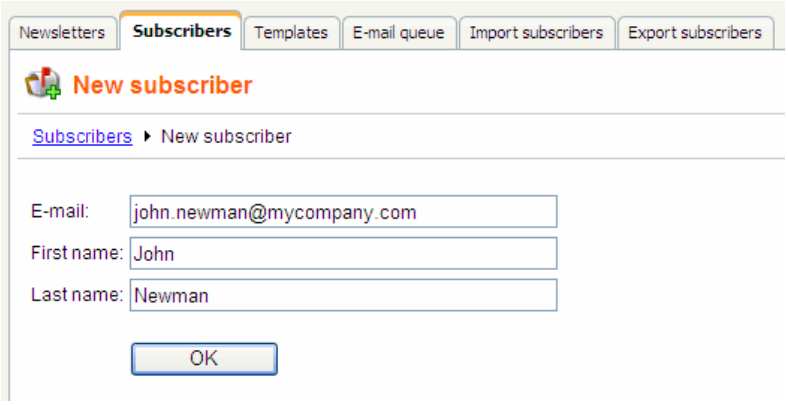
- **Base URL:** the base URL of your web site used to convert relative links to absolute; It's necessary to set this property in order for the unsubscription links to work properly. It's also useful if you encounter any issues with links in newsletter e-mails - e.g. if you're using a different URL for your editing environment than for the live web site. Example: https://www.mydomain.com
- **Unsubscription page URL:** ~/SpecialPages/Unsubscribe.aspx (the page with Newsletter unsubscription web part)
- **Send issues via e-mail queue** - if checked, newsletter issues will be sent via the e-mail queue



© 2009 Kentico Software

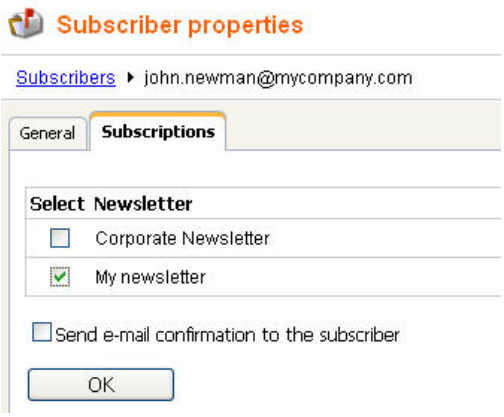
Click **OK**. We will create a new subscriber now. Go to the main **Subscribers** tab (in the top tab menu) and click **New subscriber**. Enter the following details:

- **E-mail:** subscriber's e-mail address
- **First name:** subscriber's first name
- **Last name:** subscriber's last name



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**.



If you check the **Send e-mail confirmation to the subscriber** check-box, the subscriber will also receive an e-mail confirmation of her subscription.

Your newsletter is configured. Now you can create new issues.

© 2009 Kentico Software

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 ,

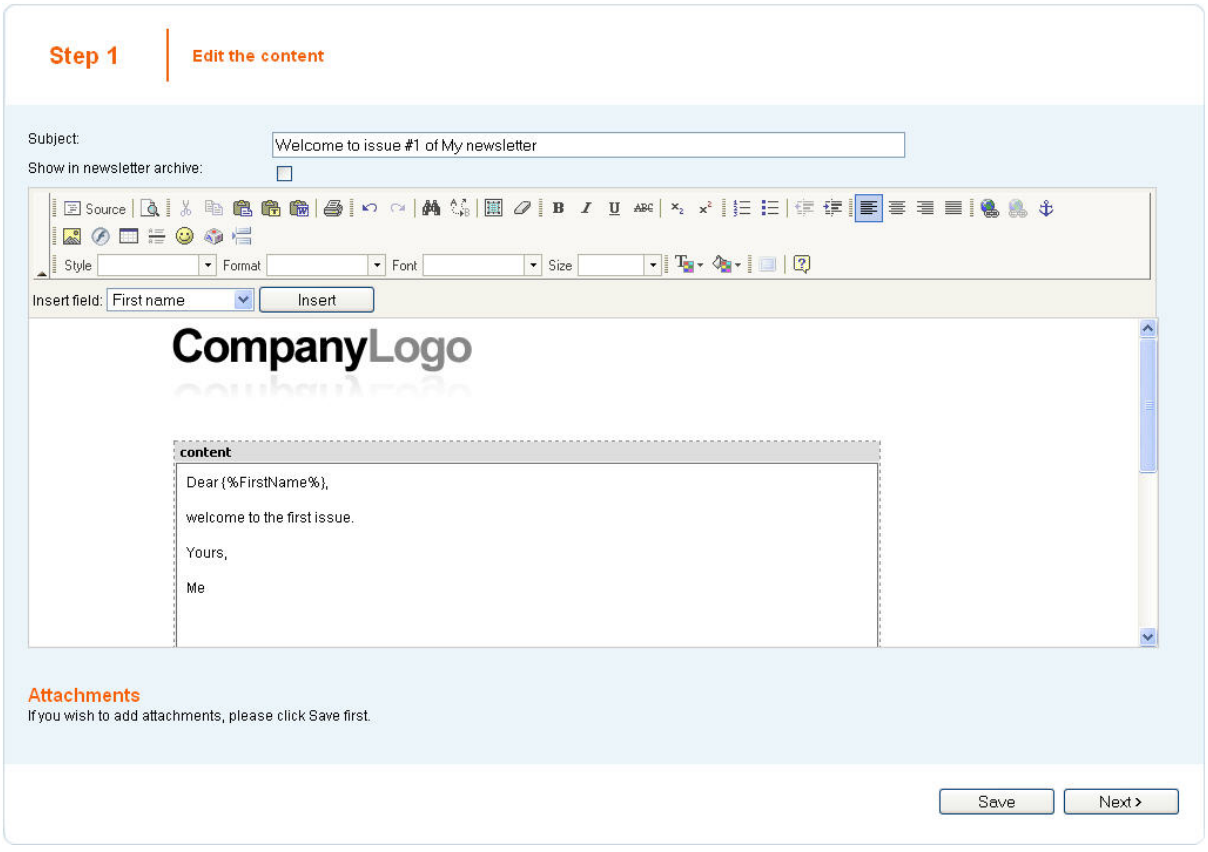
welcome to the first issue.

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:



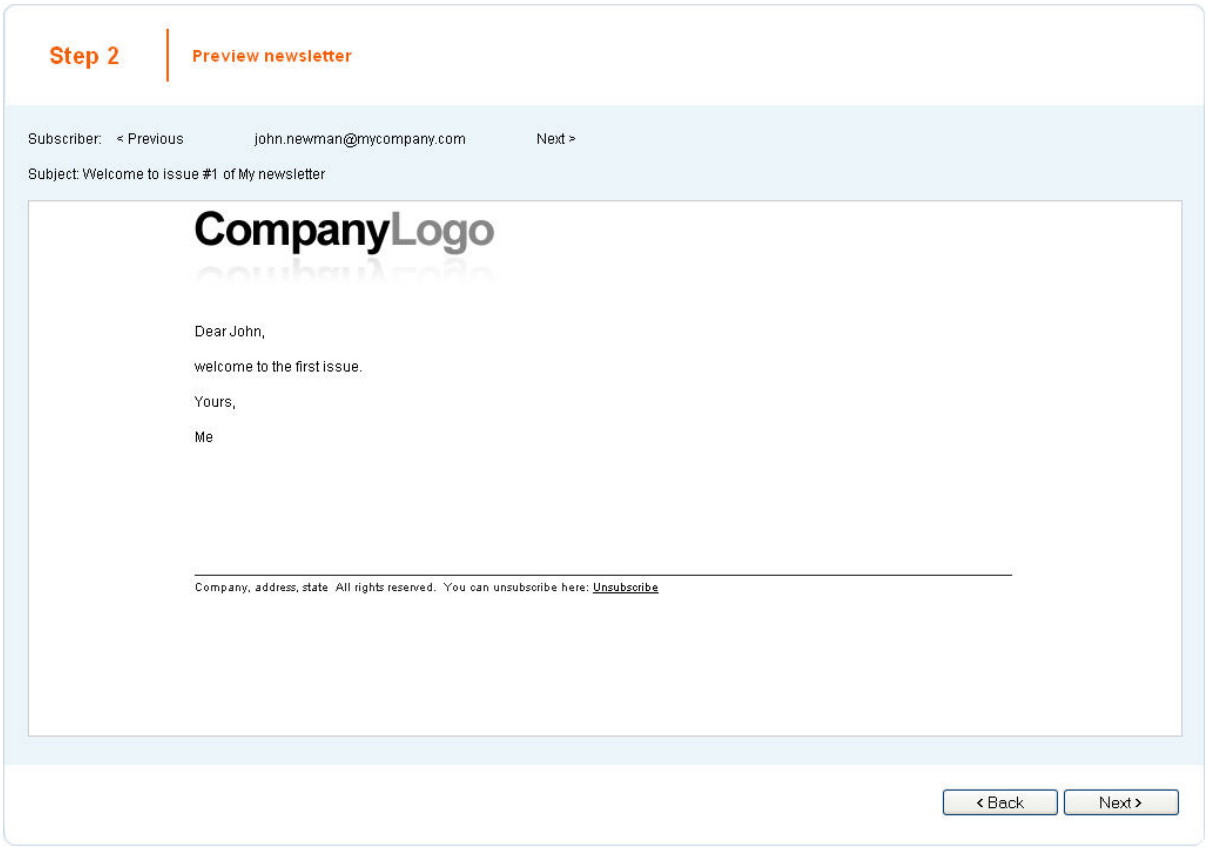
© 2009 Kentico Software



Newsletter templates

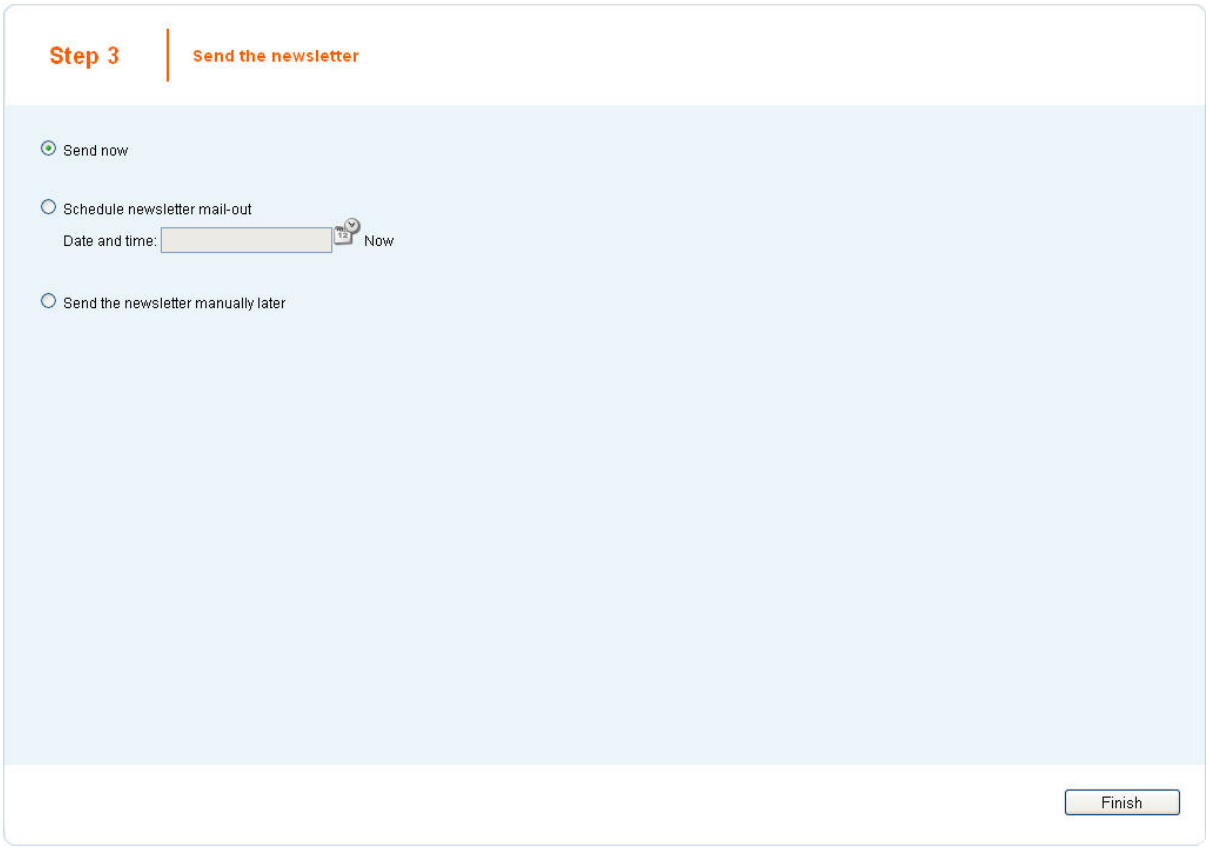
The structure of the newsletter text is defined by the newsletter issue template that can be edited in the **Templates** section. Templates are described in chapter Newsletter templates.

Click **Next**. Now you can preview the newsletter text for each subscriber. You can click **Back** and modify the text.

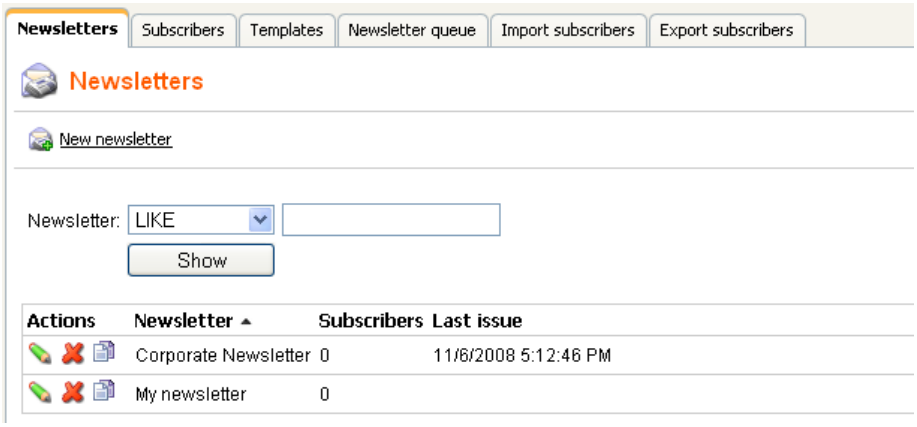


Click **Next**. Now you can choose when the newsletter issue should be sent out:

- **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.



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:



If you do not receive the e-mail, please follow the instructions in chapter Troubleshooting the problems

© 2009 Kentico Software

with e-mails.

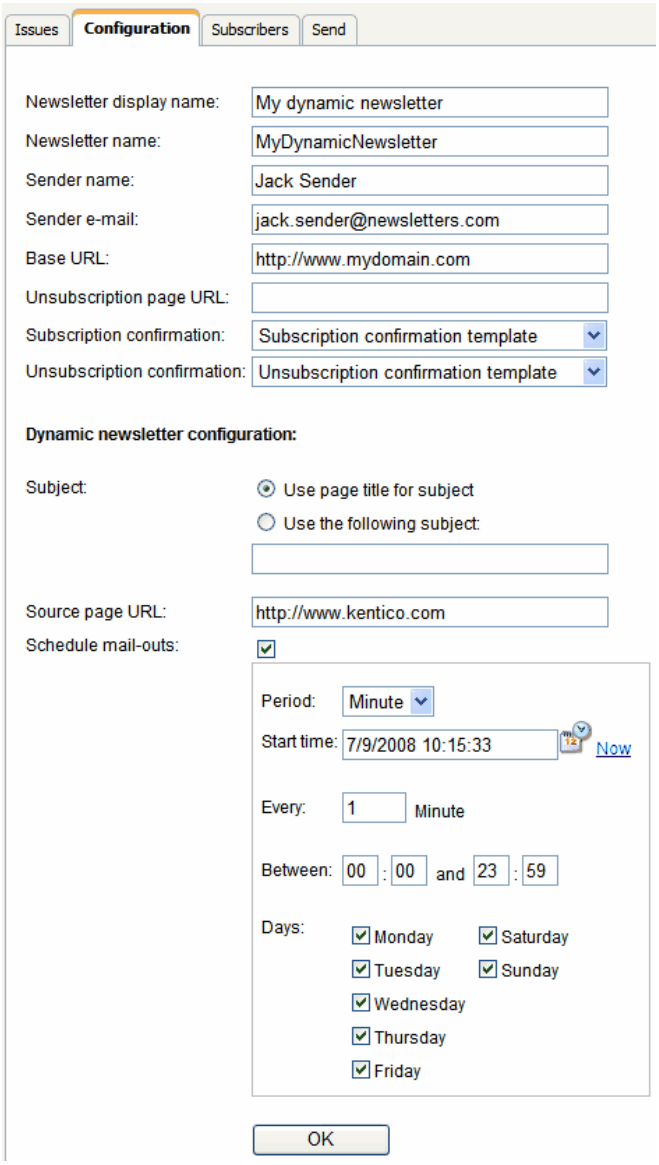
31.25.3 Creating a dynamic newsletter

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 web site 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 web site. Example: https://www.mydomain.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

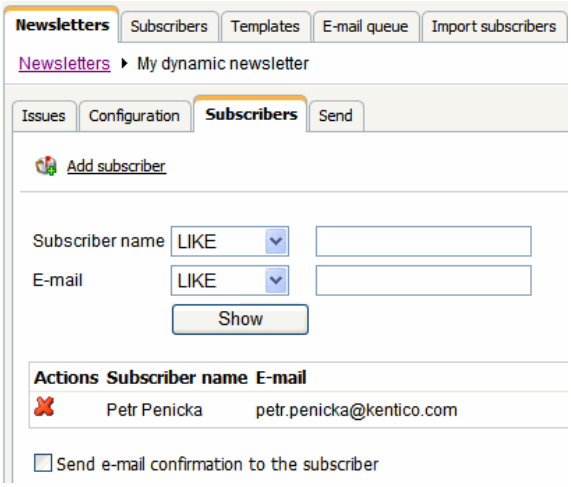
© 2009 Kentico Software



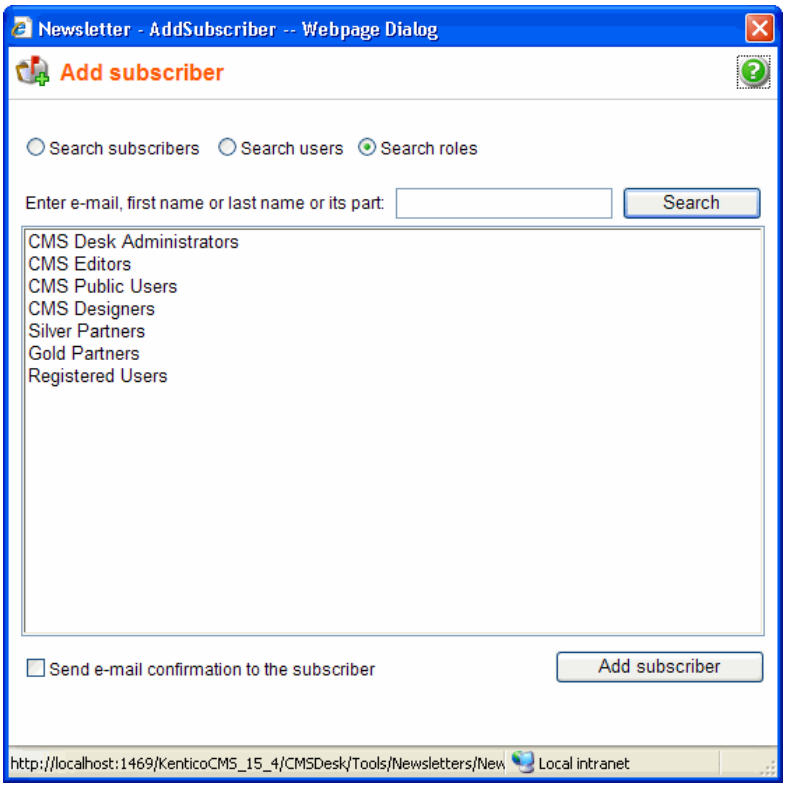
Click **OK**.

© 2009 Kentico Software

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:

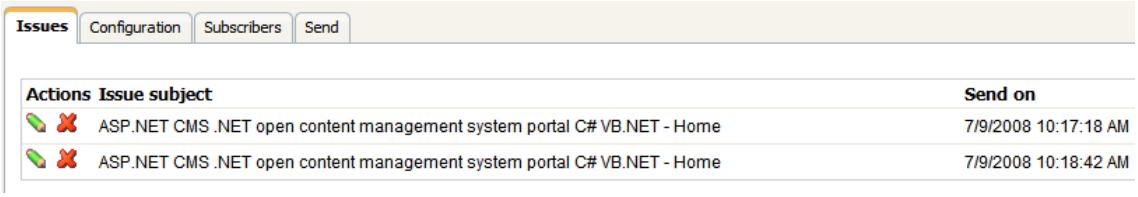


The three radio buttons at the top of the window are used for selecting the searched category. You can search among subscribers of all newsletters, users of the website or among user roles. Make the selection, enter the text you are searching for into the text field and click the **Search** button.

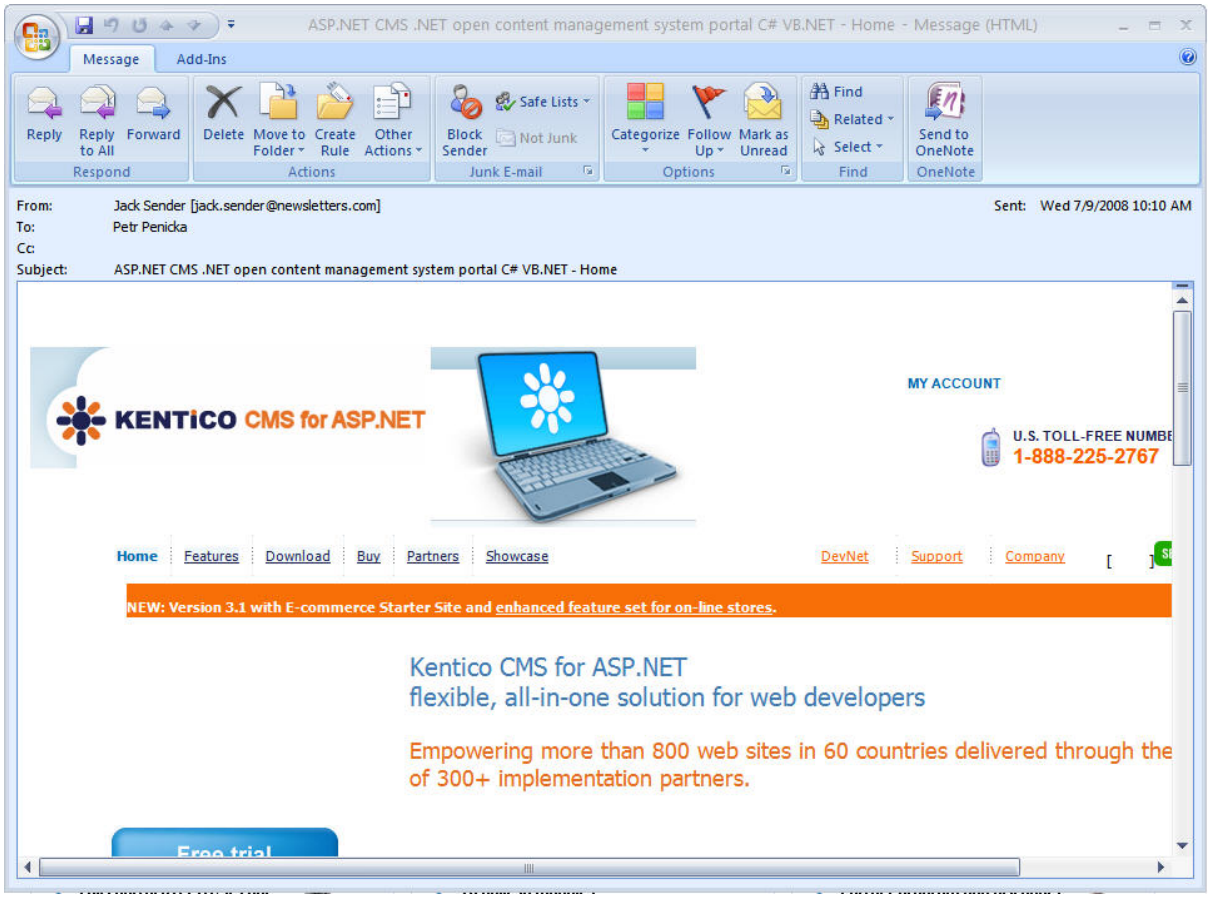
© 2009 Kentico Software

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.



Check your mail box, you should receive the content of the given page by e-mail:



In this way, you can send out any page from your web site. You can create a new page only for the newsletter purposes that will display e.g. new articles added to your web site during the last month.

Blocking the 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

© 2009 Kentico Software

##DONOTSEND## and the newsletter will not be sent.

© 2009 Kentico Software

31.25.4 Integrating newsletters into the site

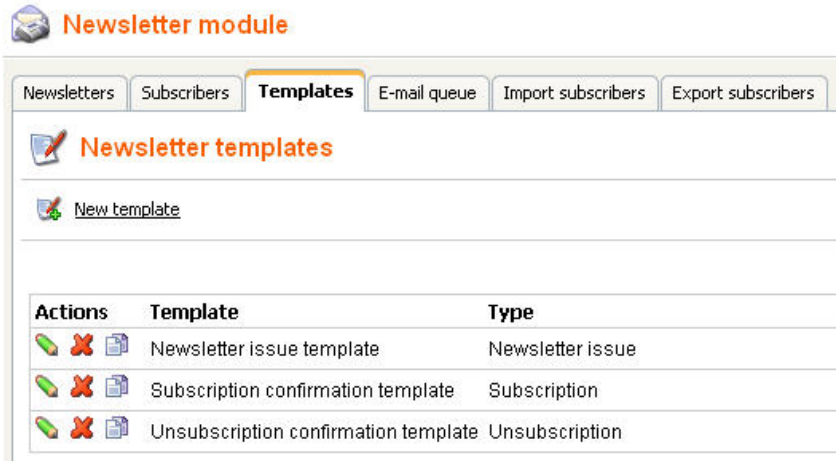
You can integrate the newsletter into your web site using two web parts:

- **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 submiting their e-mail address

You can find more details on the properties of these web parts in **Kentico CMS Web Parts and Controls Reference**.

31.25.5 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:

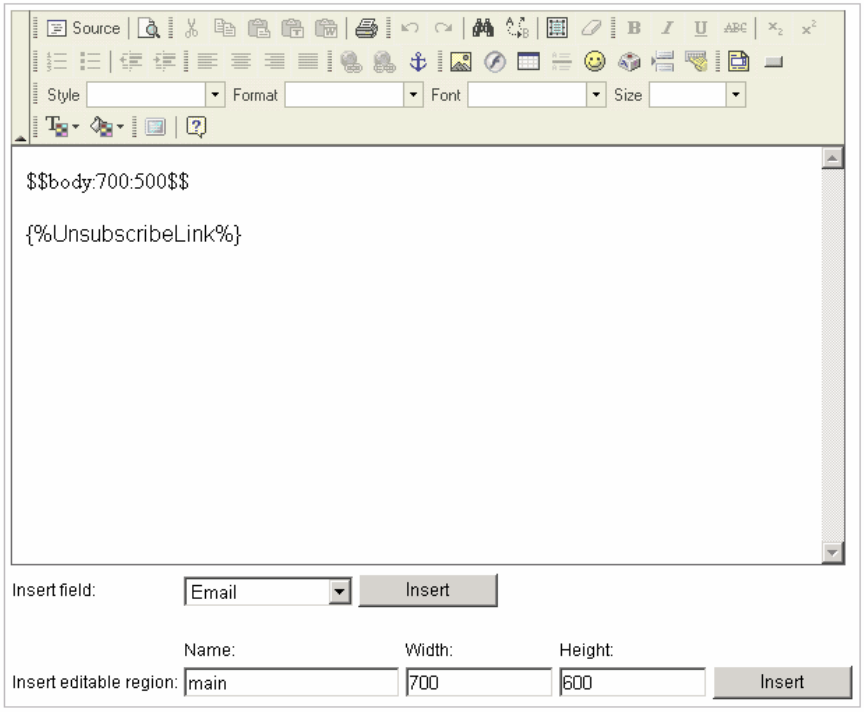
- {%Email%}
- {%FirstName%}
- {%LastName%}
- {%UnsubscribeLink%}

© 2009 Kentico Software

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.

© 2009 Kentico Software

31.25.6 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 causes that all sent e-mails will be logged, but not actually sent. This is helpful when you need to test the functionality but do not want the testing e-mails to be really 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

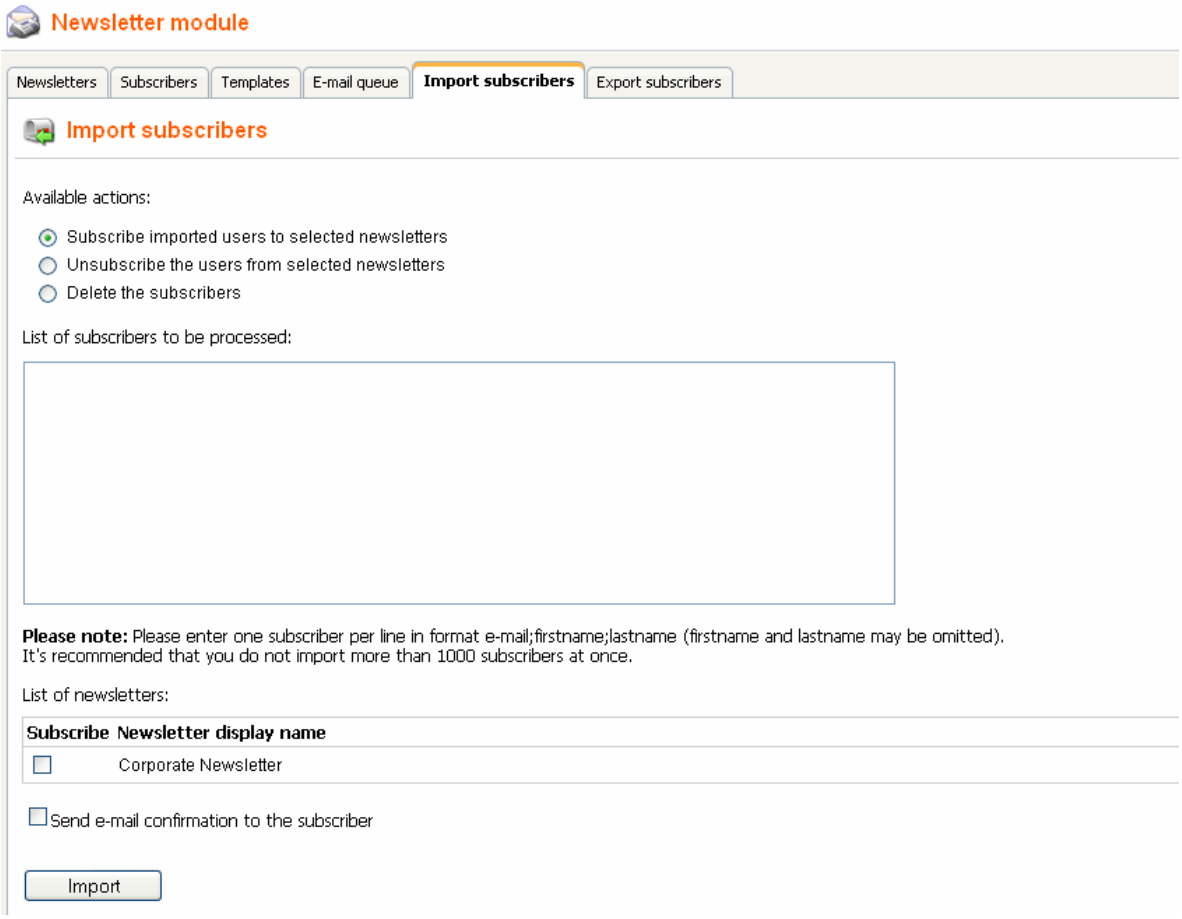
If you have a user role set as a subscriber for your newsletter, it is highly recommended to send the newsletter issues via the **e-mail queue** in order for the issues to be successfully sent to all members of the user role. To set the newsletter for using the e-mail queue, go to **CMS Desk -> Tools -> Newsletter**, choose to **Edit** ( ) your newsletter, switch to its **Configuration** tab and check the **Send issues via e-mail queue** check-box.

© 2009 Kentico Software

31.25.7 Subscriber import and export

Importing subscribers

Import of subscribers can be carried out using the **CMS Desk -> Tools -> Newsletters -> Import subscribers** dialog.



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 tree 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

© 2009 Kentico Software

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 processes 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.

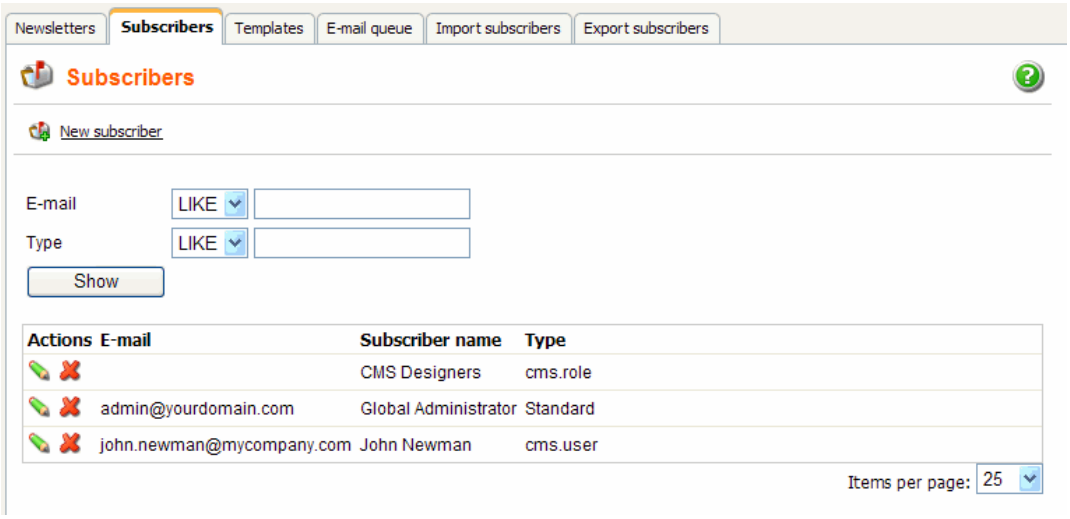
You can choose if you want to export all subscribers (do not specify any newsletter) or only subscribers of chosen newsletter(s). The subscribers are exported in format:

email;firstname;lastname

Then, you can copy and paste the list of subscribers from the textbox to your application.

31.25.8 Subscriber management

You can manage subscribers in **CMS Desk -> Tools -> Newsletter -> Subscribers**.

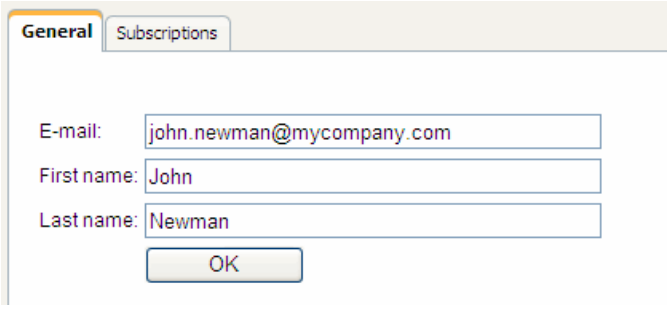


At the bottom of the page, you can see a list of all subscribers of any of the website's newsletters. You can filter these by e-mail or type, by searching for a text entered in the appropriate search text box and clicking the **Show** button.

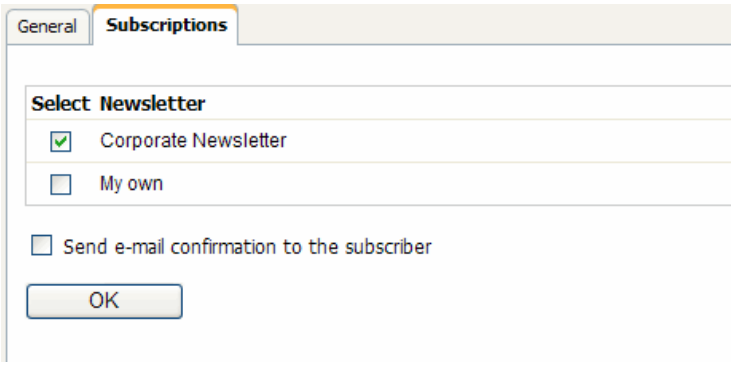
By clicking the **Delete** icon next to a subscriber record, you can remove the subscriber from the list.

© 2009 Kentico Software

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.



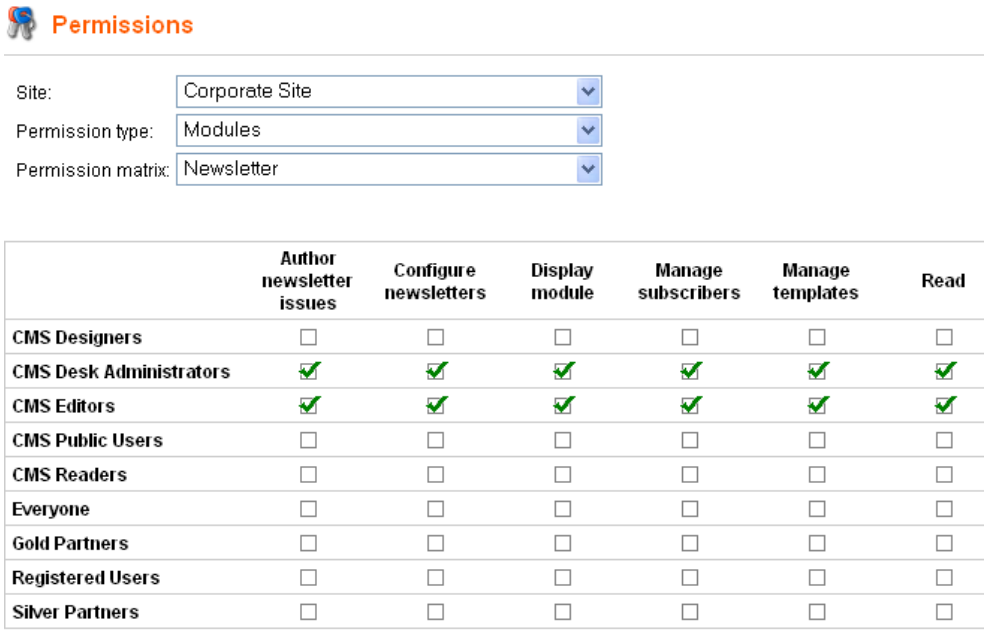
On the **Subscriptions** tab, you can select to which of all newsletters will this subscriber be subscribed. If you check the **Send e-mail confirmation to the subscriber** check-box, a notification e-mail will be sent to the user, informing him about the subscription changes.



© 2009 Kentico Software

31.25.9 Security

You can control the access to the Newsletter module in **CMS Desk -> Administration -> Permissions**, after you select **Modules -> Newsletter** permission matrix:



	Author newsletter issues	Configure newsletters	Display module	Manage subscribers	Manage templates	Read
CMS Designers	☐	☐	☐	☐	☐	☐
CMS Desk Administrators	☑	☑	☑	☑	☑	☑
CMS Editors	☑	☑	☑	☑	☑	☑
CMS Public Users	☐	☐	☐	☐	☐	☐
CMS Readers	☐	☐	☐	☐	☐	☐
Everyone	☐	☐	☐	☐	☐	☐
Gold Partners	☐	☐	☐	☐	☐	☐
Registered Users	☐	☐	☐	☐	☐	☐
Silver Partners	☐	☐	☐	☐	☐	☐

The following table explains particular permission names:

Author newsletter issues	The user is allowed to create and edit newsletter issues.
Configure newsletters	The user is allowed to configure newsletter settings.
Display module	The module is visible in the user interface.
Manage subscribers	The user is allowed to create/edit/delete subscribers.
Manage templates	The user is allowed to create/edit/delete e-mail templates used by the Newsletter module.
Read	The user is allowed to read all data of the Newsletter module.

© 2009 Kentico Software

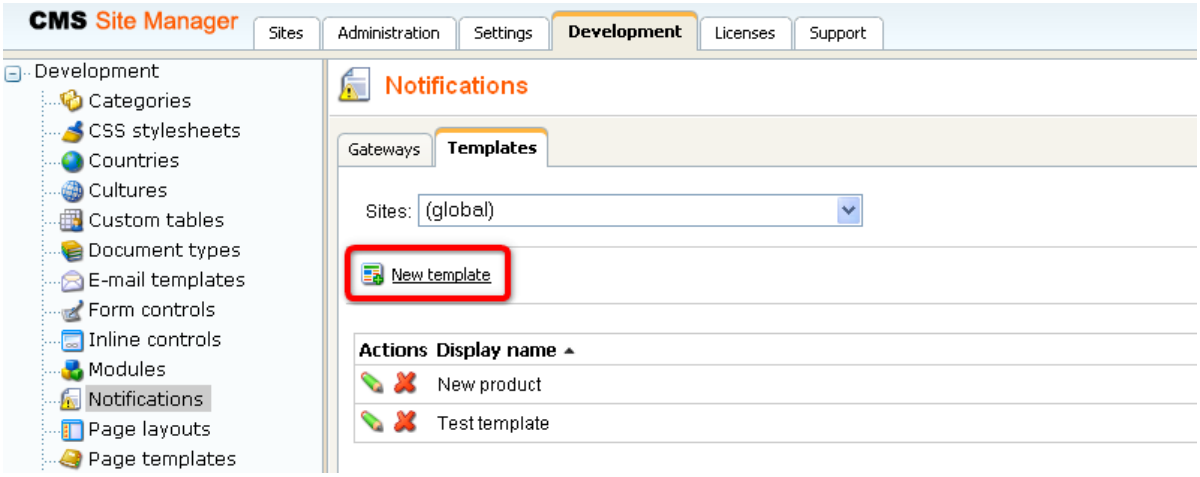
31.26 Notifications

31.26.1 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 message from. It means that for one event, user 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.

31.26.2 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.

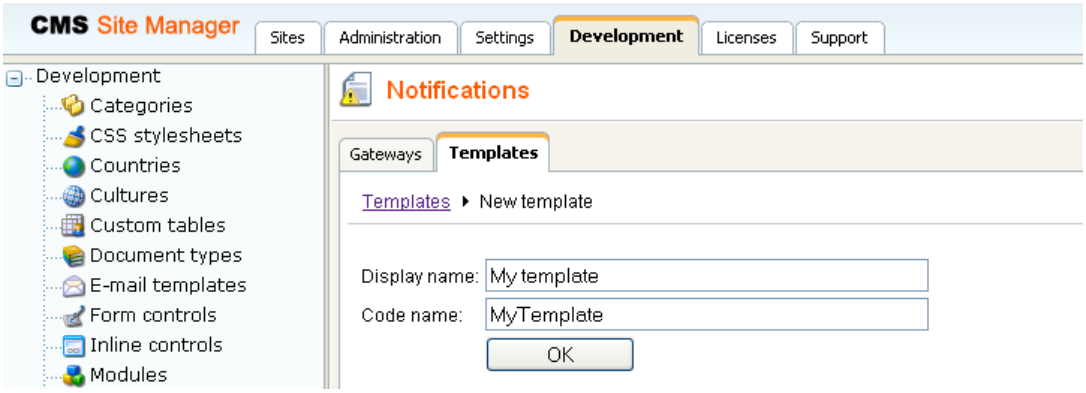


2. On the **New template** form, enter the following details:

- **Display name** - display name of the template
- **Code name** - code name of the template

Click **OK**. The template will be created.

© 2009 Kentico Software



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.

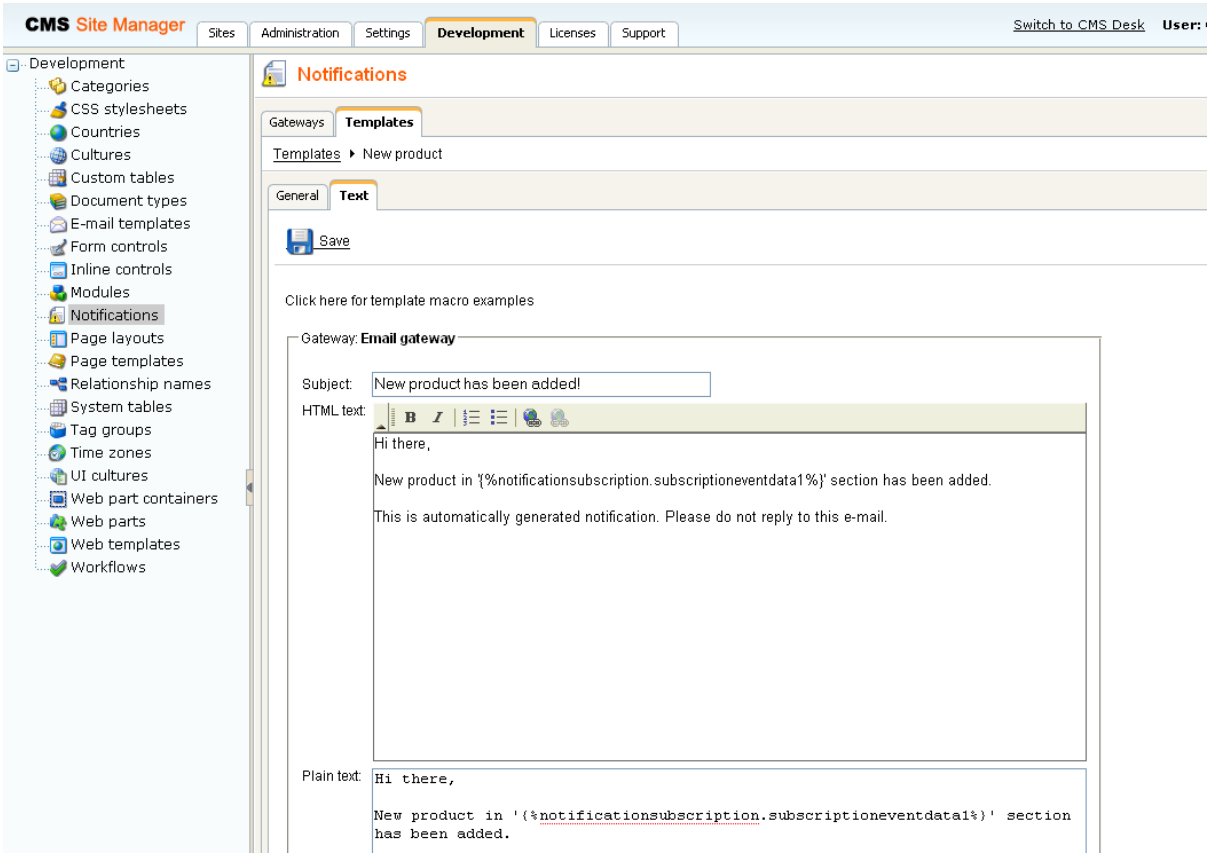
On this tab, text of the notification message can be defined. You should see **sections for each of the defined gateways**. Texts can be set separately for each gateway, so that for one event, you can have different texts sent via e-mail and via SMS. Each of the sections contains the gateway name and 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 notification gateway which performs sending notification message
- **{%notificationuser.UserID%}** - displays the value of specified user data column from the CMS_Usertable table; this represents user the notification message is sending 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)

© 2009 Kentico Software



© 2009 Kentico Software

31.26.3 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**



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.

© 2009 Kentico Software

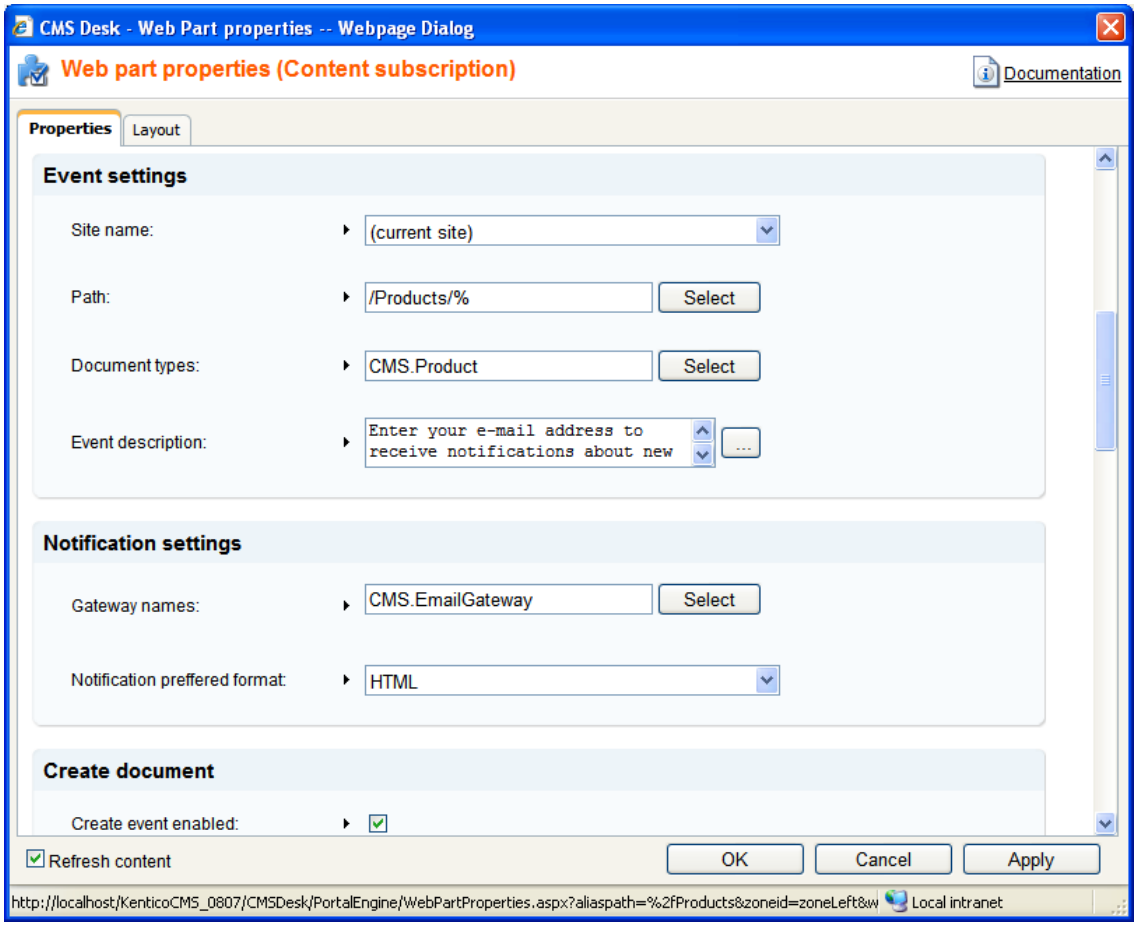
2. Add the **Content subscription** web part to the zoneLeft web part zone, below the Left tree menu. In the Web part properties dialog, set the following properties:

- **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**.

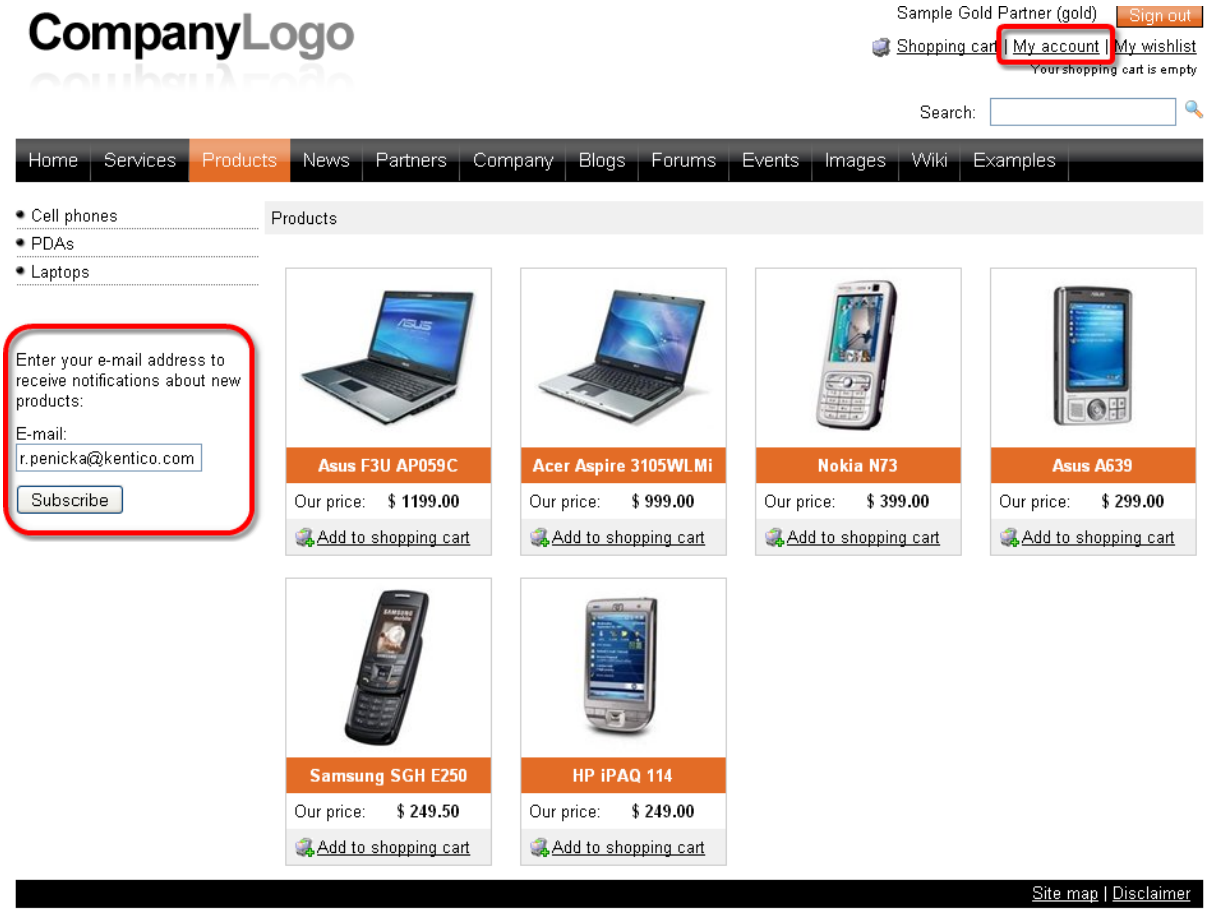


© 2009 Kentico Software

3. Let's switch to the **site visitor's** perspective now. Sign out of CMS Desk.

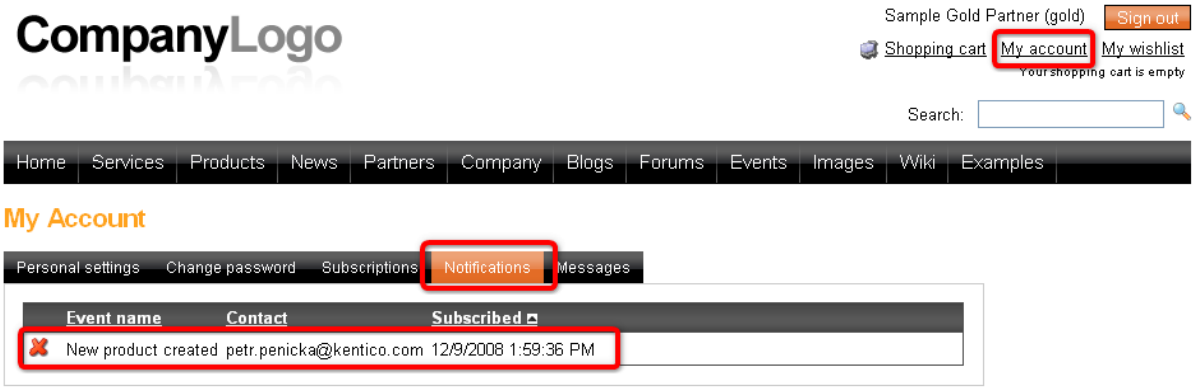
As notifications are available only for registered users, the web part is not visible unless you log in. Use the **My account** link at the top of the page to display a logon form and sign in; use e.g. user name *Gold* with blank password. Once signed in, switch to the **Products** page. You should see 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.



© 2009 Kentico Software

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.

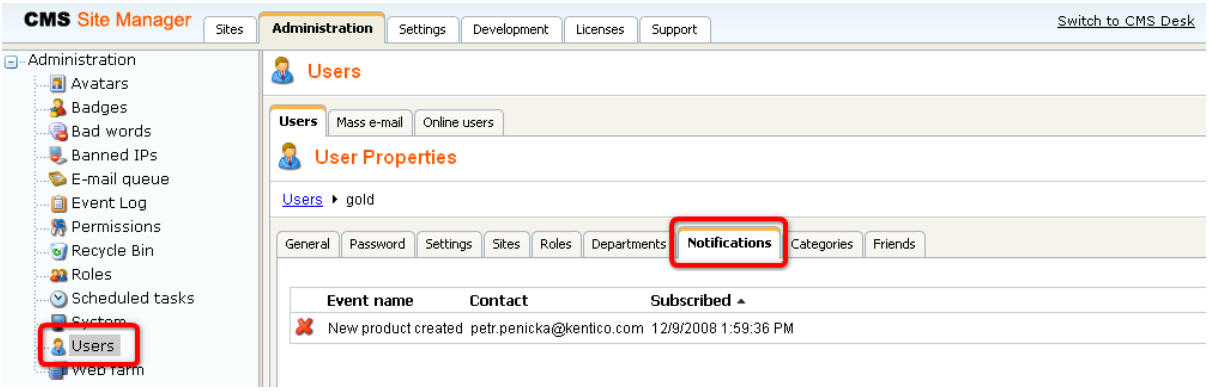


5. Now you can verify that the whole setup works. Log in to **CMS Desk** as the *administrator* again. From the content tree, select **Products** and click the **New** icon above the content tree. Choose to create some new product, e.g. a Cell phone, enter some sample data about the cell phone and click **Save**. Check your e-mail inbox in a few minutes. You should have received a new notification message about the newly added product.

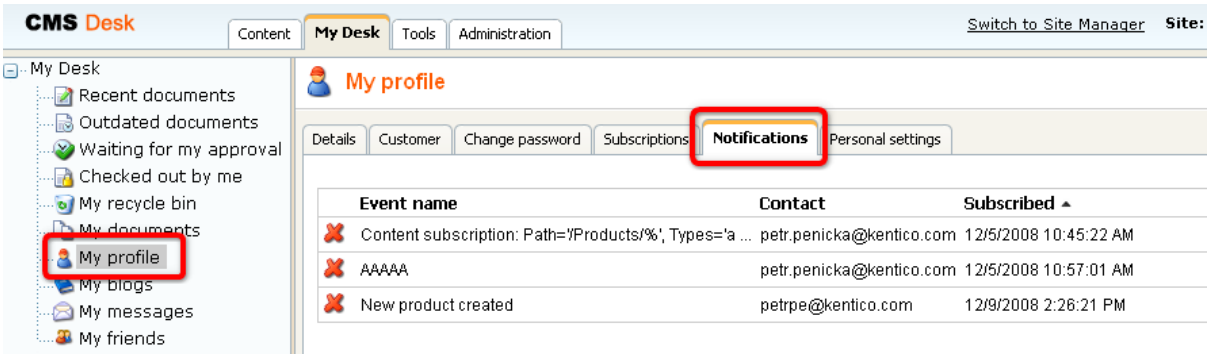
© 2009 Kentico Software

31.26.4 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.

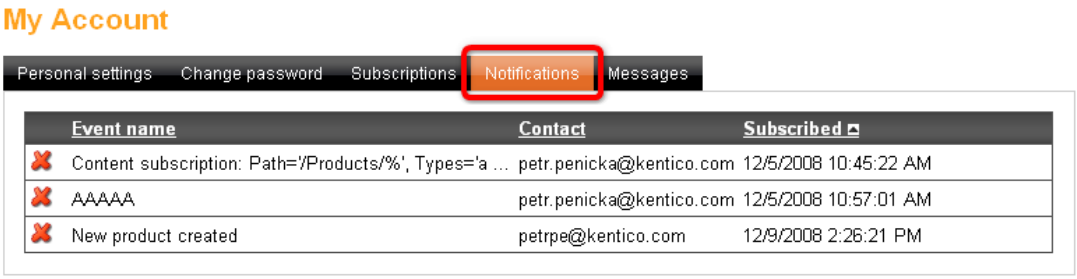


CMS Desk users can manage their own subscriptions the same way in **CMS Desk -> My Desk -> My profile -> Notifications**.



© 2009 Kentico Software

Site visitors registered to the site can manage their subscriptions the same way using the **My account** web part, on its **Notifications** tab.



31.26.5 Custom notification gateway

31.26.5.1 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

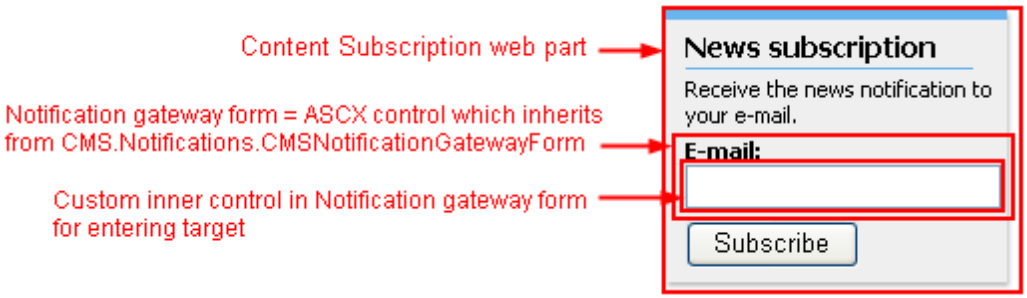
Here is a general overview of the steps that need to be taken when implementing a custom notification gateway:

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.

© 2009 Kentico Software

31.26.5.2 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

```
using System;
using System.Data;
```

© 2009 Kentico Software

```
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;
        }
```

© 2009 Kentico Software

```
    }

    #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
}
```

© 2009 Kentico Software

31.26.5.3 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

```
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)
            {
```

© 2009 Kentico Software

```
                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.
```

© 2009 Kentico Software

```
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);
                }
```

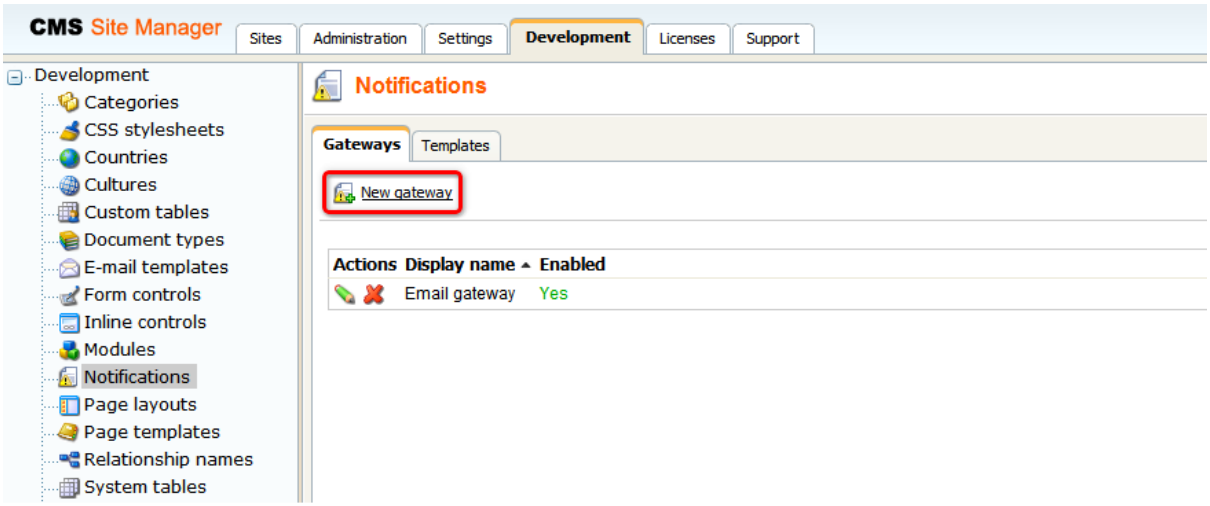
© 2009 Kentico Software

```
                catch
                {
                    // Unable to log the event
                }
            }
        }
    }
}
```

31.26.5.4 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.

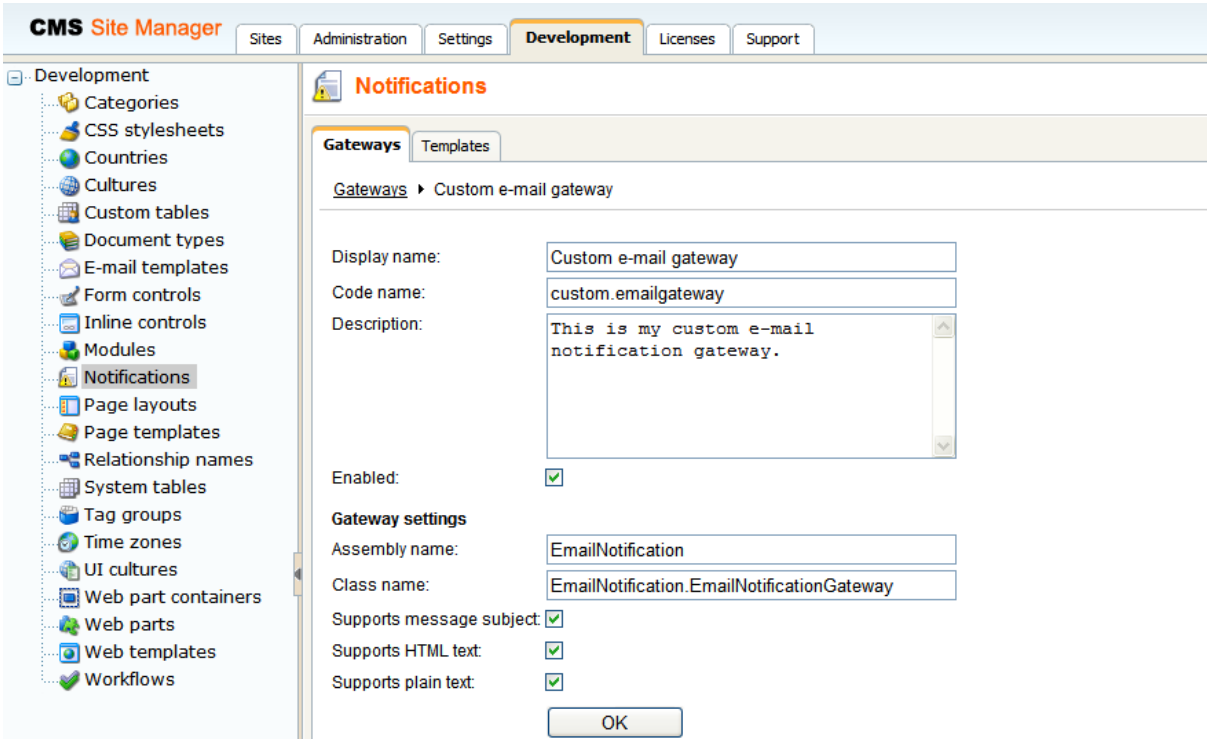


© 2009 Kentico Software

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 the class containing the gateway code; must be entered including the assembly name, as you can see in the screenshot below
- **Supports message subject** - check if the gateway's message format supports message subjects
- **Supports HTML text** - check if the gateway supports messages in HTML format (e.g. for e-mails)
- **Supports plain text** - check if the gateway supports plain text format (e.g. for SMS)

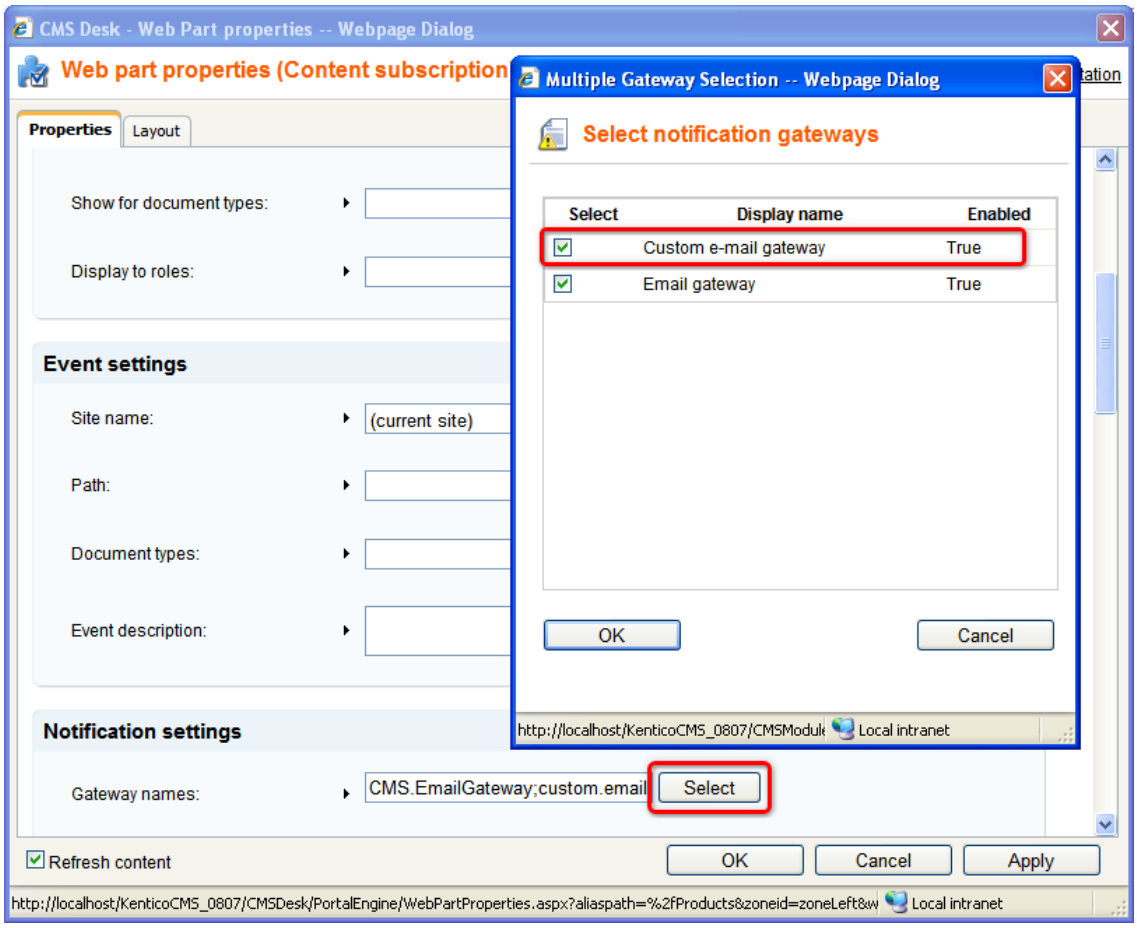


3. After entering all the details, click **OK**. You will be redirected back to the notification gateways list and you should be able to see your new gateway in the list.

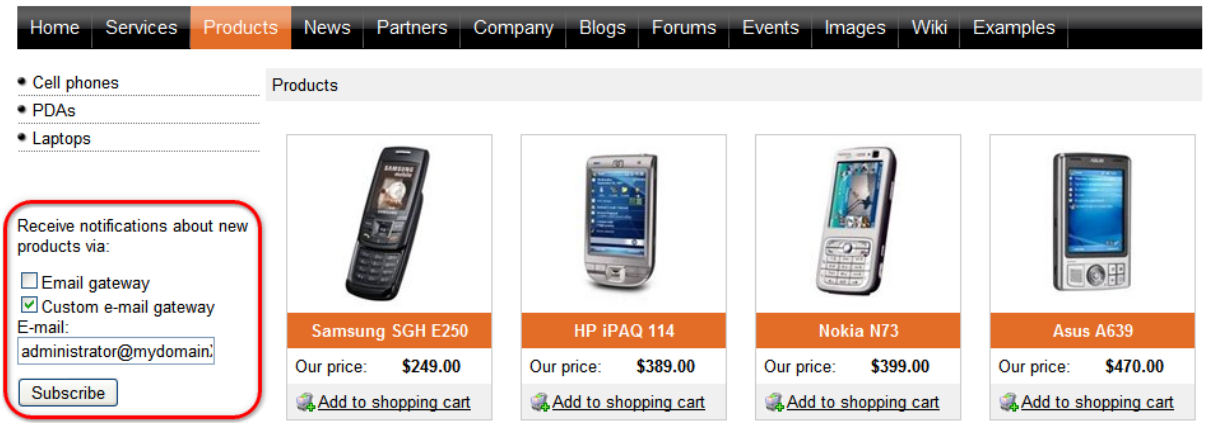
© 2009 Kentico Software

31.26.5.5 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.

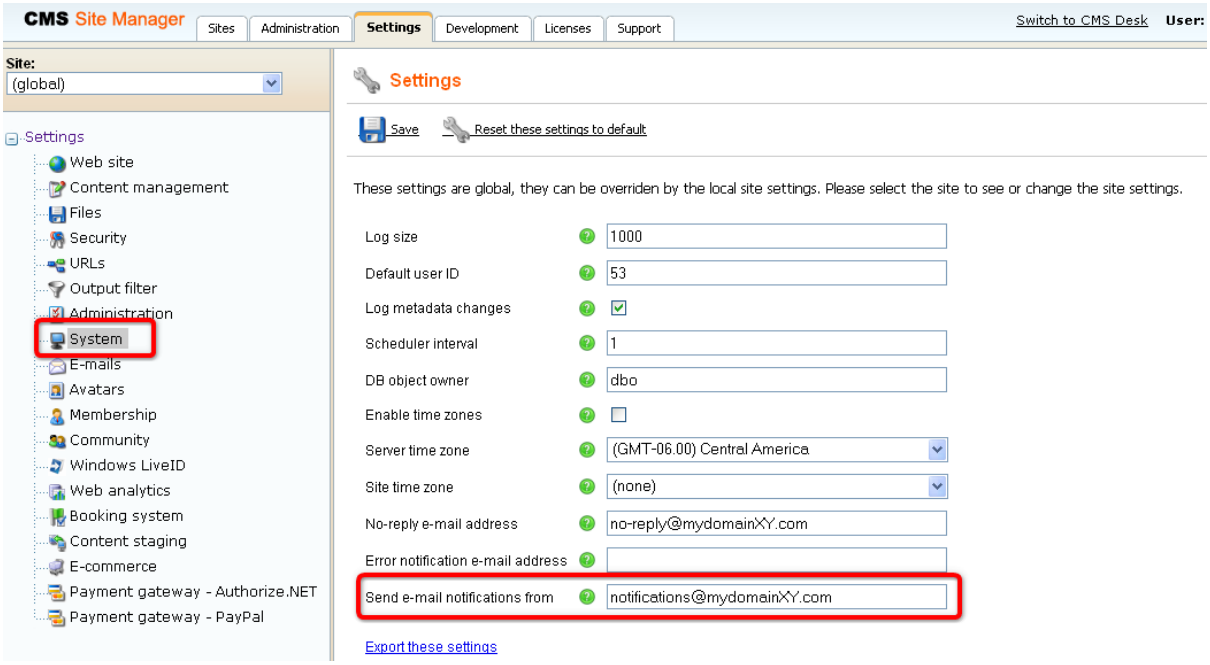


© 2009 Kentico Software

31.26.6 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



31.26.7 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.

© 2009 Kentico Software

31.27 On-line users

31.27.1 Overview

The On-line users module allows monitoring of users connected to the web site. 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 she closes her web browser without signing off.

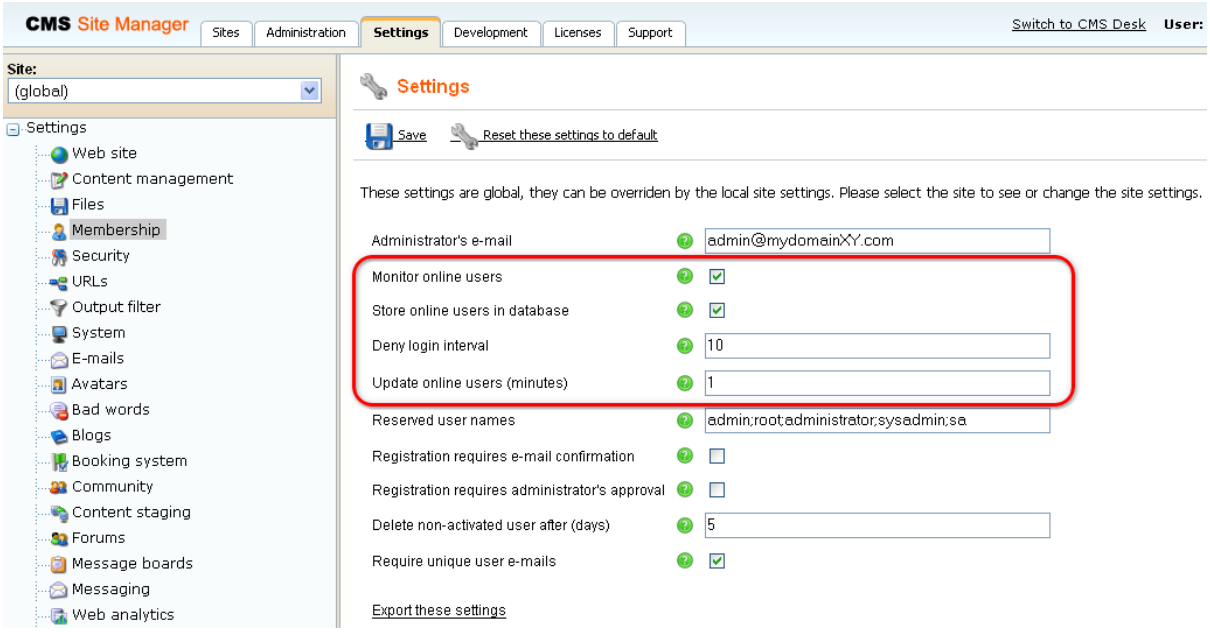
31.27.2 Enabling the module

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 that information about on-line users will be saved in the database.

The **Deny login interval** property determines how long will users 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 will information about users accessing the site 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).



© 2009 Kentico Software

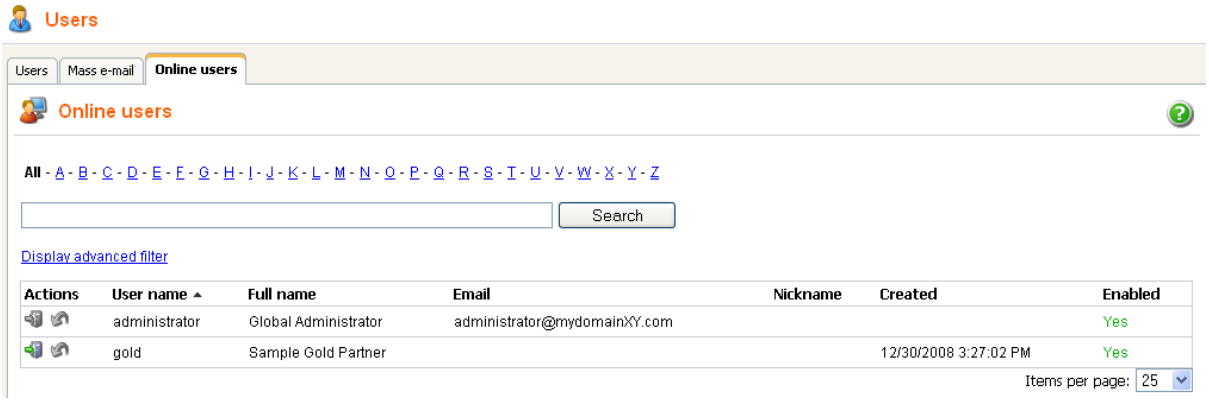
31.27.3 On-line users tab

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 web site. 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**, respectively **Display simplified search** links.

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.

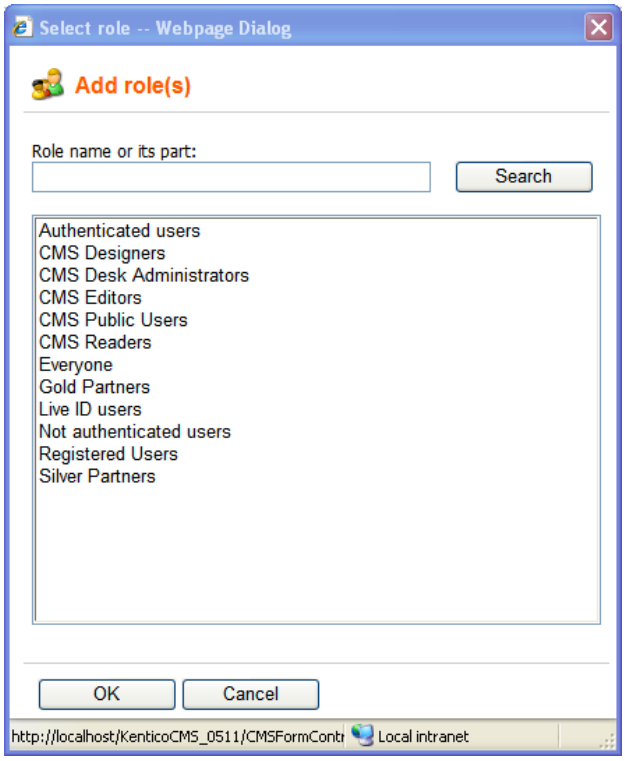


© 2009 Kentico Software

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 their belonging to roles. You can specify which roles are (**In roles**) and are not (**Not in roles**) the listed users members of.

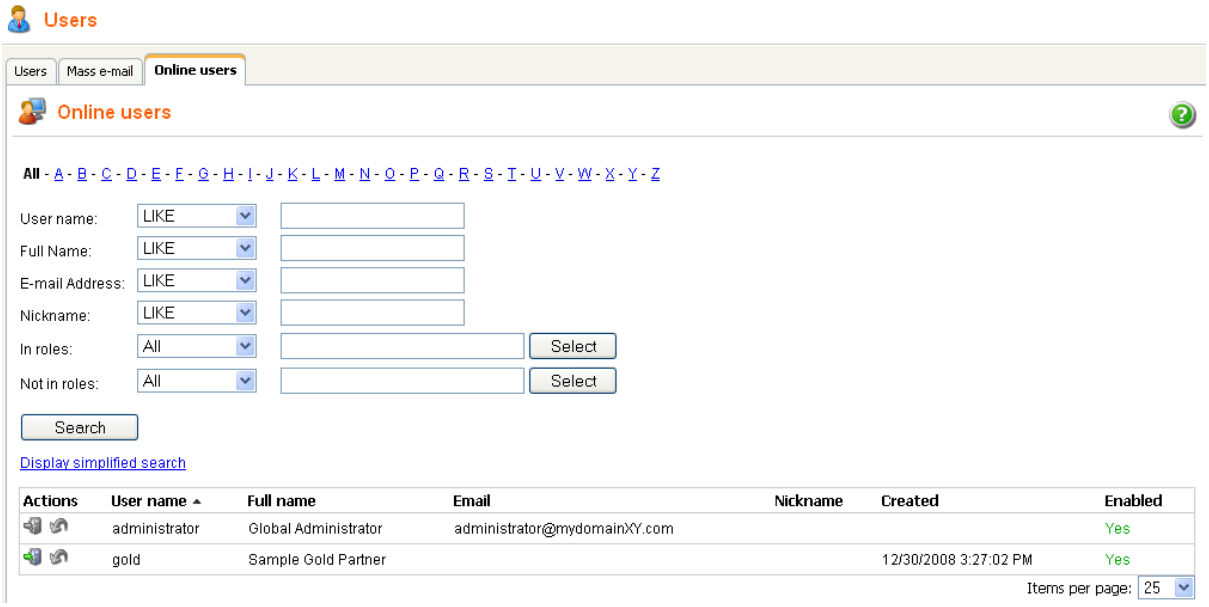
You can type in code names of the user roles manually into the fields, divided by a semicolon (;). Using the **Select** buttons, you can open the role selection pop-up window. SHIFT and CTRL can be used for multiple selection. Click **OK** to confirm the selection.



When you have entered all search criteria, click the **Search** button.

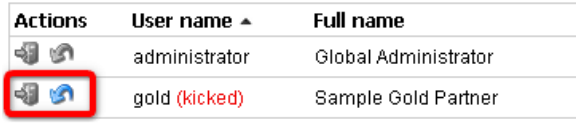
© 2009 Kentico Software

Only those users that match the specified criteria will be listed.



Kicking a user

If you click the **Kick** ( ) icon next to some of the listed users, you can kick the user out of the web site, which means that the user will be logged out of the web site. 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.



© 2009 Kentico Software

31.27.4 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.



The web part displays a summary defined by the **Additional info text** property, followed by the 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 case that no users are currently online.

© 2009 Kentico Software

31.27.5 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 that are the most important ones:

GetOnlineUsers(String, String, Int32, String, String)	Returns UserInfos of online users according to the WHERE condition and ordered by the ORDER BY expression. String - WHERE condition String - ORDER BY expression Int32 - TOP N expression String - location (alias path) of users on the web site String - site name
IsUserOnline(Int32)	Returns true when the user with the specified ID is online. Int32 - ID of the user
KickUser(Int32)	Performs all the necessary actions to kick the user with the specified ID. Int32 - ID of the user

© 2009 Kentico Software

31.28 Polls

31.28.1 Overview

The Polls module allows you to create and publish polls with single or multiple answers.



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.

31.28.2 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**.

© 2009 Kentico Software

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 web sites 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 web site may use different design depending on the design of your web site and may behave differently depending on the web part settings (if you publish it using a web part).

31.28.3 Publishing Polls

There are two ways how you can publish a poll on the web site:

- **content editors** can place the poll on the page using the Insert Poll button in the WYSIWYG editor

© 2009 Kentico Software

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 web site. You can do that in **CMS Desk -> Tools -> Polls**. Click the **Sites** tab and assign the poll to the required site.

31.28.4 Multilingual support

When you use the Polls module on a multilingual web site, 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 web site.

  or

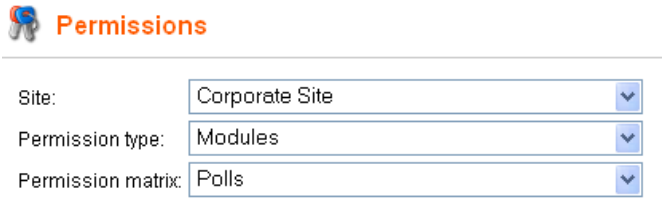
- You can create **a single poll for all languages** - in this case, all votes are tracked together. In order to localize the texts of the poll, you need to use Localization Expressions.

© 2009 Kentico Software

31.28.5 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.



	Display module	Modify	Read
CMS Designers	☐	☐	☐
CMS Desk Administrators	☑	☐	☑
CMS Editors	☑	☐	☑
CMS Public Users	☐	☐	☐
CMS Readers	☐	☐	☐
Everyone	☐	☐	☐
Gold Partners	☐	☐	☐
Registered Users	☐	☐	☐
Silver Partners	☐	☐	☐

You can choose which user roles are authorized to **read** poll details and **modify** polls (includes create/modify/delete). The **Display module** permission makes the module visible in the user interface.

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

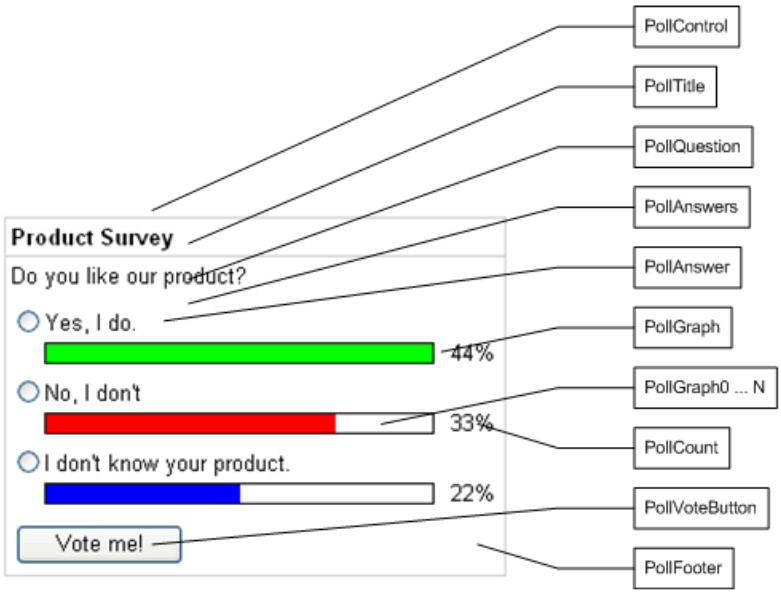
The developers can also customize the behavior of the Polls web part using the following web part properties:

- **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.

© 2009 Kentico Software

31.28.6 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:



© 2009 Kentico Software

31.28.7 Polls API and Internals

31.28.7.1 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.

31.28.7.2 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);
        }
```

© 2009 Kentico Software

31.28.7.3 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);
        }
```

31.28.7.4 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;
```

© 2009 Kentico Software

```
            pollAnswerObj.AnswerCount = 0;
            pollAnswerObj.AnswerPollID = pollObj.PollID;
            pollAnswerObj.AnswerEnabled = true;
            pollAnswerObj.AnswerText = "Yes, I love it.";

            // Save the answer
            PollAnswerInfoProvider.SetPollAnswerInfo(pollAnswerObj);
        }
```

31.28.7.5 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);
                }
            }
        }
```

© 2009 Kentico Software

31.28.7.6 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);
            }
        }
```

31.28.7.7 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);
```

© 2009 Kentico Software

```
        if (pollObj != null)
        {
            // Delete the poll
            PollInfoProvider.DeletePollInfo(pollObj.PollID);
        }
```

© 2009 Kentico Software

31.28.7.8 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.";
            }
        }
```

© 2009 Kentico Software

31.29 Reporting

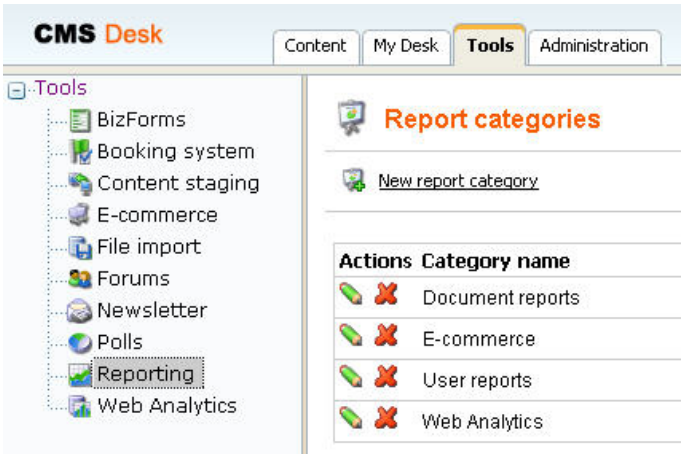
31.29.1 Overview

The Reporting module allows you to create internal reports to watch the activity in the Kentico CMS system and on the web site, such as recently created documents, expired documents, web site visits, etc.. It's also used in the Site Analytics module.

You can manage the reports in **CMS Desk -> Tools -> Reporting**.

31.29.2 Managing report categories

All reports are organized in categories. You can manage the categories in the Reporting module.



Example:

Click New report category and enter the following values:

- **Category display name:** User reports
- **Category code name:** UserReports

Click **OK**.

© 2009 Kentico Software

31.29.3 Creating a new report

Click edit next to some of the report categories and choose the **Reports** tab. 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.

Editing report layout

Enter the following text in the layout editor: **Pages by page template**

Select the text and set its format to **Heading 1**. Click **OK** to save changes.

Adding a table

Click **Add** in the **Tables** section on the right. Enter the following values:

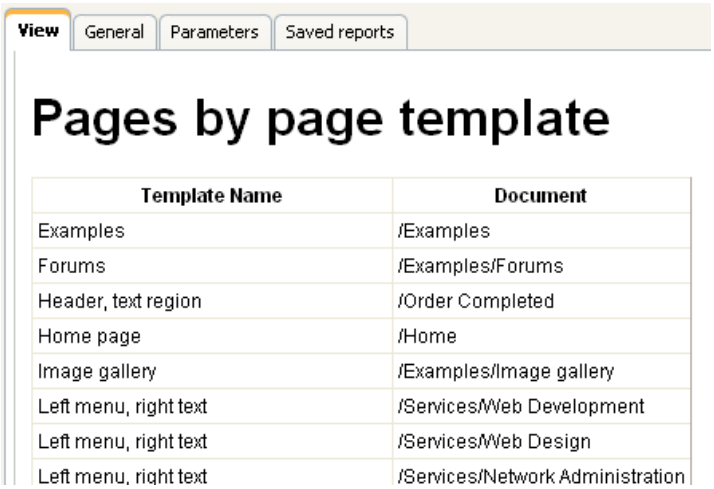
- **Display name:** Pages by Page Template
- **Code name:** PagesByPageTemplate
- **Query:**

```
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

Click **OK**. Place the cursor in the layout editor under the title, choose the table in the **Tables** section and click **Insert**. Click **OK** to save changes and switch to the **View** tab. You will see a report like this:

© 2009 Kentico Software





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 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], ...
```

Adding a Graph

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
```

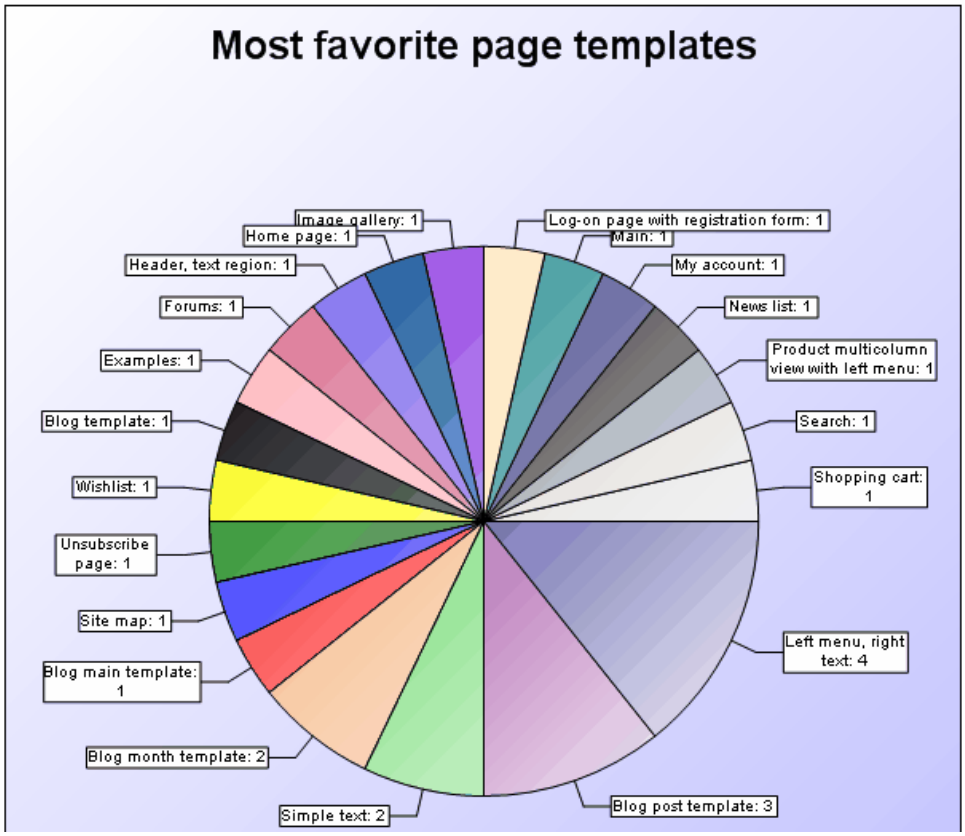
© 2009 Kentico Software

```
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)

© 2009 Kentico Software

Click **OK**. Place the cursor in the layout editor under the table, select the graph in the **Graphs** section and click **Insert**. Click **OK** to save changes and switch to the **View** tab. You will see a graph like this in the report:



© 2009 Kentico Software

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	the following graph types are available: **Pie** - pie graph, accepts only one column for values, value in the third column is used for setting 'pie pieces' offset **Bar** - bar graph, accepts multiple values and displays them next to each other **Bar overlay** - bar graph, accepts multiple values and displays them behind each other with the lower values in the front **Bar stacked** - bar graph, accepts multiple values and displays them on top of each other **Bar percentage** - bar graph, accepts multiple values, displays one column for each category and divides it by percentage determined by the values **Line** - line graph, accepts multiple values and displays them as separate lines
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 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

© 2009 Kentico Software

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 lesser number of colors than is entered, remaining colors are generated automatically
Use symbols	Determines symbols used for values in the line graphs; accepts: *Circle, Diamond, HDash, Plus, Square, Star, Triangle, TriangleDown, VDash, XCross*; if *None* 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 pie pieces offset.

Writing queries for bar charts

The queries for the pie chart 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).

© 2009 Kentico Software

Adding a Scalar Value

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 **OK** to save changes and switch to the **View** tab. You will see a text like this:



Pages with template: 20



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.



Localizing strings in reports

If you need to create a single report in multiple languages, please use the Localization Expressions.

© 2009 Kentico Software

31.29.4 Defining report parameters

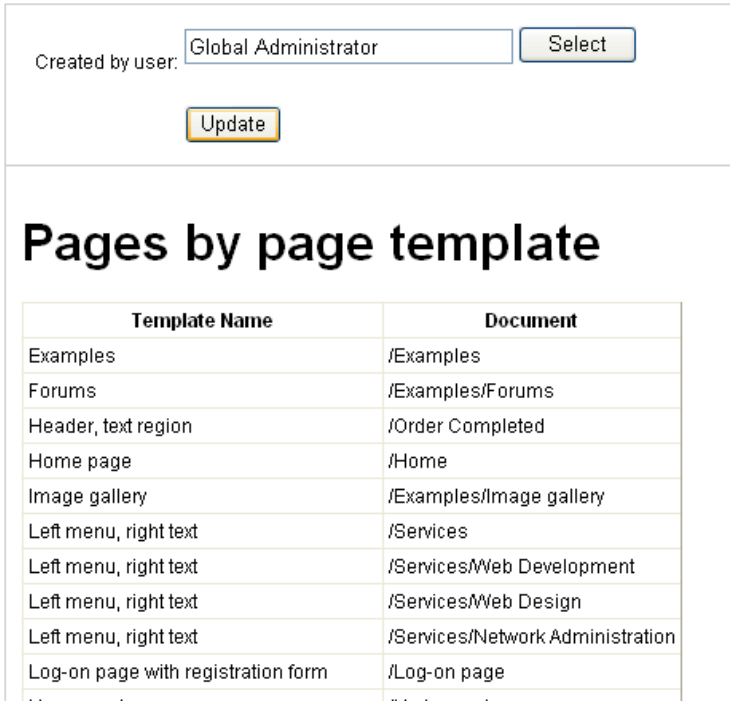
The reports may be filtered using custom parameters. You can define the parameters on the **Parameters** tab in the **Report properties** dialog.

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**. 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 and edit the table SQL query like this:

```
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 DocumentCreatedByUserID = @UserID
ORDER BY PageTemplateDisplayName
```

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 filter like this:



© 2009 Kentico Software

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 web site, you can use 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 document expired on or before {%CMSContextCurrentTime%}:

displays:

List of document expired on or before 8/12/2007 12:06:49 PM:

You can use this syntax for both custom report parameters and context paramters.

© 2009 Kentico Software

31.29.5 Saving report

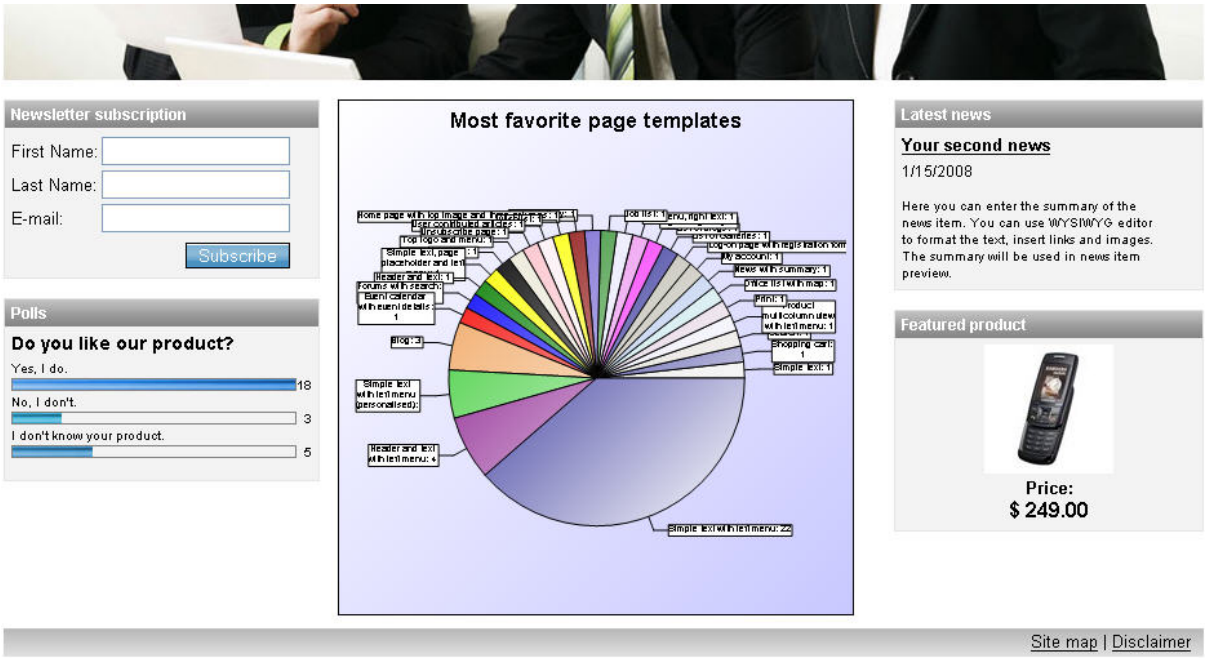
When you view some report, you can save it into the report history using the **Save** button. You can view the saved reports on the **Saved reports** tab. When the data change, the saved reports are not affected.

31.29.6 Displaying report on a web site

If you want to display some report on the web site 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 filter should be displayed on the page (if the report has some parameters specified)

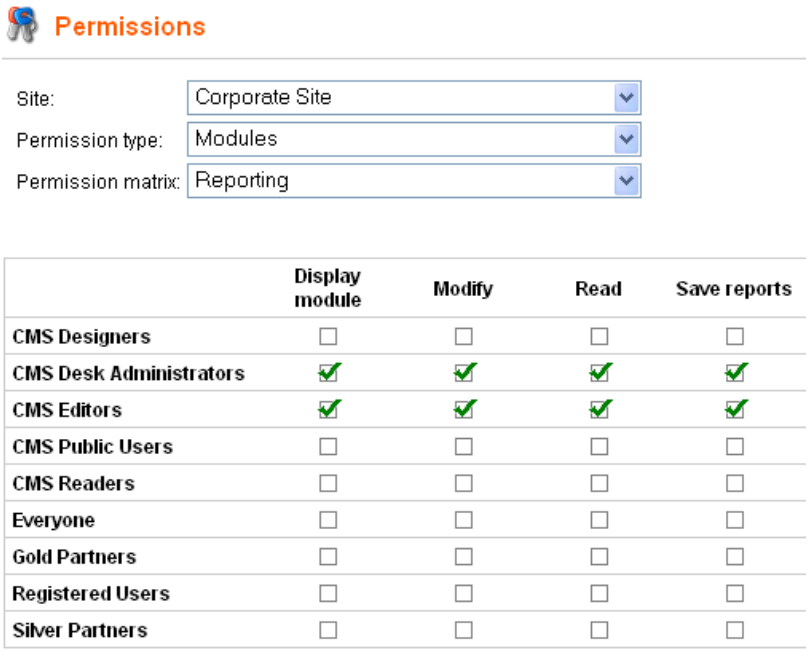
The following figure shows a report displayed on the web site:



© 2009 Kentico Software

31.29.7 Security

You can configure the access to the Reporting module in **CMS Desk -> Administration -> Permissions** . Choose the permission matrix for **Modules** -> **Reporting.**



You can assign user roles roles with the following permissions:

- **Display module -** displays the module in the user interface
- **Modify** - allows users to create, modify and delete reports
- **Read** - allows users to read prepared reports
- **Save reports** - allows users to save reports

Making reports available on the live site

The **Allow public users to see this report** property of the 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.

© 2009 Kentico Software

31.29.8 Reporting internals and API

31.29.8.1 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

You can manage the reports using the classes in the CMS.Reporting namespace:

- 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 the reports using the API.

© 2009 Kentico Software

31.29.8.2 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 occured or
    // SavedReportID of the successfully saved report
     displayReportControl.SaveReport();
}

protected override void Render(HtmlTextWriter writer)
{
    base.Render(writer);
}
```

© 2009 Kentico Software

31.29.8.3 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;
        }
```

© 2009 Kentico Software

31.30 RSS feeds

31.30.1 Setting up a RSS Feed

Kentico CMS allows you to publish content using a RSS 2.0 feed. The default installation contains a simple `CMSPages\NewsRss.aspx` page that 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 figure shows the code of the rss.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 a RSS Feed 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.

© 2009 Kentico Software

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=""

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 trasformation **cms.article.rssitem** like this in **Site Manager -> Development -> Document Types -> ... edit Article ... -> Transformations**:

```
<item>
     <guid isPermaLink="true"><![CDATA[<%# GetAbsoluteUrl(GetDocumentUrl()) %>]]
></guid>
     <title><![CDATA[<%# Eval("ArticleTitle") %>]]></title>
     <description><![CDATA[<%# Eval("ArticleText") %>]]></description>
     <pubDate><%# Convert.ToDateTime(Eval("DocumentModifiedWhen")).ToString("r") %
></pubDate>
     <link><![CDATA[<%# GetAbsoluteUrl(GetDocumentUrl()) %>]]></link>
</item>
```

This code renders the particular items.

© 2009 Kentico Software

31.31 Smart search

31.31.1 Overview

The Smart search module enables index-based search of the content of your web site. 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 this 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 here.

2. Create an index. Assign it to a site and culture and define content that will be indexed. Learn here.

3. Use some of the Smart search web parts on your site. Learn here.

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 this chapter.

In Kentico CMS versions prior to 4.1, there was just the 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 here.

31.31.2 How it works

Information about the content of your web site is stored in an **index file**. The index files are located in **~/App_Data/CMSModules/SmartSearch/{Index code name}** within your web site's folder.

Document in your Kentico CMS system may be 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

© 2009 Kentico Software

tasks.

3. When the Smart search module finds the task, it processes it and the new page gets indexed.

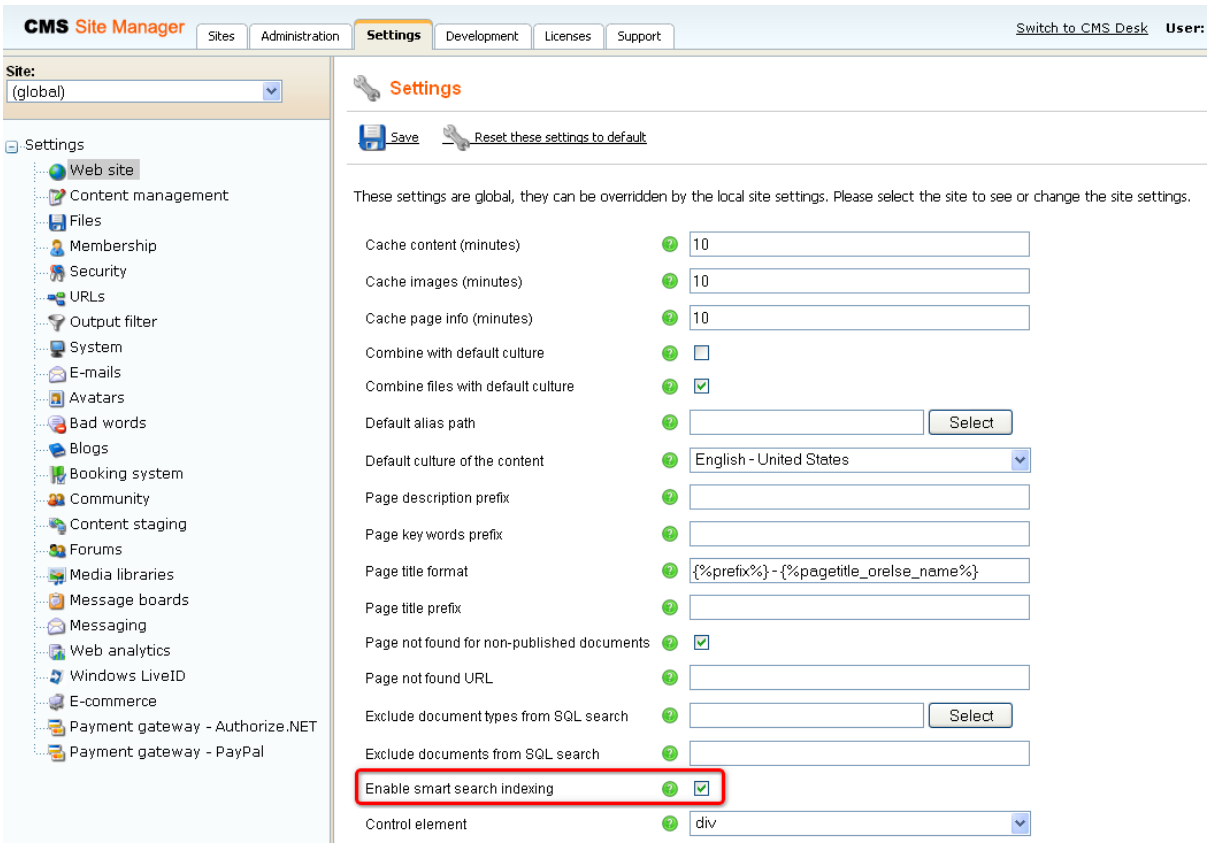
4. Now a user comes to the site and sends a search request via some Smart search web part.

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.

31.31.3 Enabling Smart search indexing

To enable Smart search indexing, go to **Site Manager -> Settings -> Web site**, check the **Enable smart search indexing** check-box and click **Save**.



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.

31.31.4 Creating an index

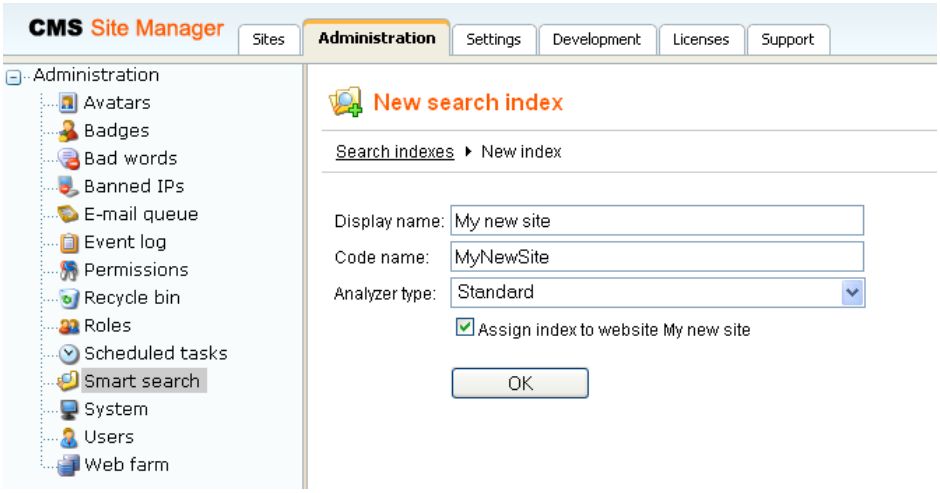
Information about the content of your site are stored in indexes. You need to have the content of your site indexed in order for it to be searchable using the Smart search module. The following example shows how an index can be created and what options you have when creating it.

© 2009 Kentico Software

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 web site code
- **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 need 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

Click **OK**.

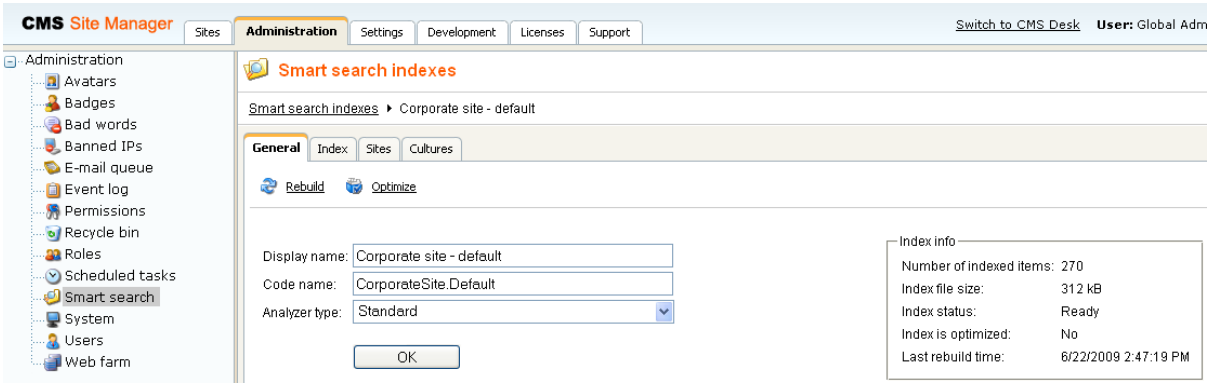


2. You will be redirected to the index's editing interface. The **General** tab, which you will be redirected to, shows the same details that you just entered. Notice the info box on the right, which shows general information about the index.

The following two action can also be performed on this tab, but it would make no sense to perform them at this stage of creating a new index:

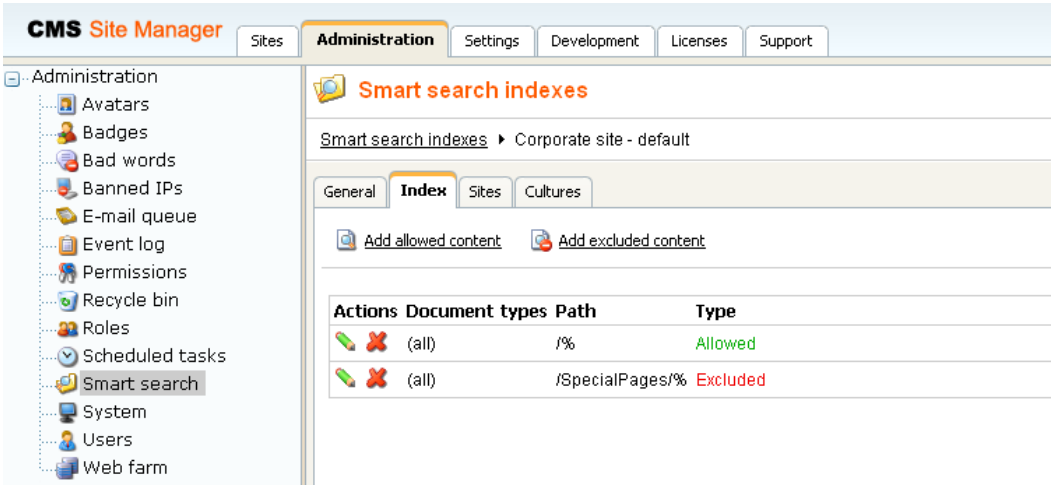
- **Rebuild** ( ) - deletes the original index and the specified content gets indexed again; the index is automatically optimized after successful rebuild
- **Optimize** ( ) - de-fragments the index, which results in better search performance, particularly in case of large indexes

© 2009 Kentico Software



3. Switch to the **Index** tab. On this tab, you can define which parts of the site will be included in/ excluded from the index. This can be defined by **Alias path** and **Document type**. You can see the content definitions in the list, while the **Type** column shows if the defined content is **Allowed** (included) or **Excluded**.

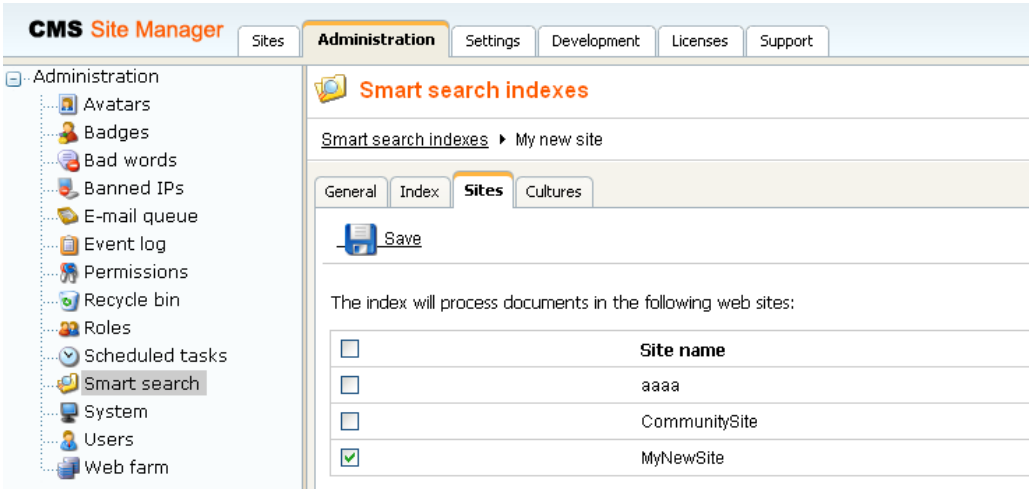
Using the **Add allowed content** ( ) and **Add excluded content** ( ) links, you can access the dialogs for defining new allowed/excluded content. Information on how allowed and excluded content can be defined can be found in this topic.



4. Now switch to the **Sites** tab. Make sure that the index is assigned to the appropriate web site. You may also want to optionally assign the index to some other site in order to have multi-site search results.

Click **Save**.

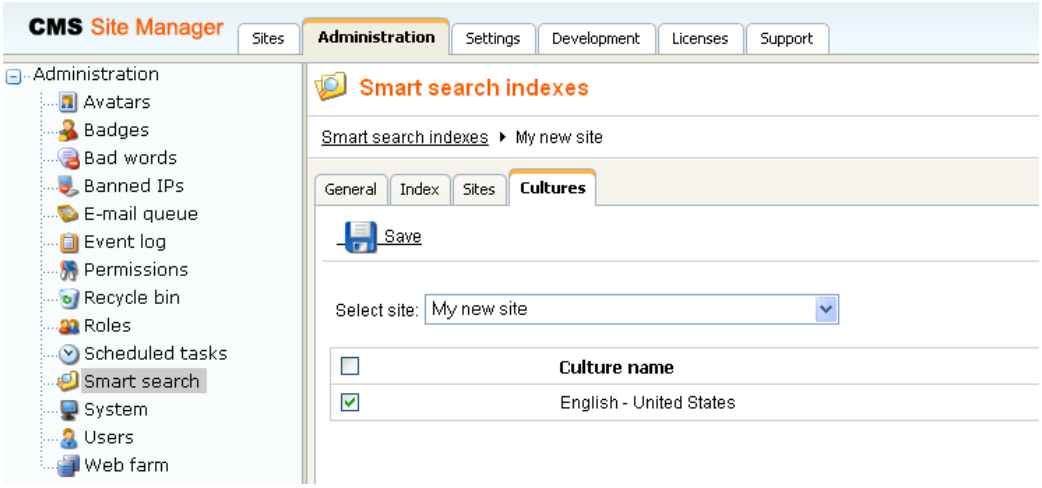
© 2009 Kentico Software



© 2009 Kentico Software

5. Switch to the **Cultures** tab. 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.



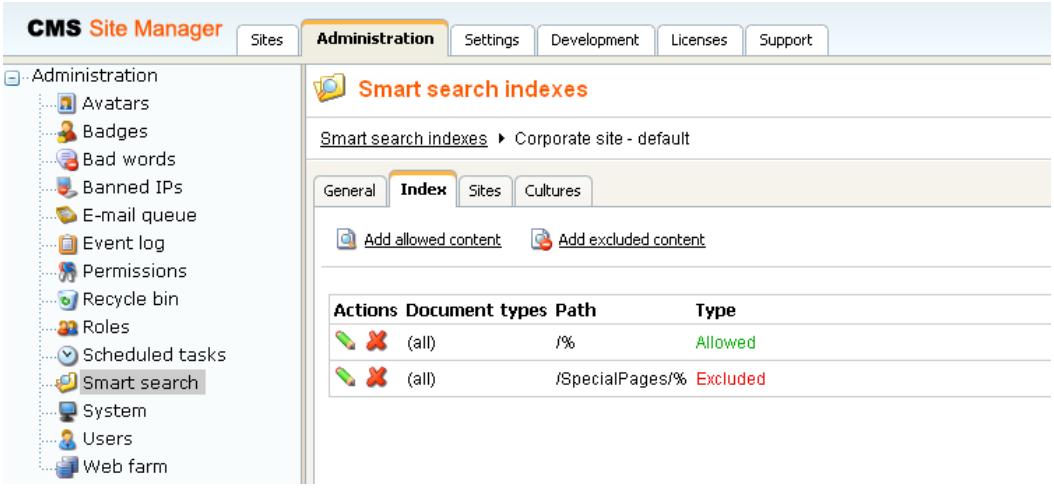
6. Finally, go back to the **General** tab and choose to **Rebuild** ( ) the index. This needs to be done only for the first time. Any further changes made to the site will be indexed automatically.

31.31.5 Defining index content

On the **Index** tab of an index's editing interface, you can define which content 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 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 dialogs for defining new allowed/excluded content can be accessed using the **Add allowed content** ( ) and **Add excluded content** ( ) links.



© 2009 Kentico Software

New allowed content

In this dialog, you are defining what part of the web site 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.

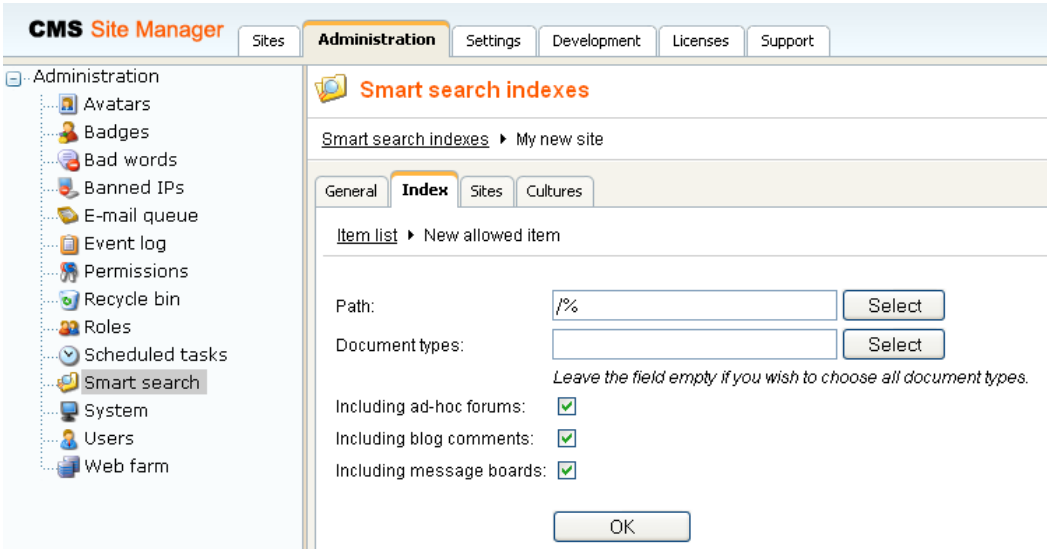
- **Path**: empty
- **Document types**: CMS.News

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.

© 2009 Kentico Software



© 2009 Kentico Software

New excluded content

In this dialog, you are defining what part of the web site 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

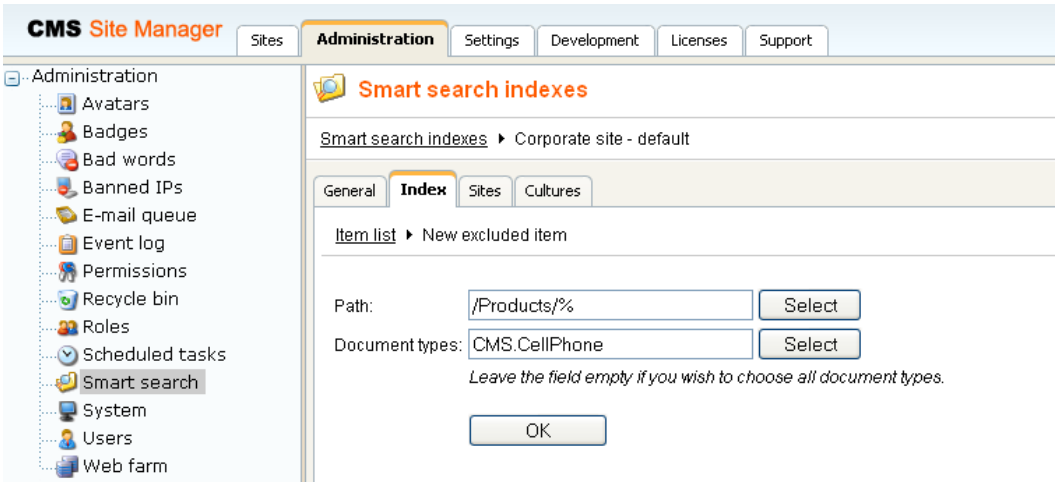
In this case, only the /Partners page will be excluded from indexing, not the pages under it.

- **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.



© 2009 Kentico Software

31.31.6 Document-level search settings

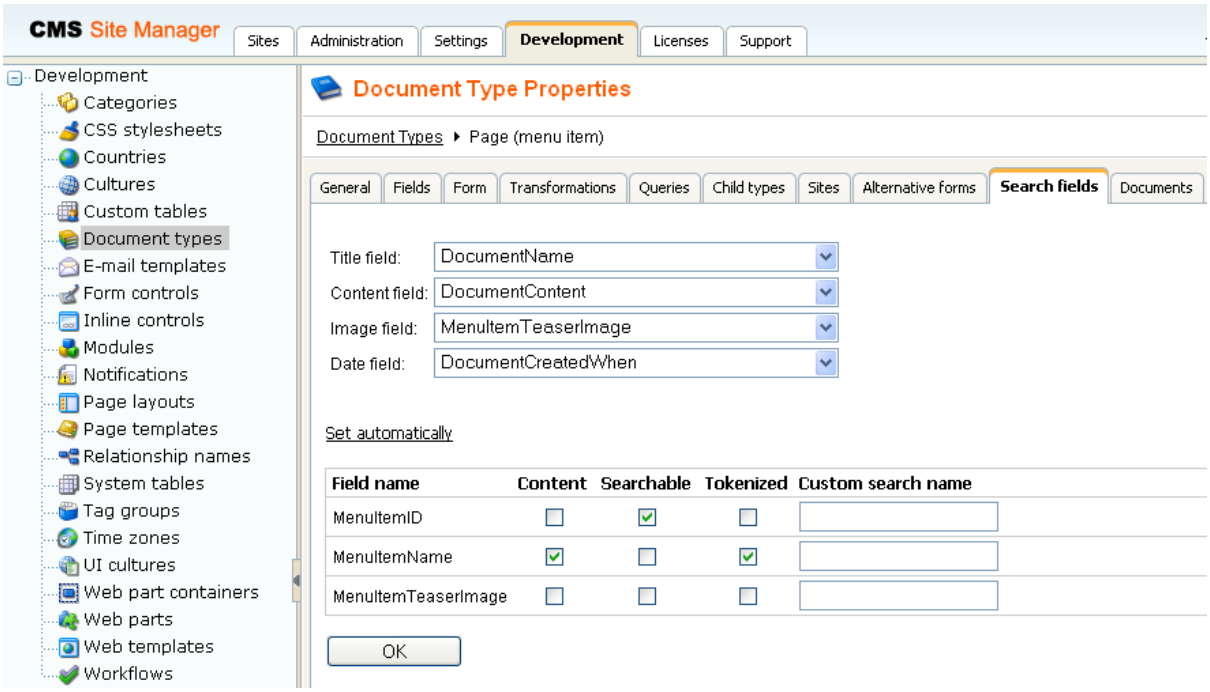
You can specify how documents of a certain document type will be indexed in **Site Manager -> Development -> Document types -> Edit (✎) a doctype -> Search fields** tab.

In the top part of the tab, you can specify how documents of this type 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
- **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 document 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



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:

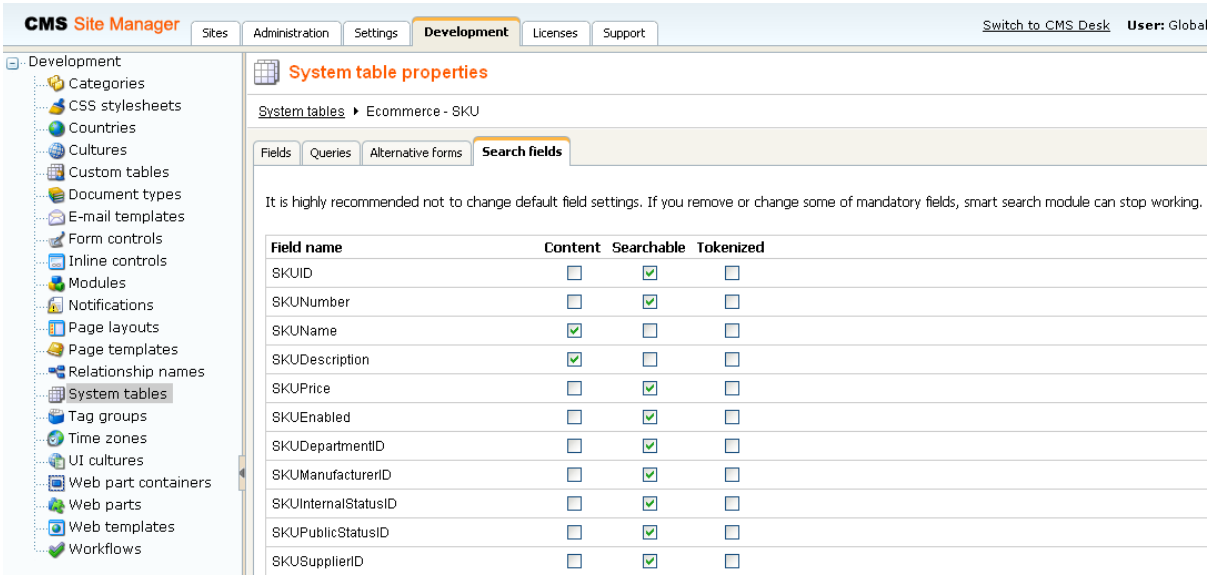
- **Content** - if checked, content of the field will be indexed and searchable the standard way
- **Searchable** - if checked, content of the field will be searchable in format **<field code name>:<searched phrase>**, which searches only through the fields and not through the other fields
- **Tokenized** - indicates if the content of the field should be processed by the analyzer when indexing;

© 2009 Kentico Software

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.

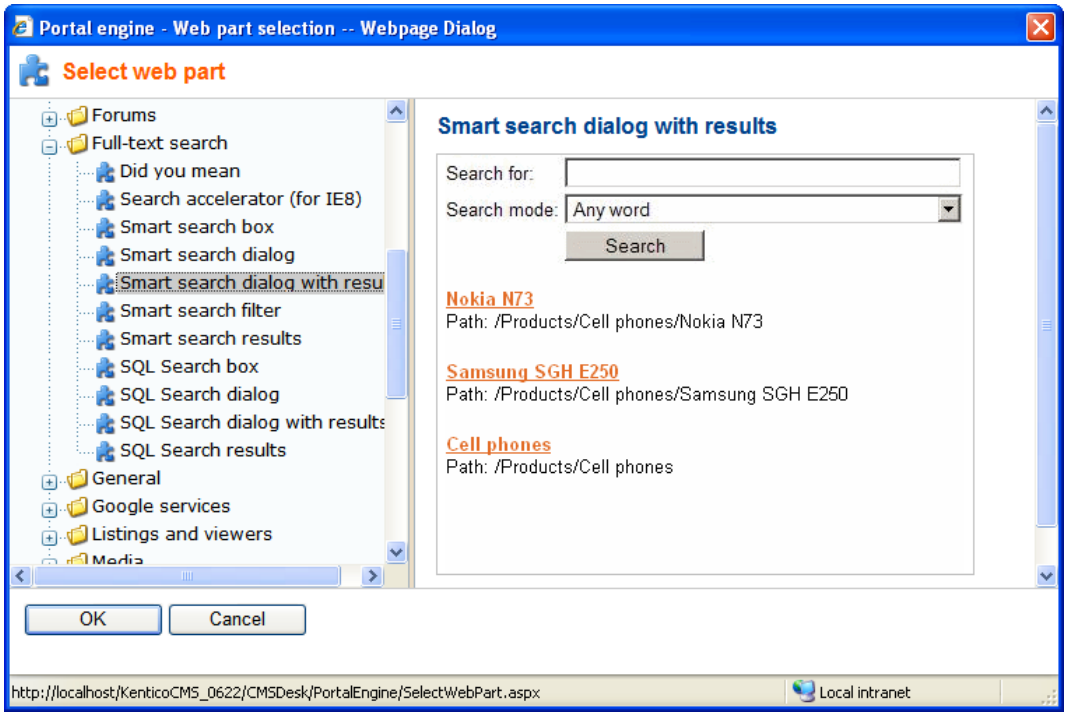


© 2009 Kentico Software

31.31.7 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.

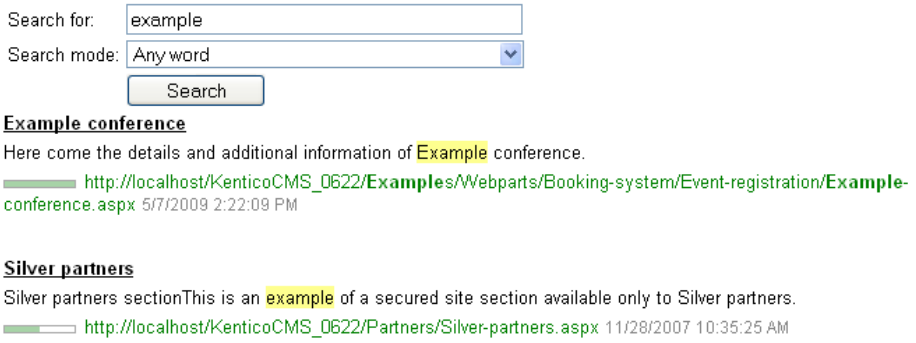


The following web parts come with the Smart search module:

© 2009 Kentico Software

Smart search dialog with results

This is the all-in-one web part for both searching and displaying search results.



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.



Smart search box

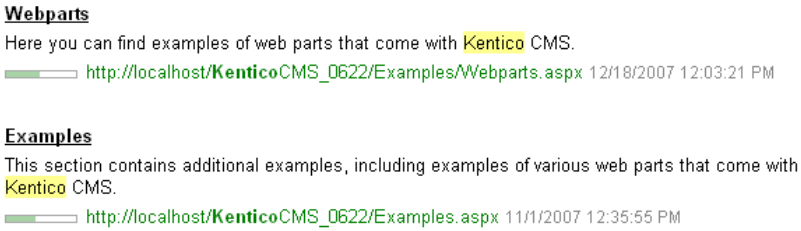
This web part is similar to the Smart search dialog, with the difference that users can not select the Search mode, which is hard-set in its web part properties. It is useful where limited space is available for the web part, e.g. in menus, etc.



© 2009 Kentico Software

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.



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.



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 sort	Using this property, you can define how search results will be sorted (e.g. articleid DESC).

© 2009 Kentico Software

31.31.8 Search syntax

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 of 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>:yyyymmddhhmm**. 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.

- {%CurrentTime|(tosearchdatetime)%}

You can also use the **|(add)** parameter, which adds the specified amount of **seconds** to the value.

- {%CurrentTime|(add)-10080|(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:

© 2009 Kentico Software

- newsid:[(int)22 TO (int)22]

© 2009 Kentico Software

31.31.9 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 a **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.

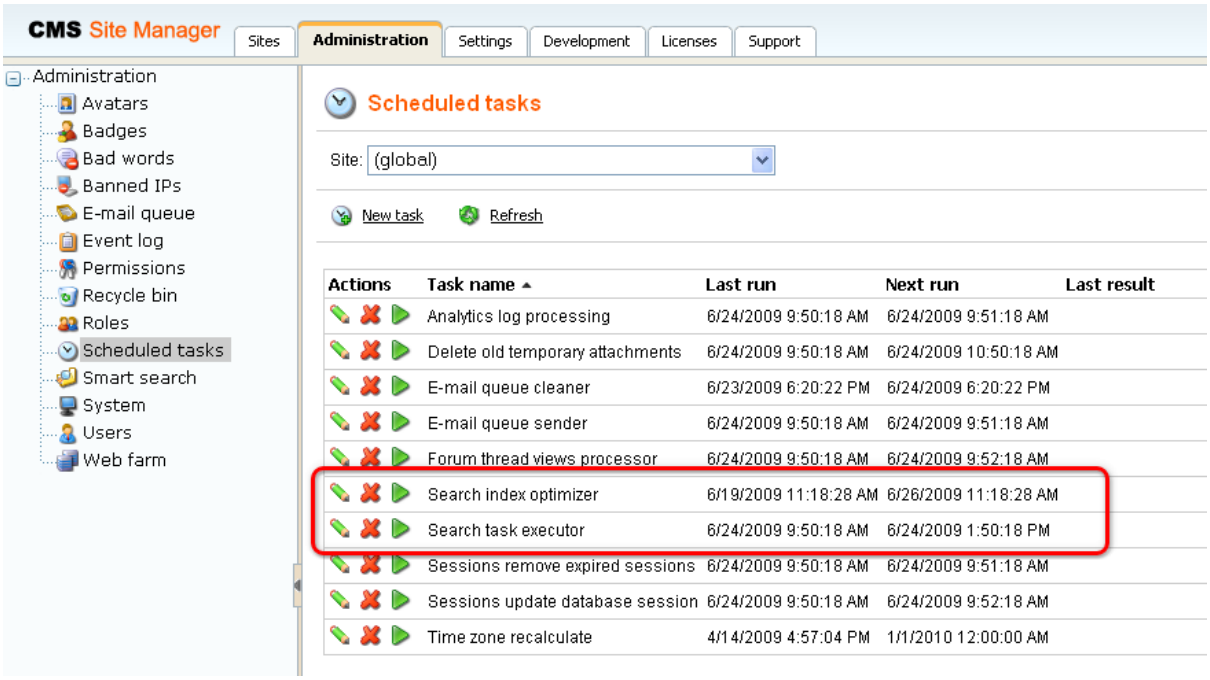
Property Name	Description
Filter is conditional	If true, the filter limit the searched documents. If false, the filter determines the sorting of search results.
Search webpart ID	ID of the Smart search dialog or Smart search dialog with results web part to which the filter is connected.
Values	Using this property, you can specify the possible values that can be selected using the filter. You enter one option per line in format: **<fake dataset field>;<value of the field>;<displayed text>** Examples: • ;;All • +classname;cms.cellphone;Cell phones • +_created;[{%CurrentTime|(add)-10080|(tosearchdatetime)%} TO {% CurrentTime|(tosearchdatetime)%}];Past week • ##SCORE##;;Score • documentcreatedwhen;;Creation date

© 2009 Kentico Software

31.31.10 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



31.31.11 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.

© 2009 Kentico Software

31.31.12 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>")** funciton: Eval("score"), Eval("title"), ...

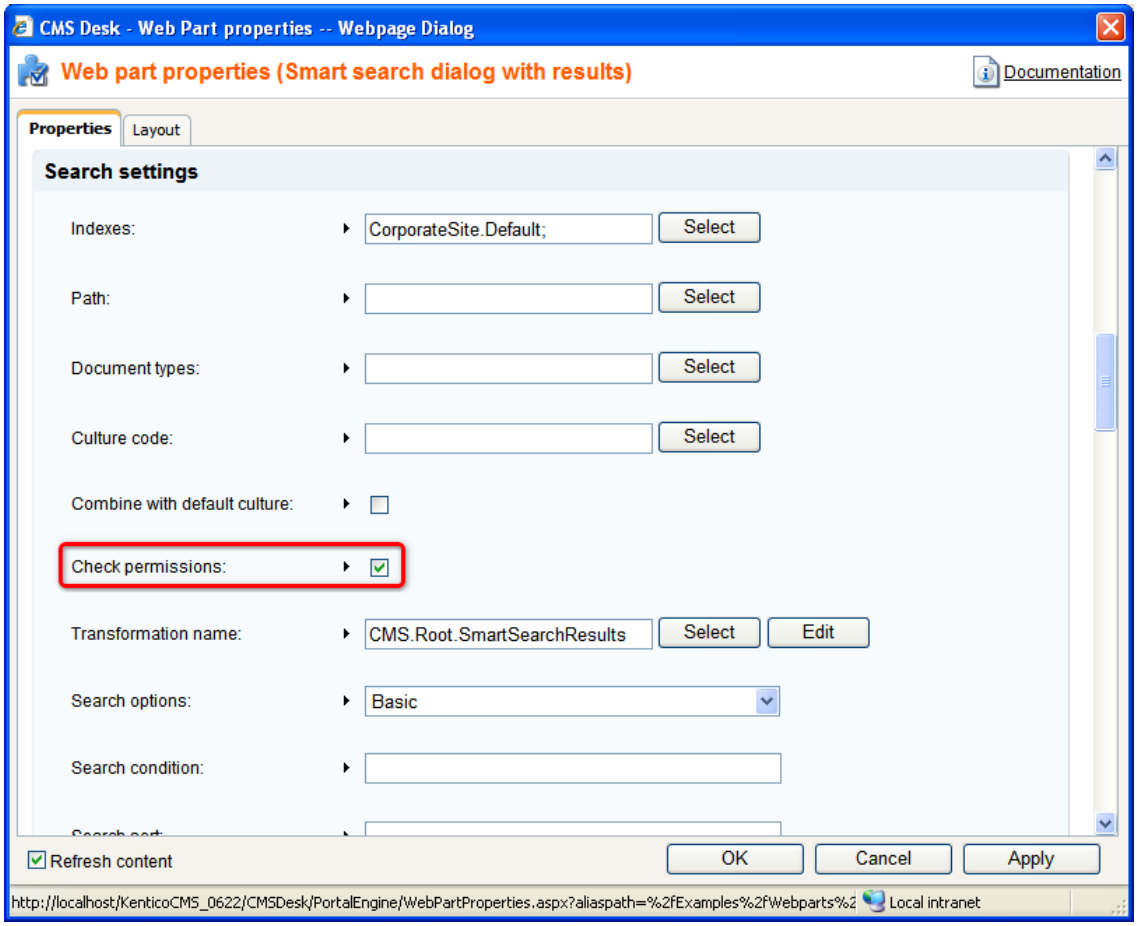
You can also use the following methods in your transformations:

- **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 maxSideSize)** - 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

© 2009 Kentico Software

31.31.13 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 her in the search results.



31.31.14 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 web site using the web parts in the Full-text search

© 2009 Kentico Software

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 -> Web Site 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 web site sections** from search by setting the **Exclude documents from search** in Site Manager -> Settings -> Web Site 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 web site 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 do 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.

© 2009 Kentico Software

31.32 Tags

31.32.1 Tags module overview

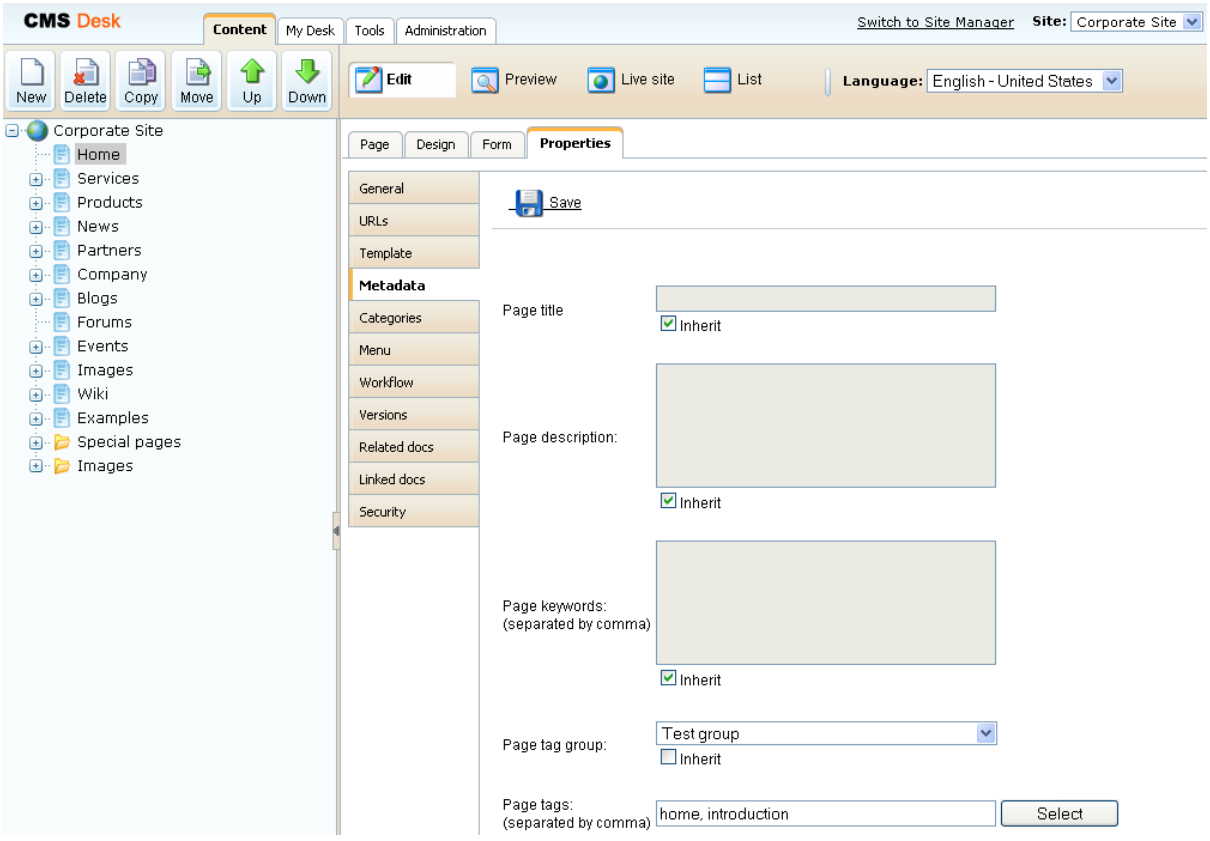
The Tags module allows you to tag documents with key words - **tags** - depending on the content of the document. Tags are organized in **tag groups**. The module comes with the Tag cloud web part that can display all tags within one tag group. The tags are displayed in a form of links by the web part. Clicking a link in the tag cloud redirects you to another page, where a repeated displays a list of all documents tagged with the clicked tag.

31.32.2 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.



© 2009 Kentico Software

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.

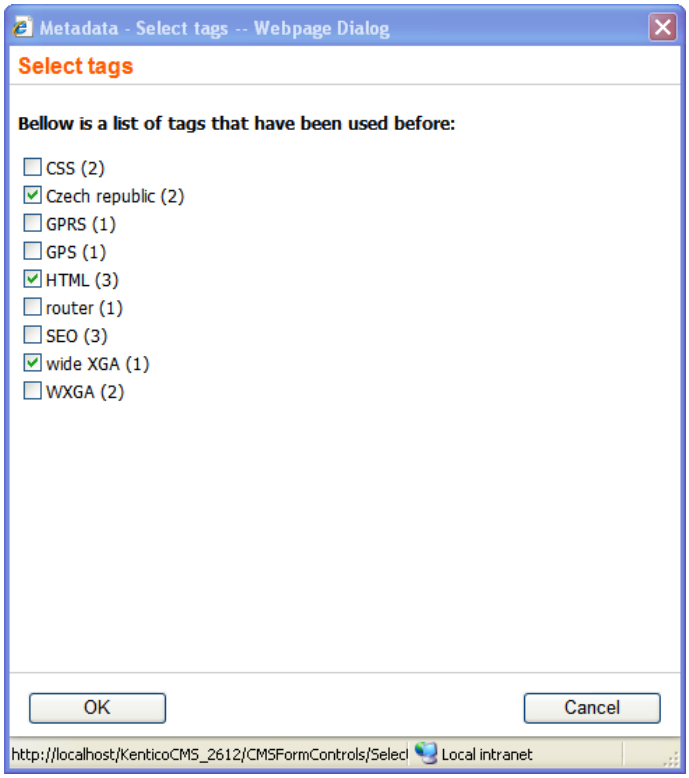


Please note

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.

© 2009 Kentico Software



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

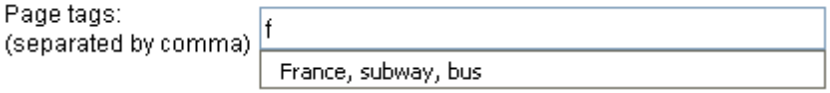
In case that you are entering a tag consisting of more than one word, you should enclose it within quotation marks. Multiple long tags can also be entered and can be also divided by both blank spaces and commas:

"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@#$"

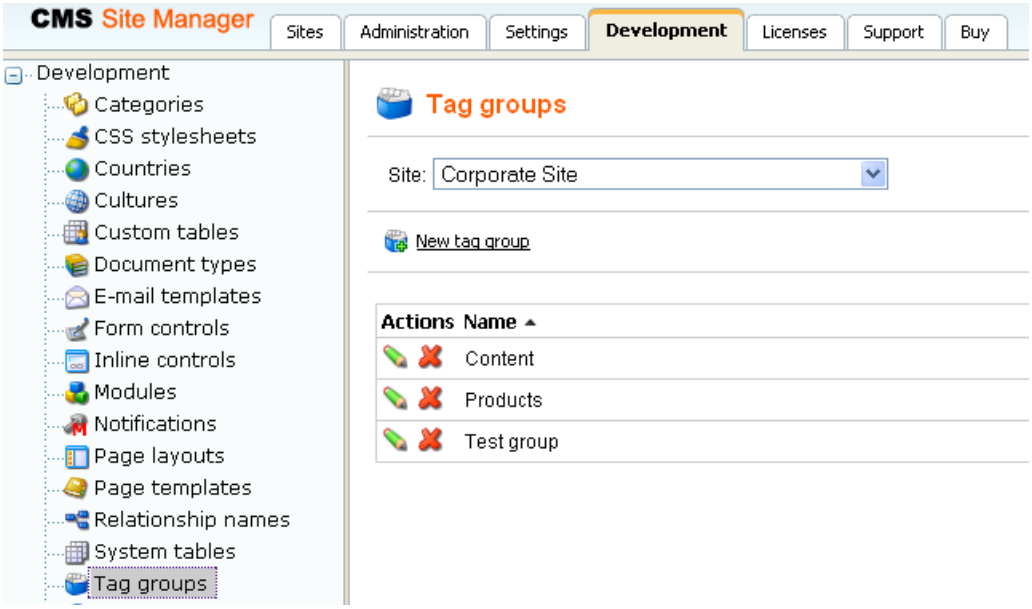
The page tags field has also an insinuation function implemented. This functions offers you tags from the selected tag group while you are writing:



© 2009 Kentico Software

31.32.3 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 -> Administration -> Tag groups**. You can **Edit** ( ) or **Delete** ( ) the listed tag groups in this section.



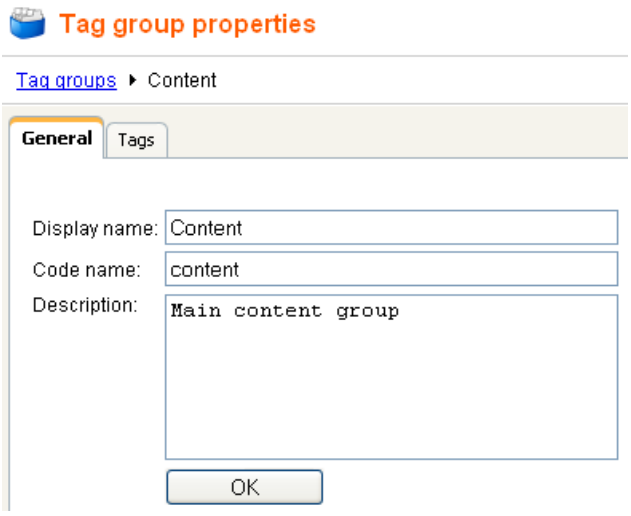
New tag groups can be created by clicking the **New tag group** link. The following properties will have to be entered:

- **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.

© 2009 Kentico Software

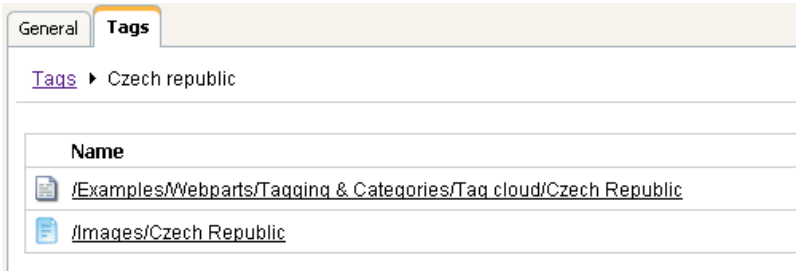
If you choose to **Edit** some of the tag groups, its properties can be changed on the **General** tab.



The **Tags** tab displays a list of all tags in the selected group:



If you click the icon next to a tag, a list of links to documents tagged with the tag will be displayed.



© 2009 Kentico Software

31.32.4 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.



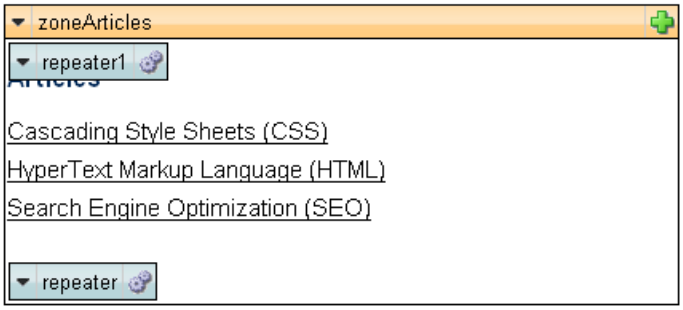
The web part has the following specific properties:

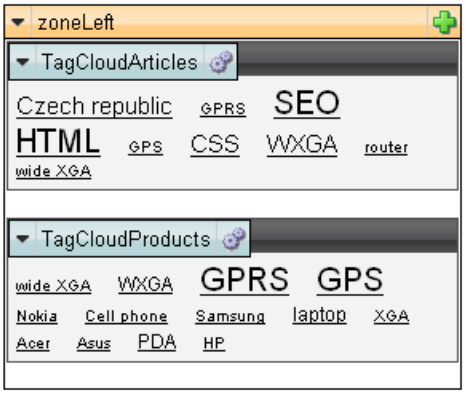
Tag group name	Name of the tag group from that the tags will be displayed.
Document list URL	URL of the page on that the documents list will be displayed after clicking some of the tags.
Query string parameter name	Name of the parameter via that the tag ID will be transferred.
Tag separator	Separator 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.
Site name	Code name of the web site from which you want to display the content. If you leave the value empty, the content is retrieved from the current web site.
Alias path	Path of the documents to be displayed.
Culture code	Culture version of the displayed content.
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.
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 not, all tags from the selected tag group will be displayed.
Max relative level	Maximum nesting level. It specifies the number of sub-levels in the content tree that should be included in the displayed content.
ORDER BY expression	ORDER BY part of the SQL query used to retrieve tags.
Select top N documents	Number of documents that will be displayed.
Where condition	WHERE part of the SQL query used to retrieve tags.

© 2009 Kentico Software

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 to 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
```

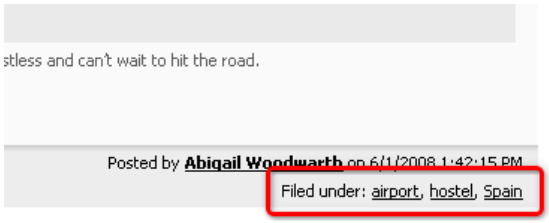
© 2009 Kentico Software

```
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.



© 2009 Kentico Software

31.33 Time zones

31.33.1 Overview

The Time zones module enables configuration of time zone for the physical location of the server, for particular web sites and even for particular users.

A typical example of such use is displaying the time of forum post when you have a global community – while the server may be located in New York (GMT -5:00), the visitor coming from Paris (GMT +1:00) may see her new posts were added at 8am, while she would expect seeing 2pm according to her current time.

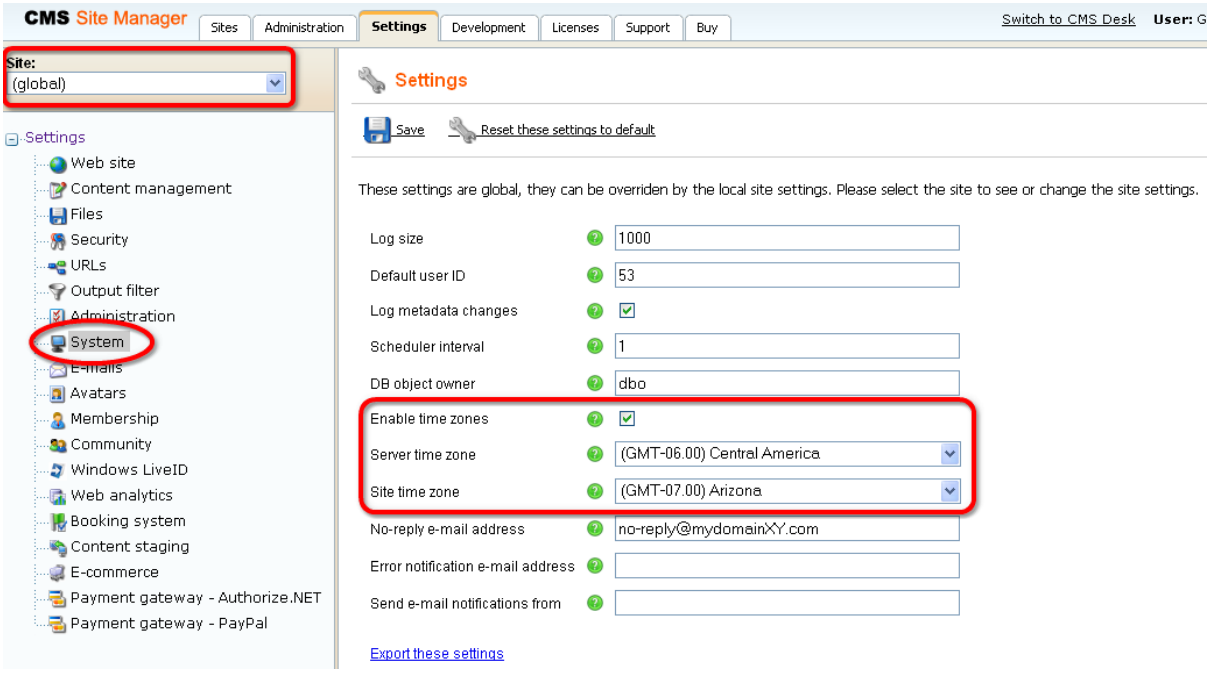
Another example is a web site of a global company that runs on a server in New York, but contains content for a French office. In this case, French visitor may wonder why the current time displayed by the server is 8am while it's 2pm in Paris. That's when you use the built-in support for multiple time zones.

Time zones are currently supported in all modules. The administration interface (CMS Desk and CMS Site Manager) does not reflect the time zone settings.

31.33.2 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 list:

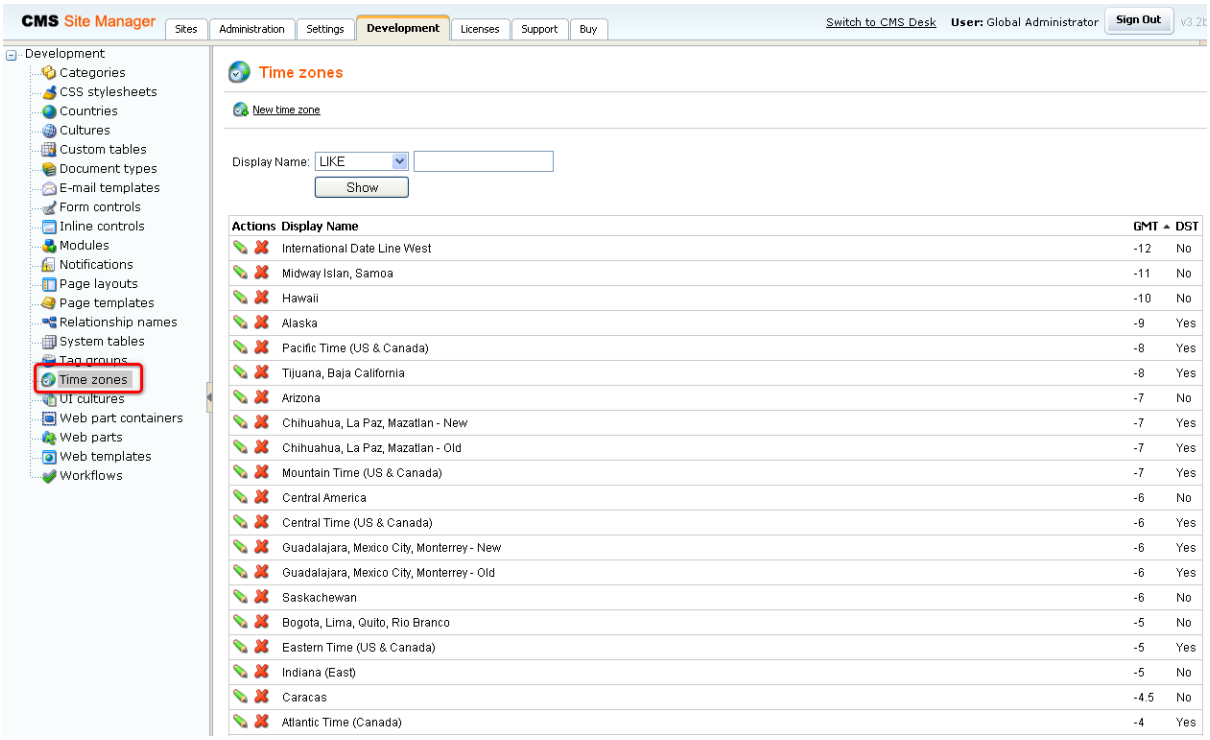
- **Server time zone** - time zone of the physical server location
- **Site time zone** - default time zone of the web site selected by the **Site** drop-down list in the top-left part of the page; this time zone can also be set globally and inherited by sites that don't have it set differently



© 2009 Kentico Software

31.33.3 Managing time zones

Time zones can be managed in **Site Manager -> Development -> Time zones**.



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.

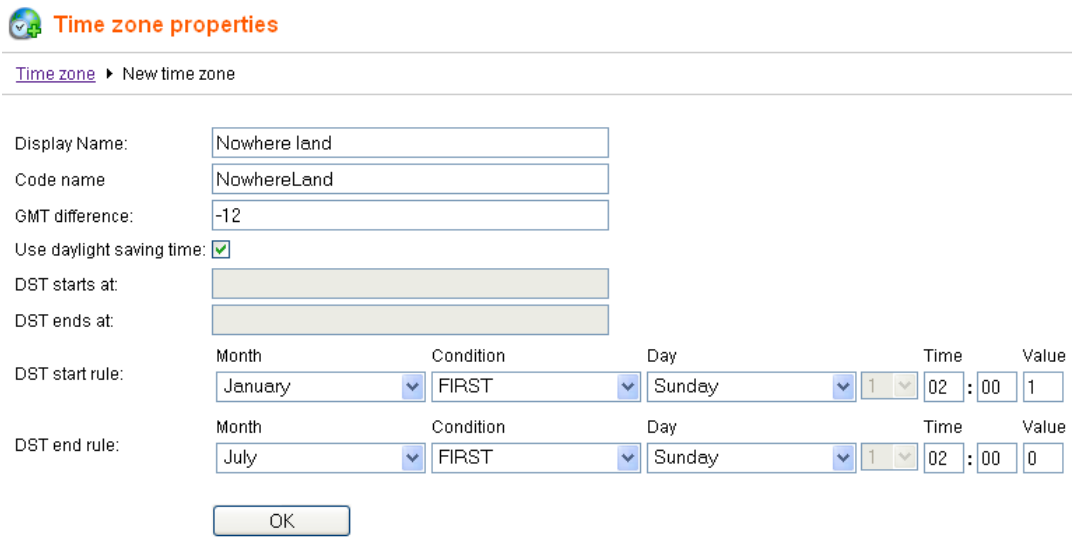
© 2009 Kentico Software

Creating a new time zone

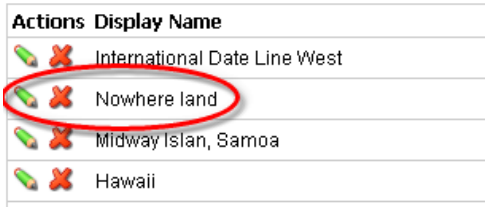
In the following example, you will learn how to create a new time zone:

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 the new time zone present among the records.



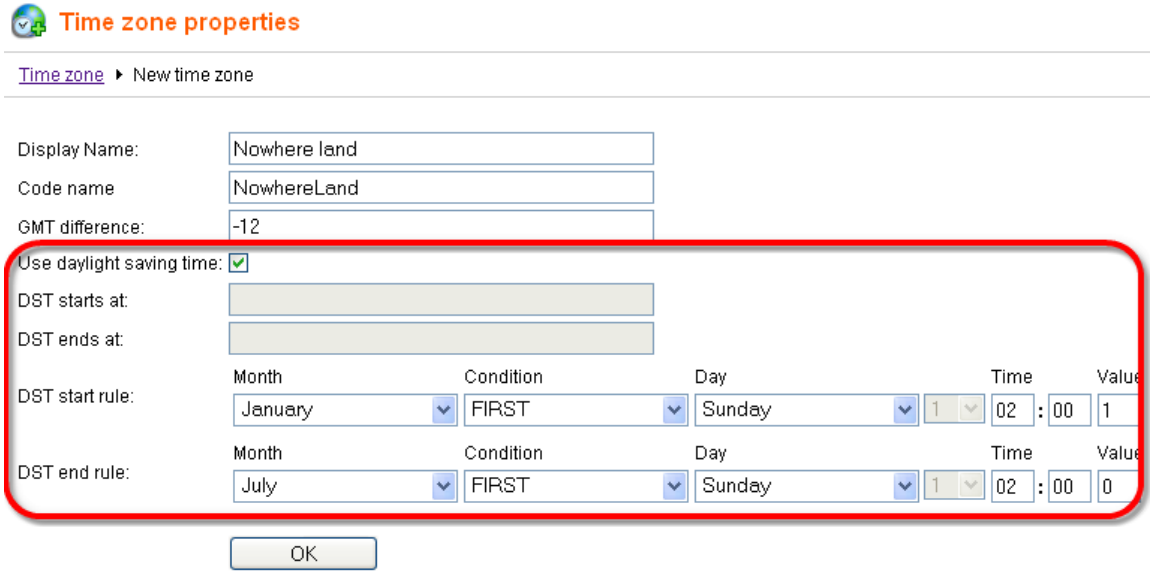
31.33.4 Daylight saving time

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 an one hour's advance in 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

© 2009 Kentico Software

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.



1. The first thing you need to do is to check the **Use daylight saving time** check-box. This enables the time zone to use the DST.

2. Now when you have the DST enabled, you have to set the **DST start rule** and **DST end rule** for the current time zone. First, select the month in that 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 will the change 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.

© 2009 Kentico Software

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.

31.33.5 Use in web parts

As you may have already noticed, all web parts 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:

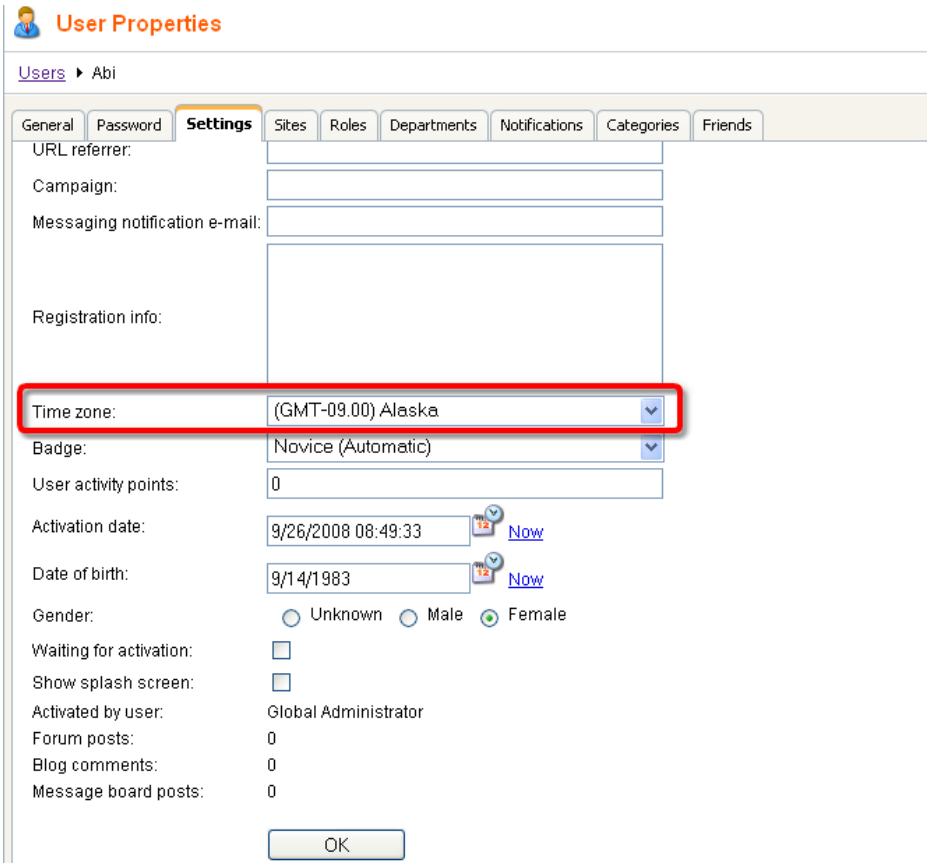
TimeZone type	**Inherit** - inherits the time zone setting from the Page placeholder in which it is displayed (typically the one on the master page) **Server** - server time zone settings will be used by the web part **WebSite** - web site time zone settings will be used by the web part **User** - user's 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 some of the time zones, the selected time zone will be used by the web part, regardless of the user's or web site time zone settings.

In 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 here.

© 2009 Kentico Software

31.33.6 Setting user's time zone

Each user can have her own time zone settings. Where applicable, this time zone settings is used instead of the web site's default time zone. 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.



© 2009 Kentico Software

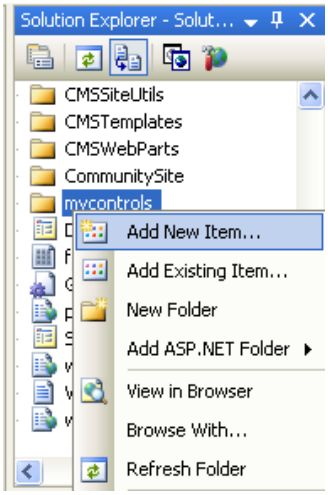
31.33.7 Displaying correct time in your code

The following methods can be used in transformation code to display correct time according to time zone settings.

<%# GetDateTime(DateTime.Now) %>	Returns date-time value according to web part time zone settings.
<%# GetSiteDateTime(DateTime.Now) %>	Returns date-time according to site time zone.
<%# GetUserDateTime(DateTime.Now) %>	Returns date-time according to current user time zone.
<%# GetCustomDateTime(DateTime.Now, "GreenwichMeanTime") %>	Returns date-time according to time zone given in the second parameter.

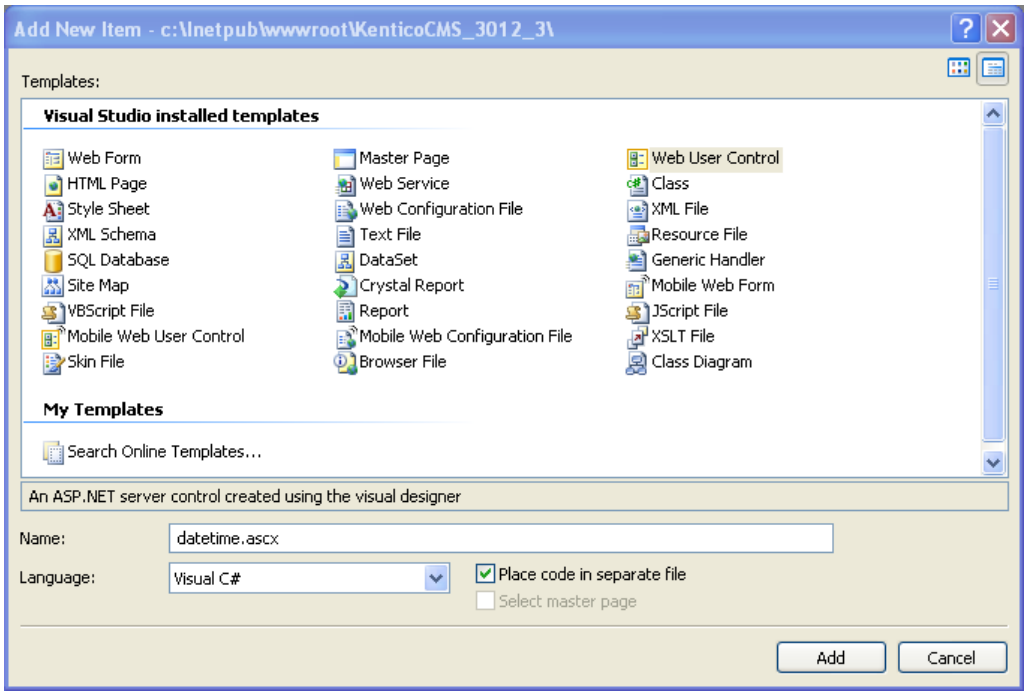
In the following example, you will learn how to use the General -> User control web part to display current date and time on your site, which will reflect the time zone settings of the web part.

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.



© 2009 Kentico Software

2. Create a new WebUserControl in the mycontrols folder, name it datetime.ascx.



3. Add the following code to the PageLoad method of the user control.

```
Label1.Text = CMS.CMSHelper.CMSContext.ConvertDateTime(DateTime.Now, this).
ToString();
```

4. Add the General -> User control web part somewhere to some page of your web site. 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 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.

© 2009 Kentico Software

31.34 User contributions (Wiki)

31.34.1 User contributions overview

The **User contributions** module allows you to create content editing interface for site members. It means that chosen web site 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 an allow community members to add news without going to CMS Desk.

2. Partner directory

Your business partners can manage their profile on your web site 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**.

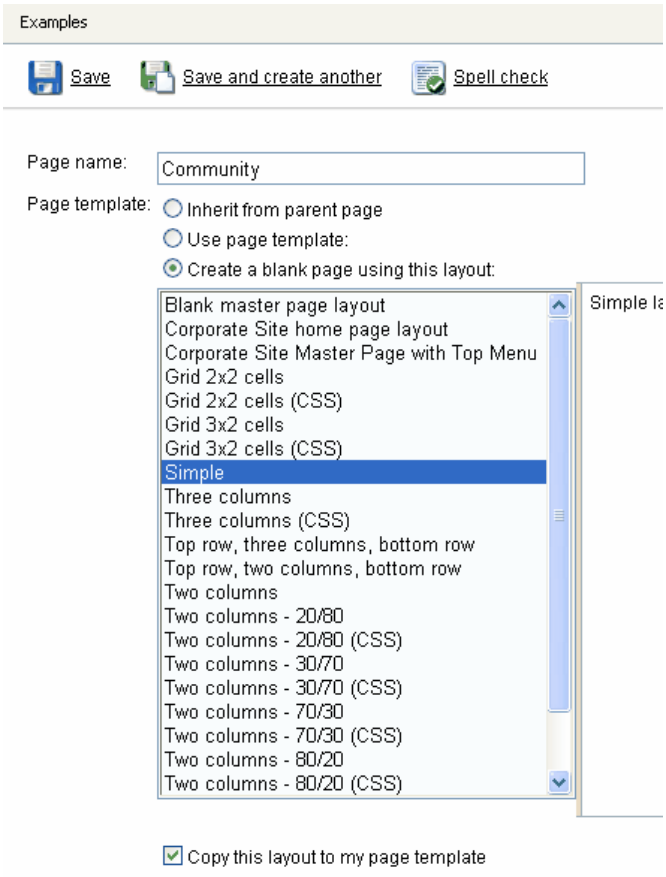
31.34.2 Example: Publishing community news

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 her previously posted news. The example assumes you are using the sample Corporate Site.

© 2009 Kentico Software

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

© 2009 Kentico Software

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 web site (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:

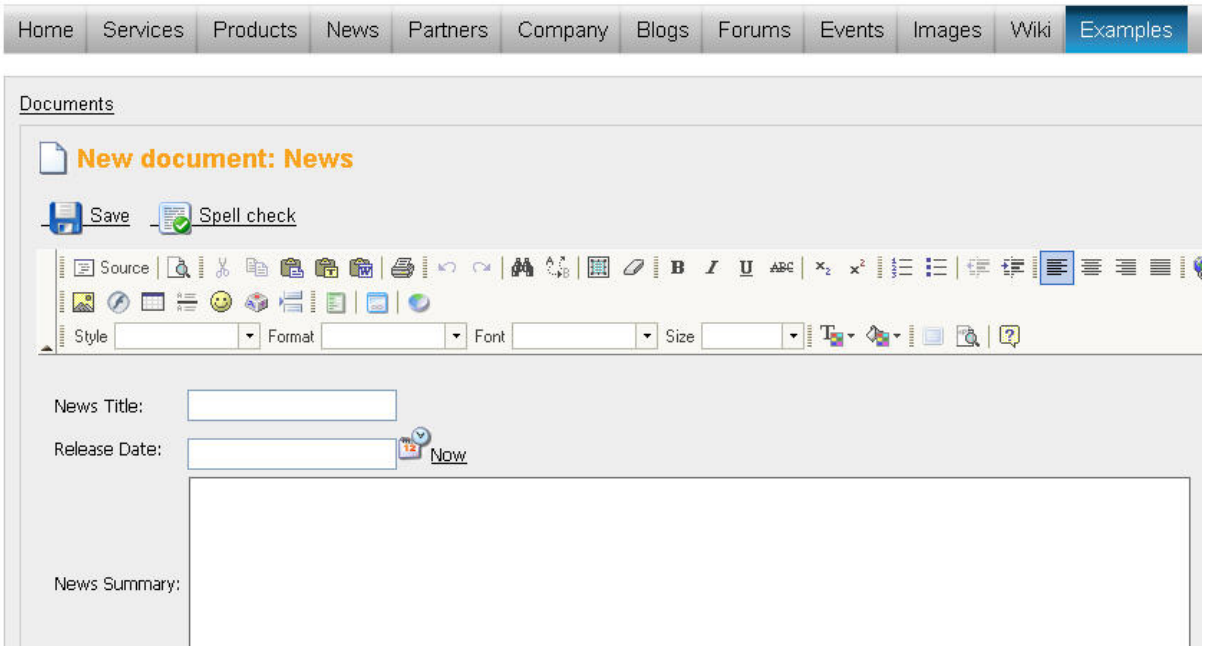


© 2009 Kentico Software

Click the **New document** link and choose to create a **News** document:



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:

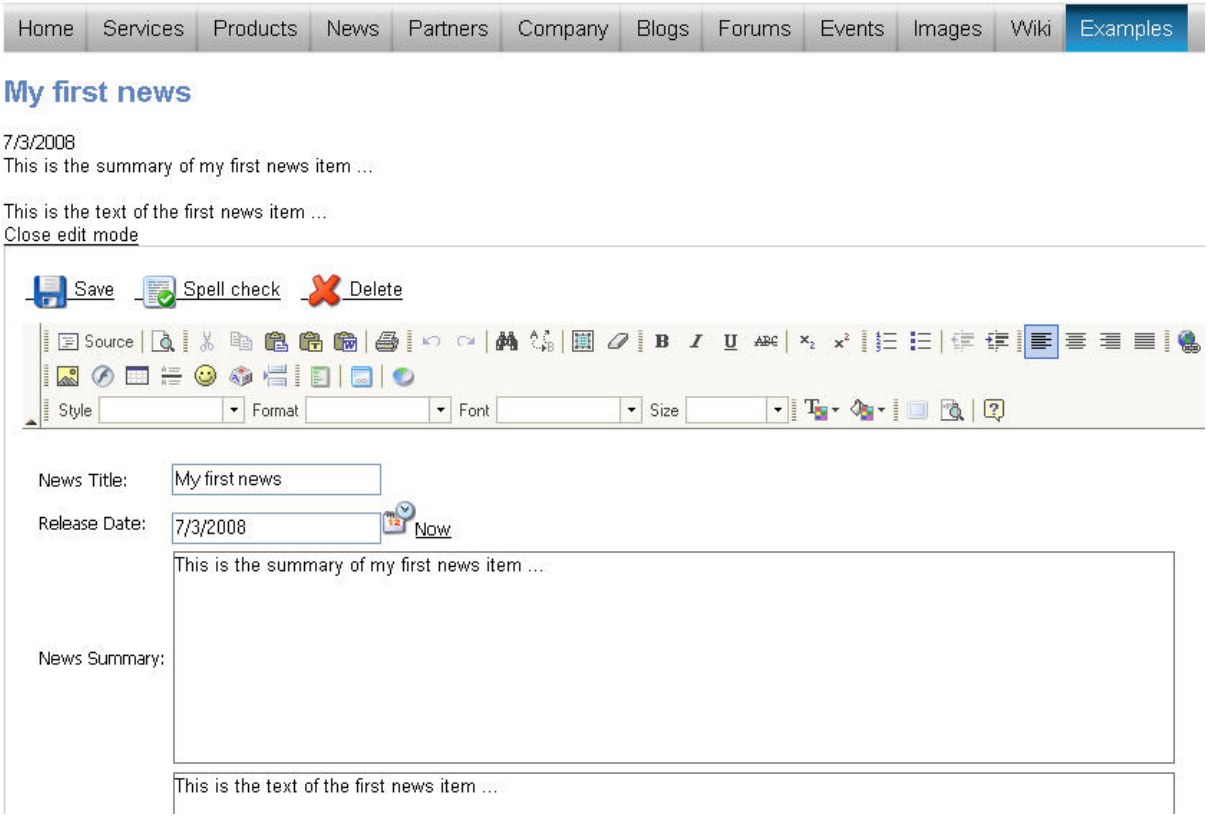


© 2009 Kentico Software

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.

© 2009 Kentico Software

31.34.3 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 web site.

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)**.

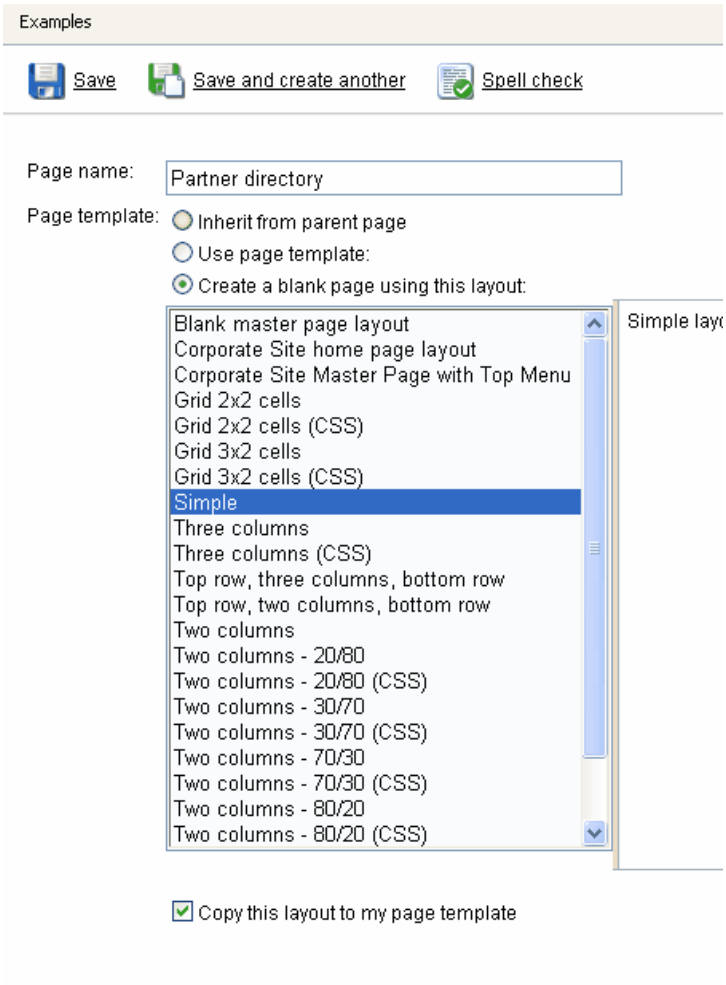
Step 6: Sites

Choose your current web site.

© 2009 Kentico Software

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.

© 2009 Kentico Software

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%}

© 2009 Kentico Software

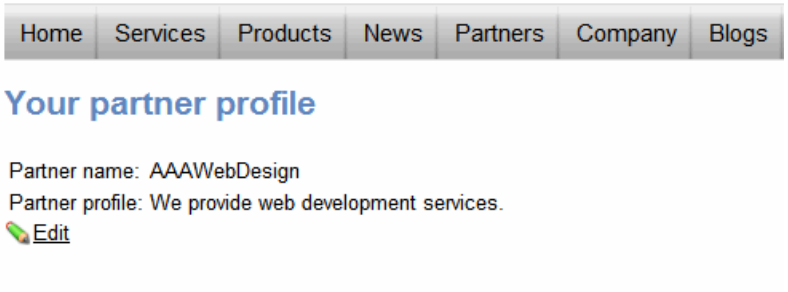
macro is resolved as the user name of current site visitor.

- **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.

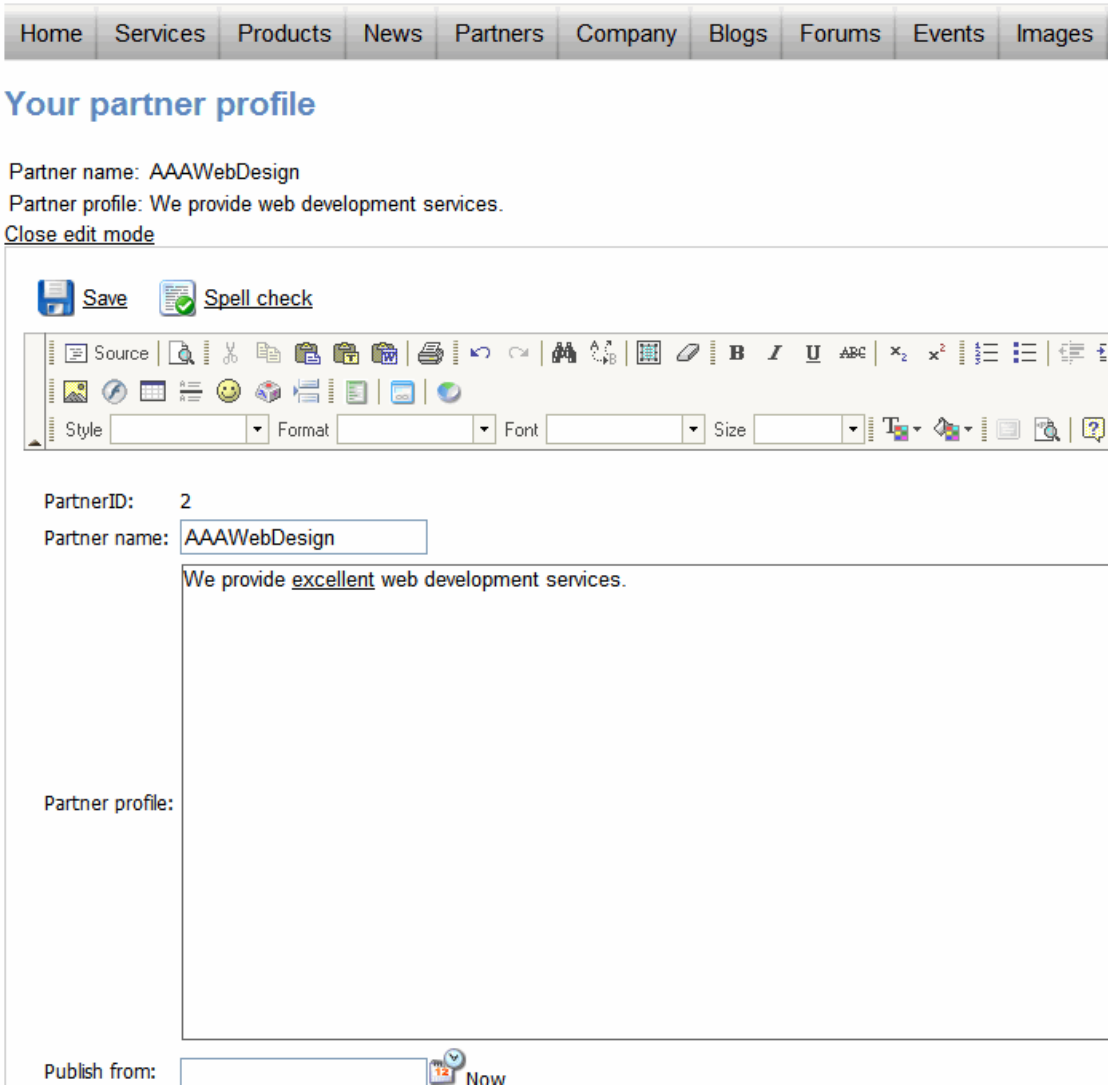
Testing the profile editing page

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:



© 2009 Kentico Software

Click **Edit**, modify some values and click **Save**:



Go to **Examples -> Partner directory** and you will see the updated profile:



© 2009 Kentico Software

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.

31.34.4 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.

31.34.5 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.

© 2009 Kentico Software

31.35 Web analytics

31.35.1 Web Analytics Overview

The Web Analytics module allows you to track and analyze web site visits, page views, file downloads and other metrics of the web site.

You can find the Web Analytics module in **CMS Desk -> Tools -> Web Analytics**:



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**.

© 2009 Kentico Software



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.

31.35.2 Available reports

The Web Analytics module comes with the following reports:

- **Browser types** - this report shows what types of browsers your web site 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 web site, 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 web site. 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 higher number of visits.
- **File downloads** - this report summarizes the number of files downloaded by the web site 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).
- **Invalid pages** - this report summarizes the number of ASPX pages that were not found on the web site 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.
- **Referrals** - this report summarizes the number of visits coming from external web sites and the web sites from which the visitors come to your web site most often.
- **Visits** - this report summarizes the number of visits of your web site and the number of new versus returning visitors. The tracking is ensured by a cookie.

© 2009 Kentico Software

31.35.3 Tracking marketing campaigns

In many cases, tracking referring web site 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 web site and set the value of the **Campaign tracking URL parameter** key to: **campaign**

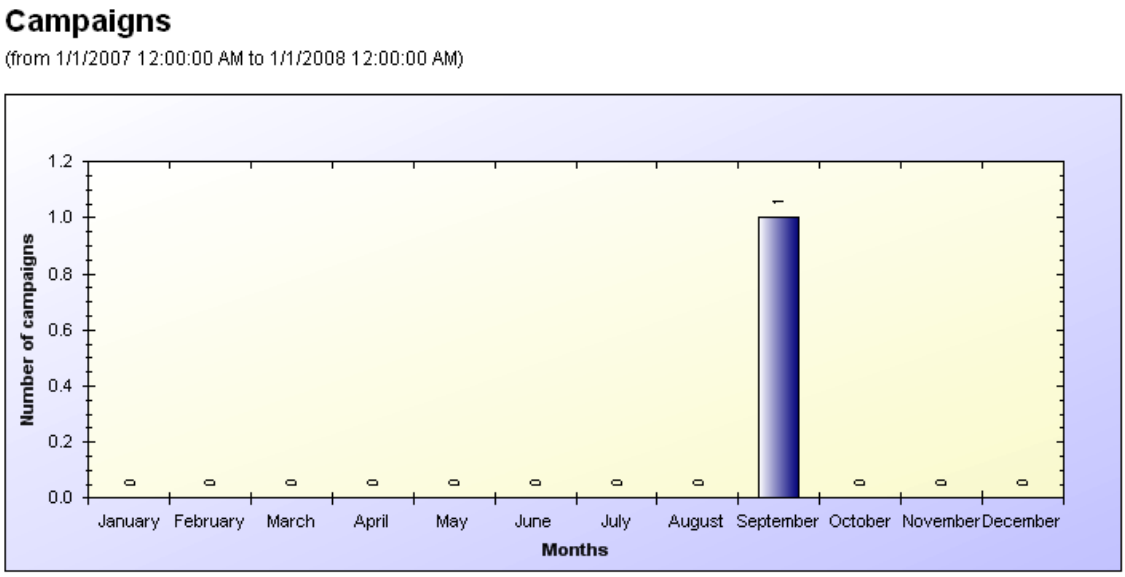
Then, modify the links to your web site so that they contain the paramter campaign like these:

```
http://www.mywebsite.com/?campaign=banner1
http://www.mywebsite.com/?campaign=newsletterJune
http://www.mywebsite.com/?campaign=pressrelease
```

© 2009 Kentico Software

How to evaluate campaigns

Go to the **CMS Desk -> Tools -> Web Analytics** module and choose the **Campaigns** report. You will see how many hits your received from your campaigns in the chosen time period:



Campaign	Views
banner1	1

31.35.4 Tracking conversions

The conversion tracking allows you to track the behavior of visitors on your web site and adjust the web site 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

© 2009 Kentico Software

custom name - e.g. "cart_registration" or "cart_order".

Tracking conversions and their campaign or referring web sites

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 web site, such as registration, sign up, etc. Then, you can see what changes made to the web site 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.CurrentSiteName;
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 web site 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 //web site 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:
```

© 2009 Kentico Software

```
CMSContext.CurrentUser.UserURLReferrer //web site URL from which the visitor first
came
CMSContext.CurrentUser.UserCampaign //campaign from which the visitor first came
```

© 2009 Kentico Software

31.35.5 Configuration options

You can configure several options of the **Web Analytics** module in **Site Manager -> Settings -> Web Analytics** dialog:

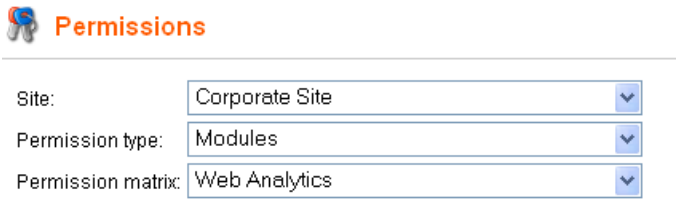
Enable web analytics	If true, web analytics module logs the events.
Exclude search engines	Indicates if search engine robots should be excluded from tracking.
Excluded URLs	URLs of your web sites that will not be tracked. All underlying pages will not be tracked either. You can specify multiple URLs (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 the 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.

© 2009 Kentico Software

31.35.6 Security

You can configure the access to the Reporting module in **CMS Desk -> Administration -> Permissions** . Choose the permission matrix for **Modules -> Web Analytics**.



	Display module	Read	Save reports
CMS Designers	☐	☐	☐
CMS Desk Administrators	☑	☑	☑
CMS Editors	☐	☐	☐
CMS Public Users	☐	☐	☐
CMS Readers	☐	☐	☐
Everyone	☐	☐	☐
Gold Partners	☐	☐	☐
Registered Users	☐	☐	☐
Silver Partners	☐	☐	☐

The following permissions can be given to the listed user roles:

- **Display module -** displays the module in the user interface
- **Read** - allows users to read Web Analytics reports
- **Save reports** - allows users to save reports. The saved reports can be viewed in the **Reporting** module

31.35.7 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**.

© 2009 Kentico Software

31.35.8 Creating custom reports

This example is describing 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.

© 2009 Kentico Software

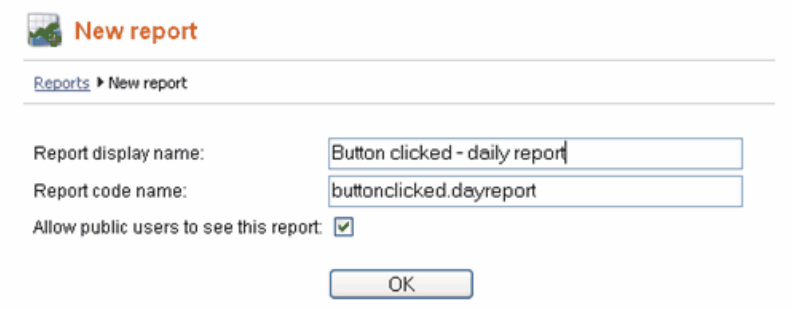
Creating reports

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.

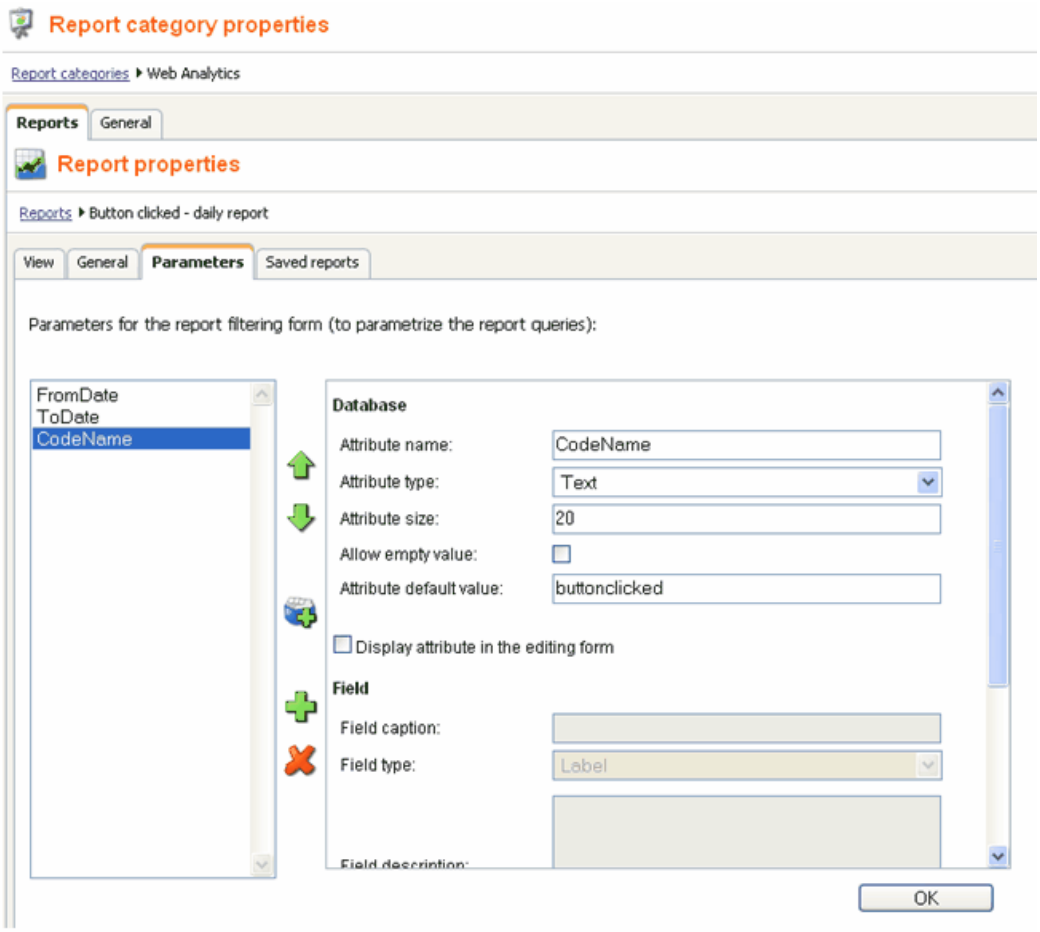
Now we will create daily report for the new statistics.



© 2009 Kentico Software

Go to Parameters section and create three essential parameters which are used in queries:

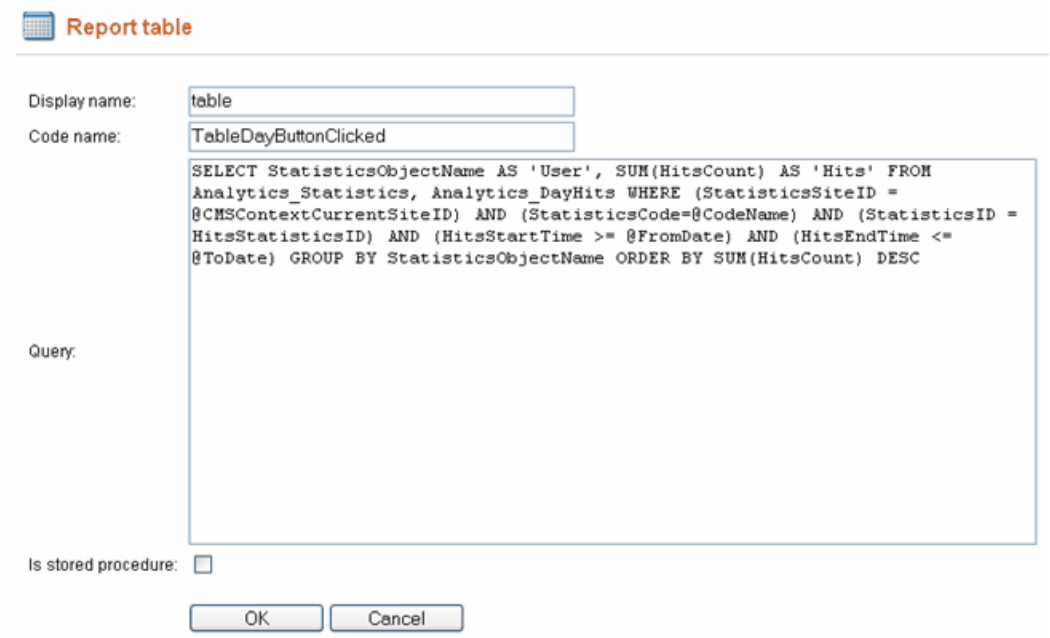
- FromDate – Date and Time attribute type
- ToDate - Date and Time attribute type
- CodeName – Text attribute type, statistics code name as attribute default value



Disable the Display attribute in the editing form for all parameters.

© 2009 Kentico Software

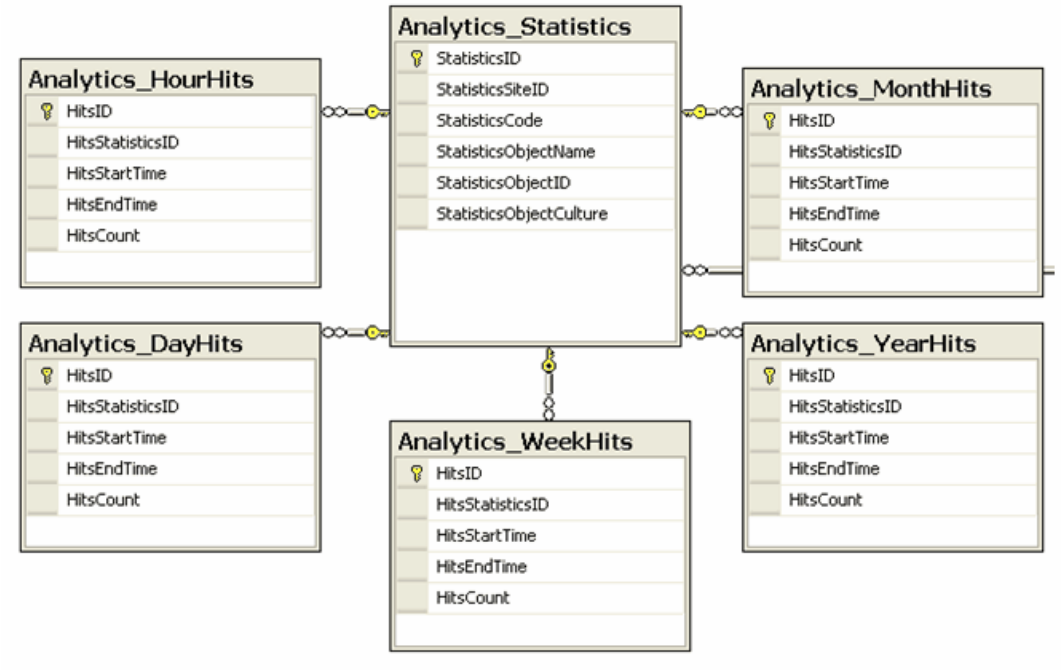
Go to General section and click Add button near Tables to create report table:



© 2009 Kentico Software

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:



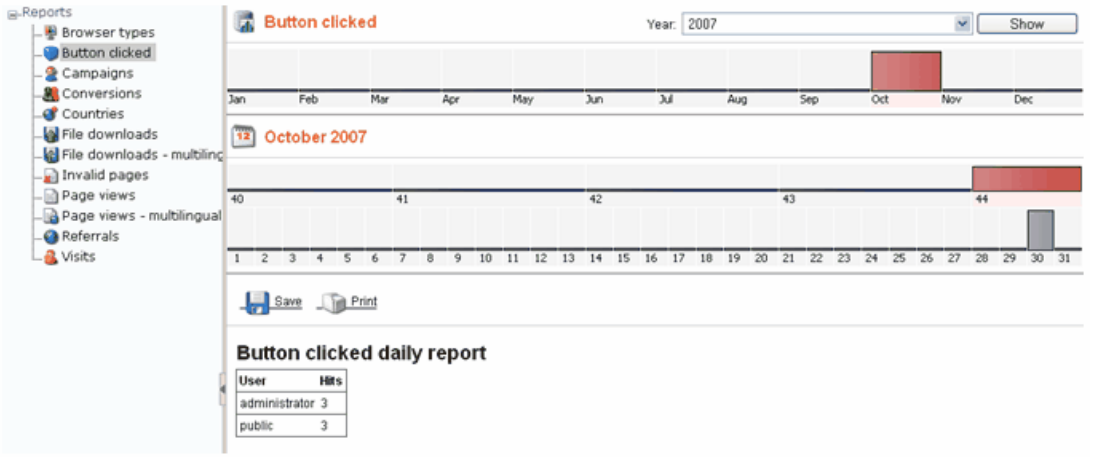
Now click OK and use Insert button near Tables to insert macro to the layout of the report. Click OK and daily report is ready now.

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 '_'.

© 2009 Kentico Software

And finally the result:



© 2009 Kentico Software

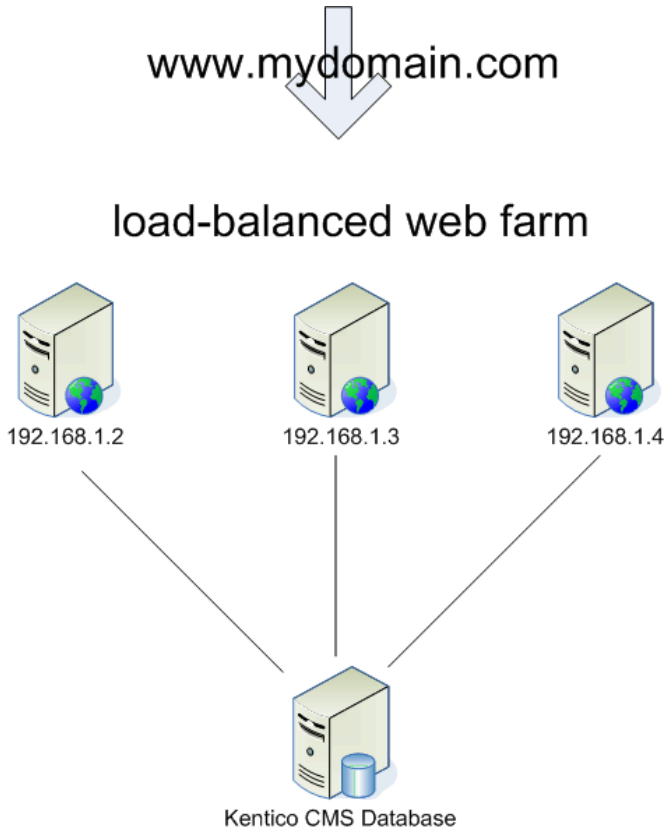
31.36 Web farm synchronization

31.36.1 Web farm support 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. However, if you're using web farm synchronization module, the module automatically creates a new synchronization task in the database and notifies the other servers so that they process their synchronization task.

© 2009 Kentico Software

Using Kentico CMS in a web farm without Web farm synchronization module

You can use Kentico CMS in 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**.

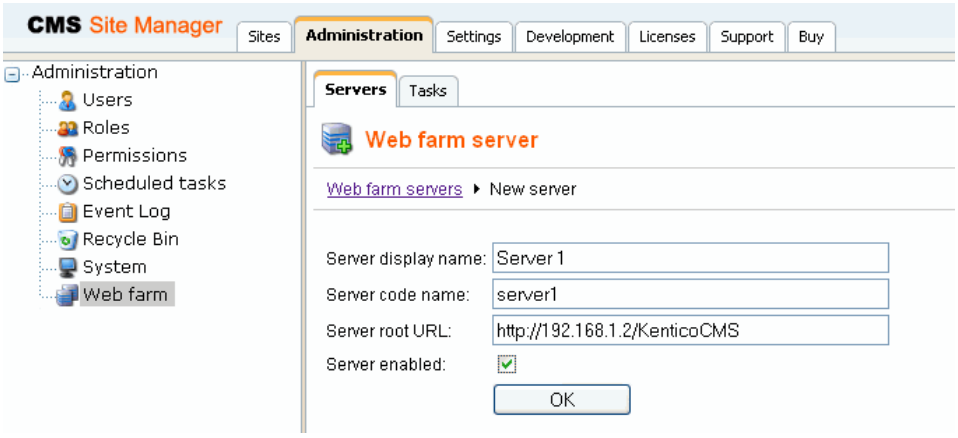
31.36.2 Defining web farm servers

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 web site, such as *http://192.168.1.2/KenticoCMS*

Click **OK** to save and repeat the process for every server in your web farm.



© 2009 Kentico Software

Now you need to update the web.config file on each server and add the following key 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.

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 mydomain.com, and you access them internally through URLs like http://192.168.1.2, http://192.168.1.3, etc., you need to enter the license keys for mydomain.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.

© 2009 Kentico Software

Part XXXI

Appendix A - Macro expressions

32 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:

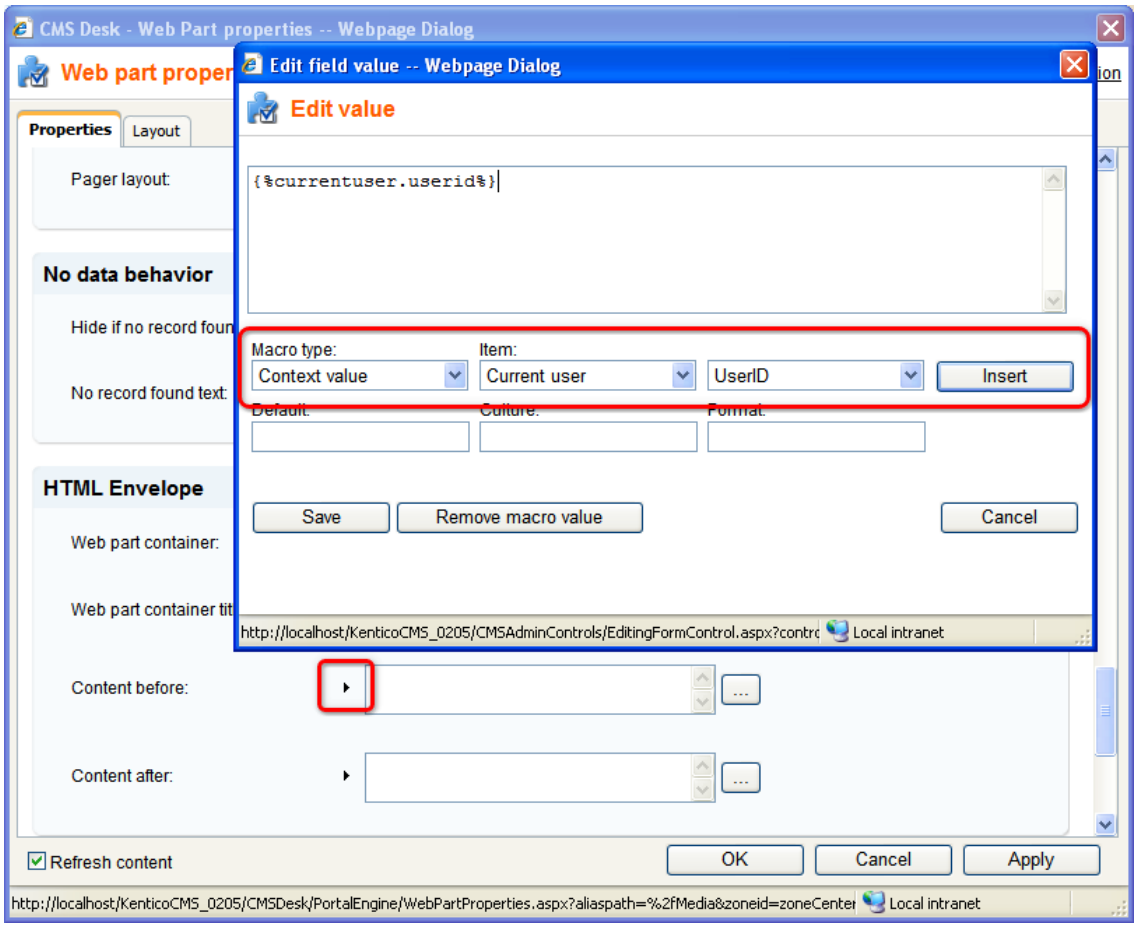
- **$** - Localization macro
- **%** - Context (data) macro
- **?** - QueryString macro
- @ - Cookie macro
- # - Custom macro

© 2009 Kentico Software

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.

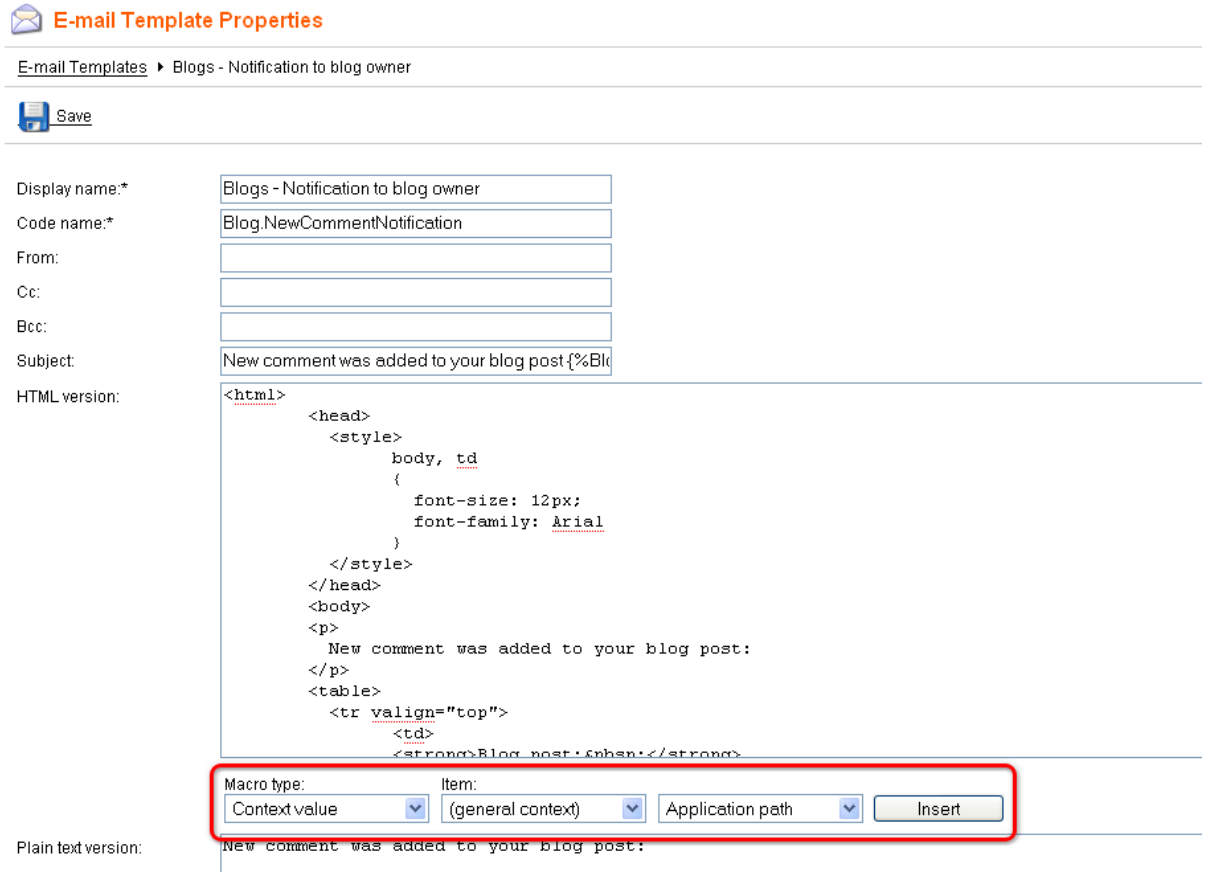
In web part properties, it can be accessed by clicking the little black arrow icon next to fields in web part properties, as you can see in the screenshot below. The expression can be selected by the three drop-down lists, inserted into the field above using the **Insert** button and finally added to the property using the **Save** button.



© 2009 Kentico Software

The same three drop-downs are also available when creating or editing:

- **E-mail templates**
- **Newsletter issues**
- **Newsletter templates**
- **E-commerce invoice templates**



Localization macros

There are two types of locatization 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 locatization – 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 web sites 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.

© 2009 Kentico Software

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

© 2009 Kentico Software

"{^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}**%}

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. **{%SKUPrice|(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. **{%SKUPrice|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

© 2009 Kentico Software

value.
e.g. **{?tagid|(toint)0?}** writes the valid **tagid** from qurystring 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. **{?userguid|(toguid)?}** converts the the userguid 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 comparisson

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 comparisson

e.g. **{%UserName|(equals)administrator|(truevalue)Yes|(falsevalue)No%}** writes No if the user is not administrator

© 2009 Kentico Software

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					

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)
```

© 2009 Kentico Software

Part



Appendix B - Path expressions

33 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 CMSRepater/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

© 2009 Kentico Software

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

© 2009 Kentico Software