

## CHAPTER 1

# Understanding the Internet and Internet Information Server



Prior to planning and implementing your Microsoft Internet Information Server site, you should understand each of the components involved in establishing an Internet Information Server site.

This chapter answers the following questions:

- u What is the Internet?
- u What is an intranet?
- u What is Internet Explorer?
- u What is Internet Information Server?

## What is the Internet?

The Internet is a global network of computers that communicate using a common language. It is similar to the international telephone system — no one owns or controls the whole thing, but it is connected in a way that makes it work like one big network.

The World Wide Web (WWW) gives you a graphical, easy-to-navigate interface for looking at documents on the Internet. These documents, as well as the links between them, comprise a “web” of information.

Files, or “pages,” on the Web are interconnected. You connect to other pages by clicking special text or graphics, which are called hyperlinks.

Pages can contain news, images, movies, sounds — just about anything. These pages can be located on computers anywhere in the world. When you are connected to the Web, you have equal access to information worldwide; there are no additional long-distance charges or restrictions.

Hyperlinks are underlined or bordered words and graphics that have Web addresses embedded in them. By clicking a hyperlink, you jump to a particular page in a particular Web site. You can easily identify a

hyperlink. Hyperlink text is a different color from the rest of the text on a Web page.

Each Web page, including a Web site's home page, has a unique address called a Uniform Resource Locator (URL), for example, <http://www.microsoft.com/home.htm>. Domain Name System (DNS) names are used on the Internet.

## What is an Intranet?

In this book, "intranet" refers to any TCP/IP network that is not connected to the Internet. Internet Information Server can be configured to provide your intranet with the same features and services found on the Internet, such as hypertext pages (which can contain text, hyperlinks, images, and sounds), client/server applications, and database access.

## What is Internet Explorer?

Microsoft Internet Explorer is a Web browser. Just as Microsoft® Word is a tool to do word processing, or Microsoft Excel is a tool to do spreadsheets and calculations, Internet Explorer is a browser, or a tool for navigating and accessing information on the Web.

The toolbar provides a range of detailed functions and commands for managing the browser. The address bar below the toolbar displays the current Web site address being accessed. To go to a new Web site, you type the site's URL directly into the white space on this bar. When you have finished typing, press ENTER on your keyboard.

Microsoft Internet Information Server includes a version of Internet Explorer for each Windows version:

- u Internet Explorer for Windows NT
- u Internet Explorer for Windows® for Workgroups and Windows version 3.1
- u Internet Explorer for Windows 95

## What is Internet Information Server?

Microsoft Internet Information Server is a network file and application server that transmits information by using the HyperText Transport Protocol (HTTP).

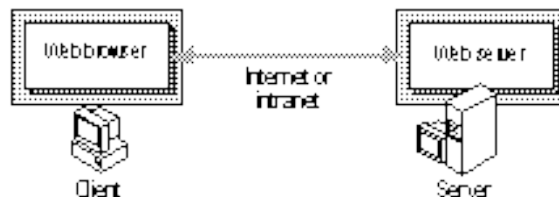
## What Can I Do with Internet Information Server?

The creative possibilities of what you can offer on a Microsoft Internet Information Server are endless. Some familiar uses are to:

- u Publish a “home page” on the Internet for your business featuring a newsletter, sales information, or employment opportunities.
- u Publish a catalog and take orders from customers.
- u Publish interactive programs.
- u Provide your remote sales force easy access to your sales database.
- u Use an order-tracking database.

## How Does Internet Information Server Work?

The Web is fundamentally a system of requests and responses. The Microsoft Internet Information Server responds to Web browser requests for information. The Internet Information Server listens for requests from users on the network using the WWW service.



## Browser Requests

Browser request syntax determines what the server will do with the request. Requests are in the form of an URL.

### URL Syntax

URL syntax is a specific sequence of protocol, domain name, and path to the requested information, as described in the table below. Protocol is the application used to gain access to information; for example, HyperText Transport Protocol (HTTP). Domain name is the name registered in DNS. The path is the path on the server to the requested information.

Protocol	Domain Name	Path to Information
http://	www.microsoft.com	/backoffice
https:// (secure HTTP)	www.company.com	/catalog/orders.htm
gopher://	gopher.college.edu	/research/astronomy/index.htm
ftp://	orion.bureau.gov	/stars/alpha quadrant/starlist.txt

## Request Syntax

Just as Microsoft Word documents use the convention *Filename.doc*, and programs use the convention *Programname.exe*, the path to information determines whether the request is for a static HyperText Markup Language (HTML) page, for a dynamic HTML page, or for a directory listing. Sometimes the path includes parameters, or data the Information server will process before returning a dynamic page.

In all cases the server replies with an HTML page (or an error message). Example request types are listed in the following table:

Request Type	URL
Static HTML page	http://www.microsoft.com/backoffice/home.htm
ISAPI application	http://www.msn.com/custom/page1.dll?CUST=on
Internet Database Connector	http://www.microsoft.com/feedback/input.idc
CGI script	http://www.company.com/calculator/add.pl?2.2
Directory listing	ftp://orion.nasa.gov/stars/alpha quadrant/list

## Information Server Response

Responses are typically in the form of an HTML page. The returned page can be one of three types: a static HTML page, a dynamic HTML page, or a directory listing page.

## Static Pages

Static pages are static HTML pages that are prepared in advance of the request. The Information Server returns the HTML pages to the user, but takes no special action. The user requests a static page by typing in an URL (in the following illustration, <http://www.company.com/home.htm>) or by clicking a link pointing to an URL. The URL request is sent to the server. The server responds by returning the static HTML page.

## Dynamic Pages

Dynamic pages are created in response to a user's request. The user requests a dynamic page by clicking a link pointing to an URL, or by clicking a button on a form, which in turn sends the data in the form to the server. The server uses any data supplied by the user to run the specified script or application or to query or post data to a database. The server returns the results to the user in an HTML page.

The following illustration shows how a user can send a query to an Internet Server API (ISAPI) application that adds two numbers. The user types the two numbers to be added, then clicks a button, which in turn sends the two numbers to the server. The server adds the numbers, then returns the results to the user in an HTML page.

The following illustration shows a user posting an order to a database using the Internet Database Connector. The user completes a form, then clicks a button, which in turn sends the data in the form to the server. The server posts the data to a database, then confirms the order by sending an HTML page.

### Directory Listings

If users might send queries without specifying a particular file, you might want to configure your server for directory browsing. If directory browsing is configured, a directory listing (a hypertext version of a File Manager listing) is returned to the user in the form of an HTML page. The user can then jump to the appropriate file by clicking it in the directory listing.

In summary, Internet Information Server responds to user requests with an HTML page. This page can be a static page that is already prepared, or it can be generated in response to information that the user provides, or it can be a directory listing that is created automatically from a listing of the available files and directories.

## How Do I Use Internet Information Server?

Internet Information Server is flexible enough to perform many important functions for your organization. It is scalable from supporting a single-server site to supporting large multi-server installations. For example, [www.microsoft.com](http://www.microsoft.com) and [www.msn.com](http://www.msn.com) are among the busiest Web sites on the Internet today, and both use multiple servers running Microsoft Internet Information Server.

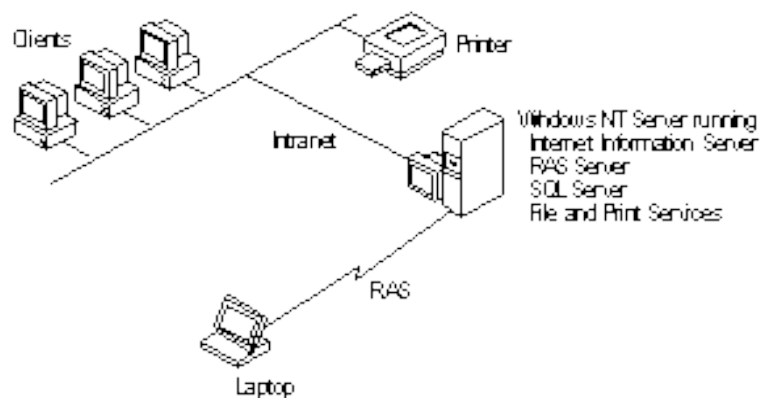
One of the primary factors that determines the configuration and use of Internet Information Server is whether it will be used internally by employees on your intranet, or if it will be connected to the Internet.

The following scenarios are intended to help you understand the range of possibilities for using Internet Information Server.

### Intranet Scenarios

Internet Information Server integrates well into almost any existing environment. Because Internet Information Server integrates Windows NT security and networking, you can often add the software to an existing computer and use existing user accounts. It is not necessary to use a dedicated computer to run Internet Information Server.

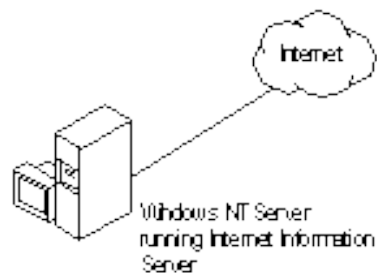
For example, in a small workgroup you can add Internet Information Server to an existing file and print server. The WWW server can host personal Web-style pages, customized workgroup applications, serve as an interface to the workgroup's Sequential Query Language (SQL) database, or use Remote Access Service (RAS) to provide dial-up access to the workgroup's resources from remote sites.



In a larger business with multiple departments or workgroups, each department might run Internet Information Server on an existing file server for workgroup-specific information. A central information server might be used for company-wide information, such as an employee manual or company directory.

### Internet Scenarios

Internet Information Server can function as a simple dedicated WWW server on the Internet, as shown in the following illustration.





In larger sites you can provide access from your internal network to the Internet Information Server, allowing employees to browsing the server or to use authoring tools, such as Internet Assistant for Microsoft Word, to create content for your server.

Internet Information Server's integration with all of the Windows NT services can also create servers with multiple functions. For example, a company with sites in different parts of the world can use Internet Information Server to provide communication between sites, with the added flexibility of Internet access. You can even add RAS to an Internet Information Server to provide dial-up access to your intranet or the Internet.

**Note** Many scenarios for connecting to the Internet involve third-party routers or security devices that filter network packets between your computer and the Internet. Routers and other security devices are not indicated in the preceding illustrations.

