

# Sitecore CMS 6.2 or later WebDAV Configuration

WebDAV Implementation and Configuration for Sitecore Administrators and Developers



## Table of Contents

Chapter 1	Introduction	4
Chapter 2	WebDAV Overview	5
2.1 V	VebDAV Features	6
2.2 V	VebDAV Architectural Notes	7
2.2.1	WebDAV Requests	7
2.2.2	WebDAV Modes	7
2.2.3	WebDAV Options Objects	7
2.2.4	WebDAV Views	7
2.2.5	The WebDAV Request Handler	8
2.2.6	The WebDAV File Drop Area Data (FDA) Template Field Type	8
2.2.7	WebDAV Custom Properties	8
2.2.8	The IT Hit WebDAV Engine	8
Chapter 3	Sitecore WebDAV Configuration	9
3.1 C	Configure IIS to Support WebDAV	10
3.1.1	Disable Integrated Windows Authentication	10
How 2001	v to Disable Integrated Windows Authentication on IIS6 or Earlier (Windows XP and Wi	ndows
How	to Disable Integrated Windows Authentication on IIS7 or Later (Windows Vista, Window	
2005	R and Windows 7)	11
312	Configure IIS to Use ASP NET to Process WebDAV Requests	12
1185	(Windows XP)	12
IIS6	(Windows 2003)	17
IIS7	(Windows Vista Windows 2008 and Windows 7)	24
32 V	VebDAV Configuration Settings	25
321	The WebDAV Associate UsernameWithLink Setting	25
3.2.2	The WebDAV Enabled Setting	
3.2.3	The WebDAV EngineLogLevel Setting	
3.2.4	The WebDAV FileDropAreaMediaLocation Setting	
3.2.5	The WebDAV.Folder Setting	26
3.2.6	The WebDAV.LicenseFile Setting	26
3.2.7	The WebDAV.MediaHandlerName Setting.	26
3.2.8	The WebDAV.PromptWhenUsernameUnknown Setting	26
3.2.9	The WebDAV.URLDisplayName Setting	26
3.3 T	he WebDAV Configuration Element	27
3.3.1	Configure WebDAV Authentication	27
Wet	DAV Authentication Methods	27
3.3.2	Configure WebDAV Views	28
3.3.3	Configure the WebDAV Supplemental Locking Provider	28
3.3.4	Configure the WebDAV Null Locking Provider.	28
3.3.5	Configure the WebDAV Option Store	29
3.4 V	VebDAV Pipelines	30
3.4.1	The autogenerateVersions Pipeline	30
3.4.2	The getProperties Pipeline	30
3.4.3	The requireAuthentication Pipeline	30
3.4.4	The resolveDatabase Pipeline	30
3.4.5	The resolveMode Pipeline	30
3.4.6	The resolveRootItem Pipeline	31
3.4.7	The resolveSite Pipeline	31
3.4.8	The resolveUser Pipeline	31
3.4.9	The resolveView Pipeline	31



3.4.10	The updateProperties Pipeline	31
3.4.11	The validateOperation Pipeline	31
Chapter 4	Known Issues and Troubleshooting Techniques	32
4.1 K	nown Issues	33
4.2 T	roubleshooting WebDAV	34
4.2.1	The WebDAV Logs	34
4.2.2	WebDAV Client Configuration	34
4.2.3	Running a System Command on this Item Might Be Unsafe	34
4.2.4	Internet Explorer Could Not Open	35
4.2.5	Cannot Find	35



## **Chapter 1**

## Introduction

This document provides a technical overview and configuration details for the Sitecore Web-based Distributed Authoring and Versioning (WebDAV) implementation.<sup>1</sup> CMS administrators, architects, and developers should read this document before implementing WebDAV features in a Sitecore solution.

This document begins with an overview of WebDAV features and the WebDAV architecture, continues to provide instructions to configure Sitecore WebDAV features, and completes with descriptions of limitations, known issues, and troubleshooting techniques for Sitecore WebDAV features.

This document contains the following chapters:

- Chapter 1 Introduction
- Chapter 2 WebDAV Overview
- Chapter 3 Sitecore WebDAV Configuration
- Chapter 4 Known Issues and Troubleshooting

<sup>&</sup>lt;sup>1</sup> For more information about WebDAV, see <u>http://www.webdav.org</u>. For more information about Sitecore WebDAV features, see the Content Author's Cookbook at <u>http://sdn.sitecore.net/End%20User/Sitecore%206%20Cookbooks.aspx</u>.

Sitecore® is a registered trademark. All other brand and product names are the property of their respective holders. The contents of this document are the property of Sitecore. Copyright © 2001-2013 Sitecore. All rights reserved.



# Chapter 2

# WebDAV Overview

This chapter provides overviews of WebDAV features and the WebDAV architecture.

This chapter contains the following sections:

- WebDAV Features
- WebDAV Architectural Notes



## 2.1 WebDAV Features

WebDAV allows users of Web clients such as browsers to manage files on Web servers using Web protocols such as HTTP or HTTPS. With WebDAV, users can drag-and-drop files between the Windows desktop and the browser.

#### Warning

Microsoft Internet Explorer 8 does not support WebDAV when accessing the host name localhost. For more information about this issue, see the section Cannot Find.

#### Warning

The Sitecore WebDAV implementation uses the ITHit WebDAV engine. The IIS7 WebDAV component available from Microsoft and the IIS7.5 WebDAV Publishing feature can interfere with the Sitecore WebDAV implementation. For more information about the ITHit WebDAV engine, see the section The IT Hit WebDAV Engine.

#### Important

Sitecore does not support WebDAV features that Internet Explorer does not directly support, such as custom WebDAV properties and the ability to map drive letters to WebDAV resources.

#### Note

For information about WebDAV client configuration, see the section WebDAV Client Configuration.

#### Note

To access the IIS management console, in the Windows desktop, click the **Windows** button. The Windows Start menu appears. If the Windows Start menu does not contain a text box, then select **Run**. Type inetmgr, and then press Enter.

#### Note

If Internet Explorer prompts for a password when accessing WebDAV features, then enter your Sitecore username including the domain prefix (sitecore\username) and your password. Usernames and passwords are case-sensitive.



## 2.2 WebDAV Architectural Notes

This section provides information about the WebDAV architecture and the Sitecore WebDAV implementation.

## 2.2.1 WebDAV Requests

WebDAV interactions consist of a series of HTTP (or HTTPS) requests and responses (WebDAV requests) between a Web client and a Web server. User actions in WebDAV-enabled components of a Web client trigger WebDAV requests from the Web client to the Web server. The Web server responds to WebDAV requests by taking some action on one or more files or directories and returning some information to the Web client. For example, when a user drags a file into a browser window that supports WebDAV, the Web client sends information about that file including its contents to the Web server, which stores a copy of that file and returns information about the current directory and its contents to the Web client.

## 2.2.2 WebDAV Modes

WebDAV operates in read-only or read-write mode. The default is read-write mode.

#### Тір

You can override the WebDAV mode by manipulating the resolveMode pipeline to set the Sitecore.Configuration.WebDAVOptions.ReadOnlyMode property.<sup>2</sup> For more information about the resolveMode pipeline, see the section The resolveMode Pipeline.

## 2.2.3 WebDAV Options Objects

Sitecore determines a processing context for each WebDAV request. To optimize performance, Sitecore stores information about different processing contexts in WebDAV Options objects on the server, but does not populate properties of these objects until needed. WebDAV request URLs contain GUIDs linking to WebDAV Options objects. For information about server-side storage of WebDAV Options objects, see the section Configure the WebDAV Option Store.

WebDAV Options objects can include various types of information, including:

- The context site.
- The database.
- The media item.
- The WebDAV mode (read-only or read-write).

#### Note

Sitecore can use the same WebDAV Options object for requests from multiple users. To optimize performance by minimizing the number of objects and database interactions, WebDAV Options objects persist between HTTP requests and are read-only after creation.

#### 2.2.4 WebDAV Views

WebDAV views provide alternative user interfaces to a WebDAV repository.

<sup>&</sup>lt;sup>2</sup> For more information about Sitecore APIs, see the Sitecore API documentation at <u>http://sdn.sitecore.net/Reference/Sitecore%206/Sitecore\_6\_API\_Reference.aspx</u>.

Sitecore® is a registered trademark. All other brand and product names are the property of their respective holders. The contents of this document are the property of Sitecore. Copyright © 2001-2013 Sitecore. All rights reserved.



Sitecore provides two default views. The simple view provides information about the media folders and media items within a media folder or the root of the media library. The detailed view lists each media item that supports versioning as a folder containing folders for each language, where each folder contains zero or more versions for that language.

#### Note

In Sitecore user interfaces, the simple view can appear as **Show only latest version of files**; the detailed view can appear as **Show versioned files in folders**.

#### Note

You can register additional views as described in the section Configure WebDAV Views.

### 2.2.5 The WebDAV Request Handler

Sitecore processes WebDAV request with the WebDAV request handler. For more information about the WebDAV request handler, see the section The WebDAV.MediaHandlerName Setting.

## 2.2.6 The WebDAV File Drop Area Data (FDA) Template Field Type

The File Drop Area data template field type allows users to use WebDAV to manage media items associated with an item.<sup>3</sup> Each FDA field value links to a unique folder in the media library that contains the media items dragged into the field.

## 2.2.7 WebDAV Custom Properties

WebDAV allows users to associate custom properties with files stored in the WebDAV repository.

#### Note

The Microsoft Internet Explorer WebDAV client supported by Sitecore does not support WebDAV custom properties.

## 2.2.8 The IT Hit WebDAV Engine

Sitecore uses the IT Hit WebDAV engine.<sup>4</sup>

http://sdn.sitecore.net/Reference/Sitecore%206/Data%20Definition%20Reference.aspx.

<sup>&</sup>lt;sup>3</sup> For more information about the File Drop Area (FDA) data template field type, see the Data Definition Reference manual at

<sup>&</sup>lt;sup>4</sup> For more information about IT Hit WebDAV, see <u>http://ithit.com/</u>. For more information about the IT Hit WebDAV Engine, see <u>http://www.webdavsystem.com/server/</u>.

Sitecore® is a registered trademark. All other brand and product names are the property of their respective holders. The contents of this document are the property of Sitecore. Copyright © 2001-2013 Sitecore. All rights reserved.



## **Chapter 3**

# Sitecore WebDAV Configuration

This chapter describes Sitecore WebDAV configuration, beginning with instructions to configure IIS to support WebDAV, and continuing with information about WebDAV configuration elements including the WebDAV pipelines.

This chapter contains the following sections:

- Configure IIS to Support WebDAV
- WebDAV Configuration Settings
- The WebDAV Configuration Element
- WebDAV Pipelines



## 3.1 Configure IIS to Support WebDAV

If you do not use the setup executable to install Sitecore, then follow the instructions in this section to configure IIS to support WebDAV.

#### Note

The Sitecore setup executable automatically configures IIS to support WebDAV.

#### Note

If you use separate Sitecore instances for content management and content delivery, and you do not use WebDAV in the content delivery environment, then you do not need to configure WebDAV support in the content delivery environment.

#### 3.1.1 Disable Integrated Windows Authentication

Ensure that you have disabled integrated Windows authentication.

# How to Disable Integrated Windows Authentication on IIS6 or Earlier (Windows XP and Windows 2003)

To disable integrated Windows authentication on IIS6 or earlier:

- 1. In the IIS management console, right-click the Web site, and then click **Properties**. The **Properties** dialog appears.
- 2. In the **Properties** dialog, click the **Directory Security** tab, and then under **Authentication and access control**, click **Edit**. The **Authentication Methods** dialog appears.



3. In the Authentication Methods dialog, disable Integrated Windows authentication, and then click OK.

🕄 Internet Informatio	n Services	
File Action View Hel	p	
← → 🗈 🖬 😭 [	ð 🗟 😫 🖬 💂 🕨 🔳	11
Internet Information See	vices Name IISHelp Site Default Web Site P Web Site Directory Security Anonymous acces sta La auther Name	Path c: Wi roperties ISAPI Filters Home Directory Documents HTTP Headers Custom Errors ASP.NET s and authentication control le anonymous access and edit the entication methods for this resource. Edit
uthentication Methods  Anonymous access  No user name/password requirer  Account used for anonymous ac  User name:  Accounts	d to access this resource. cess:	A name restrictions deny access to this resource using sses or internet domain names. Edit
Password: Allow IIS to co	ntrol password	ns secure communications and lient certificates when this is accessed. View Certificate
For the following authentication r are required when - anonymous access is a - access is restricted usi	nethods, user name and password lisabled, or ng NTFS access control lists	Edit
Basic authentication for Win	dows domain servers rd is sent in clear text)	OK Cancel Apply Help
Default domain:	Select	
Realm:	Select	
Integrated Windows authenti	cation	
ОК	Cancel Help	

# How to Disable Integrated Windows Authentication on IIS7 or Later (Windows Vista, Windows 2008, and Windows 7)

To disable integrated Windows authentication on IIS7 or later:

1. In the IIS management console, select the Web site, and then double-click Authentication.



2. In the IIS management console, disable Windows Authentication.

	M_X64 ► Sites ► Sitecore ►		
File View Help			
Connections	Q Authenticatio	'n	
▲ · • • WIN7ULTIM_X64 (Wi ▲	Group by: No Grouping	•	
Application Pool	Name	Status	Response Type
<ul> <li>Solution</li> <li>Solution</li> <li>Sitecore</li> <li>Sitecore</li> <li>App_Brow</li> <li>Sitecore</li> <li>Si</li></ul>	Anonymous Authentication ASP.NET Impersonation Basic Authentication Forms Authentication Windows Authentication	Enabli Disabl Disabl	ed led led HTTP 401 Challenge HTTP 302 Login/Redire Disable Advanced Settings Providers Help Online Help
Configuration: 'localhost' applica	🛅 Features View 🚰 Content V tionHost.config , <location path:<="" td=""><td>View ="Siteco</td><td>ore"&gt;</td></location>	View ="Siteco	ore">

## 3.1.2 Configure IIS to Use ASP.NET to Process WebDAV Requests

Follow the instructions in this section for your platform to ensure that IIS processes WebDAV requests using ASP.NET.

#### Note

To minimize processing overhead in some cases, different configuration applies to the document root of the IIS Web site and the subdirectory specified by the WebDAV.Folder setting. For more information about the WebDAV.Folder setting, see the section The WebDAV.Folder Setting.

#### Note

The instructions below list the default value of the WebDAV.Folder setting (/sitecore\_files). For more information about the WebDAV.Folder setting, see the section The WebDAV.Folder Setting.

#### **IIS5 (Windows XP)**

To configure the document root of an IIS5 Web site to support Sitecore WebDAV features:



1. In the IIS management console, right-click the Web site, and then click **Properties**. The **Properties** dialog appears.

Internet Information         File       Action         View       Help         ←       →       1         [1]       [2]       [2]	Services	
Internet Information Server     Image: Server	ces Name IISHelp Printers Explore Open e_f Browse onf Start ata Stop Pause New \$ All Tasks e w Rename Refresh Export List Properties t.as Properties t.as	Path         c:\windows\help\ishelp         Default Web Site Properties         Directory Security         HTTP Headers         Custom Errors         ASP.NET         Web Site         ISAPI Filters         Home Directory         Documents         Web Site Identification         Description:         Default Web Site         IP Address:         (All Unassigned)         Y         Advanced         TCP Port:         80         SSL Port:         Connections         Connection Timeout:         900         wire log format:         W3C Extended Log File Format         Y         Properties
	l	OK Cancel Apply Help



2. In the **Properties** dialog, click the **Home Directory** tab, and then click **Configuration**. The **Application Configuration** dialog appears.

Application Co	onfiguration		
Mappings Opt	ions Debugging		
Cache ISA	PI applications		
- Application M			
-			
Exten	Executable Path	Verbs	
.adproto	C:\WINDOWS\Microsoft.NET\Frame	GET, HEA.	
.asax	C:\WINDOWS\Microsoft.NET\Frame	GET, HEA.	
.ascx	C:\WINDOWS\Microsoft.NET\Frame	GET, HEA.	-
.ashx	C:\WINDOWS\Microsoft.NET\Frame	GET,HEA.	
.asmx	C:\WINDOWS\Microsoft.NET\Frame	GET,HEA.	
.aspx	C:\WINDOWS\Microsoft.NET\Frame	GET,HEA.	
.axd	C:\WINDOWS\Microsoft.NET\Frame	GET,HEA.	
.browser	C:\WINDOWS\Microsoft.NET\Frame	GET,HEA.	
.cd	C:\WINDOWS\Microsoft.NET\Frame	GET,HEA.	
.compiled	C:\WINDOWS\Microsoft.NET\Frame	GET,HEA.	
.config	C:\WINDOWS\Microsoft.NET\Frame	GET, HEA.	▼
<		>	
	<b>_</b>		
Add	Edit Remove		
			lolo
	OK Cancel Apply		ieip
			_

- 3. In the Application Configuration dialog, select.aspx, and then click Edit. The Add/Edit Application Extension Mapping dialog appears.
- 4. In the Add/Edit Application Extension Mapping dialog, copy the value of Executable to the Windows clipboard, and then click OK.
- 5. In the Application Configuration dialog, click Add. The Add/Edit Application Extension Mapping dialog appears.
- 6. In the **Add/Edit Application Extension Mapping** dialog, in the **Executable** field, paste the value from the Windows clipboard.
- 7. In the Add/Edit Application Extension Mapping dialog, for Extension, enter an asterisk ("\*").
- 8. In the Add/Edit Application Extension Mapping dialog, select Limit to, and enter PROPFIND, OPTIONS.



9. In the Add/Edit Application Extension Mapping dialog, disable Check that file exists, and then click OK.

Executable:	C:\WINDOWS\\aspnet_isapi.dll Browse
Extension:	
Verbs	
🔿 All Verbs	
<ul> <li>Limit to:</li> </ul>	PROPFIND, OPTIONS
Script engine	exists OK Cancel Help

To configure the WebDAV subdirectory of an IIS5 Web site to support Sitecore WebDAV features:

- 1. In the IIS management console, expand the Web site, then right-click /sitecore\_files, and then click Properties. The Properties dialog appears.
- 2. In the Properties dialog, click the Directory tab, and then click Create.

Internet Information Services	Name	Path		
EKM (local computer)	Web.config			
Default Web Site	sitecore_files Properti	es	? 🛛	
🕀 🚰 Printers	HTTP Headers	Custom Errors	ASP.NET	
🗈 🥸 Music	Virtual Directory	Documents	Directory Security	
sitecore_files	When connecting to thi	s resource, the content should come	from:	
App_Browsers	• A	directory located on this computer		
App_Coning     App_Data	O A	share located on another computer		
🕀 🛄 bin	O A	redirection to a URL		
🗈 🧰 data				
i layouts	Local Path: D:	\Sitecore\Website\sitecore_files	Browse	
sitecore modules	Script source access 🔽 Log visits			
i∎i temp	Read	Index this resource	urce	
🗈 🧰 upload	Directory browsing			
i ⊡ - 🛄 xsl	Application Settings			
I Contract SMTP Virtual Serve	Application Settings			
	Application name:	Sitecore CMS	Create	
	Starting point:	<default site="" web=""></default>	Configuration	
	Execute Permissions:	Scripts only		
	Application Protection:	Medium (Pooled)	Unload	
	- application rotocton.			
		OK Cancel	Apply Help	
L				

The Properties dialog refreshes to indicate the new application.

Sitecore® is a registered trademark. All other brand and product names are the property of their respective holders. The contents of this document are the property of Sitecore. Copyright © 2001-2013 Sitecore. All rights reserved.



3. In the **Properties** dialog, click **Configuration**. The **Application Configuration** dialog appears.

	sitecore_files Properties		? 🗙
	HTTP Headers	Custom Errors	ASP.NET
	Virtual Directory	Documents	Directory Security
	When connecting to this reso	ource, the content should c	ome from:
	A direct	tory located on this comput	ter
	🔿 A shan	e located on another compo	uter
	O A redin	ection to a URL	
Application Cor	nfiguration	×	ELO Browse
Mappings Optio	ne Debugging		
Moppinge Optio	ns Debugging		ource
Cache ISAPI	applications		
Application Ma	appings		
Exten	Even table Path	Verba	
Extern	Executable Fath	Veibs	Remove
			Apply Help
Add	Edit Remov	re	
	(1) (	in the second	

4. Create an extension mapping for an asterisk ("\*") extension. In the **Executable** field, paste the value that you copied in the step 4 of the previous actions list. Select **All Verbs**, disable **Check** 



#### that file exists.

Application Configuration
Mappings Options Debugging
Add/Edit Application Extension Mapping
App           Executable:         C:\WINDOWS\\aspnet_isapi.dll         Browse
Extension:
Verbs-
All Verbs
Add Edit Remove
OK Cancel Apply Help

5. In the **Properties** dialog, click **Remove**, and then click **OK**. The **Properties** dialog refreshes to indicate that you can create an application.

HTTP Headers	Custom Errors	ASP.NET	
Virtual Directory	Documents	Directory Security	
When connecting to thi	s resource, the content should	d come from:	
۵ (ا	directory located on this com	puter	
○ A	share located on another co	mputer	
○ A	redirection to a <u>U</u> RL		
Lo <u>c</u> al Path: D:	\Sitecore\Website\sitecore_fi	iles Br <u>o</u> wse	
Script source access     ✓ Log visits       Bead     ✓ Index this resource       ✓ Write     ✓			
Application Settings			
Application name:	Sitecore CMS	Remove	
Starting point:	<defaul\sitecore_files< td=""><td>Configuration</td></defaul\sitecore_files<>	Configuration	
Execute Permissions:	Scripts only	×	
Application Protection:	Medium (Pooled)	Unload	

#### IIS6 (Windows 2003)

Sitecore® is a registered trademark. All other brand and product names are the property of their respective holders. The contents of this document are the property of Sitecore. Copyright © 2001-2013 Sitecore. All rights reserved.



To configure an IIS6 Web site to support Sitecore WebDAV features, configure the Web site, and then configure the WebDAV subdirectory of that Web site as described in the following section. For more information about the WebDAV subdirectory, see the section The WebDAV.Folder Setting.

To configure the document root of an IIS6 Web site to support Sitecore WebDAV features:

1. In the IIS management console, right-click the Web site, and then click **Properties**. The **Properties** dialog appears.

🐌 Internet Information Services (IIS) Manager	
🐚 Eile Action <u>V</u> iew <u>W</u> indow <u>H</u> elp	_8×
Image: Start       Start         Image: Start       Image: Start<	Path         D:\www.vroc         Properties         Properties         Agencies         tory Security         HTTP Headers         Custam Errors         ASP.NET         Documents         Content for this resource should come from:         A ghare located on another computer         A share located on another computer         A redirection to a URL         path:       D:\Sitecore\Website         Brgwse         cript source access       Index this resource         grite       Index this resource         grite       Index this resource         cation name:       Sitecore CMS         station name:       Sitecore S         cation pool:       DefaultAppPool         OK       Cancel       Apply         Marcel       Apply



2. In the **Properties** dialog, click the **Home Directory** tab, and then click **Configuration**. The **Application Configuration** dialog appears.

	Directory Security	HTTP Headers	Custom Errors	ASP.NET
	Web Site Performant	ce I ISAPI Filters	Home Directory	Documents
	The content for this reso	urce should come from	:	'
	• A	irectory located on thi	is computer	
	C A g	hare located on anoth	ier computer	
		redirection to a <u>U</u> RL		
ation Co	pfiguration		Bro	wse
. )				
ings   O	itions   Debugging		l ce	
<u>C</u> ache IS	API extensions			
pplication	e <u>x</u> tensions			
Extens	Executable Path	Verbs	<u> </u>	
.adprot. .asax	<ul> <li>C:\WINDOWS\Microsoft.NE</li> <li>C:\WINDOWS\Microsoft.NE</li> </ul>	T\Framew GET,HE	A	emove
ascx	C:\WINDOWS\Microsoft.NE	T\Framew GET,HE	A	
.ashx asmy	C:\WINDOWS\Microsoft.NE	:T\Framew GET,HB :T\Framew GET HB		guration
<ul> <li>I I I I I I I I I I I I I I I I I I I</li></ul>	crimino o no price osoremie			beala
odd	Edit	Bemove		nijeau
Ago		Veniove		
/ildcard a	oplication maps (order of imple	mentation):		1
			t	Help
		Edit		
		Rem	ove	
	p Move Down			
Movel				
Move				
Move		1		

- 3. In the Application Configuration dialog, select the .aspx extension, and then click Edit. The Add/Edit Application Extension Mapping dialog appears.
- 4. In the Add/Edit Application Extension Mapping dialog, copy the value of Executable to the Windows clipboard, and then click OK.
- 5. In the Application Configuration dialog, click Insert. The Add/Edit Application Extension Mapping dialog appears.
- 6. In the **Add/Edit Application Extension Mapping** dialog, for **Executable**, paste the value from the Windows clipboard.



7. In the Add/Edit Application Extension Mapping dialog, disable Verify that file exists, and then click OK.

Application Configuration	×
Mappings Options Debugging	
Cache ISAPI extensions	
Application extensions	
Extens Executable Path Verbs	
Add/Edit Application Extension Mapping	×
Executable: T\Framework\v2.0.50727\aspnet_isa	api.dll
Urify that file exists	
OK Car	ncel Help
Wildcard application maps (order of implementation):	
C:\WINDOWS\Microsoft.NET\Framework\v2.0	rt
Edit	
Rem	ove
Move Up Move Down	
OK Cancel	Help

To configure the WebDAV subdirectory of an IIS6 Web site to support Sitecore WebDAV features:



1. In the IIS management console, expand the Web site, then right-click the /sitecore\_files subdirectory, and then click **Properties**. The **Properties** dialog appears.

Internet Information Services (IIS) Mana         Image: Steecore         Image: Steecore	ig		? X
	HTTP Headers	Custom Errors	ASP.NET
Ar New	Virtual Directory	Documents	Directory Security
	The content for this resource	e should come from:	
ia) <u>Vi</u> ew ►	• A dire	ectory located on this compute	r 🔤
	C A sha	re located on another computi in ation to a UDI	er
E Refresh	O A rec	irection to a <u>U</u> RL	
	Local path: D:\Site	core\Website\sitecore_files	Br <u>o</u> wse
	Scrip <u>t</u> source access	🔽 Log visits	
	Read	Index this res	source
🗄 🭎 service	Directory browsing		
	Application settings		
	Application name; Si	ecore CMS	Create
Web	Starting point:	tecore	
			Configuration
Opens the properties	Execute permissions: So	ripts only	
	Application pool: be	eSitecore620rev091012AppPc	
	<u> </u>		
_			
		OK Cancel	Apply Help



2. In the **Properties** dialog, click the **Virtual Directory** tab, and then click **Create**. The **Properties** dialog refreshes to indicate the new application.

HTTP Headers	Custom Errors	ASP.NET
Virtual Directory	Documents	Directory Security
The content for this resou	rce should come from:	
🖲 A di	rectory located on this comp	uter
⊂ A <u>s</u> t	are located on another comp	outer
C A re	direction to a <u>U</u> RL	
Local path: D:\Si	tecore\Website\sitecore_file:	Browse
Script source access Read Write Directory browsing	<ul> <li>✓ Log visits</li> <li>✓ Index this</li> </ul>	resource
Application settings		
Application name:	itecore_files	Remove
Starting point: <	Sitecore>\sitecore_files	Castinumstics
Execute permissions:	cripts only	
Application pool:	PefaultAppPool	Unload

3. In the **Properties** dialog, click **Configuration**. The **Application Configuration** dialog appears.

Mappings Options Debugging
✓ Gache ISAPI extensions       Application extensions       Extens       Extens       Executable Path
Application extensions           Extens         Executable Path
Extens Executable Path Verbs
Add Edit <u>Remove</u>
Edit
Move Up Move Down
OK Cancel Help

4. In the Application Configuration dialog, click Insert. The Add/Edit Application Extension Mapping dialog appears.



- 5. In the **Add/Edit Application Extension Mapping** dialog, in the **Executable** field, paste the value that you copied in the step 4 of the previous actions list.
- 6. In the Add/Edit Application Extension Mapping dialog, disable Verify that file exists, and then click OK.

Application Configuration	×
Mappings Options Debugging	
☑ _ache ISAPI extensions	
Application extensions	
Extens Executable Path	Verbs
Add/Edit Application Extension Mapp	bing 🔀
Executable: T\Framework\v2.0.	.50727\aspnet_isapi.dll Browse
	Cancel Help
Wildcard application maps (order of implementa	ation):
	Insert
	Edit
	Remove
Move Up Move Down	
	Capcel Help



7. In the **Properties** dialog, click **Remove**, and then click **OK**. The **Properties** dialog refreshes to indicate that you can create an application.

HTTP Headers	Custom Errors	ASP	.NET
Virtual Directory	Documents	Directory Se	curity
The content for this re	source should come from:		
• ,	A <u>d</u> irectory located on this com	puter	
0,	A <u>s</u> hare located on another con	nputer	
0,	A redirection to a <u>U</u> RL		
ocal path:	:\Sitecore\sitecore_files	Brows	. 1
	- Victore Construction Construction		
Read	, I♥ Log visit: ▼ Index th	, is resource	
✓ Write	<u> </u>		
Directory browsing			
Application settings			
oplication name:	Sitecore CMS	Crea	te
-h	Charles b		
starting point:	<pre><sitecore></sitecore></pre>	Configura	tion
ixecute <u>p</u> ermissions:	Scripts only	<b>_</b>	
Application pool:	beeSitecore620rev091012A	unioa	ad
	1		

#### IIS7 (Windows Vista, Windows 2008, and Windows 7)

If you use IIS7, then you do not need to configure IIS to support WebDAV.



## 3.2 WebDAV Configuration Settings

This section describes the structure of the file /App\_Config/Include/Sitecore.WebDAV.config that controls Sitecore WebDAV features. For more information, see the comments above each setting in /App Config/Include/Sitecore.WebDAV.config.

## 3.2.1 The WebDAV.AssociateUsernameWithLink Setting

The WebDAV.AssociateUsernameWithLink setting controls whether Sitecore stores information about users in WebDAV Options objects. For more information about WebDAV Options objects, see the section WebDAV Options Objects. For more information about WebDAV authentication, see the section Configure WebDAV Authentication.

#### Warning

Do not set the WebDAV.AssociateUsernameWithLink setting to true on networks that you do not know to be secure.

#### Important

In order to support CMS users using Microsoft Internet Explorer on Windows 7, do not set WebDAV.AssociateUsernameWithLink to false.

#### Note

If the value of the WebDAV.AssociateUsernameWithLink setting is default, then Sitecore stores information about users in WebDAV Options objects when required for specific Web clients, such as Microsoft Internet Explorer on Windows 7.

#### Тір

On secure networks, you can set the WebDAV.AssociateUsernameWithLink setting to true to reduce the frequency of WebDAV authentication prompts.

## 3.2.2 The WebDAV.Enabled Setting

The WebDAV.Enabled setting controls whether Sitecore enables WebDAV features. If you set WebDAV.Enabled to false, then WebDAV features do not appear in the Sitecore user interfaces, and Sitecore does not use the WebDAV engine to process WebDAV requests. For more information about the WebDAV engine, see the section The IT Hit WebDAV Engine.

#### Note

When WebDAV. Enabled is false, File Drop Area (FDA) data template fields display an alternate interface that does not rely on WebDAV. For more information about FDA fields, see the section The WebDAV File Drop Area Data (FDA) Template Field Type.

## 3.2.3 The WebDAV.EngineLogLevel Setting

The WebDAV.EngineLogLevel setting controls the verbosity of the IT Hit WebDAV engine log. For more information about the IT Hit WebDAV engine, see the section The IT Hit WebDAV Engine. For more information about WebDAV logs, see the section The WebDAV Logs.

#### Note

The default configuration disables the IT Hit WebDAV engine log.

Sitecore® is a registered trademark. All other brand and product names are the property of their respective holders. The contents of this document are the property of Sitecore. Copyright © 2001-2013 Sitecore. All rights reserved.



## 3.2.4 The WebDAV.FileDropAreaMediaLocation Setting

The WebDAV.FileDropAreaMediaLocation setting specifies the default location in the media library for Sitecore to store media items managed with WebDAV. Sitecore rejects WebDAV requests that involve items outside of this location. You can use the WebDAV.FileDropAreaMediaLocation setting to configure WebDAV support for only one specific branch of the media library.

## 3.2.5 The WebDAV.Folder Setting

The WebDAV.Folder setting specifies the subdirectory of the IIS Web site that handles WebDAV requests.

Sitecore does not create files in the directory specified by the WebDAV.Folder setting.

#### Warning

```
The WebDAV. Folder setting uses the value attribute of the
```

/configuration/sitecore/sc.variable element in the file /App\_Config/Include/
Sitecore.WebDAV.config with name webDAVPrefix. These two configurable items must always
evaluate to the same value.

## 3.2.6 The WebDAV.LicenseFile Setting

The WebDAV.LicenseFile setting specifies the location of the license file that Sitecore uses for the IT Hit WebDAV engine. For more information about the IT Hit WebDAV engine, see the section The IT Hit WebDAV Engine.

#### Warning

Do not change the WebDAV.LicenseFile setting unless instructed to do so by Sitecore.

## 3.2.7 The WebDAV.MediaHandlerName Setting

The WebDAV.MediaHandlerName setting controls which handler Sitecore uses for WebDAV requests. Sitecore handles WebDAV requests with the class identified by the type attribute of the /configuration/system.web/httpHandlers/add element in web.config for which the path attribute matches the value of the WebDAV.MediaHandlerName setting.

## 3.2.8 The WebDAV.PromptWhenUsernameUnknown Setting

The WebDAV.PromtWhenUsernameUnkown setting controls how Sitecore responds to WebDAV requests when the context user is unknown. When the WebDAV.PromtWhenUsernameUnkown setting is true, then Sitecore prompts for authentication. When the WebDAV.PromtWhenUsernameUnkown setting is false, then Sitecore performs the operation as the anonymous user in the context domain.

## 3.2.9 The WebDAV.URLDisplayName Setting

The WebDAV.URLDisplayName setting controls the prefix that Sitecore uses in WebDAV URL paths, and can appear as the current folder name in WebDAV clients.

Sitecore® is a registered trademark. All other brand and product names are the property of their respective holders. The contents of this document are the property of Sitecore. Copyright © 2001-2013 Sitecore. All rights reserved.



## 3.3 The WebDAV Configuration Element

The following sections describes the /configuration/sitecore/webdav element in the file /App\_Config/Include/Sitecore.WebDAV.Config, which controls Sitecore WebDAV features including authentication, WebDAV views, lock management, and storage of WebDAV Options objects.

## 3.3.1 Configure WebDAV Authentication

The /configuration/sitecore/webdav/authentication element in the file /App\_Config/Include/Sitecore.WebDAV.config controls WebDAV authentication. The type attribute of the <authentication> element specifies the class to use for authenticating WebDAV requests.

Sitecore uses the authentication method specified by the first <map> element within the /configuration/sitecore/webdav/authentication/authentications element in the file /App\_Config/Include/Sitecore.WebDAV.config with a useragent attribute that matches the user agent string of the Web client. If no such entry exists, Sitecore uses the authentication method specified by the

/configuration/sitecore/webdav/authentication/preferredAuthentication **element in** the file /App Config/Include/Sitecore.WebDAV.config.

#### Note

Without customization, you must use the same authentication method for all Web clients that match each useragent.

#### **WebDAV Authentication Methods**

Sitecore provides two WebDAV authentication methods: Basic and Digest.

#### Warning

*Basic* authentication transmits usernames and passwords in plain text. *Digest* provides additional security, but is not completely secure. Consider implementing custom WebDAV authentication on networks that you do not know to be secure.

#### Note

WebDAV requires separate authentication because WebDAV clients do not support ASP.NET forms authentication used by Sitecore.<sup>5</sup>

#### Note

Default configurations of Windows Vista and Windows 2008 do not support Basic authentication.<sup>6</sup>

#### Note

The default Sitecore configuration uses *Digest* for all user agents.

To implement a custom WebDAV authentication provider:

1. Implement the abstract methods in the Sitecore.Security.Authentication.HttpAuthenticationProvider class.

<sup>&</sup>lt;sup>5</sup> http://msdn.microsoft.com/en-us/library/aa480476.aspx.

<sup>&</sup>lt;sup>6</sup> http://www.webdavsystem.com/server/documentation/authentication/basic\_auth\_vista.

Sitecore® is a registered trademark. All other brand and product names are the property of their respective holders. The contents of this document are the property of Sitecore. Copyright © 2001-2013 Sitecore. All rights reserved.



- Register your class within the /configuration/sitecore/httpAuthentication section in web.config.
- 3. Create, update, or delete the appropriate /configuration/sitecore/webdav/authentication/authentications/map elements in the file /App\_Config/Include/Sitecore.WebDAV.config to reference your class, or update the contents of the preferredAuthentication> element in the file /App\_Config/Include/Sitecore.WebDAV.config to specify your class.

## 3.3.2 Configure WebDAV Views

The /configuration/sitecore/webdav/views element in

/App\_Config/Include/Sitecore.WebDAV.config controls views available to WebDAV users. The defaultProvider attribute of the /configuration/sitecore/webdav/views element specifies the default view for users who have not selected a view.

To implement a view:

- 1. Create a class that inherits from Sitecore.Data.Views.WebDAVView base class.
- 2. In the new class, implement all of the abstract methods in the base class. In the GetHierarchyItem() method, return the appropriate WebDAV item.
- 3. Register the new class within the /configuration/sitecore/webdav/views element in the file /App\_Config/Include/Sitecore.WebDAV.config.

## 3.3.3 Configure the WebDAV Supplemental Locking Provider

WebDAV operations require Sitecore locks where appropriate, such as when a user edits a media item. In some cases, to prevent multiple users from acting on a single media item through WebDAV at the same time, Sitecore must maintain additional locking information without affecting the Sitecore locking status of the item.

The /configuration/sitecore/webdav/locking element in the file the file /App\_Config/Include/Sitecore.WebDAV.config controls the class used to implement this WebDAV supplemental locking. The default WebDAV supplemental locking provider stores supplemental locking information in the IDTable table in the database specified by the first /configuration/sitecore/IDTable/param element in web.config.

#### Note

The default Sitecore configuration uses the IDTable table in the Master database. To use the IDTable table in a different database, set the connectionStringName attribute of the first /configuration/sitecore/IDTable/param element in web.config to the name of that database.

## 3.3.4 Configure the WebDAV Null Locking Provider

Sitecore uses the class specified by the /configuration/sitecore/webdav/lockNull element in the file /App\_Config/Include/Sitecore.WebDAV.config to store information before creating media items using WebDAV. The default WebDAV null locking provider stores lock information in memory on the server.

Sitecore® is a registered trademark. All other brand and product names are the property of their respective holders. The contents of this document are the property of Sitecore. Copyright © 2001-2013 Sitecore. All rights reserved.



## 3.3.5 Configure the WebDAV Option Store

The /configuration/sitecore/webdav/optionStore element in the file /App\_Config/Include/Sitecore.WebDAV.config controls the class that Sitecore uses to persist WebDAV Options objects. For more information about WebDAV Options objects, see the section WebDAV Options Objects.

The default WebDAV Options object store provider uses the IDTable table in the database specified by the first /configuration/sitecore/IDTable/param element in web.config. GUIDs in WebDAV URLs correspond to entries in this table, associating WebDAV Options objects with WebDAV requests.



## 3.4 WebDAV Pipelines

For each WebDAV request, Sitecore invokes pipelines defined in the file /App\_Config/Include/Sitecore.WebDAV.config. You can add and replace processors in these pipelines to control WebDAV functions.

#### Important

To maximize performance, thoroughly optimize each pipeline and pipeline processor. The first action in a processor is to exit if the logic in that processor is not relevant to the processing context.

#### Note

This document does not describe pipeline or pipeline processor implementation.

#### 3.4.1 The autogenerateVersions Pipeline

Sitecore invokes the autogenerateVersions pipeline to determine when to create a new version of the media item for a WebDAV operation.

## 3.4.2 The getProperties Pipeline

Sitecore invokes the getProperties pipeline to manage WebDAV custom properties. For more information about WebDAV custom properties, see the section WebDAV Custom Properties.

The current implementation of the getProperties pipeline returns a single property named ItemID, which contains the ID of the media item. If you use a WebDAV client that supports custom WebDAV properties, then you can implement features in the getProperties pipeline.

## 3.4.3 The requireAuthentication Pipeline

Sitecore invokes the requireAuthentication pipeline determine whether to prompt the WebDAV user for authentication. If no authentication information is available, the WebDAV request handler applies the WebDAV.PromptWhenUsernameUnknown setting as described in the section The WebDAV.PromptWhenUsernameUnknown Setting, prompting for authentication or invoking the operation as the Anonymous user in the context domain. For more information about authentication, see the section Configure WebDAV Authentication.

#### 3.4.4 The resolveDatabase Pipeline

Sitecore invokes the resolveDatabase pipeline to determine the database to access for each WebDAV request.

## 3.4.5 The resolveMode Pipeline

Sitecore invokes the resolveMode pipeline to determine whether to process a WebDAV request in readonly or read-write mode. For more information about WebDAV modes, see the section WebDAV Modes. Sitecore assumes WebDAV read-write mode.

Sitecore® is a registered trademark. All other brand and product names are the property of their respective holders. The contents of this document are the property of Sitecore. Copyright © 2001-2013 Sitecore. All rights reserved.



## 3.4.6 The resolveRootItem Pipeline

Sitecore invokes the resolveRootItem pipeline to determine the root item of the media library for WebDAV requests. The WebDAV request handler only operates on media items that are descendants of the root item of the media library. You can manipulate the resolveRootItem pipeline to use different media library root items under different conditions.

## 3.4.7 The resolveSite Pipeline

Sitecore invokes the resolveSite pipeline to determine determines the context logical Web site for WebDAV requests. Sitecore determines the context site from the WebDAV Options object associated with the GUID in the URL, or from the context Web site. For more information about WebDAV Options objects, see the section WebDAV Options Objects,

#### 3.4.8 The resolveUser Pipeline

Sitecore invokes the resolveuser pipeline to determine the context user for WebDAV requests. For more information about the WebDAV user, see the section The requireAuthentication Pipeline and the section Configure WebDAV Authentication.

### 3.4.9 The resolveView Pipeline

Sitecore invokes the resolveview pipeline to determine the WebDAV. Sitecore uses the first defined view from the following options:

- The WebDAV Options object associated with the request.
- The view selected by the user on the Application Options dialog accessible by clicking the Sitecore logo in the Content Editor.
- The default view specified in the file /App Config/Include/Sitecore.WebDAV.config.

For more information about WebDAV views, including how to specify the default WebDAV view, see the section WebDAV Views and the section Configure WebDAV Views.

## 3.4.10 The updateProperties Pipeline

Sitecore invokes the updateProperties pipeline to manage WebDAV custom properties. For more information about WebDAV custom properties, see the section WebDAV Custom Properties.

The current implementation of the updateProperties pipeline takes no action. If you use a WebDAV client that supports WebDAV custom properties, then you can implement features in the updateProperties pipeline.

## 3.4.11 The validateOperation Pipeline

Sitecore invokes the validateOperation pipeline to determine whether a user has authorization to perform a WebDAV operation when item access rights would otherwise allow that operation. For example, you can configure processors in this pipeline to prevent a WebDAV user from deleting a media item for which access rights allow deletion.

Sitecore® is a registered trademark. All other brand and product names are the property of their respective holders. The contents of this document are the property of Sitecore. Copyright © 2001-2013 Sitecore. All rights reserved.



## **Chapter 4**

# **Known Issues and Troubleshooting Techniques**

This chapter begins by describing known issues with the Sitecore WebDAV implementation and then provides troubleshooting techniques.

This chapter contains the following sections:

- Known Issues
- Troubleshooting WebDAV



### 4.1 Known Issues

The following list describes limitations and known issues with the Sitecore WebDAV implementation:

- Sitecore supports Microsoft Internet Explorer WebDAV clients with updated installations of the Windows Web Folders Client or the Windows Desktop Experience. Internet Explorer as a WebDAV client does not support WebDAV custom properties and certain other WebDAV features. For more information about supported versions and instructions to configure Internet Explorer and Windows Web Folders or the Desktop Experience, see the section WebDAV Client Configuration.
- You cannot use WebDAV with two items with the same name under the same parent item. You cannot use WebDAV with a media folder and a media item with the same name under the same parent item. You cannot use WebDAV with two media items with the same name and different extensions under the same parent item unless the Media.IncludeExtensionsInItemNames setting in web.config is true.
- You cannot change the file name extension of a media item using WebDAV.
- You cannot use WebDAV to create media items with names containing Unicode characters.
- Enter the domain name when authenticating (domain\username).
- You cannot control the options that appear in the WebDAV client user interface. You can block WebDAV operations after the user invokes a command using the user interface.
- WebDAV requires a value of None for the mode attribute of the /configuration/system.web/authentication element in web.config.
- You cannot control the text of messages shown by the client operating system.
- In the WebDAV simple view, if a media item does not have any version data for the default language, then the extension for the media item does not appear in the user interface. If WebDAV does not require authentication, then you cannot add version data for that item in the simple view. You can add version data using the detailed view. For more information about WebDAV views, see the section WebDAV Views.
- WebDAV does not support HTTPS using ports other than the default (443).
- Microsoft Internet Explorer 8 does not support WebDAV over HTTPS.
- You cannot use WebDAV features from a Web client in which you have not authenticated against Sitecore.
- Microsoft Internet Explorer 8 does not support WebDAV when accessing the host name localhost. For more information about this issue, see the section Cannot Find.

#### Note

Sitecore user interfaces do not display WebDAV features to Web clients that do not support those features.

#### Note

If the WebDAV client user interface does not automatically update after an operation, right-click in the browser window, and then click Refresh.

Sitecore® is a registered trademark. All other brand and product names are the property of their respective holders. The contents of this document are the property of Sitecore. Copyright © 2001-2013 Sitecore. All rights reserved.



## 4.2 Troubleshooting WebDAV

This section provides techniques to troubleshoot issues with WebDAV.

## 4.2.1 The WebDAV Logs

You can use diagnostics messages in the WebDAV logs to obtain additional information about issues with WebDAV.

Sitecore logs messages specific to WebDAV to the file WebDAV.log.{date}.txt in the /logs subdirectory of the directory specified by the \$dataFolder variable in web.config, where {date} represents the system date.

#### Note

You can update the /configuration/log4net/appender element in web.config with name WebDAVLogFileAppender to configure the Sitecore WebDAV log. You can add a <level> element containing one of the values recognized by log4net.<sup>7</sup>

```
<logger name="Sitecore.Diagnostics.WebDAV" additivity="false">
<level value="INFO"/>
...
</logger>
```

The IT Hit WebDAV engine logs to the file named WebDAVLog.txt in the directory specified by the value attribute of the /configuration/sitecore/settings/setting element in web.config with name DataFolder.

## 4.2.2 WebDAV Client Configuration

Ensure that the Web client meets Sitecore requirements, and implement Sitecore configuration requirements.<sup>8</sup> Install available Windows updates, including updates to the Windows Web Folders client.

## 4.2.3 Running a System Command on this Item Might Be Unsafe

If you see the the following messages in the browser, then you need to configure the client.

Running a system command on this item might be unsafe.

Do you wish to continue?

Click **Yes**. To configure the client, see the section WebDAV Client Configuration.

http://sdn.sitecore.net/Reference/Sitecore%206/IE%20Configuration%20Reference.aspx.

<sup>&</sup>lt;sup>7</sup> For more information about log4net, see

http://logging.apache.org/log4net/release/manual/configuration.html.

<sup>&</sup>lt;sup>8</sup> For information about Sitecore client requirements, including supported Web clients and versions, see the Sitecore CMS Installation guide at

<sup>&</sup>lt;u>http://sdn.sitecore.net/Products/Sitecore%20V5/Sitecore%20CMS%206/Installation.aspx</u>. For instructions to configure Microsoft Internet Explorer to support WebDAV, see the Internet Explorer Configuration Reference manual at

Sitecore® is a registered trademark. All other brand and product names are the property of their respective holders. The contents of this document are the property of Sitecore. Copyright © 2001-2013 Sitecore. All rights reserved.



### 4.2.4 Internet Explorer Could Not Open

If you see messages such as the following in the browser, then remove any IIS WebDAV component that could conflict with the IT Hit WebDAV engine, and confirm that ASP.NET can access the license file used by the IT Hit WebDAV engine. For more information about the IT Hit WebDAV engine, see the section The IT Hit WebDAV Engine.

#### Open Folder

Internet Explorer could not open <URL> as a Web Folder

#### Would you like to see its default view instead

If you see messages such as those above in conjunction with messages such as the following in the WebDAV log, then ASP.NET may not have access to the license file used by the IT Hit WebDAV engine. For more information about the WebDAV log, see the section The WebDAV Log.

#### System.IO.FileNotFoundException

#### Could not find file

Ensure that the file specified by the WebDAV.LicenseFile setting in the file /App\_Config/Include/Sitecore.WebDAV.config exists, and that ASP.NET can read this file. For more information about the WebDAV license file, see the section The WebDAV.LicenseFile Setting.

#### 4.2.5 Cannot Find

If you see messages such as the following in the browser, then access the Sitecore instance using a host name other than localhost.

#### Cannot find <URL>

Make sure the path or Internet address is correct.

Microsoft Internet Explorer 8 does not support WebDAV when accessing the host name localhost. You can use an IP address such as 127.0.0.1 or configure an alternate host name for the IIS Web site.