



Technical Brief for Windows Home Server Remote Access

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Abstract

This Technical Brief provides an in-depth look at the features and functionality of Windows Home Server Remote Access.

To learn more about other aspects of Windows Home Server, see the [Microsoft Web site \(http://go.microsoft.com/fwlink/?LinkId=100260\)](http://go.microsoft.com/fwlink/?LinkId=100260).

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Overview of Remote Access

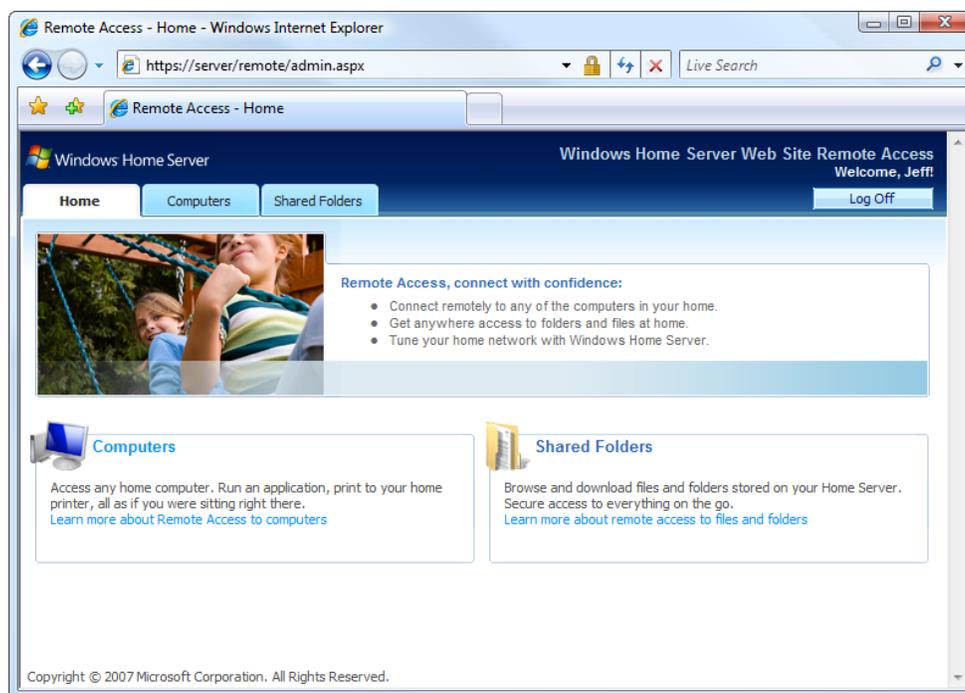
You can use the Remote Access feature in the Windows® Home Server operating system to connect to your home server and your home computers while you are away from home.

Features and Functionality

After you configure a user account for remote access in the Windows Home Server Console, you can use a Web browser on a computer that is outside your home to remotely access your home server and home computers.

- **Remote Access to Shared Folders**

Users can download files and folders, and they can upload one or more files to the shared folders on the home server while they are away from home. They can also search through the Shared Folders when they are trying to find a specific file.



- **Remote Access to Home Computers**

You can connect remotely to the computers in your home. You can run an application or print to your home printer, just like you can when you are sitting in front of your home computer.

- **Remotely Connect to the Windows Home Server Console**

If the need arises, you can access the Windows Home Server Console while you are away from home to add new user accounts, to create new shared folders, or to check on the status of your home network.

Benefits

In Windows Home Server, Remote Access is unique from other solutions. Some of the benefits are as follows:

- **Personalized domain name**

You can register for your own Internet domain name (for example, SmithFamily.HomeServer.com), and then you can use your personalized domain name to remotely access your home server (for example <http://SmithFamily.HomeServer.com/Home>)

- **Remote access to home computers**

After you log on to your home server, you can quickly connect to your home computers and run applications, just like you can when you are sitting in front of that computer. With Remote Access, families and home-based businesses can easily access their home computers, using the same user interface.

- **Remote access permissions set for each user**

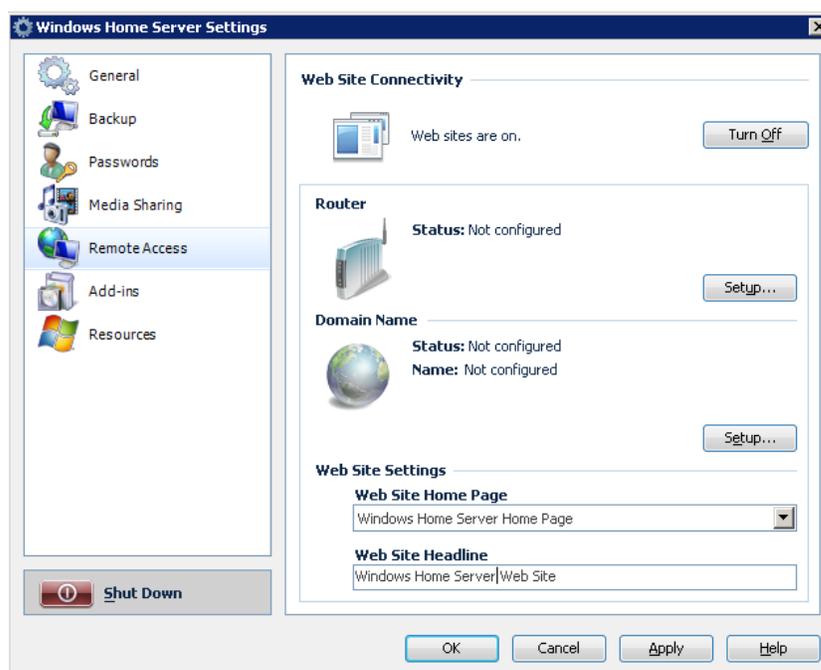
You can add up to 10 user accounts, and for each one you can easily enable and disable the ability to remotely connect to your home server.

Remote Access In-Depth

This section explains in more detail how Remote Access in Windows Home Server works.

Enabling Remote Access

By default, Remote Access is disabled for your home server. To enable Remote Access, do the following:



1. Open the Windows Home Server Console, click **Settings**, and then click **Remote Access**.
2. Ensure that **Web Site Connectivity** is **Turned On**. If it is, three network ports (80,443 and 4125) on the Windows Home Server firewall are open, so that your home server accepts incoming requests from the Internet.
3. Configure your router. In this step, Windows Home Server configures the persistent port forwarding from your UPnP™-certified router to your home server, as follows:
 - Port 80: http:// web requests
 - Port 443: https:// web requests using Secure Sockets Layer
 - Port 4125: remote desktop proxy
4. Select a Domain Name. Choose a personalized domain name for your home server (for example, SmithFamily.homeserver.com). Click **Setup...** to run the Domain Name Setup Wizard

which prompts you to enter your Windows Live ID, and then you can select a domain name for your home server.

Important

You may need to add services from your broadband provider to use Windows Home Server's remote access features. For example, you will need certain "ports" to be open to use these features. Some broadband providers block certain ports for customers on some service plans. Also, some broadband providers' terms of service may limit or prohibit setting up and running of "servers" on their networks by some customers on some service plans. Make sure that your use of Windows Home Server features follows your broadband providers' terms of service. Please contact your broadband provider if you have questions about their terms of service.

Windows Home Server includes a built-in dynamic DNS client feature that binds your personalized domain name to the external IP address that is assigned by your ISP.

Important

You do not need to forward TCP port 3389 from your router to your home server. To remotely connect to your home computers and to the Windows Home Server Console, you only need to enable port 4125.

Note

Windows Home Server needs the UPnP architecture in order to automatically configure your router, but not all broadband routers properly support the UPnP architecture. The Internet Connectivity Evaluation Tool checks your router to see if it supports certain technologies. You can use this tool on a computer that is running either the Windows Vista® or the Windows XP operating system. The tool is available at: <http://go.microsoft.com/fwlink/?LinkId=100267>

If your router does not pass these tests, then you need to manually forward the TCP ports (80, 443, and 4125) from your router to the IP address of your home server. For more information, see the documentation for your broadband router or visit the PortForward web site at: <http://go.microsoft.com/fwlink/?LinkId=100269>

Next, enable Remote Access on at least one user account. User accounts that have Remote Access enabled must have a strong password. The strong-password policy requires passwords that are at least 7 characters long and that contain characters from at least three of the following four categories:

- Uppercase letters
- Lowercase letters
- Numbers
- Symbols (such as !, @, #, etc.)

 **Note**

For improved security, choose long, complex user names and long, complex passwords for your user accounts that have Remote Access enabled.

Testing Remote Access Connectivity

After you configure Remote Access, test the remote connectivity from within your home and from outside of your home. Run the following tests from one of your home computers to see if Remote Access is working properly:

- <http://<servername>/home> - Connects over your home network to the Windows Home Server home page, using port 80.
- <https://<servername>/remote> - Connects over your home network to the logon page for Windows Home Server Remote Access, using a Secure Socket Layer connection on port 443.

You can run the following tests from a computer when you are outside of your home and you have access to an Internet connection. These tests check if your personalized domain name (for example, SmithFamily.HomeServer.com) is working properly:

- <http://<yourname>.HomeServer.com/home> - Connects over the Internet to your home server, using port 80. You should see the Windows Home Server home page.
- <https://<yourname>.HomeServer.com/remote> - Connects over the Internet to your home server, using port 443. You should see the logon page for Windows Home Server Remote Access.

 **Important**

Some broadband providers restrict the use of port 80, so you may find that, although you can connect to your home server by using https://, you cannot connect by using http://. Please contact your broadband provider if you have questions about their terms of service.

If these tests give negative results, do the following to try to connect directly to your home server with the external IP address that your broadband provider assigns:

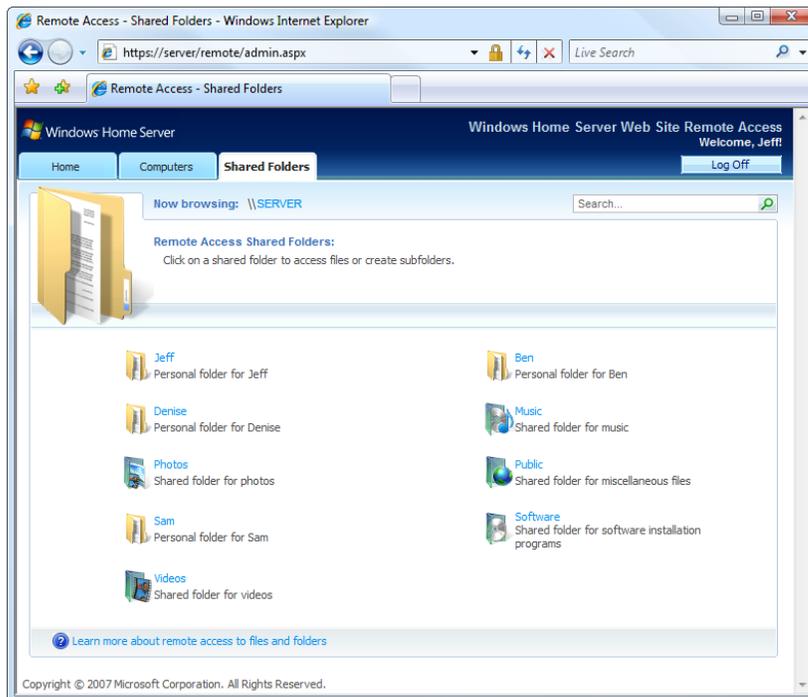
- http://<external_IP_address>/home Connects over the Internet to your home server, using port 80. You should see the Windows Home Server home page.
- http://<external_IP_address>/home Connects over the Internet to your home server, using port 443. You should see the logon page for Windows Home Server Remote Access.

 **Note**

One way to determine the external IP address that your broadband provider assigns to your broadband router is to access the WhatsMyIP.org URL from one of your home computers at: <http://go.microsoft.com/fwlink/?LinkId=100270>

Remote Access to Shared Folders

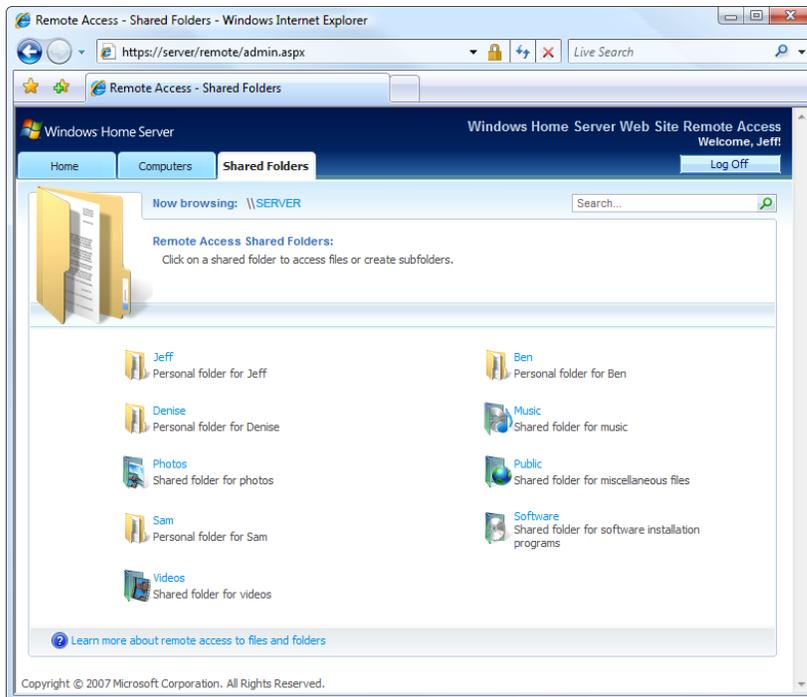
After a user logs on via Remote Access, they can access the shared folders to which they have either “Full” or “Read” access. You can set the level of access in the Windows Home Server Console. From the **Shared Folders** tab, users can navigate to a particular shared folder, and then they can download or upload files to their home server. Also, because Windows Home Server indexes all of the content in the shared folders, users can use the **Search** bar to find a file that is stored on the home server.



If a user selects multiple files to download at the same time, Windows Home Server creates a .zip file of these items. The user can download only the .zip file, reducing the time needed for the download.

Note

The user can upload only one file at a time. If the user wants to upload multiple files, the user should create a .zip file and upload it to the home server.



Troubleshooting Remote Access to Shared Folders

The following issues may limit your ability to remotely access shared folders.

Remote Access Has an Upload Limit of 2 GB

You cannot upload a file or a combination of files that is larger than 2 GB. If you want to upload files that total more than 2 GB, separate the files, and then upload them in batches that are less than 2 GB.

Large File Uploads May Time Out Before Finishing

If you upload a large file or group of files by using Remote Access, the session may time out before the upload finishes. To resolve this problem, you can increase the time-out parameter in the Windows Home Server web.config file.

▶ **To increase the Remote Access time-out parameter**

1. Use `mstsc.exe` to start a Remote Desktop Connection session to your home server.

 **Caution**

Be careful when using a Remote Desktop Connection to your home server. You can damage Windows Home Server functionality if you use Remote Desktop incorrectly.

2. Use a text editor, such as `notepad.exe`, to open **C:\inetpub\remote\web.config**.
3. Locate the following line:
<sessionState mode="InProc" cookieless="false" timeout="20"/>
4. Replace "20" (which represents 20 minutes) with a larger number, to allow your uploads to finish.

 **Note**

If you change the **timeout** value to more than 200 minutes, you must also change the **executionTimeout** value. Search for the following line

<httpRuntime maxRequestLength="2097151" executionTimeout="12000"/>

and increase the **executionTimeout** value (measured in seconds) to the same or greater value than the **timeout** value (measured in minutes).

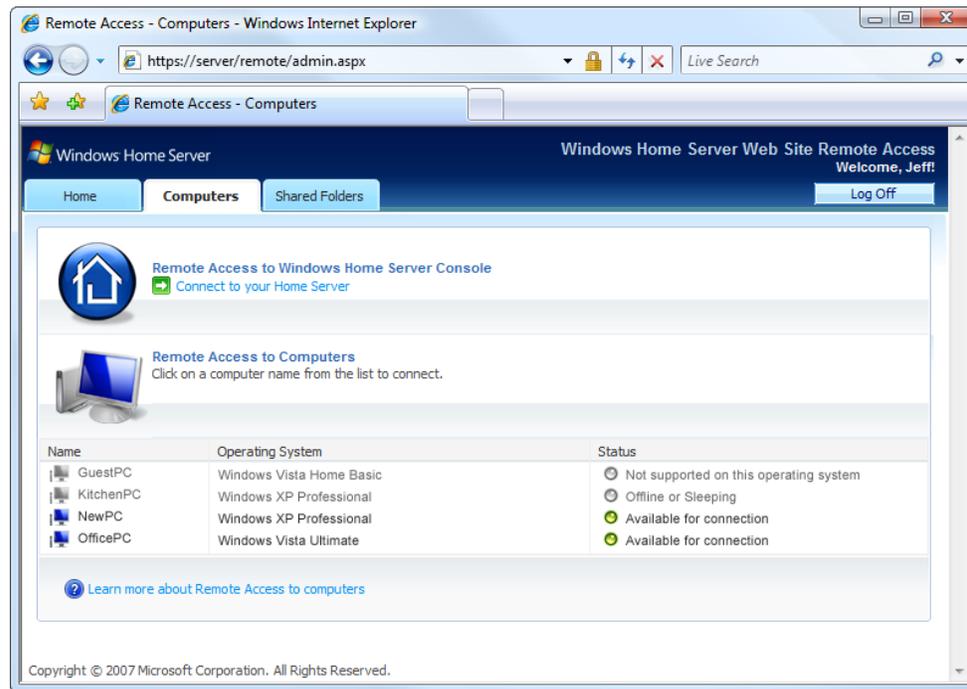
5. Save your change, close the file, and then log off from your Remote Desktop Connection session.
6. Use Remote Access to upload your file or files, to ensure that the new time-out parameter is sufficient to finish the upload.

 **Important**

If you increase the time-out parameter, you increase your security risk. Do not leave a computer that has an active session unattended in a public place.

Remote Access to Home Computers

When you are away from home, you can use your Web browser to remotely access your home computers and your Windows Home Server Console. When you connect to the console, you can manage Windows Home Server just like you were at home. You can perform all of the usual console tasks, such as adding user accounts, adding shared folders, and setting access to shared folders. When you connect to your home computers, you can access the desktops of those computers as if you were sitting in front of them at home.



Important

You must use Internet Explorer to remotely access to your home computers, because Remote Access requires an ActiveX® control. If you use another Web browser, you cannot access your home-computer desktops, but you can access your shared folders.

Note

When you connect via Remote Access, you cannot browse shared folders from the console. However, you can browse them from the Shared Folders tab.

To connect to one of your home computers, on the **Computers** tab, click the name of the home computer. You can connect only a computer that is **Available for connection** and that is running one of the following operating systems:

- Windows XP Professional with Service Pack 2 (SP2)
- Windows XP Media Center Edition 2005
- Windows XP Tablet Edition with SP2
- Windows Vista Ultimate, Windows Vista Business, or Windows Vista Enterprise

Also, make sure that the home computer is configured to allow remote access. For detailed instructions about how to complete this configuration, see “Why can’t I connect to some computers?” in Windows Home Server Console Help.

 **Important**

Some third-party firewall programs block traffic on port 3389, which is the port that your home server uses to connect to your home computers. Verify that the firewall programs on your home computers allow network traffic on port 3389.

Some corporate firewalls restrict the use of port 4125 for communicating with systems outside of the corporate network. Windows Home Server requires access via port 4125 to be enabled from the remote computer and the remote network, so that you can connect to your home computers after logging on to Windows Home Server Remote Access.

Troubleshooting Remote Access to Home Computers

Check the following items if you cannot connect to your Windows Home Server Console.

Make sure that Remote Desktop is enabled on your home server

Remote Desktop is enabled by default on Windows Home Server, but it might have been disabled.

To check if Remote Desktop is enabled

1. Using `mstsc.exe`, start a Remote Desktop Connection session to your home server.

Caution

Be careful when using a Remote Desktop Connection to your home server. You can damage Windows Home Server functionality if you use Remote Desktop incorrectly.

2. Click **Start**, right-click **My Computer**, and then click **Properties**.
3. Click the **Remote** tab, and then see if the **Enable Remote Desktop on this computer** check box is selected.

Make sure that the Windows Firewall settings are correct on your home server

Windows Home Server configures Windows Firewall to allow remote connections, but this might have been manually changed.

To check Windows Firewall settings on your home server

1. Using `mstsc.exe`, start a Remote Desktop Connection session to your home server.

Caution

Be careful when using a Remote Desktop Connection to your home server. You can damage Windows Home Server functionality if you use Remote Desktop incorrectly.

2. Click **Start**, click **Run**, type `firewall.cpl`, and then click **OK**.
3. Click the **Exceptions** tab.
4. Make sure **RDP proxy** (TCP port 4125) is checked. Select **RDP proxy**, and then click **Edit**. Click **Change scope**, and then make sure that **Any computer (including those on the Internet)** is selected.
5. Make sure that **Remote Desktop** (TCP port 3389) is checked. Select **Remote Desktop**, and then click **Edit**. Click **Change scope**, and then make sure that **My network (subnet) only** is selected.

Check the following items if you cannot connect to your home computers.

Check the firewall settings your home computers

The firewall software on your home computers must be configured to allow remote connections. Use the following procedure to check the settings for Windows Firewall. For more information about other firewall software, see the documentation for that software.

▶ To check the settings for Windows Firewall on your home computer

1. Log on to your home computer with an administrator account.
2. On Windows XP, click **Start**, click **Run**, type **firewall.cpl**, and then click **OK**.
On Windows Vista, click **Start**, type **firewall.cpl** in the Search text box, and then press **ENTER**.
3. Click **Change settings**.
4. Click the **Exceptions** tab.
5. Make sure **Remote Desktop** (TCP port 3389) is checked.
6. Click the **General** tab.
7. Make sure that the **Don't allow exceptions** (Windows XP) check box or the **Block all incoming connections** (Windows Vista) is clear.
8. If you made any changes, restart the computer.

Make sure that a home computer running Windows Vista allows connections from any computer

Computers running Windows Vista have an additional system property that you should check.

▶ To check Windows Vista system properties

1. Log on to your home computer with an administrator account.
2. Click **Start**, right-click **Computer**, and then click **Properties**.
3. In **Tasks**, click **Remote Settings**.
4. In **Remote Desktop**, make sure that the **Allow connections from computers running any version of Remote Desktop (less secure)** check box is selected.
5. If you made any changes, restart the computer.

Customizing Remote Access

There are a few ways that you can customize the Remote Access experience for your home server. All of them require access to the Administrator's desktop of your home server through a Remote Desktop session over your home network.

Caution

All of these changes are overwritten if you reinstall Windows Home Server. Be sure to save the original versions of any files that you change. You will need to be logged on to the Windows Home Server using remote desktop. Many standard Windows Server administration tools available from this desktop can break Windows Home Server.

To change the image that appears on the Remote Access home page

1. Using `mstsc.exe`, start a Remote Desktop Connection session to your home server.

Caution

Be careful when using a Remote Desktop Connection to your home server. You can damage Windows Home Server functionality if you use Remote Desktop incorrectly.

2. Click **Start**, click **Run**, type `c:\inetpub\home\images`, and then press **ENTER**.
3. Open `i_landingpage_main.png` with Microsoft Paint.
4. Change the image.
5. Save the file, and then close Paint.

To change the image that appears after logging on via Remote Access

1. Using `mstsc.exe`, start a Remote Desktop Connection session to your home server.

Caution

Be careful when using a Remote Desktop Connection to your home server. You can damage Windows Home Server functionality if you use Remote Desktop incorrectly.

2. Click **Start**, click **Run**, type `c:\inetpub\remote\images`, and then press **ENTER**.
3. Open `i_default_photo.png` with Microsoft Paint.
4. Change the image.
5. Save the file, and then close Paint.

Also, you can provide links to Web sites on either your public-facing Web page or your intranet. The links appear when a user logs on to your home server. To provide these links, edit the file `websites.xml` in `c:\inetpub\home` or in `c:\inetpub\remote`.

Additional Tips

Showing Additional Web Page Error Information

If the Web page for Windows Home Server Remote Access shows an error, you can configure Windows Home Server to display additional information about the error.

 **To display additional information about a Web page error**

1. Using `mstsc.exe`, start a Remote Desktop Connection session to your home server.

 **Caution**

Be careful when using a Remote Desktop Connection to your home server. You can damage Windows Home Server functionality if you use Remote Desktop incorrectly.

2. Click **Start**, click **Run**, type `c:\inetpub\remote`, and then press **ENTER**.
3. Open `web.config` with Microsoft Notepad, and then search for the following:
`<customErrors mode="On" defaultRedirect="error.aspx"/>`
4. Change **On** to **Off**.
5. Save the file, and then close Notepad.
6. Connect to the Remote Access Web page to see the additional error information.

Windows Server 2003 Administrative Tools

Do not use the administrative tools in the Windows Server® 2003 operating system to modify user-account properties. Modify user-account properties only with the Windows Home Server Console. You can break Windows Home Server functionality if you use the Windows Server 2003 administrative tools.

For example, if you use the administrative tools to add a Windows Home Server user account to the Administrators group, that user account cannot log on using Remote Access.

More Information

For more information about Windows Home Server, see the [Microsoft Web site](http://go.microsoft.com/fwlink/?LinkId=100260) at:
<http://go.microsoft.com/fwlink/?LinkId=100260>

For more information about Windows Home Server Remote Access, see the Community Forums at:
<http://go.microsoft.com/fwlink/?LinkId=100263>