
Module 12: Configuring a Web Server

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Simulations and interactive exercises were built with Macromedia Authorware

Instructor Notes

Presentation:
30 Minutes

Lab:
30 Minutes

This module provides students with the knowledge and skill necessary to configure the built-in Web server for Microsoft® Windows® 2000–based server operating systems. The module first introduces Microsoft Internet Information Services (IIS) 5.0 and then describes how to establish and configure Web sites.

At the end of this module, students will be able to:

- Describe the uses of IIS.
- Prepare for an IIS installation.
- Install IIS.
- Configure a Web site.
- Administer IIS.
- Troubleshoot IIS.

Materials and Preparation

This section provides you with the required materials and preparation tasks that are needed to teach this module.

Required Materials

To teach this module, you need the Microsoft PowerPoint® file 2153a_12.ppt.

Preparation Tasks

To prepare for this module, you should:

- Read all of the materials for this module.
- Complete the lab.
- Read the white paper, *Internet Information Services 5.0 Technical Overview* under **Additional Reading** on the Web page on the Student Materials compact disc.
- Search for and read the topic “Overview of Internet Information Services 5.0” in the Internet Information Services 5.0 Resource Guide in the Windows 2000 Server Resource Kit.
- Search for and read the topic “Security” in the IIS 5.0 Documentation. To view the IIS 5.0 Documentation, open Internet Explorer on a computer running Windows 2000 Server. In the **Address** box, type **<http://localhost/iishelp>**

Module Strategy

Use the following strategy to present this module:

- Overview of IIS

This topic introduces IIS. Explain the integrated environment of the operating system and Web services. Briefly mention other Web services that work in conjunction with IIS.

- Preparing for an IIS installation

This topic describes the requirements for a successful IIS installation. Describe the network services and information that you must establish before installing IIS.

- Installing IIS

This topic presents the procedure for installing IIS. Briefly explain the two options for installing IIS, describe how to install IIS, and then explain how to test the installation.

- Configuring a Web site

This topic describes the tasks for configuring Web sites. First, explain how to configure Web site identification settings. Explain the purpose of the home directory and the use of local and virtual directories. Next, describe different authentication methods and how IIS authenticates users. Finally, explain the use of default documents.

- Administering IIS

This topic describes the different methods that you can use to administer IIS. Explain how to install the Windows 2000 Administration Tools that are included on the Windows 2000 Server compact disc. Describe how to use Internet Services Manager to manage Web servers remotely, and then explain how to use System Monitor to monitor IIS performance.

- Troubleshooting IIS

This topic describes the tasks for testing connectivity of a Web site and resolving IIS problems. Explain the procedures for testing a Web site that is connected to the Internet, and for testing a Web site that is on your intranet. Identify common Web site connectivity problems and their solutions.

Customization Information

This section identifies the lab setup requirements for a module and the configuration changes that occur on student computers during the labs. This information is provided to assist you in replicating or customizing Microsoft Official Curriculum (MOC) courseware.

Important The labs in this module are dependent on the classroom configuration that is specified in the Customization Information section at the end of the Classroom Setup Guide for course 2153, *Implementing a Microsoft Windows 2000 Network Infrastructure*.

Lab Setup

The lab in this module requires that you perform the procedure specified in the Classroom Setup Guide before performing the lab.

Lab Results

There are no configuration changes on student computers that affect replication or customization.

Overview

Topic Objective

To provide an overview of the module topics and objectives.

Lead-in

In this module, you will learn about configuring IIS on a server running Windows 2000.

- Overview of IIS
- Preparing for an IIS Installation
- Installing IIS
- Configuring a Web Site
- Administering IIS
- Troubleshooting IIS

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The Microsoft® Windows® 2000–based server products integrate Web publishing into the operating system with a built-in Web server, Microsoft Internet Information Services (IIS) 5.0. The integrated Web publishing environment that Windows 2000 provides makes it easy for an organization to publish and host Web content over a corporate intranet or the Internet.

At the end of this module, you will be able to:

- Describe the uses of IIS.
- Prepare for an IIS installation.
- Install IIS.
- Configure a Web site.
- Administer IIS.
- Troubleshoot IIS.

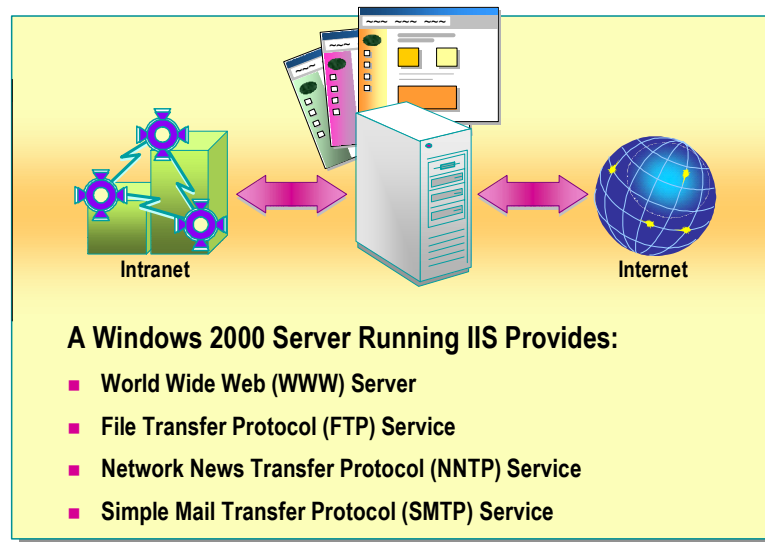
Overview of IIS

Topic Objective

To illustrate the integrated environment that Windows 2000 provides for publishing and sharing information on an intranet or the Internet.

Lead-in

You can use IIS to support Web sites on a corporate intranet or the Internet.



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By default, IIS is installed automatically when you install Windows 2000. IIS is designed to support simple Web sites in addition to multiple Web sites on a single Web server. The Web publishing features of IIS integrate the latest Internet standards to provide high levels of security, better performance, and standards-based publishing protocols.

Delivery Tip

Describe the other Internet services that work in conjunction with IIS.

In addition to the World Wide Web (WWW) server, other Internet services that work in conjunction with IIS include:

- *File Transfer Protocol (FTP) service.* Enables you to set up FTP sites for uploading and downloading files.
- *Network News Transfer Protocol (NNTP) service.* Enables you to host electronic discussion groups, or newsgroups. Newsgroups contain threaded discussions, which consist of articles and follow-up messages that are related to a particular subject.
- *Simple Mail Transfer Protocol (SMTP) service.* Enables you to receive mail messages from a client application and send these mail messages to another server over the Internet. You can also configure domain controllers to use the SMTP service for replication over site links.

Important It is recommended that you remove IIS if you do not plan on using the server as a Web server. To remove IIS from Windows 2000 Server, you can cancel the selection of IIS from the default installation.

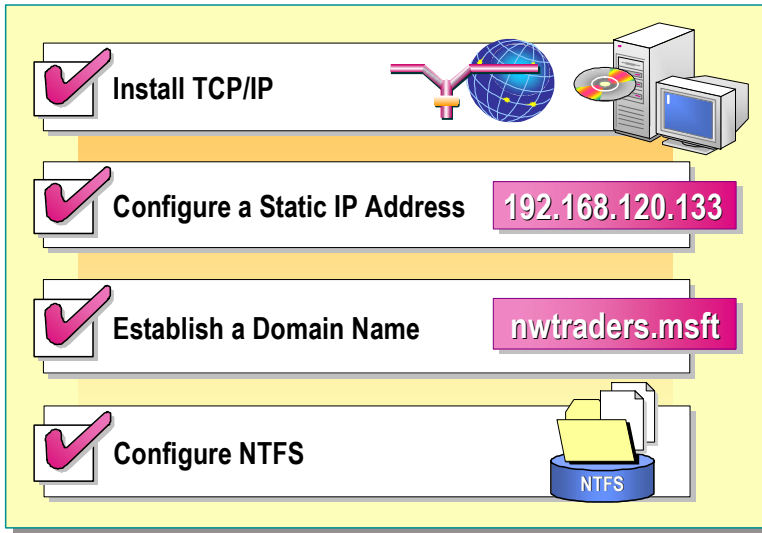
Preparing for an IIS Installation

Topic Objective

To identify the network services and information required before you install IIS.

Lead-in

Proper preparation will help ensure that your IIS installation is successful.



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Key Points

Before installing IIS, configure the server for TCP/IP and assign a static IP address. In addition, you must have a DNS server available for name resolution.

Before you install IIS, make sure you configure your server running Windows 2000 with the following network services and information:

- *Transmission Control Protocol/Internet Protocol (TCP/IP)*. IIS requires TCP/IP to provide the connectivity that is necessary for transmitting data.
- *Static IP address*. You must use a static IP address for your server if you intend to use IIS to publish content on the Internet.
- *Domain name*. To make your Web site accessible by a domain name, you need to have a Domain Name System (DNS) server available. Client computers use DNS to resolve the names of Web servers.
- *NTFS*. For Security purposes, it is recommended that you format all drives that contain Web content with the NTFS file system.

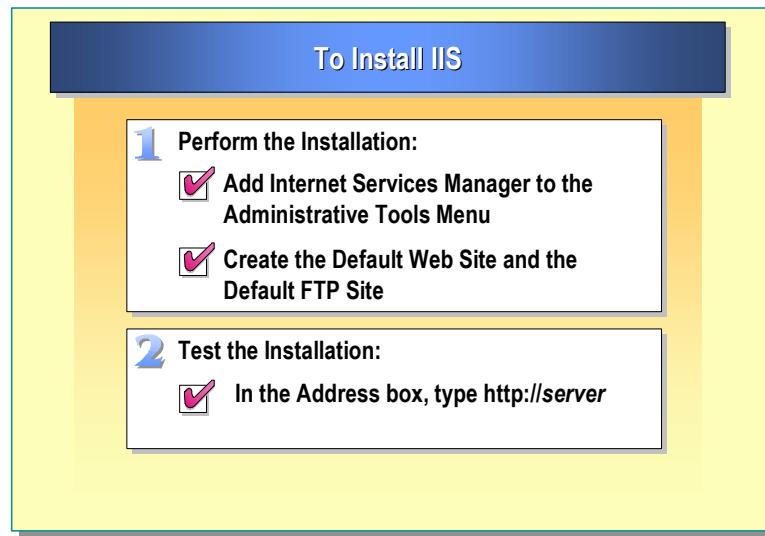
Installing IIS

Topic Objective

To identify installation tasks and results.

Lead-in

When you install IIS, Setup adds Internet Services Manager to the **Administrative Tools** menu and creates the Default Web Sites and Default FTP Site.



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By default, IIS is installed automatically when you install Windows 2000, unless you choose not to install it. When you configure IIS during the installation of Windows 2000 Server, Setup adds Internet Services Manager to the **Administrative Tools** menu and creates the Default Web Site and Default File Transfer Protocol (FTP) Site. You can use Internet Services Manager to manage the Web server and to configure Web and FTP sites. After you install IIS, you can test the IIS installation by using a browser to view files over your intranet or the Internet.

Note Setup will upgrade existing versions of IIS to IIS 5.0 when you install Windows 2000 Server.

Performing the Installation

If you choose not to install IIS during Windows 2000 Setup, you can install it later.

To install IIS:

1. In Control Panel, double-click **Add/Remove Programs**.
2. Click **Add/Remove Windows Components**, select the **Internet Information Services (IIS)** check box, and then follow the on-screen instructions in the Windows Components wizard to install IIS.

Note To open Internet Services Manager, click **Start**, point to **Programs**, point to **Administrative Tools**, and then click **Internet Services Manager**.

Delivery Tip

Describe the procedure for installing IIS if it is not installed during Windows 2000 Setup.

Important IIS requires continual management. To be informed of the latest security updates for IIS and Windows 2000, ensure that you subscribe to the security bulletin service at <http://www.microsoft.com/technet/security/bulletin/notify.asp>.

Testing the Installation

After you install IIS, test your installation by using Microsoft Internet Explorer to view the files in your home directory. The *home directory* is the central location for your published pages. The location of the default home directory that IIS creates during Setup is C:\Inetpub\wwwroot.

Delivery Tip

Describe the procedure for testing IIS installation.

To test your IIS installation:

1. Start Internet Explorer on a computer that has an active connection to your intranet or the Internet. This computer can be the computer that you are testing, although it is recommended that you use a different computer on the network.
2. In the **Address** box, type `http://server` (where *server* is the name of your computer), and then press ENTER.

The home page for the default Web site installed during Setup appears in the browser. A *home page* is the initial page of information for a Web site. If you did not create a home page, Internet Explorer displays a message stating that the page is under construction.

Note If the page cannot be displayed, open Internet Services Manager. In the console tree, click the name of the computer on which IIS is installed. In the details pane, verify that the Default Web Site, the Administration Web Site, and the Default SMTP Virtual Server are running.

◆ Configuring a Web Site

Topic Objective

To identify the tasks that you perform when configuring a Web site.

Lead-in

There are a number of tasks that you need to perform before users can connect to your Web site.

- Configuring Web Site Identification
- Configuring the Home Directory
- Identifying Methods of Authentication
- Selecting a Method of Authentication
- Configuring Authentication
- Assigning a Default Document

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Before users can connect to your Web site, you must configure the IP address and domain name that users will use to connect to the Web site. You can also specify the type of authentication used to validate user logon information. IIS 5.0 provides four methods of authentication: Anonymous, Basic, Digest, and Integrated Windows authentication.

To publish Web content, you need to configure home and virtual directories to store that content. To help users browse your Web site, you can assign a default document. A *default document* is the page that appears if a user request to the Web server does not include a file name.

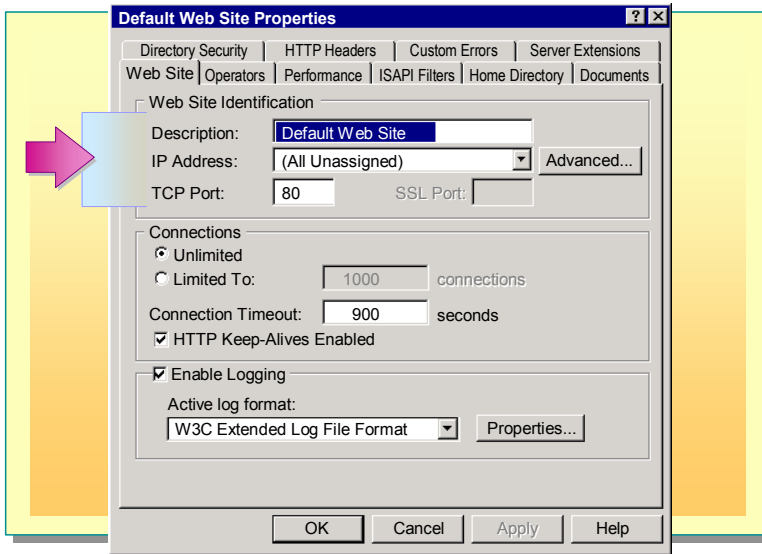
Configuring Web Site Identification

Topic Objective

To describe the settings used to identify a Web site.

Lead-in

There are a number of settings that you need to configure to identify your Web site.



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You must set identification parameters for your Web site to enable Web browsers to locate your Web server. To establish a Web site, you can configure the default Web site or use the Web Site Creation wizard to create a new site.

Configuring the Default Web Site

To configure the default Web site:

1. In Internet Services Manager, right-click the Web site, and then click **Properties**.

You can specify the following identification settings on the **Web Site** tab.

- **Description.** Determines the name of the Web site that appears in Internet Services Manager.
- **IP Address.** The Web site's IP address. If your computer has multiple IP addresses, you can create a separate Web site for each of them.

Delivery Tip

Describe the procedure for configuring the default Web site.

Emphasize to students that HTTP is the default port that Web browsers use to connect to a Web server, and students must avoid changing the TCP port.

- **TCP Port.** Determines the TCP port on which the Web service is running. The default is port 80. You can change the port to any unique TCP port number, but users must specifically request that port number or their requests will fail to connect to your server.
- **SSL Port.** Determines the port for connections that use Secure Sockets Layer (SSL) encryption. An SSL port number is required only when SSL encryption is used. The default is port 443. You can change the port to any unique TCP port number, but users must specifically request that port number or their requests will fail to connect to your server. A Web server requires a computer certificate or Web server certificate to enable SSL.

Note SSL security is an increasingly common requirement for Web sites that provide e-commerce and access to sensitive business information.

2. Click **OK** to close the **Default Web Site Properties** dialog box.

Creating a New Web Site

Delivery Tip

Describe the procedure for creating a new Web site.

To create a new Web site by using the Web Site Creation wizard, open Internet Services Manager, right-click the name of your computer point to **New**, and then click **Web Site**.

Follow the instructions in the Web Site Creation wizard to configure your new site. You must provide a description of the Web site, the IP address, port settings, and the path of the Web site home directory. You must also specify whether to allow anonymous connections to the Web site, and set Web access permissions.

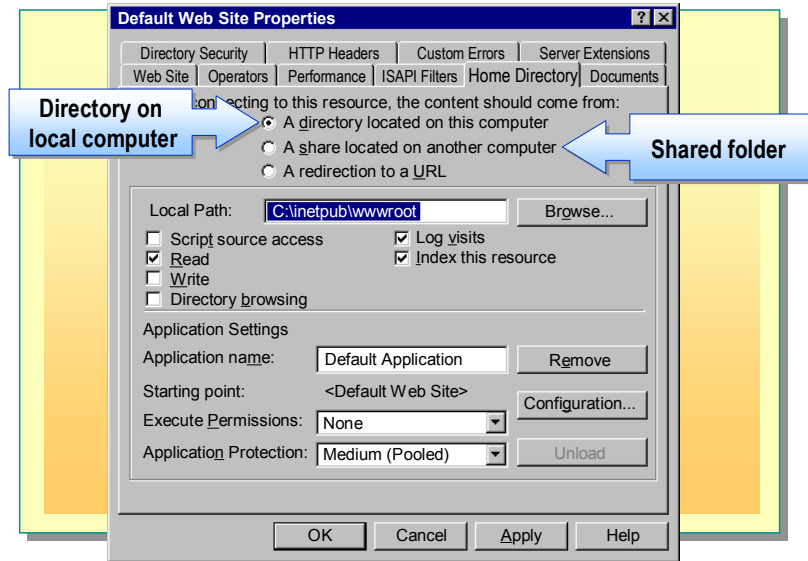
Configuring the Home Directory

Topic Objective

To identify the assignment of home directories and shared folders.

Lead-in

There are two types of directories that you can use to publish documents.



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The home directory determines the location of the published content for a site. When you assign a home directory, you can specify either a local directory or a shared folder. A *local directory* stores published pages on the local computer. A *shared folder* stores published pages on another computer on the network, and appears to browsers as though it were located on the Web server.

You can assign the home directory for your site on the **Home Directory** tab in the **Properties** dialog box for the Web site.

Specifying a Local Directory

To specify a home directory that resides on the same computer as IIS, click **A directory located on this computer**. Specify the path to the home directory in the **Local Path** text box, or click **Browse** to locate the home directory.

Specifying a Shared Folder

To specify a home directory that resides on a different computer from IIS, click **A share located on another computer**.

Delivery Tip

Explain that shared folders use UNC and that client computers use the following syntax to locate the share: `\\server_name\share_name`.

Note When you specify a shared folder, most of the settings on the **Home Directory** tab remain the same as when you specify a local directory. However, the **Network Directory** text box replaces the **Local Path** text box, and the **Connect As** button replaces the **Browse** button.

Type the universal naming convention (UNC) name in the **Network Directory** text box, and click **Connect As** to specify the user name and password that IIS uses to connect to the shared folder.

Identifying Methods of Authentication

Topic Objective

To list the methods of authentication.

Lead-in

You can select from four methods of authentication for Web sites: Anonymous access, Basic authentication, Digest authentication, and Integrated Windows authentication.

- **Anonymous Access**
- **Basic Authentication**
- **Digest Authentication**
- **Integrated Windows Authentication**

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To prevent unauthorized access to your Web site, you must verify the identity of users. Configure your Web site so that no user can access the information on your Web site without providing a valid Windows user name and password. This identification process is called *authentication*. The authentication process determines whether a user has a valid Windows user account with appropriate permissions for accessing a particular Web site, folder, or file. Authentication can be set at the Web site, directory, or file level. IIS supports four methods of authentication for controlling access to content on your server.

Note IIS also includes a method of authentication by using certificates. For more information about using certificates with IIS, see module 5, “Implementing Security on a Web Server,” in course 2295A, *Implementing and Supporting Microsoft Internet Information Services 5.0*.

Delivery Tip

Describe the four methods of authentication that IIS provides.

Anonymous Access

Anonymous access provides users access to the public areas of your Web site without prompting them for a user name or password. This authentication method is configured by default during the IIS installation process. When a user attempts to connect to your public Web site, your Web server assigns the user to the Windows user account called IUSR_*computername*, where *computername* is the name of the IIS server.

Note The IUSR_*computername* account is included in the built-in Guests group. This group has security restrictions that determine the level of access.

Basic Authentication

Basic authentication prompts users for a user name and password before allowing access to a Web page. You can set Basic authentication at the Web site, folder, or file level. When the Web server verifies that the user name and password correspond to a valid Windows 2000 user account, it establishes a connection. You can configure IIS to use a specific domain when validating users' credentials because Basic authentication does not allow a user to specify a domain. If the server rejects the credentials, the Web browser repeatedly displays the **Logon** dialog box until the user either enters a valid user name and password or closes the dialog box.

Basic authentication is part of the Hypertext Transfer Protocol (HTTP) specification, and is supported by most browsers. However, Web browsers using Basic authentication transmit passwords in an unencrypted form. As a result, any hacker can intercept a user name and password. To secure user account information transmitted across the network, you must use Basic authentication with SSL security.

Digest Authentication

Digest authentication is a new feature of IIS 5.0. This method is similar to Basic authentication, but it involves a different way of transmitting the authentication credentials. The authentication credentials pass through a process called hashing. *Hashing* converts the password to a unique value, from which the server can verify the client's knowledge of the password without the client having to send the password.

Digest authentication works across proxy servers and other firewalls, unlike integrated Windows authentication. Digest authentication is only available for servers in a domain with Windows 2000 domain controllers. Also, Web browsers that support HTTP 1.1 can support Digest authentication.

Important All user accounts that use Digest authentication must be configured within the Active Directory™ directory service with the **Store password using reversible encryption** account option.

Internet Explorer 5.0 is the only browser that currently supports Digest authentication. The Digest authentication method proceeds as follows:

1. The Web server sends the browser certain information that will be used in the authentication process.
2. The browser encrypts the user name and password by adding the additional information sent by the server and then performing a hash on it.
3. The resulting hash is sent over the network to the server, along with the additional information in clear text.

4. The server then adds the additional information to a plain text copy of the client's password and hashes all of the information.
5. Finally, the server compares the hash value it received with the one it just made. Access is granted only if the two numbers are absolutely identical.

Note A hash value consists of a small amount of binary data, no more than 160 bits. This value is produced by using a hashing algorithm.

Integrated Windows Authentication

Integrated Windows authentication is a secure form of authentication because in this method the user name and password are not sent across the network. The current Windows logon information on the client computer is used instead of the actual Windows user account and password information.

Note Only Internet Explorer, version 2.0 or later, supports this authentication method. This method does not work over HTTP proxy connections.

Selecting a Method of Authentication

Topic Objective

To illustrate the order in which authentication methods are applied.

Lead-in

The method of authentication that you choose depends on the information access and security levels that you want to provide on your Web site.

Authentication Method	Use When
Anonymous	You want users to access public areas of your Web site
Basic	You want to authenticate users who access your Web site through any browser or proxy server
Digest	You want to secure authentication for your Web sites and you must go through a proxy server
Integrated Windows	You are configuring an intranet site, where both the users and the Web server are in the same domain, or in domains with a trust relationship

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You can select a method of authentication for your Web site depending on the type of information that you want to make available and the level of security that you want to assign to your site.

Delivery Tip

Explain when to use each authentication method.

The following table describes which type of authentication method to select for different requirements.

Authentication Method	Use When
Anonymous access	You want users to access public areas of your Web site. This method does not offer any authentication at all.
Basic authentication	You want to authenticate users who access your Web site through any browser or proxy server. Use this method when you are sure that connections between the user and Web Server are secure, such as with a direct cable line or a leased line. To secure authentication data that is sent across the Internet, you must use Basic authentication with SSL.
Digest authentication	You want secure authentication for your Web sites and you must go through a proxy server. Also, Web browsers that support HTTP 1.1 can support Digest authentication.
Integrated Windows authentication	You are configuring an intranet site, where the users and the Web server are in the same domain or in domains with trust relationships between them. This method cannot authenticate users who access the Web site through a proxy server. This method works only with Internet Explorer version 2.0 or later.

Selecting Multiple Methods of Authentication

Based on your requirements, you can select more than one method of authentication. However, when you select multiple methods, one method takes precedence over others during authentication.

Key Points

If you are using a combination of Anonymous access and any authentication method, the Anonymous access method takes precedence. When Anonymous access is not permitted, IIS and the Web browser negotiate the most secure authentication method.

- When you use a combination of Anonymous access and any authentication method, Anonymous access takes precedence. If the anonymous user account does not have permission to access a specific resource, IIS and the Web browser negotiate an authentication method.
- When IIS and a Web browser negotiate an authentication method, The Web browser uses the most secure method that both can use. The order of preference is Integrated Windows authentication, Digest authentication, and Basic authentication. For example, if a web page is configured to use to use all three authentication methods, and a Web browser can use only Digest authentication and Basic authentication, the most secure authentication method that IIS and the Web browser can negotiate is Digest authentication.

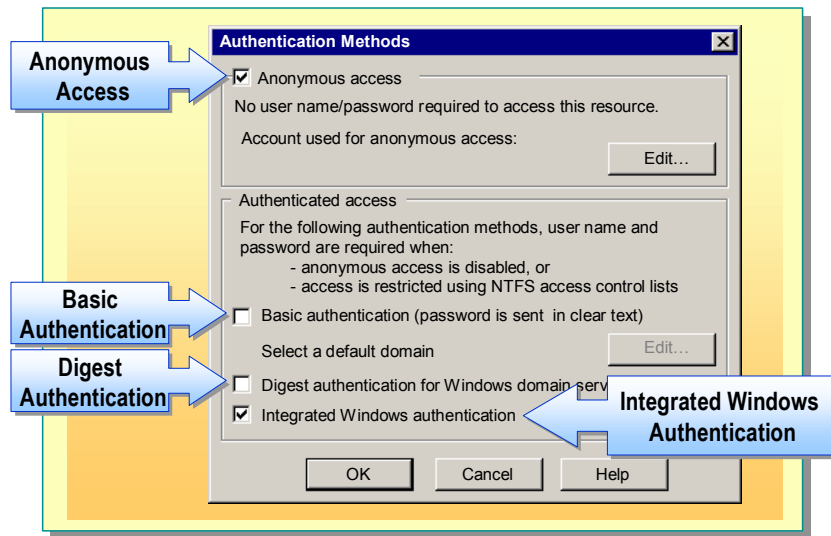
Configuring Authentication

Topic Objective

To illustrate where to configure different authentication methods for a Web site.

Lead-in

Configure authentication for a Web site, directory, or file on the Web server.



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To use a method of authentication, you must configure authentication for a Web site, directory, or file on the Web server.

Configuring Anonymous Access

The anonymous account must have the user right to log on locally. If the account does not have the Log on locally user right, IIS cannot respond to any anonymous requests. By default, IUSR_*computername* accounts are granted this right, but you can change the security privileges. However, if the anonymous user account does not have permission to access a specific resource, your Web server refuses to establish an anonymous connection.

Delivery Tip

Describe the procedure for changing the account that is used for Anonymous access.

To change the account that is used for Anonymous access:

1. In Internet Services Manager, locate and right-click the Web site, directory, or file that you want to configure, and then click **Properties**.
2. In the **Properties** dialog box, click the **Directory Security** tab if you want to configure a Web site or directory, or click the **File Security** tab if you want to configure a file.
3. Under **Anonymous access and authentication control**, click **Edit**.
4. In the **Authentication Methods** dialog box, under **Anonymous access**, click **Edit**.
5. In the **Anonymous User Account** dialog box, type *useraccount* or click **Browse** to locate the valid Windows user account that you want to use for anonymous access.
6. If the user account is located on a different computer, clear the **Allow IIS to control password** check box and type the account password.

Configuring Basic Authentication

To authenticate users with Basic authentication, the Windows user accounts being used for Basic authentication must also have the Log on locally user right. By default, most user accounts are not granted the Log on locally user right on a domain controller.

Delivery Tip

Describe the procedure for enabling Basic authentication.

To enable Basic authentication for a Web site:

1. Open Internet Services Manager, locate and right-click the Web site, directory, or file that you want to configure, and then click **Properties**.
2. In the **Properties** dialog box, click the **Directory Security** tab if you want to configure a Web site or directory, or click the **File Security** tab if you want to configure a file.
3. Under **Anonymous access and authentication control**, click **Edit**.
4. In the **Authentication Methods** dialog box, clear the **Integrated Windows authentication** check box, and then select the **Basic authentication** check box.
5. In the **Internet Service Manager** message box, click **Yes** to acknowledge that passwords will transmit without data encryption, and then click **OK** twice to close the **Authentication Methods** and **Properties** dialog boxes.

Configuring Digest Authentication

To enable Digest authentication for a Web site:

Delivery Tip

Describe the procedure for enabling Digest authentication.

1. Open Internet Services Manager, locate and right-click the Web site, directory, or file that you want to configure, and then click **Properties**.
2. In the **Properties** dialog box, click the **Directory Security** tab if you want to configure a Web site or directory, or click the **File Security** tab if you want to configure a file.
3. Under **Anonymous access and authentication control**, click **Edit**.
4. In the **Authentication Methods** dialog box, select the **Digest authentication for Windows domain servers** check box.
5. In the **IIS WWW Configuration** message box, click **Yes** to acknowledge that the method works only with Windows 2000 domain controllers.
6. Click **OK** twice to close the **Authentication Methods** and **Properties** dialog boxes.

Configuring Integrated Windows Authentication

To enable Integrated Windows authentication:

Delivery Tip

Describe the procedure for enabling Integrated Windows authentication.

1. Open Internet Services Manager, locate and right-click the Web site, directory, or file that you want to configure, and then click **Properties**.
2. In the **Properties** dialog box, click the **Directory Security** tab if you want to configure a Web site or directory, or click the **File Security** tab if you want to configure a file.
3. Under **Anonymous access and authentication control**, click **Edit**.
4. In the **Authentication Methods** dialog box, select the **Integrated Windows authentication** check box, and then click **OK** twice to close the **Authentication Methods** and **Properties** dialog boxes.

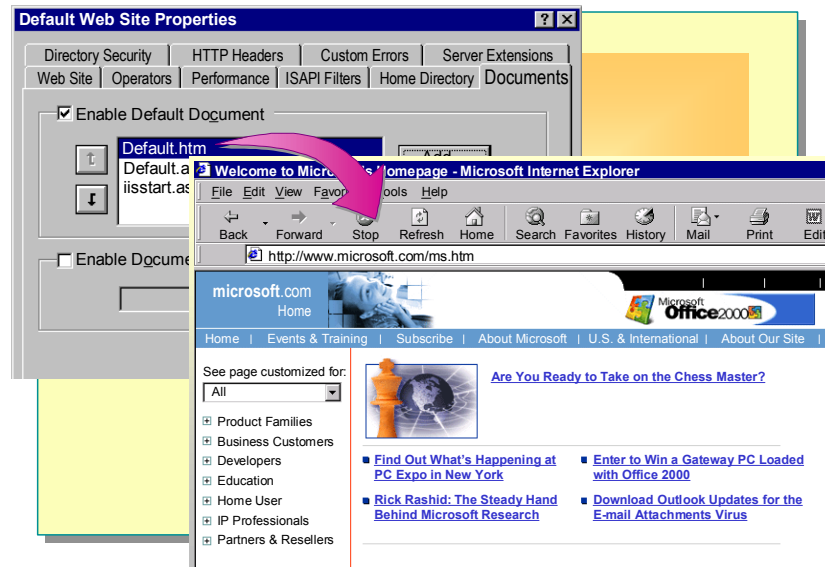
Assigning a Default Document

Topic Objective

To identify the assignment of default documents.

Lead-in

Default documents can help users browse your Web site more efficiently.



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You can assign a default document so that Web page content appears to the user even when a browser request does not include a specific Hypertext Markup Language (HTML) file name. You can use a default document as:

- A home page that provides information for pages, Web sites, or section of a Web site.
- An index page that provides links to other content on the Web site.

Delivery Tip

Demonstrate the steps for assigning a default document.

To assign a default document:

1. Open the **Properties** dialog box for the Web site, and then click the **Documents** tab.
2. Select the **Enable Default Document** check box.

After you enable a default document, you can configure multiple default documents. To add a new default document, click **Add**.

When you assign multiple default documents, the Web server searches the list of default documents in the order in which the names appear. The server returns the first document it finds. To change the search order, select a document in the list of default documents, and then click the arrows to move the selected document up or down accordingly.

Administering IIS

Topic Objective

To list the administrative tools that are used for administering IIS.

Lead-in

Windows 2000 provides administrative tools that enable you to manage a Web server remotely and monitor IIS performance.

- **Apply the Latest Security Updates**
- **Use Internet Services Manager to Manage Web Servers Remotely**
- **Use System Monitor to Monitor IIS Performance**

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When administering IIS, it is important that you apply the most current security updates to ensure that your IIS server is up-to-date and secure. Also, Windows 2000 Administration Tools, which are included on the Windows 2000 Server compact disc, provide the administrative tools that enable you to manage a Web server remotely and monitor IIS performance.

Note The file called adminpak.msi is located in the \i386 directory on the Windows 2000 Server compact disc, or in the systemroot\system32 directory on a computer running Windows 2000 Server. To install Windows 2000 Administration Tools, right-click **adminpak.msi**, and then click **Install**.

Applying the Latest Security Updates

To ensure that your Web server can take advantage of the most current security updates, you should verify that your Web server is running the most current software, including service packs, hot fixes, and security updates.

Delivery Tip

Discuss the security bulletin service and show the students the benefits by going to <http://www.microsoft.com/technet/security/bulletin/notify.asp>.

Important To help you determine what software is needed on your Web server, to receive the most current security information, and to obtain information on the IIS lockdown tool, subscribe to the security bulletin service at <http://www.microsoft.com/technet/security/bulletin/notify.asp>.

Managing Web Servers Remotely

Delivery Tip

Describe the procedure for connecting to another Web server by using Internet Services Manager.

Use Internet Services Manager to connect to and manage Web servers remotely from any computer that is running Windows 2000.

To connect to another Web server by using Internet Services Manager:

1. Open Internet Services Manager from the **Administrative Tools** menu.
2. In the console tree, right-click **Internet Information Services**, and then click **Connect**.
3. In the **Connect To Computer** dialog box, type the name of the Web server to which you want to connect, and then click **OK**.

Note For more information about using Internet Services Manager to manage a Web server remotely, in Internet Services Manager, click the **Action** menu, and then click **Help**.

Monitoring Internet Information Services

Delivery Tip

Describe the performance objects and counters that are available in System Monitor for monitoring IIS.

Open System Monitor from the **Administrative Tools** menu to monitor IIS performance. When you install IIS, the following performance objects and counters for monitoring service activity are added to System Monitor:

- *Internet Information Services Global*. Contains counters that report on bandwidth throttling and on usage of the IIS Object Cache.

Bandwidth throttling limits the bandwidth used by IIS services to a value that is set by an administrator. If the amount of bandwidth approaches or exceeds this limit, bandwidth throttling delays or rejects IIS service requests until more bandwidth becomes available.

The IIS Object Cache stores frequently used objects and objects that can slow performance if they are retrieved repeatedly. The counters report on the size, content, and effectiveness of the IIS Object Cache.
- *Web Service*. Provides counters that show data about the anonymous and non-anonymous connections to the HTTP service application and HTTP requests that have been handled since the Web service was started.
- *Active Server Pages*. Monitors applications running on your Web server that use Active Server Pages. To monitor requests processed by calls to Common Gateway Interface (CGI) applications or Internet Server Application Programming Interface (ISAPI) extensions, use the counters on the Web Service object.

Note For more information about using System Monitor, see module 12, “Monitoring and Optimizing Performance in Windows 2000,” in course 2152, *Implementing Microsoft Windows 2000 Professional and Server*.

Troubleshooting IIS

Topic Objective

To list methods for troubleshooting IIS.

Lead-in

You can test connectivity of a Web site by using your Web browser. If the Web page does not appear, examine the error message to determine the cause of the problem.

**Testing a Web Site That Is Connected to the Internet****Testing a Web Site on Your Intranet****Resolving IIS Problems**

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You can use your Web browser to test a Web site that is connected to the Internet, or to test a Web site on your intranet. If the Web page does not appear after using these testing methods, examine the error message to determine the cause of the problem.

Testing a Web Site that is Connected to the Internet

To test a Web site that is connected to the Internet:

1. Ensure that the home directory for your Web server contains all of the HTML files for the Web site.
2. Open the Web browser on a computer that has an active connection to the Internet. This computer can be the computer you are testing, although it is recommended that you use a different computer on the network.
3. In the **Address** box, type the Uniform Resource Locator (URL) for the Web site's home directory, and then press ENTER.

Delivery Tip

Describe the procedure for testing a Web site that is connected to the Internet.

Note The URL includes the name of your Web site and the path of the file that you want to view. For example, if your site is registered in DNS as examples.nwtraders.com and you want to view the file called homepage.htm that is located in the root of the home directory, type **http://examples.nwtraders.com/homepage.htm**

Testing a Web Site on Your Intranet

Delivery Tip

Describe the procedure for testing a Web site on your intranet.

To test a Web site on your intranet:

1. Ensure that your computer has an active network connection and the DNS or WINS Server service is functioning properly.
2. Open the Web browser.
3. In the **Address** box, type the URL of the Web server's home directory, and then press ENTER.

Note The URL begins with `http://` followed by the Windows Networking name of your server and the path of the file that you want to view. For example, if your site is registered in WINS as Admin1 and you want to view the file called homepage.htm that is located in the root of the home directory, type **`http://admin1/homepage.htm`**

Resolving IIS Problems

Delivery Tip

Describe common IIS problems and their solutions.

When you are not able to display a Web page while testing a Web site, carefully examine the error message. The error message contains information that can help you to identify the cause of the problem. The following table lists common connectivity problems and their solutions.

Problem	Solution
The client cannot find the Web server.	Check name resolution and connectivity.
Access is forbidden.	Check the authentication method and file permissions.
File not found.	Check that the file exists and that its location is correct.
File does not display correctly.	Check the page design to ensure that all elements exist, such as graphics. Verify that the permissions are set correctly.

Tip If your computer has IIS installed on it, you can use your Web browser to access the IIS online documentation, which contains many troubleshooting tips and procedures. To access the IIS online documentation, in the **Address** box, type **`http://localhost/iishelp`** and then press ENTER.

Lab A: Configuring a Web Server

Topic Objective

To introduce the lab.

Lead-in

In this lab, you will configure IIS, create a Web site, configure Web site security, and configure a default document for a Web site.



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Explain the lab objectives.

Objectives

After completing this lab, you will be able to:

- Configure IIS.
- Create a Web site.
- Configure Web site security.
- Configure a default document for a Web site.

Prerequisites

Before working on this lab, you must have:

- Knowledge of the operations of IIS.
- Knowledge of the options for Web site security.

Key Points

The lab does not reflect the real-world environment. It is recommended that you always use complex passwords for any administrator accounts, and never create accounts without a password.

Outside of the classroom environment, it is strongly advised that you use the most recent software updates that are necessary. Because this is a classroom environment, we may use software that does not include the latest updates.

Lab Setup

To complete this lab, you need the following:

- A computer running Windows 2000 Advanced Server
- The files in the C:\MOC\Win2153\Labfiles\Module12\ folder

Important The lab does not reflect the real-world environment. It is recommended that you always use complex passwords for any administrator accounts, and never create accounts without a password.

Important Outside of the classroom environment, it is strongly advised that you use the most recent software updates that are necessary. Because this is a classroom environment, we may use software that does not include the latest updates.

Scenario

Northwind Traders is creating an intranet Web site to keep employees up-to-date about company initiatives and other news. All employees will access most of this Web site. However, parts of the Web site contain information to which only managers should have access. An important design objective for the Web site is that the information on the site be protected from unauthorized access.

Estimated time to complete this lab: 30 minutes

Exercise 1

Creating a Web Site

Scenario

As the network administrator for Northwind Traders, you have been given the responsibility to create an intranet Web site. Another company has designed the content of the Web site for Northwind Traders. You need to ensure that users in your company are able to access the content.

Goal

In this exercise, you will create a Web site by using IIS.

Tasks	Detailed Steps
1. Stop the Default Web Site.	- Log on as <code>administrator@domain.nwtraders.msft</code> (where <i>domain</i> is the name of your domain) with a password of password. - Open Internet Services Manager from the Administrative Tools menu. - In the console tree, under Internet Information Services, expand <i>server</i> (where <i>server</i> is the name of your computer). - Right-click Default Web Site, and then click Stop.
2. Create a new Web site with the name NWTraders Web Site and a Web site home directory of <code>C:\MOC\Win2153\Labfiles\Module12\Web</code> .	- Right-click <i>server</i>, point to New, and then click Web Site. - In the Web Site Creation wizard, click Next. - On the Web Site Description page, in the Description box, type NWTraders Web Site and then click Next. - On the IP Address and Port Settings page, verify that the Web site uses all unassigned IP addresses and TCP port 80, and then click Next. - On the Web Site Home Directory page, in the Path box, type <code>C:\MOC\Win2153\Labfiles\Module12\Web</code> - Verify that the Allow anonymous access to this Web site check box is selected, and then click Next. - On the Web Site Access Permissions page, verify that the Read and Run scripts check boxes are selected, click Next, and then click Finish.
3. Set <code>home.htm</code> as the default home page for the Web site that you created.	- In Internet Services Manager, in the console tree, right-click NWTraders Web Site, and then click Properties. - Review the information on the Web Site and Home Directory tabs to verify that the information that you entered in the wizard appears. - On the Documents tab, click Add. - In the Add Default Document dialog box, in the Default Document Name box, type home.htm and then click OK. - Click the arrow button to the left of the default document list until <code>home.htm</code> is at the top of the list.

Tasks	Detailed Steps
3. <i>(continued)</i>	f. On the Operators tab, verify that only the Administrators group is listed as operators. g. Click OK to close the NWTraders Web Site Properties dialog box. h. Minimize Internet Information Services.
4. View your Web site's home page.	a. Click Start, and then click Run. b. In the Open box, type http://localhost and then click OK.  <i>Internet Explorer displays the Northwind Traders home page.</i> c. Minimize Internet Explorer.

Exercise 2

Configuring Web Site Security

Scenario

Northwind Traders' intranet Web site is functional and employees are accessing it. Management has requested a secure area of the Web site where managers can place information that only other managers can access. After confidential portions of the Web site have been secured, all users need to continue to be able to access information on the Web site without having to enter user names and passwords.

Goal

In this exercise, you will configure Web site security by using several authentication methods.

Tasks	Detailed Steps
1. Assign the Log on locally right to Everyone.	Run the C:\MOC\Win2153\Labfiles\Module12\lab12.cmd command file to assign the Logon locally right to the Everyone group.
2. Configure the Web site for Basic Security, and then access your Web site as nwtraders.msft\Paul with a password of password .	- Restore Internet Information Services. - In the console tree, right-click NWTraders Web Site, and then click Properties. - On the Directory Security tab, under Anonymous access and authentication control, click Edit. - In the Authentication Methods dialog box, clear the Anonymous access and Integrated Windows authentication check boxes. - Select the Basic authentication check box. - In the Internet Service Manager message box, read the warning, and then click Yes. - Click OK to close the Authentication Methods dialog box. - Click OK to close the NWTraders Web Site Properties dialog box. - Restore Internet Explorer. - Click the Refresh button.  <i>Internet Explorer prompts you for your network credentials. When anonymous access is disabled, you must provide a valid user name and password to view any page on the Web site.</i> - In the Enter Network Password dialog box, in the User Name box, type nwtraders.msft\Paul - In the Password box, type password - Verify that the Save this password in your password list check box is not selected, and then click OK. - Minimize Internet Explorer.

(continued)

Tasks	Detailed Steps
3. Set the permissions for managers.htm to only allow access for members of the Administrators group, and then test the permissions.	a. In Internet Information Services, right-click Nwtraders Web Site, and then click Explore. b. In Windows Explorer, right-click managers.htm, and then click Properties. c. In the managers.htm Properties dialog box, on the Security tab, clear the Allow inheritable permissions from parent to propagate to this object check box. d. In the Security dialog box, click Remove. e. Click Add. f. In the Select Users, Computers, or Groups dialog box, under Name, click Administrators, click Add, and then click OK. g. Allow the Administrators group the Full Control permission, and then click OK. h. Close Windows Explorer, and then restore Internet Explorer. i. On the Northwind Traders Intranet Web page, click Click here for Public information about Northwind Traders. j. Click Back to return to the home page. k. On the Northwind Traders Intranet Web Page, click Click here for the Northwind Traders Management Web Page.  <i>Internet Explorer prompts you for your network credentials. When the user account that you used to log on to a Web site does not have access to a file that you are attempting to access, you must provide a user name and password that does have access to the file.</i> l. In the Enter Network Password dialog box, in the User Name box, type Administrator m. In the Password box, type password n. Verify that the Save this password in your password list check box is not selected, and then click OK.  <i>Internet Explorer displays the Northwind Traders Managers Only Web page.</i> o. Close Internet Explorer.

(continued)

Tasks	Detailed Steps
4. Configure the Web site for Integrated Windows Authentication, and then test the authentication.	- In Internet Services Manager, right-click Nwtraders Web Site, and then click Properties. - On the Directory Security tab, under Anonymous access and authentication control, click Edit. - In the Authentication Methods dialog box, select the Integrated Windows authentication check box. - Clear the Basic authentication check box, and then click OK. - Click OK to close the NWTraders Web Site Properties dialog box. - Minimize Internet Information Services. - Click Start, and then click Run. - In the Open box, type http://localhost and then click OK.  <i>Internet Explorer displays the Northwind Traders Web page without prompting you for your credentials.</i>
 Why were you not prompted for your credentials when you accessed the Northwind Traders Web site? IIS requested authentication credentials from your Web browser. Because you enabled Integrated Windows authentication, Internet Explorer automatically supplied the credentials of the account that is currently logged on.	
4. (continued)	On the Northwind Traders Intranet Web Page, click Click here for the Northwind Traders Management Web Page.  <i>Internet Explorer displays the secured Web page without prompting you for your credentials.</i>
 Why were you not prompted for your credentials when you accessed the secured Web page? IIS requested authentication credentials from your Web browser. Because you enabled Integrated Windows authentication, Internet Explorer automatically supplied the credentials of the account that is currently logged on.	
4. (continued)	Close Internet Explorer.

Exercise 3

Restoring Your Configuration

Scenario

After you have tested the Web site for Northwind Traders, you must restore IIS to its original configuration.

Goal

In this exercise, you will restore the original Web site settings for your computer.

Task	Detailed Steps
1. Stop the NWTraders Web Site and start the Default Web Site.	a. Restore Internet Information Services. b. In the console tree, right-click NWTraders Web Site, and then click Stop. c. In the console tree, right-click Default Web Site, and then click Start. d. Close all open windows, and then log off.

Review

Topic Objective

To reinforce module objectives by reviewing key points.

Lead-in

The review questions cover some of the key concepts taught in the module.

- Overview of IIS
- Preparing for an IIS Installation
- Installing IIS
- Configuring a Web Site
- Administering IIS
- Troubleshooting IIS

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1. The computer running Windows 2000 Server in your department stores some product information and white papers that you want to share with other employees of your organization. Your organization has a network of computers running Windows 2000, Windows 98, and the Macintosh operating system. How do you publish the required information so that it is accessible to all of the users in your network?

Convert your documents to HTML. To publish the HTML documents on the Web, install IIS so that all network users can view the documents by using a Web browser.

2. You are about to host a new Web site for your company, and you want users to refer to the Web site by using a specific name. How do you enable users to connect to the Web site by using this name?

Use DNS to establish a domain name that maps to the IP address of the IIS server.

3. You are responsible for your company's intranet Web site that contains general information and white papers. Your network spans multiple domains, and you do not have a corporate standard for Web browsers. You must configure IIS to enable all employees of the company to have access to the information. Which access or authentication method do you use to achieve this?
- a. Anonymous access.
 - b. Basic authentication.
 - c. Digest authentication.
 - d. Integrated Windows authentication.

Anonymous access. Because it is a corporate intranet site, only the authorized users of the company are able to access it, so you do not require an additional level of authentication. In addition, anonymous access is the authentication method that is configured by default during the IIS installation process.

4. Your Web page designer created Web pages for your company's Web site. The home page for the Web site is called nwtradershome.htm. You have been assigned the task of publishing the Web site. How do you ensure that users can access the home page without explicitly specifying the file name nwtradershome.htm?

Assign a default document to your Web site, specifying nwtradershome.htm as the file. Make this the first default document. Users connecting to the home page only have to specify the name of the Web site to see the home page.

5. You want to authenticate all of the users who access the official Web site of your organization through any Web browser. Which of the following methods of authentication is best suited for your requirements?
- a. Anonymous access.
 - b. Basic authentication.
 - c. Digest authentication.
 - d. Integrated Windows authentication.

Basic authentication is the only method that can authenticate users accessing a Web site through any browser.