PART IV

Site Administration and Security
Overview

In the previous chapters, we discussed how to create and develop a CMS Web site. We will now concentrate on site administration tasks, starting off by focusing on managing the CMS publishing environment.

In CMS, managing the publishing environment means managing virtual storage. Virtual storage is used to organize pages, templates, and other site resources, such as images and video files. As we have already mentioned, virtual storage spaces are referred to as containers. There are three types of containers:

- A channel container stores pages and subchannels.
- A template gallery container stores templates and other template galleries.
- A resource gallery container stores site resources such as images, video files, and file attachments, as well as other resource galleries.

After the containers have been set up, users are granted rights to these containers. For example, by assigning user rights to a channel, you can specify who can only view pages inside the channel, and who can author, edit, or approve the same pages. When a user browses to a page in a channel, the page is displayed in different ways depending on the user rights. For instance, as we have seen in Chapter 5, the Web Author console is not visible to the site subscribers but is displayed to the users with appropriate rights, such as authors, editors, and moderators. To have rights in a container, a user must be a member of at least one CMS rights group that is assigned to this container. In turn, each rights group belongs to one of the CMS roles, which determines the rights the user will have in that container.
Each object in CMS virtual storage has a Globally Unique Identifier (GUID) assigned to it. All objects are uniquely identified by their GUIDs, not by their names. As a result, it is possible, for example, for two or more channels to have the same name. Because these channels have different GUIDs, they are treated as two independent objects within CMS.

NOTE: To avoid confusion, make sure the publishing schedules for the channels with the same names do not overlap. This is one of the site administration tasks; we will discuss it later in the chapter.

In this chapter, we will concentrate on administering containers; in the next chapter, we will look into setting up user rights. In most cases, the Site Manager is used to perform administration tasks on CMS containers; however, certain tasks can be performed in the Web Author and Visual Studio .NET as well.

Working with Channels

Channels store pages and provide the hierarchical structure for CMS sites. This structure determines the overall navigation for your site and is similar to a virtual directories structure for IIS-based sites. However, there is an important difference: In CMS, no actual disk directories are used for storage; instead, the content is stored in the SQL Server database and is organized in channels. The Site Manager provides a GUI that allows us to organize and manage the hierarchical channel structure.

NOTE: Channel hierarchy implements the information architecture of your site. We have created the channel hierarchy for our sample site in Chapter 9.

The Site Manager provides the ability to perform usual administration tasks, such as creating, renaming, and deleting channels, as well as CMS-specific channel configuration tasks—for example, setting up channel rendering options and sorting order. Site administrators, channel managers, and template designers can create and administer channels.

To display the channels hierarchy, click the Channels icon in the left pane of the Site Manager window (Figure 16–1).
Configuring Channel Properties

You can configure an existing channel by using the tabs within the Properties dialog box. To display the Properties dialog, right-click the existing channel and select Properties.

**NOTE:** Some configuration options can be set up when you create a channel using the New Channel dialog; the tabs in the New Channel dialog provide access to the subset of options accessible via the channel’s properties.

The Properties > General tab (Figure 16–2) allows us to change the display name of the channel and the channel description. As we have discussed in previous chapters, the display name is a user-friendly alias that is used as text for a link pointing at your channel when the channel is presented to the users—for example, within a navigational structure for your site in a browser. The Display Name property can contain non-US-ASCII and spaces, which is very useful for multilingual sites.

The Description property allows us to provide a meaningful description of the channel content; it is an optional property. The Description field is limited to 256 characters in length and is mainly used for site maintenance. The General tab also shows when the channel was created and by whom, the locking owner, and when and by whom it was last modified; this information is read-only and can’t be changed.
The name, display name, and the description of a channel can also be changed from the Web Author by using the Channel Properties dialog (Figure 16–3).

The Properties > Publishing tab (Figure 16–4) provides access to the channel rendering and lifetime settings as well as the channel options.

The Options section on the Publishing tab (Figure 16–4) provides access to four channel publishing options; the first two options are also available from the Web Author using the Channel Properties dialog (Figure 16–3).

- The Important Channel check box sets up an additional flag on the channel. This flag can be analyzed programmatically; it is used for all sorts of business reasons. For example, it can be used to denote channels that will be protected by SSL. This flag by default is not selected.
- The Hide When Published check box makes the channel invisible after it has been published. This option can also be analyzed in the code and changed programmatically at runtime depending on the business logic you’d like to implement; by default this option is not
Figure 16–3  Channel Properties dialog available from the Web Author console

Figure 16–4  Channel publishing properties
selected. For example, if this flag is set, then the channel will be hidden in the navigation structure displayed on the published site.

- The Web Robots settings define how the robots META tags are generated at runtime for a channel navigation page, whether static or generated by a script.

The Web Robots settings for a channel are only available from the Site Manager, as follows:

- The Web Robots Can Crawl Links check box allows Web robots to follow links from this channel navigation page. A channel navigation page is a page displayed by the channel rendering when the channel is accessed by its URL.
- The Web Robots Can Index This Channel’s Navigation check box allows Web crawlers to index the navigation page that is displayed for the channel URL.

**NOTE:** Pages within the channel have their own robots META tags (refer to Chapter 6 for details of the robots META tags). These are configured by authors, using Page Properties in the Web Author console or Advanced Page Properties in the Authoring Connector. Automatically, the channel robots META tag configuration settings apply only to the channel rendering. However, programmatically they can be used anywhere in the site—for example, for generating META tags for some or all pages or subchannels within the current channel.

The Lifetime section on the Publishing tab (Figure 16–4) defines the channel’s publishing schedule. Click the Set button to display the Set Channel Lifetime dialog box (Figure 16–5), where you can set the Start Publishing and Stop Publishing options. The channel’s publishing schedule can also be changed from the Web Author by using the Channel Properties dialog, as shown in Figure 16–3.

Start Publishing defines the server date and time when the channel becomes available on the live site. You can define the exact date and time or make the channel visible immediately. If necessary, you can set the start publishing date of the channel to the day of your choice in the past. However, using the Site Manager, you cannot set a start date that is before the installation date of CMS.

**NOTE:** You can set a channel start date that is before the installation date of CMS by using the Publishing API. In this case, the Site Manager accepts a new date.
Stop Publishing defines the server date and time when the channel stops being available on the live site. However, it is not deleted from the Content Repository and remains visible from the Site Manager. The following list describes the Stop Publishing options.

- The Never Stop Publishing option provides permanent availability of the channel on the live site.
- The Interval option defines an amount of time after the channel has been published. The values are 1 day; 1 and 2 weeks; 1, 4, and 6 months; and 1 year. This option is only available in the Site Manager.
- The exact date and time option specifies the expiry date for the channel. The date and time here refer to the date and time on the CMS server computer.

The Channel Rendering section on the Publishing tab defines what is displayed in the browser when the channel is accessed by its URL, without a page name. To configure the options, click Select. The Select Channel Rendering dialog box is displayed, as shown in Figure 16–6. This dialog allows you to specify the page that should be used as the default page for the channel, as well as whether any additional processing should occur on the server. The default page can be defined in one of two ways.

- You can explicitly specify the name of the page to be used as the default. The name should be typed manually; there is no browsing button. The page doesn’t have to exist in the channel at the time of configuration; it can be added later. However, if your default page is not present in the published channel on the live site, an
error message will be displayed in the browser when a user tries to access the channel URL.

- You can choose that the first page in the channel be used as its default page. This is the default setting. “First” means any page that is the first item in the list displayed under Properties > Sorting.

In the Channel Rendering section, you can specify a script to be executed when content in the channel is accessed. This script is called a channel rendering script, or just a channel script; it is also referred to as a channel outer script. This setting is optional. The script can be either an ASP or ASPX page for mixed mode sites, and only an ASPX page for ASP.NET sites. The channel script is defined by its location in the IIS virtual site; this location should be typed in manually, there is no browse button. The channel script can perform any processing that is required by the logic of your site—for example, combine pages in a frameset, verify the security credentials, redirect the user to another channel or page, or display a list of all pages in the channel.

The No and Yes radio buttons define whether the channel script is executed only when the channel URL is requested or when the channel URL as well as all page URLs within the channel are requested. For example, if Yes is selected, then the channel script will be run for the channel requests (http://<site>/<channel>) as well as page requests (http://<site>/<channel>/<page>).

On a framed site, a channel rendering script contains the frameset and must run when a user browses either to a channel or to any page in the channel.

Figure 16–6 Channel rendering properties
For example, a sample channel script is configured for the root channel node Channels when you create your site. The script is called McmsHomeport.aspx and is located in the folder \Server\MCMS\McmsHomeport. By default, this folder is mapped to the virtual directory /MCMS/MCMSHomeport on the IIS virtual site that is configured as the CMS Web entry point. It provides an ASPX page that is displayed for an empty CMS site with no pages. The page lists the CMS Web applications on the IIS virtual site and provides a brief description of CMS and the links to support information on the microsoft.com site (Figure 16–7).

A channel may contain no pages—only subchannels. This configuration can be used, for example, to organize the content in channels in a logical way for a site and to provide better navigation through the site's content. However, if a URL points to a channel, we still need to provide a browser with a page to display. The Navigation URL box does exactly that—it specifies what to return to the browser if there are no pages in the channel. Usually, it will be a page that provides links to the content of the channel; therefore, the URL is referred to as the Navigation URL. The Navigation URL can be a frameset. You need to type in the URL
manually. In effect, this box provides a simulation of HTTP redirection on the server side.

**NOTE:** You can also use a channel rendering script to dynamically generate a navigation page for a channel with no stored pages. The Navigation URL is mostly used for compatibility with CMS 2001.

If there is no script or Navigation URL configured for a channel without stored pages, then the default channel cover page provided by CMS will be displayed when a browser points to a channel URL. The default page is an ASP page called Cover.asp, located in the folder `<installation point>\Server\IIS_NR\Shared`. For example, Figure 16–8 shows the channel cover page displayed on our sample site for the top-level channel botsconsulting. If we click the root node Channels, the channel rendering script will be displayed, as shown in Figure 16–7.

For a nonroot channel, the channel rendering properties can be inherited. Click the Copy From Parent button (Figure 16–6) if you want the settings to be the same as for the parent channel. You can apply the channel rendering settings to the subchannels by selecting the “Apply to descendents” check box in the Channel Rendering section on the Publishing tab (Figure 16–4).

![Figure 16–8  Channel cover page](image-url)
The Publishing > Web Authoring tab allows you to set up the default template and resource galleries for the channel (Figure 16–9).

Both settings are optional. However, it makes sense to assign the default template and resource galleries to the channel since these could be accessed programmatically using the Channel.DefaultTemplateGallery and Channel.DefaultResourceGallery properties. Using these properties we can, for example, customize the Web Author console. It is worth mentioning that the content authors don’t have to use the default gallery; they can select another one if they wish.

Another benefit of assigning the default galleries is that the site administrator can see explicitly who needs rights where. It’s a good practice, one of those “nice-to-haves.”

A gallery can be a default gallery for more than one channel. Setting up the default galleries is easy: Browse to the gallery that is to become the default gallery by clicking the ellipsis button (Figure 16–10), select it, and click OK. Typing the gallery name in a box is not allowed; you have to browse to it. If you want to clear an entry, use the Clear button.

The Publishing > Sorting tab (Figure 16–11) specifies the order of the items contained within the channel. The items may be pages or channels. The position of an item within the list can be changed using the Up and Down buttons.

![Figure 16–9 Setting up the default template and resource galleries for a channel](image-url)
The purpose of this ordered list is twofold.

- The channel's default page can be configured as the first page in the list.
- It is a standard practice to provide navigation within the channel, which means displaying the channel items as links. This can be accomplished programmatically using the properties of the ChannelItem class; we have seen it in Chapter 14. The navigation links within the channel appear in the order of the channel items.

Figure 16–10  Select Template Gallery dialog box

Figure 16–11  Channel sorting order
within the list in the Sorting tab. It is likely that you will want to change the default order of the items within the channel for meaningful and user-friendly navigation.

The Publishing > Rights tab assigns the CMS rights groups to a channel (Figure 16–12). Make sure you assign at least one subscribers rights group to the channel; otherwise, ordinary users may not be able to view content in the channel on the live site. If you want your channel to have the same group assignment as its parent channel, click Modify and then click Add Parent’s Rights. We will focus on setting up user rights in the next chapter.

The Publishing > Custom tab allows you to set up the custom properties for a channel (Figure 16–13). A custom property is a name/value pair associated with a channel. A channel can have multiple custom properties. Different channels and pages can have the same custom properties. After the custom properties have been defined for a channel, their values can be assigned or changed from the Web Author by using the Channel Properties dialog > Custom tab, as shown in Figure 16–14.

**NOTE:** Custom properties for CMS pages are defined in their corresponding templates in Visual Studio .NET. The values for custom properties are assigned by content contributors, using the Web Author or the Authoring Connector (refer to Chapters 5 or 7, respectively, for a detailed discussion).

![Channel Rights](image.png)

**Figure 16–12** Channel rights
Figure 16–13  Custom tab of the Channel Properties dialog in the Site Manager

Figure 16–14  Custom tab of the Channel Properties dialog in the Web Author
Custom properties can be used programmatically—for example, to present the user with the channels and pages that share a particular property value. If custom properties are created consistently across a number of channels and pages, then you can provide additional functionality for the site. The key here is the word “consistently.” Defining custom properties should be part of defining the overall architecture of your site. For example, let’s say that we created a custom property for a brief summary of content provided within a channel. We could then use this summary as additional information we present to the user in the navigation structure—for instance, when a user’s mouse is over the channel’s display name.

**NOTE:** Custom channel properties can be created only using the Site Manager. The current version of the Publishing API does not expose a method to create custom channel properties programmatically. This limitation, combined with the inability to manage user rights programmatically, can hinder efforts to use automated scripts to create large numbers of channels.

Setting up a custom property involves giving it a name, selecting the type of the property, and defining its values. The New button allows you to set up a new custom property; the Modify button provides the ability to change the values of the existing properties; the Delete button deletes the selected property. The custom property name can be up to 45 characters in length.

There are two types of custom properties: text and selection.

- The text custom property value (Figure 16–15) must be a US-ASCII string. The string length is limited to 2,000 characters. The string cannot contain any control characters (ASCII 1–31) other than tab, LF, and CR (ASCII 9, 10, and 13, respectively). The value defined in the Custom tab is a default value for the property. To provide a value, position your cursor in the Current Text Value box and either type or paste the text. The value can be changed by users with the appropriate rights from the Web Author console, using the Channel Properties dialog > Custom tab, by clicking the Properties icon and assigning the value (Figure 16–16).

- The selection custom property has a list of Allowed Values (Figure 16–17). Values are added to the list by clicking the New button and typing the value in the Add Value dialog box. The up and down arrow buttons move the selected value up and down the list.
The Set as Current button marks the highlighted value in the list as current. Selection-based custom property values are usually presented in a user interface by drop-down lists. Values are positioned in the drop-down list in the same order as they are positioned in the Allowed Values list in the Custom tab. The value marked as current is selected by default. It is mandatory to set one of the values in the Allowed Values list as current. This value can be changed by users with the appropriate rights from the Web Author console, using the Channel Properties dialog > Custom tab (Figure 16–18).

As we discussed in Chapter 6, custom properties are typically used to generate Keywords and Description META tags for the internal and
external search engines. Custom properties can also be used to categorize content across the site. Authors apply the values to the predefined custom properties when they add content using the Web Author; the actual META tags are created at runtime programmatically. In the code, developers retrieve the content stored in the custom properties and insert it into the META tags in the HTML header using the Channel.CustomProperties collection.

That's all about creating and configuring channels. The other tasks we need to look into are renaming, moving, copying, and deleting channels, as well as moving, copying, and deleting the pages within the channel. Performing these tasks for the channels inside the Site Manager is like working with folders inside Windows Explorer.

Figure 16–17 Selection custom property

Figure 16–18 Assigning the value for a selection custom property in the Web Author
Renaming a Channel

To rename a channel in the Site Manager, right-click the channel you'd like to rename, select Rename, and type the new name. This name will be used as a part of the URL. If you want to change the channel's display name, you can do it from the Properties > General tab. You can rename all channels, including the default root node Channels.

The Name and Display Name properties for a channel can also be changed from the Web Author console using the Channel Properties dialog (Figure 16–3).

Moving and Copying a Channel

Right-click the channel you'd like to move or copy, and select either Cut or Copy; then right-click the channel where you want the channel to be moved or copied, and click Paste.

As we have already mentioned, the Site Manager doesn’t enforce the uniqueness of channel names. This is because the name of a channel is not used as its unique identifier. Instead, each object in the Content Repository has a GUID assigned to it. Two channels with the same names have different GUIDs; hence they are treated as two independent objects within CMS.

If the publishing schedules of two channels with the same name overlap, both channels will be displayed in the browser. It could be quite confusing for users. Therefore, it is important to rename the channel after you've copied it, or make sure the publishing schedules of channels with the same names do not overlap. The expiration date and time of one of the channels must precede the start date and time of the other channel.

You can dovetail the publishing schedules to make the second channel with the same name available at the same time the first one expires. This technique allows seamless site updates.

Deleting, Removing, and Restoring a Channel

To delete a channel, right-click the channel and click Delete. Deleted channels are moved to the Deleted Items container. From there, you can either restore the channel or remove it permanently.

To remove the channel permanently, open the Deleted Items container, right-click the channel, and select Delete. To restore the channel, move it from the Deleted Items container to where you'd like it to be restored.
Moving, Copying, and Deleting Pages in a Channel

To move or copy a page using the Site Manager, right-click the page you’d like to move or copy and select either Cut or Copy; then right-click the channel where you want the page to be moved or copied to, and click Paste.

CMS allows pages with the same names to be stored in a channel. Each page is identified by its own GUID, and is therefore completely independent and has its own set of properties, including the name and the publishing schedules. To avoid confusion, make sure the publishing schedules for pages with the same names do not overlap. You can use the same technique for consecutive updates as for the channels: Set the start date of the new version of the page to the expiration date of the version you’d like to replace.

**NOTE:** Pages that are copied or moved individually will have to be approved for publishing in the normal way, using the publishing workflow configured on their destination channel. If the content of the moved page hasn’t been changed, it only requires moderator approval. However, if you move the channel containing the page, then the page does not need reapproval.

To delete a page using the Site Manager, right-click the page and click Delete. Deleted pages are moved to the Deleted Items container. From there, you can either restore the page by moving it back in the channels hierarchy, or remove it permanently by right-clicking it and selecting Delete. If you’d like to permanently remove all pages and channels in the Deleted Items container, right-click it and select Clear Deleted Items.

You can move, copy, and delete pages using the Web Author console; we discussed how to do it in Chapter 5. There are some differences in implementation of the functionality between the Site Manager and the Web Author. For example, pages deleted from the Web Author console are not moved to the Deleted Items container and can’t be restored.

Working with Template Galleries

A template gallery is a virtual storage space that provides a way to store and organize template metadata. Template metadata is usually referred to as just a template; it includes references to a template file location,
placeholder definitions, and custom property definitions. Templates and template files are created and managed using the Template Explorer within Visual Studio .NET.

**NOTE:** Template galleries can be created using the Site Manager as well as the Template Explorer in Visual Studio .NET. User rights to template galleries can be assigned only using the Site Manager.

In this section, we will look into working with template galleries using the Site Manager. It is similar to working with folders in Windows Explorer. Site managers, channel managers, and template designers can create and administer template galleries.

To access the template galleries tree, click the Template Gallery icon in the left pane of the Site Manager window (Figure 16–19).

**Renaming, Moving, and Copying a Template Gallery**

To rename a template gallery, right-click the template gallery you’d like to rename, select Rename, and type the new name. If you want to change the gallery’s description, you can do it from the Properties > General tab (Figure 16–20).

**NOTE:** To access the Properties dialog box, right-click the template gallery and select Properties.
To move or copy a template gallery, right-click the template gallery you’d like to move or copy, and select either Cut or Copy; then right-click the destination gallery where you want it to be moved or copied, and click Paste.

The Site Manager allows galleries with the same name to be stored inside the parent gallery because they have different GUIDs. However, it is a good practice to rename the template gallery immediately after you’ve copied it into the same gallery as the original; otherwise, it could become very confusing for both authors and administrators of your site.

### Deleting, Removing, and Restoring a Template Gallery

To delete a template gallery, right-click it and click Delete. Deleted template galleries are moved to the Deleted Items container. From there, you can either remove the deleted gallery permanently by right-clicking it and selecting Delete, or restore the gallery by moving it back to the template galleries tree.

### Moving, Copying, and Deleting Templates in a Template Gallery

To move or copy a template, right-click the template you’d like to move or copy and select either Cut or Copy; then right-click the template gallery where you want the template to be moved or copied, and click
Paste. You can also drag and drop the template onto a template gallery in the tree pane.

Templates, and other CMS objects, are identified by GUIDs; therefore, the Site Manager allows templates with the same name to be stored inside a template gallery. You cannot rename the template from the Site Manager, you can rename it only from the Template Explorer in Visual Studio .NET.

To delete a template, right-click the template and click Delete. Deleted templates are moved to the Deleted Items container in the template galleries hierarchy. From there, you can either restore the template by moving it back into a template gallery or remove it permanently by right-clicking it and selecting Delete. If you’d like to permanently remove all templates and template galleries in the Deleted Items container, right-click it and select Clear Deleted Items.

Reverting a Template

Sometimes, after you have changed a template but haven’t approved it, you need to go back to the template that has been previously approved. You can achieve this “rollback” functionality in the Site Manager by right-clicking the template and selecting Revert to Approved. If this option is grayed out, it means that this particular template cannot be reverted.

NOTE: The Revert to Approved option allows you to revert the template metadata, including placeholder definitions, custom properties definitions, and the template file location. However, this option doesn’t control the changes to the template ASPX file. Using the Revert to Approved option, you can revert changes to the metadata, but not the code.

Dependent Report

A template’s dependent report shows all pages that are based on this template. To run a dependent report for a template, right-click the template and select Dependent Report. The report is displayed in an Internet Explorer pop-up window, as shown in Figure 16–21.

NOTE: You can revert templates and run dependent reports only from the Site Manager.
Assigning Rights to a Template Gallery

Rights to an existing template gallery are assigned using the Properties > Rights tab (Figure 16–22). If you want your template gallery to have the same rights group assignment as its parent gallery, click Modify and then click Add Parent’s Rights. We will look into assigning rights in the next chapter.

Figure 16–21 Dependent report

Figure 16–22 Template gallery rights
Working with Resource Galleries

A resource gallery is a virtual storage space that stores resources and other resource galleries. Resources are images, audio and video files, or any other files that can be used as file attachments. Resource galleries can store any Multipurpose Internet Mail Extensions (MIME) type files. Resources are either displayed inline in the browser or presented as a link to the resource file: If the resource is not one of the well-known image or video types, the file is displayed as a link (attachment) within a page. How the linked file is viewed is determined by a client’s browser and the applications available on the client computer.

Resources are mainly managed using the Resource Manager in the Web Author console. Resource galleries are managed using the Site Manager. Site managers, channel managers, template designers, and resource managers can create and administer resource galleries.

To access the resource galleries tree, click the Resource Gallery icon in the left pane of the Site Manager window (Figure 16–23). Working with resource galleries using the Site Manager is similar to working with folders in Windows Explorer. Most of the tasks are exactly the same as for the template galleries.

Adding Resources to a Resource Gallery

Resources can be added to a resource gallery in one of two ways: either using the Resource Manager or using the Site Manager.

Figure 16–23 Resource gallery hierarchy
If you want to use the Resource Manager, then log on to the site, switch to Edit mode, and from the Web Author console select Resource Manager. In the Resource Manager dialog, navigate to the resource gallery you’d like to import your file into, and select it. In the Manage Resources dialog (Figure 16–24), click the Add New button (you might need to scroll down to find it). In the Add Resource dialog (Figure 16–25), browse to the file you’d like to add, and click Open.

The next task is to assign the MIME type to the newly added resource. Any file in a resource gallery has a MIME type assigned to it. When a new resource is created, if a new file name has an extension, the MIME type is assigned from the extension using the MIME mapping from the registry of the CMS server computer. If there is no MIME type mapping for the extension, then usually the MIME type application/x-octetstring (a binary format) will be assigned to the new resource. If this is not suitable, you’ll need to map the appropriate MIME type to the extension in the registry as follows:

- Start the Registry Editor (on the Start menu, click Run, and then type regedit.exe) and expand HKEY_CLASSES_ROOT.
- Determine whether the registry already contains a key for the file extension—for example, .pdf. If the key does not exist, create it—that is, HKEY_CLASSES_ROOT\.pdf.

![Figure 16–24 Manage Resources dialog](image)
Check whether the file extension key contains a value named Content Type. If it does not exist, create the value as a string value.

To assign the MIME type, double-click the Content Type value and type the MIME type for the file extension in the Value data box—for example, application/pdf (Figure 16–26).

If the name of the file that you are adding to a resource gallery doesn’t have an extension, you can select the MIME type from the File Type list. The list is quite limited—only well-known image, video, and document types are listed. If the type of a new file is not listed, carry on without selecting a type. In this case, usually the MIME type application/octetstring will be assigned to the new resource. If this is not suitable, rename the file to have an extension, and, if necessary, map the extension to the MIME type in the registry.

A template designer may enable the UseGeneratedIcon property for a single attachment placeholder in a template. This means that an icon representing a resource type must be shown by CMS, together with the attachment’s display name, as a link to a resource in the published pages that are based on this template. However, if an application identified by the attachment type is not installed on the CMS server machine, there is no icon available to be generated. To resolve this situation, you can either
install the application in question on the CMS server—for example, the Adobe Acrobat viewer for PDF files—or you can define the default application icon in the registry using the path of a file that contains the icon. If you decide to follow the second route, you can obtain the file and the registry settings from the computer where the application is installed. For example, for Microsoft Word XP, you need to do the following:

- Under the HKEY_CLASSES_ROOT\.doc registry key, set the value data for the default value to a name that identifies the application that handles Word documents. You can look up this name on a computer that has Word installed. For Word XP, the name is Word.Document.8.
- Under HKEY_CLASSES_ROOT\Word.Document.8, create a key named DefaultIcon.
- Under the DefaultIcon key, set the default value as the path of a file that contains the icon that you want to use, followed by a comma and the number of the icon in the file that is to be used. In this example, the path is to the wordicon.exe file. The complete path on a computer that has Word XP installed is `<installation drive>:\WINNT\Installer\{90280409-6000-11D3-8CFE-0050048383C9}\wordicon.exe,1` (Figure 16–27).
- Copy the wordicon.exe file to the location you specified in the previous step.

The last task is to define the display name and description for a resource. It is a good practice to provide both. The display name may be used programmatically to generate a link to a resource; it is a default...
display name that can be overwritten by the authors inserting the resource into their pages. The description appears in the Resource Manager in the resource record and could assist the content authors in selecting the appropriate file. The description is limited in length to 256 characters.

The other method of adding a resource to a gallery is using the Site Manager. To do this, open the Site Manager and navigate to the resource gallery to which you want to add a resource. In Windows Explorer or on the Desktop, select the file you wish to add. Then drag and drop it on the appropriate resource gallery. Make sure you drop it in the resource gallery tree, not in the resources pane. This method makes the display name the same as the file name and leaves the Description property for the new resource empty. You can change these using the Resource Manager by navigating to the resource, selecting the Properties icon for this resource, and modifying the Display Name and Description properties.

Replacing a Resource in a Resource Gallery

Replacing a resource allows you to automatically change it in all pages and templates that reference this resource. A good example is updating a company's logo. The existing pages and templates that use the logo will automatically display the new one after it has been updated.

Resources are replaced using the Resource Manager. To replace a resource, navigate to the resource and click the Replace icon for the resource (Figure 16–28).

Click the Browse button to select the new resource file, and then click Open. The new resource file can have a different name but must have the same file extension as the old file. The original MIME content...
type for a resource is preserved. You can't, for example, replace a JPEG image with a GIF. If the extensions, and therefore the MIME types, don't match, an error message is displayed (Figure 16–29), and the replacement process is aborted. If necessary, you can change the display name and description for the replaced resource.

**Renaming, Moving, and Copying a Resource Gallery**

To rename a gallery, in the Site Manager right-click the resource gallery you'd like to rename, select Rename, and type the new name. If you want to change the gallery's description, right-click the gallery, select Properties, and then change the Description property from the Properties > General tab. The description is limited to 256 characters in length.

To move or copy a resource gallery, in the Site Manager, right-click the gallery you'd like to move or copy and select either Cut or Copy; then right-click the gallery where you want it to be moved or copied, and click Paste. All links in pages and templates to the resources inside the moved resource gallery will be maintained.

As with other CMS objects, galleries with the same name can be stored inside the parent gallery because they have different GUIDs. However, having two or more resource galleries with the same name is
very confusing for content authors. It is a good practice to rename the resource gallery immediately after you’ve copied it.

Deleting, Removing, and Restoring a Resource Gallery

To delete a resource gallery, right-click it in the Site Manager and click Delete. Deleted resource galleries are moved to the Deleted Items container in the resource galleries tree. From there, you can either remove the deleted gallery permanently by right-clicking it and selecting Delete, or restore the gallery by moving it back to the resource galleries tree.

Moving, Copying, and Deleting Resources in a Resource Gallery

To move or copy a resource, right-click the file name in the right pane of the Site Manager window you’d like to move or copy, and select either Cut or Copy; then right-click the resource gallery where you want the resource to be moved or copied, and select Paste. You can also drag and drop the resource onto a resource gallery in the tree pane. Moving and reorganizing resources inside the Site Manager doesn’t break links in any pages or templates referencing that resource.

NOTE: It used to be possible to run resource-dependent reports in CMS 2001. This feature is no longer available in CMS 2002.

Resources are identified by GUIDs in the same way as other CMS objects. This means that you can have, for example, two image files with
the same name in the same resource gallery. This is better avoided because it could create problems for content authors.

To delete a resource, right-click the file name and click Delete. Deleted resources are moved to the Deleted Items container in the resource galleries tree. From there, you can either restore the resource by moving it back into a resource gallery or remove it permanently by right-clicking it and selecting Delete. If you’d like to permanently remove all resources and resource galleries in the Deleted Items container, right-click it and select Clear Deleted Items.

You can also delete resources using the Resource Manager in Web Author console. If using the Resource Manager, navigate to the resource you’d like to delete, select the resource by clicking the check box to the left of the resource name, and then click the Delete button. Resources deleted from the Resource manager can’t be restored.

Assigning Rights to a Resource Gallery

Rights to the existing gallery are assigned using the Properties > Rights tab (Figure 16–30). If you want your gallery to have the same rights group assignment as its parent gallery, click Modify and then click Add Parent’s Rights. We will look into assigning rights in the next chapter.

![Figure 16–30 Resource gallery rights](image)
Killing a Lock

When a user is working on a CMS object, this object is locked to prevent two users from working on the same object at the same time. CMS assigns a short-time session lock to the object when a user modifies it. Other users can work with a locked object in read-only mode; however, administrators and channel managers can override the lock. The objects include channels, pages, template galleries, templates, resource galleries, and individual resources.

**NOTE:** A session lock is different from the ownership lock assigned, for example, when an author creates a page. The author automatically becomes the owner of the page, and the page is locked while it goes through the publishing workflow to prevent other authors from changing it before it has been approved. The lock is removed when the page is published, and the locking ownership is assigned to a CMS pseudo-account called Everybody. A pseudo-account is an internal CMS entity that is not mapped to any Windows account. Setting page locking ownership to Everybody allows all CMS users with appropriate rights to edit the page. However, the short-time session lock does not change the locking ownership.

If a user’s machine crashes or is turned off while the user is working with a CMS object, the object may remain locked after the user’s machine has been rebooted. If a user is not able to work on an object they have rights to, you may need to remove a session lock placed on an object by CMS.

Administrators and channel managers can use the Kill Lock command, available from the Tools menu in the Site Manager, to end the session lock. You can also right-click an object, such as a channel or a page, and select Kill Lock. Before you use the Kill Lock command, make sure no user is currently working with the page you are killing the lock on; otherwise, the latest edits may be lost.

Purging Revisions

As we discussed in Chapter 6, CMS stores all approved page, template, and resource revisions. For example, any page change that has been approved by an editor is a revision; each approved change to a page
creates a new page version. The number of revisions on your system is limited only by the size of your database; object versions are stored by date and time. There is no option to automatically purge revisions or disable the creation of revisions. Historical revisions, including large resources, remain in your database and take up space.

Administrators can permanently delete all object revisions that are older than a defined time using the Site Manager. CMS purges all revisions in the site database that are older than the date and time specified. It is advisable to back up the CMS database before purging because this operation cannot be undone.

To purge revisions, in the Site Manager from the Tools menu select Clear Revision History. The Clear Revisions dialog box appears, as shown in Figure 16–31; specify the date and time corresponding to the revisions to be purged, and click Clear. A calendar is provided when you click the down arrow button in the date box. Click Yes in the confirmation message (Figure 16–32). All revisions older than the date you specified will be deleted.

**NOTE:** Users may be locked out of the system during the revision purging procedure; therefore, don’t purge revisions from your site at times of high usage.

![Clear Revisions dialog box](image)

**Figure 16–31** Clear Revisions dialog box

![Confirm Clear Revision History](image)

**Figure 16–32** Clear Revision History confirmation message
Purging the CMS Database

When items are deleted from a Deleted Items container, they are flagged as such in the appropriate tables in the database, and therefore the Site Manager doesn’t display them anymore. For the same reason, the deleted items are not accessible from the PAPI. However, the deleted items’ data is not actually deleted from the CMS database at this stage.

The deleted items’ data is purged from the CMS database tables by a background SQL Server Agent job that is created when you populate the database in the DCA. By default, the job is called BGP-<CMS database name> and is scheduled to run daily at 1 AM. To access the job, open SQL Server Enterprise Manager and then open Microsoft SQL Servers > SQL Server Group > <server name> > Management > SQL Server Agent > Jobs, as shown in Figure 16–33.

The job consists of four steps performed in the following sequence (Figure 16–34):

2. Purge content for deleted pages.
3. Update gallery-based resources.
4. Purge data for deleted resources.

The first step deletes the expired postings; it is not enabled by default. To change this and other settings, right-click the job in the
right pane and select Properties, and then go to the appropriate tab, as follows:

- The General tab allows you to change the job's ownership, category, and description. The job is enabled by default; to disable the job, clear the Enable box in the General tab.
- The Steps tab provides the ability to change the sequence of steps, add new steps, or run each step individually if necessary (Figure 16–34).
  
  To enable the first step—deleting expired pages—select step 1 from the "Start step" list.
- The Schedules tab allows you to modify the default schedule for the job.
- The Notifications tab provides the ability to set up actions to perform on the job's completion.

Background job events are logged in the SQL Server Agent log file \<SQL server installation point\>\MSSQL\LOG\sqlagent.out. You can view the SQL Server Agent error log by right-clicking the SQL Server Agent node and selecting Display Error Log.

**NOTE:** In certain situations, you have to manually start SQL Server Agent. For example, when you stop SQL Server, SQL Server Agent is stopped as well. However, when you restart SQL Server, SQL Server Agent is not restarted automatically. Another example is when SQL
Server is installed on a remote computer. The DCA that is installed locally cannot start SQL Server Agent on a remote machine. In both scenarios, to enable the background purging of the CMS database, you must start SQL Server Agent manually.

Summary

In this chapter, we looked into administering containers. There are several tools, such as the Site Manager, the Web Author, and Visual Studio .NET, that you can use to perform administrative tasks. Table 16–1 compares the Site Manager with the Web Author and VS.NET, and provides a brief reference to show which tool can be used for which task.

Table 16–1 Comparison of Tools for Administrative Tasks

<table>
<thead>
<tr>
<th>Object</th>
<th>Task</th>
<th>Site Manager</th>
<th>Web Author</th>
<th>VS.NET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel</td>
<td>Create a channel</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Rename a channel</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Edit channel display name</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>and description</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Edit channel publishing</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>schedule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Set up publishing flags:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Important channel, Hide</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>when published</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Set up robots flags</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Edit channel rendering</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>properties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Set up default galleries</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Set up the sorting order for</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>the channel items</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assign rights to users</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
Table 16–1  Comparison of Tools for Administrative Tasks (Continued)

<table>
<thead>
<tr>
<th>Object</th>
<th>Task</th>
<th>Site Manager</th>
<th>Web Author</th>
<th>VS.NET</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Set up custom properties</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Move a channel</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Copy a channel</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Delete a channel</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Restore a channel</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Kill lock</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Page</td>
<td>Create a new page</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Edit a page</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Move a page</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Copy a page</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Delete a page</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Restore a page</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Edit page properties</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Kill lock</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Template gallery</td>
<td>Create a new template gallery</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Rename a template gallery</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Edit a description property</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Move a template gallery</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Copy a template gallery</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Delete a template gallery</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Restore a template gallery</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Assign rights to users</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Kill lock</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

*continued on page 390*
Table 16–1  Comparison of Tools for Administrative Tasks (Continued)

<table>
<thead>
<tr>
<th>Object</th>
<th>Task</th>
<th>Site Manager</th>
<th>Web Author</th>
<th>VS.NET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Template</td>
<td>Create a new template</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Rename a template</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Edit template properties</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Check in and check out a template</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Move a template</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Copy a template</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Delete a template</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Restore a template</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Run a dependent report</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Revert to approved</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Kill lock</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Resource gallery</td>
<td>Create a new resource gallery</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Rename a resource gallery</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Edit a description property</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Move a resource gallery</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Copy a resource gallery</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Delete a resource gallery</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Restore a resource gallery</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Assign rights to users</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Kill lock</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Resource</td>
<td>Add a resource to a resource gallery</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Replace a resource in a resource gallery</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
For tasks that can be performed using different tools, there may be subtle differences in implementation of functionality. These differences have been outlined in the chapter where appropriate.

**NOTE:** Table 16–1 shows the use of VS.NET for administrative tasks; we are not talking here about writing code to modify an object’s properties programmatically.

In this chapter, we focused on managing containers such as channels, template galleries, and resource galleries. However, to provide a publishing environment for our site, we need to assign rights groups to these containers. We will concentrate on this task in the next chapter.

Table 16–1  Comparison of Tools for Administrative Tasks (Continued)

<table>
<thead>
<tr>
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<th>Task</th>
<th>Site Manager</th>
<th>Web Author</th>
<th>VS.NET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move a resource</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Copy a resource</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Delete a resource</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Restore a resource</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Kill lock</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>