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Publishing mail  
Internet secure sockets layer  
encryption HTML  
JavaScript Comp.sys  
news certificate Proxy

**Welcome to**

# **Getting Started**

*with*

Netscape<sup>®</sup> Enterprise Server for NetWare<sup>®</sup>

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# Installation

**T**his chapter tells you what you need to know to quickly install the Netscape® Enterprise Server for NetWare®.

## Before you begin installation

Before installing the Enterprise Server for NetWare, make sure you review the following information:

1. Verify client and server requirements.
2. Review the list of required and additional information.
3. Follow the installation procedure by running the self-extracting executable setup program.
4. Configure the webserver after installation (if you want to change any of the feature default settings, click the help button for online directions).

## Client requirements

Make sure the client machine used to install the Netscape Enterprise Server for NetWare

Before you begin installation

- is running Windows® 95™ or Windows NT® 4.0
- is running a correctly installed version of Novell®'s 32 bit NetWare client
- is running a correctly configured Netscape 3.x or above browser (Netscape Communicator 4.04 is included on the Enterprise Server CD; you may use one copy of Communicator for configuration)
- has a CD-ROM drive if the installation is being made from a CD
- has a hard disk with at least 100 MB of free space (the installation program expands files prior to installation; unnecessary installation files will be removed during the install process).

## Server requirements

Make sure the target server machine for the Netscape Enterprise Server for NetWare

- is correctly configured for IPX and is running NetWare 4.11 or higher
- is running CLIB 4.11J (if your server doesn't have CLIB 4.11J already installed, the Enterprise Server installation program will prompt you and install it for you)
- has long filename support installed (if your server doesn't have long filename support already installed, the Enterprise Server installation program will prompt you and install it for you)
- has Novell's NLDAP gateway installed (*if* you want to integrate users and groups with other databases). The NLDAP gateway can be downloaded from the Novell website (<http://www.novell.com>).
- has a minimum of 32 MB of RAM (64MB is recommended and is required if you are going to run the Oracle® server in addition to the Enterprise)
- has at least 100 MB space on the SYS: volume.

In addition, make sure DNS is running in the network and is accessible to the target NetWare server.

## Required information

The person installing the Enterprise Server for NetWare needs to

- have a working knowledge of the NetWare network operating system
- have administrative rights to the SYS: volume of the target NetWare 4.11 or higher server
- have a working knowledge of the Windows 95 or Windows NT client operating system
- have a working knowledge of TCP/IP
- know the IP address (or DNS hostname, if previously setup) for the target NetWare 4.11 or higher server (install will configure the IP even if it is not running)
- know the netmask of the IP network to which the target server is attached
- know the IP gateway providing service to the target server
- know the DNS hostname for the target server and at least one DNS server that the target server will use for IP address resolution
- choose unique portnumbers for the administration and the webservers.

If you need more information on accomplishing these tasks then is included in the following sections, consult your system manager or your local reseller.

## Installing the Enterprise Server

This section describes the installation of the Netscape Enterprise Server for NetWare.

## Installation instructions

1. Go to a Windows NT or 95 client machine meeting the requirements outlined in “Client requirements” above and put the compact disc in the CD-ROM drive.
2. On the Windows Task bar, Click Start | Run, and then type  

```
D:\Setup.exe
```

where *D*: is the letter of your CD-ROM drive. Press Enter. The Netscape Enterprise Server for NetWare Installation dialog box appears.
3. Click Finish to continue. The files are extracted, and the Welcome screen appears. Follow the instructions on the screen to complete the installation.

Once the Netscape Enterprise Server for NetWare is successfully installed, you can proceed with changing any of the default configurations of your webserver using the administration server. For more information, see Chapter 6, “Managing your server.”

## What happens during installation

The installation process places all the files under the server root directory that you specified during installation.

The following directories are created under the server root directory.

- `admin-serv` contains administration server directories:
  - `config` contains the administration server’s configuration files.
  - `logs` contains the administration server’s log files.
- `adminacl` contains the files that store access control configuration information for the administration server.
- `alias` contains the key and certificate files for all Novell servers.

- `bin` contains the binary files for the server, such as the actual server, the administration forms, and so on.
- `docs` is the server's default primary document directory, where your server's content files are usually kept.
- `extras` contains a log analysis tool.
  - The `log_anly` directory contains the log analysis tool that runs through the Server Manager. This log analyzer analyzes files in common log format only.
- `httpacl` contains the files that store access control configuration information in the generated `.server-identifier.acl` and `genwork.server-identifier.acl` files. The file `generated.server-identifier.acl` contains changes you make using the Server Manager access control forms after saving your changes; `genwork.server-identifier.acl` contains your changes *before* you save your changes.
- `https-webserverid` are the directories for each server you have installed on the machine. Each server directory has the following subdirectories and files:
  - `config` contains the server's configuration files: `agent.conf`, `csid.conf`, `filter.conf`, `magnus.conf`, `magnus.conf.clfilter`, `mime.types`, `obj.conf`, `obj.conf.clfilter`, `process.conf`, `rdm.conf`, `robot.conf`, `webpub.conf`, and `webpub.conf.clfilter`. Working copies are kept here. For complete information on `magnus.conf` and `obj.conf`, see the *NSAPI Programmer's Guide* on the DevEdge site at <http://developer.netscape.com/library/documentation/index.html>.
  - `conf_bk` contains backup copies of the server's configuration files.
  - `db` contains the RDM (Resource Description Messaging) schema used by the auto catalog feature, which is a feature that will be added in the next release of Enterprise Server for NetWare.
  - `logs` contains any agent, error, and access log files.
- `include` contains header files.
- `js` contains the Application Manager and the samples for server-side JavaScript.

## Installing over a beta version

- `manual` contains the online manuals for the product.
- `ns-icons` contains icons for FTP listings and Gopher menus used in “fancy” indexing lists.
- `nsapi` contains header files and example code for creating your own functions using NSAPI. For more information, see Netscape’s DevEdge online documentation website at <http://developer.netscape.com/library/documentation/index.html>.
- `plugins` contains directories for search and other plugins.
- `userdb` contains user databases and related information.

## Installing over a beta version

The installation program will match existing files that are currently on your system with files of the same name on the installation CD, and then determine if they are newer or older. You will be prompted to overwrite files that are older than those on the installation CD. Any web content you have developed should remain untouched.

**Warning** Beta versions of the server should not have been used in a production environment. Although in our labs, installing over existing betas has proven to work, Novell does not guarantee that your web content will not be affected.

## What’s next?

After the server is successfully installed, you can begin using the server by simply accepting all of its default settings. However, if you want to begin configuring your server, you will need to read the next three chapters, which will give you the information you need to successfully modify and configure the server for your needs.

## Welcome



elcome to the Netscape® Enterprise Server for NetWare®. Netscape servers on NetWare provide the best of both worlds when it comes to management and administration.

This book introduces you to the Enterprise Server and gets you up and running quickly. It shows you how to install the server (see Chapter 1, “Installation”) and how to perform the most common tasks (see Chapter 3 through Chapter 7).

If you want to explore the Enterprise Server for NetWare in greater depth or learn about some of the more technical aspects of the Enterprise Server, the first topic in this section, “Finding the information you need” on page 13, directs you to other sources of information.

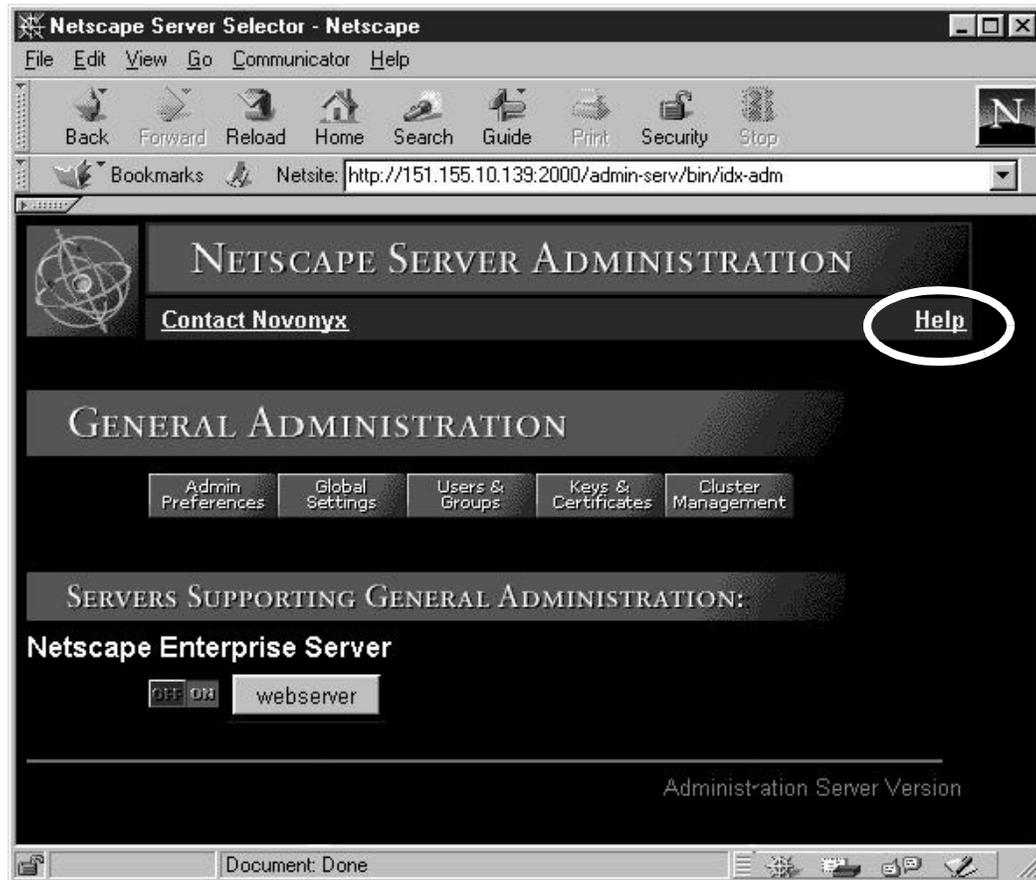
## Finding the information you need

### Online help

Online help is the primary source of information about the Enterprise Server for NetWare. Online help describes the user interface for the administration server and documents how to use it to configure the administration server.

Finding the information you need

The server is configured and managed using a browser, such as Netscape Communicator (included on the CD). After installing the Netscape Enterprise Server for NetWare and launching a browser to begin configuring the server, you will find a link to the online help. To read the Help, click Help on the Administration Server page.



The online help contains two electronic (HTML) books:

1. Administrator's Guide: Contains information about administering the Enterprise Server for NetWare.

2. **Managing Netscape Servers:** Describes the Netscape administration server and covers basic concepts common to all Netscape servers.

## Getting help over the web

If you are not able to find answers to your question in the online documentation, you should look at the following tools available on the Novell® website at <http://support.novell.com/products/Novonyx.htm> (this URL is case sensitive).

- **Knowledgebase:** We have provided a free and convenient search feature on our technical support knowledgebase. This is a continually evolving database of technical information documents (containing solutions to previously encountered problems) created by our Novell technical support engineers.
- **File Finder:** We have provided a list of software patches, readme files, utilities, updated files, etc, available for free download. Each file contains a description of its use, the file size, and posting date. Many of these files are referenced in the Knowledgebase entries as potential solutions to problems.
- **Forum:** Our website hosts a support-oriented Forum. Not only does the Forum contain answers to many frequently asked questions, but provides customers with an opportunity to submit their own technical support inquiries regarding Novell products. Other Forum participants, including members of the Novell technical support team, provide suggestions and solutions.
- **Additional Support:** Provides the tools and programs you need to get your job done, from alternative methods of obtaining support to special programs designed for developers to finding a service partner. Includes links to electronic support, other programs, support programs, Novell service partners, and telephone support.
- **Site Assistant:** Helps you find answers on how to use Support Connection. Provides you the most frequently asked questions to help you know what to look for on the website.

## How the Enterprise Server works

When you install the Enterprise Server for NetWare, two servers are installed: The *admin server* and the *webserver*.

The admin (or administration) server is used to manage and configure all Novell servers. It is through this server that you set up access rights, security, enable or disable features, and so on.

The webserver is the server that is configured by the admin server to deliver webpages to the Internet or to an intranet.

## The administration server

The administration server is a web-based server containing forms you use to configure your Netscape server products, including the Netscape Enterprise Server for NetWare. With the administration server, you can manage multiple servers from a single interface.

During the installation of your Netscape Enterprise Server for NetWare, you select an IP address and portnumber for the administration server. Like any other server, the administration server listens to that port and responds to requests sent to it.

For more information on the administration server, see the online manual, *Managing Netscape Servers*, which can be accessed by clicking Help on the Admin Server page. For information on accessing your Netscape Enterprise Server for NetWare through the administration server, see Chapter 6, “Managing your server.”

## Additional information

### Make sure DNS is running

When you install the Netscape Enterprise Server for NetWare, you’ll be asked for a hostname or an IP address (or multiple entries of the same) as input strings:

- A hostname is a name for a specific computer in the form `machine.subdomain.domain`. For example, `www.novell.com` is the machine `www` in the subdomain `novell` and domain `com`.
- An Internet Protocol (IP) address is a set of numbers, separated by dots, that specifies the actual location of a computer on the Internet, for example, `198.95.251.30`.

As you prepare for installation, make sure DNS is running properly. Otherwise, the server can't resolve (translate) hostnames and can't connect to any remote hosts.

To use a hostname during installation, your server must have an entry in a DNS server, and you must have entered a hostname. You can also use an IP address during installation.

If your system is using a dynamic IP address, (for example, if your IP address is assigned by the Dynamic Host Configuration Protocol [DHCP] or your Internet service provider [ISP]), users might have difficulty accessing your webserver as your IP address changes.

For more information about your system's networking configuration, see the documentation for your operating system.

## Choosing unique portnumbers

You need two portnumbers:

- one for the administration server
- one for the webserver.

The standard webserver portnumber is 80 and the standard SSL-enabled webserver portnumber is 443, but you can install the server to any port. If you use a port other than the default port (port 80), the URL used to gain access to your homepage will change. For example, if your computer is called `www.novell.com` and you choose port 9753, your server's URL will be `http://www.novell.com:9753/`.

You should choose a random number for the administration server to make it harder for anyone to breach your server. When you configure your server, you use the administration server's portnumber. For example, for server `novell.com`, the server's URL could be `http://www.novell.com:2634/`.

What's next?

Make sure the port you choose isn't in use. If you choose a port that is being used by another service, the installation program prompts you for another port. Refer to your NetWare documentation for more information on port settings.

## What's next?

Chapter 3, "Internet basics," provides an overview of the Internet and the technology that makes it work, as well as a brief list of the features of Enterprise Server that allow it to take advantage of Internet technology.

## Internet basics

**T**his section provides a basic overview of the Internet. If you are already familiar with the Internet, you might want to skip to Chapter 4, “Administration server basics” on page 19.

### Welcome to the Internet

**O**ne computer by itself is a useful tool. You can work with and store a great deal of information on a computer. A *network*, or group of computers working together, is an even greater tool. You and other people can share and work with each other’s information in a variety of ways. If a network can exchange information with other networks through a protocol called TCP/IP, it is part of the *Internet*. At its simplest, the Internet is a network of networks. No one person or company runs the Internet. Because of this design, the information available on the Internet changes constantly, and new computers are continually added to the network, which provides an ever-growing source of information.

Through the Internet people can

- send and receive e-mail (messages and files)
- read newsgroups (“bulletin boards” to discuss special-interest topics)

- visit websites (remote areas that users can get information from or interact with).

Websites are collections of documents and programs that can include hypertext, graphics, sounds, movies, and more. Often they contain links to other web documents, perhaps at other websites. To a user, it hardly matters that some documents are at different sites—they are all merely a click away. All the websites in the world using a protocol known as the hypertext transfer protocol, or HTTP, are known collectively as the World Wide Web (often called “WWW” or simply “the web”). You access the web with a *web client* like Netscape® Navigator or Microsoft®’s Internet Explorer.

A company can maintain an internal network of websites, e-mail, and other Internet services; this structure is called an *intranet*. An intranet is a particularly useful way to disseminate information within a company. Intranets can contain such information as benefits policies, sales and marketing product details, company phone lists, product plans, and online forms.

Usually, an intranet is kept separate from the Internet by hardware and software called a *firewall*, so that only people in the company can access that intranet.

When a company extends its intranet outside the firewall to allow customers, suppliers, and offsite workers access to the company’s data, that structure is called an *extranet*.

## Internet basics

The Internet is based on a client-server relationship. A client program (e.g., a web browser) requests information, and the server program supplies it. When clients on the Internet connect to servers to send e-mail, read newsgroups, or visit websites, they communicate using other protocols in addition to TCP/IP. Multiple protocols are often thought of as layers. For example, the bottom layer might be PPP (Point-to-Point Protocol) if you use a modem or Ethernet if you are on a corporate intranet.

TCP/IP is the middle layer in Internet communication, and it specifies exactly how all digital data is transferred from one computer to another. Moving up, the next layer might be HTTP (HyperText Transfer Protocol), which specifies what type of communication and information is sent between a website and a web browser. HTTP is what makes web servers and web browsers speak the same language; TCP/IP is what makes sure the messages are sent back and forth reliably.

Other protocols that work “on top” of TCP/IP include

- SMTP (Simple Mail Transfer Protocol for e-mail)
- NNTP (Network Transfer Protocol for newsgroups)
- FTP (File Transfer Protocol for transferring files).

The various protocols are handled transparently by the client and server software. Generally, users only see what protocol is being used when a uniform resource locator (URL) is required by their browser to find a network service.

## Understanding URLs

To get information from the Internet, you need to know the address of the information. These addresses are called Uniform Resource Locators (URLs). URLs are in the format *protocol://computer/unique identifier*. For example, the unique identifier could be a directory followed by a file. An example of a URL is `http://www.danishfurniture.com/products/orderform.html`

Most files on the web have the extension `html` or `htm`. HTML stands for HyperText Markup Language.

Because the protocol for accessing the web is HTTP, all web URLs begin with `http://`, as in the preceding example. The rest of the example URL is straightforward—the computer hostname is `www.danishfurniture.com`, the directory on that computer is `products`, and the file in question is `orderform.html`. Typing that URL into Navigator’s Location field displays the file `orderform.html`, from `www.danishfurniture.com`, in the `products` directory. The file is sent from the server to the client through HTTP.

**Note** On the Internet, a computer is identified by a number, such as 198.95.251.30. This number is called a computer’s Internet Protocol address, or *IP address*. To make Internet navigation easier, each IP address can also be associated with a hostname, such as `home.novell.com`, or `www.danishfurniture.com`. The words you type into the Location field of your browser are automatically translated to IP addresses by a special program called the *Domain Name System* (or DNS), which is maintained by your Internet provider or information systems department.

## Understanding webservers

In the previous example, a computer named `www.danishfurniture.com` holds a file in one of its directories. This in itself is not unusual—every computer contains files in directories. What makes `www.danishfurniture.com` special is that it can “serve” its documents to clients when requested. This computer runs a server program that “speaks” HTTP and is physically connected to a TCP/IP-based network.

Sometimes the word *server* is used to mean the machine that serves the documents, but in these discussions, *server* refers to the installed program.

When you install a Netscape server, you specify a directory to contain all the files you want to serve to clients. All directories and subdirectories below that main content directory are available to clients. As mentioned previously, the most common type of content at a website is HTML files. Graphic images and sounds are also often available on websites. Additionally, websites can contain programs that perform special tasks. For example, a website might have a program that looks up stock prices, based on information a user fills out in an HTML form. Further, some websites can hold programs that actually run on client computers, when they connect to the server.

The uses and abilities of websites are virtually limitless. As the definition of HTML grows, so does its ability to present more varied and dynamic information. And with languages such as JavaScript™ and Java™, you have the power to make a website into almost whatever you want. On the web, you can find shopping malls, interactive stories, encyclopedias, video games, banks, and much more.

## The Netscape Enterprise Server for NetWare®

Here is a partial list of what the Netscape Enterprise Server for NetWare offers:

- Admin Server and NWAdmin: Allows for simplified user administration
- Content management: Dramatically lowers cost of ownership
- Full-text and meta data searching: Provide powerful tools for locating information on your intranet
- Web Publishing: Allows end users to organize and publish their documents from their desktops with a Web Publishing interface. They can also use text search and revision control to manage content.
- Link management: Checks for link consistency increasing the reliability of your intranet
- LDAP (Lightweight Directory Access Protocol): Stores users and groups in a centralized directory
- NDS (Novell® Directory Services™): Aids integration to LDAP support
- Encryption: Establishes encrypted and authenticated transactions between clients and the server through the Secure Sockets Layer (SSL) 3.0 protocol

- Access control: Protects confidential files or directories by implementing access control by username, password, domain name, or IP address
- Scripting language support: Includes support for Perl 5, NetBasic<sup>®</sup> (100% Visual Basic<sup>®</sup> Script Compatible; supports Universal Component System<sup>®</sup> [USC] for integration with Java, JavaBeans<sup>®</sup>, and ActiveX<sup>™</sup>), LCGI (supports Novell's webserver), and JavaScript.

## What's next?

After installing the server, continue on to Chapter 4, "Administration server basics," to learn how to use the administration server to configure the Enterprise Server.

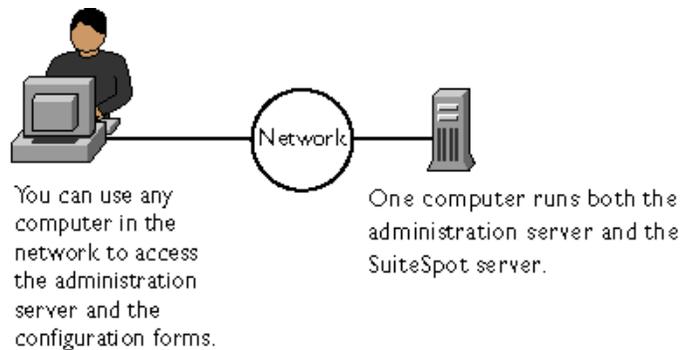
What's next?

## Administration server basics

This chapter describes the concepts behind the administration server and the Server Manager forms you use to configure Novell® servers. This chapter also gives you an overview of some new features and tells you how to start and stop the server.

Because every Novell server is configured using an administration server and the Server Manager forms, you can easily configure your servers remotely, using any computer in your network.

Figure 4.1 You can configure your Novell servers from any computer in the network.



## Using the administration server

The administration server is a web-based server that contains the Java™ and JavaScript™ forms you use to configure your Netscape® servers. Because the forms for each server have a consistent look and feel, you can quickly learn to configure and manage another server.

The administration server is installed when you install your first Netscape server. The directory where you install the servers is called the server root directory.

After installing a webserver and administration server, you use your browser to navigate to the administration server and use its forms to configure your webserver. When you submit the forms, the administration server modifies the configuration for the webserver you were administering.

The URL you use to navigate to the administration server depends on the computer hostname and the portnumber you choose when you install any Netscape webserver. For example, if you installed the administration server on port 12345, the URL would look like this:

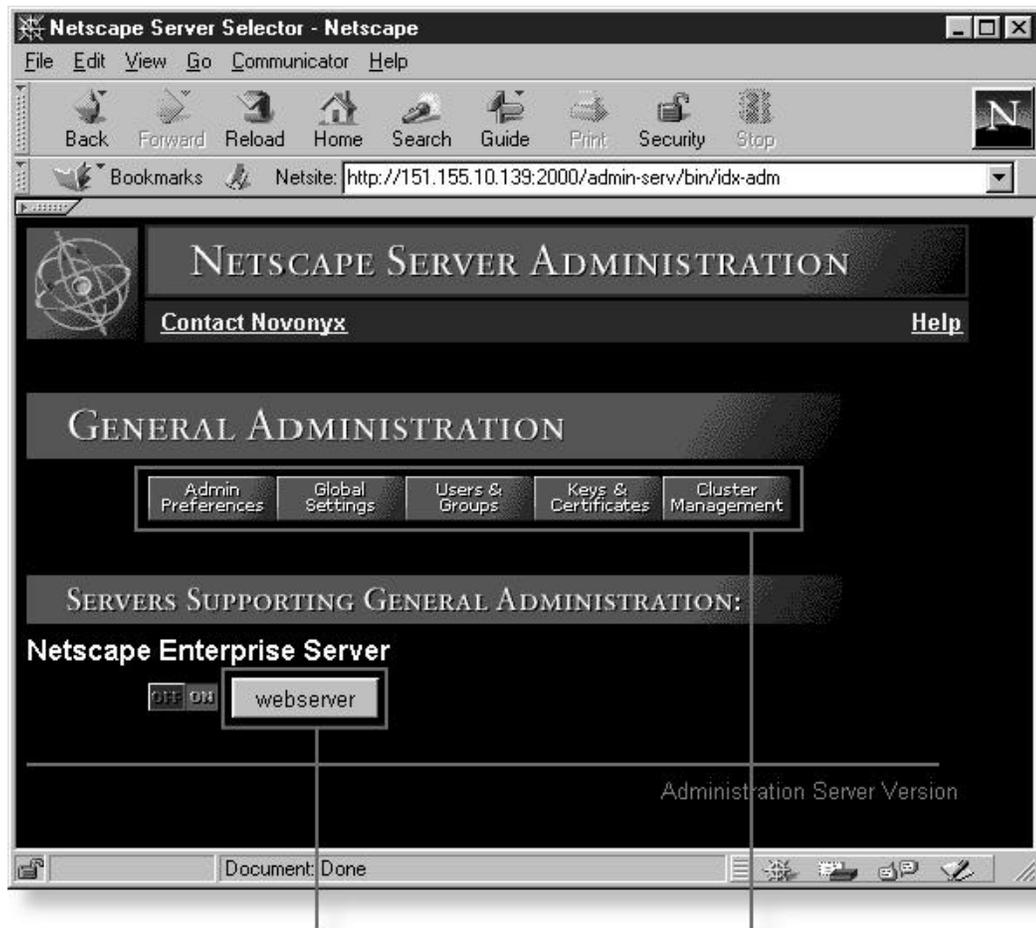
```
http://myserver.novell.com:12345
```

Before you can get to any forms, the administration server prompts you to authenticate yourself. This means you need to type a username and password. You set up the “superuser” username and password when you install the Enterprise Server and administration server on your computer. (See “Logging in to the administration server” for more information.)

The first page you see when you access the administration server is called the Server Administration page (Figure 4.2). The Server Administration page has three sections, depending on the servers you have installed. Figure 4.2 shows all three sections, which are described here.

1. Netscape Server Administration contains links to the Novonyx homepage and to the online documentation.
2. General Administration contains buttons for configuring the administration server.
3. Servers Supporting General Administration contains buttons for configuring web servers.

Figure 4.2 The Server Administration page lets you manage your Netscape servers.



Click this button to go to the Server Manager forms for this server.

These buttons configure the administration server.

## Using the Server Manager forms

As stated earlier, the collection of forms used to configure a single server is called the *Server Manager*. The administration server contains a Server Manager for each Netscape server installed on the computer, including one for the administration server itself.

The Server Administration page, shown in Figure 4.2, contains links to each Server Manager.

- To get to the Server Manager forms for the administration server, click any of the category buttons under General Administration.

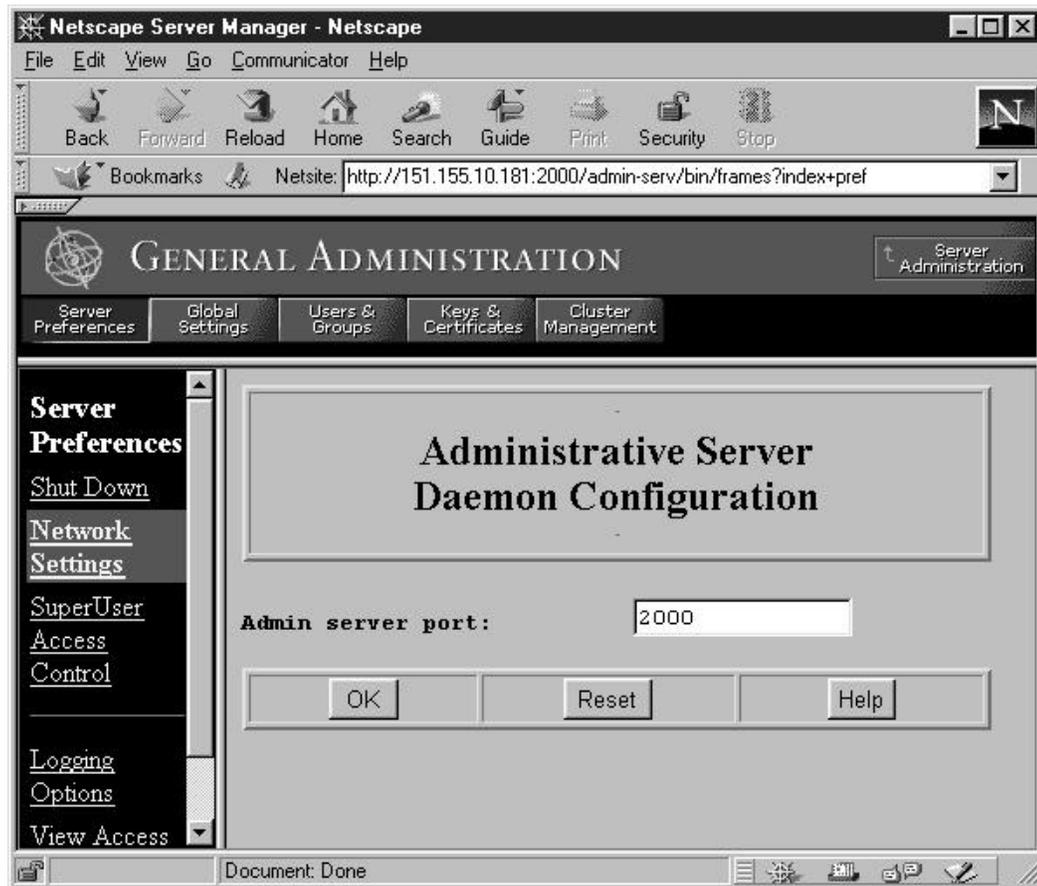


- To get to the Server Manager forms for a particular server, click the appropriate button under Servers Supporting General Administration section. For directions on configuring a particular server, see that server's documentation or click Help in any online form.



After clicking on a button, you'll see the Server Manager—a three-frame page with buttons in the top frame and links in the left frame (see Figure 4.3).

Figure 4.3 The administration server's Server Manager forms appear in a three-frame page.



To use the Server Manager, you click a category button in the top frame (for example, Admin Preferences), and then you click a link in the left frame (for example, Network Settings). A form appears in the remaining frame where you select options and specify values that configure the server. To submit your changes in the form, click OK button. Click Help in any form to get specific directions for that form.



To return to the Server Administration page (Figure 4.2), click Server Administration in the top frame of the Server Manager.

## Logging in to the administration server

When you first connect to the administration server, you must provide a username and a password.

There are three general levels of users:

- **superusers:** listed in the file `<server_root>/admin-serv/config/admpw`. This is the username (and password) you specified during installation. This user has full access to all features in the administration server and sees all forms in the administration server except the Users & Groups forms, which depend on the superuser having a valid account in an LDAP server. If you use the local database, superuser will always have access to the Users & Groups forms.
- **administrators:** bypass the Server Administration page and go directly to the Server Manager forms for a specific server, including the administration server. The forms they see depend on the access control rules set up for them (usually done by the superuser). Administrators can perform limited administrative tasks and can make changes that affect other users, such as adding users or changing access control.
- **end users:** see a limited set of forms that allow them to change information specific to themselves, such as their password and any other information about themselves that is stored in the user database.

Table 4.1 illustrates the different access that users get and what affects their access to the administration server.

Table 4.1 What the administration server does when different users log in.

| Option   | superuser  | administrator  | end user                         |
|--|--|--|----------------------------------|
| The username and password is checked against entry in  | <code>&lt;server_root&gt;/admin-serv/config/admpw</code>       | LDAP directory or local database                             | LDAP directory or local database |
| Can user create users and groups in a local database?  | YES  | YES  | NO                               |
| Can user create users and groups in an LDAP directory? | YES, but only if there is an entry matching the superuser name | YES, provided the administrators group has create permission | NO                               |

Table 4.1 What the administration server does when different users log in.

| Option  | superuser  | administrator  | end user            |
|---|--|--|---------------------|
| If LDAP directory is down, can the user access the administration server? | YES  | NO   | NO                  |
| What forms are viewable in administration server?                         | All, except User & Groups depends on the superuser having an account in the LDAP directory (if used) | Depends on access control. If no access control is used, can see all forms | End-user forms only |

## Stopping the administration server

If you enable end-user access to the administration server, you should keep the administration server running as often as possible. If you don't enable end-user access, consider shutting down the administration server when you aren't using it. This minimizes chances of a break in, which could happen if someone learns any of your superuser or administrator passwords.

To shut down the administration server from the Server Administration page, perform the following:

1. Under General Administration, click Admin Preferences | Admin Preferences.
2. Click Shut Down. The Shut Down the Administration Server screen will appear.
3. Click Shut down the administration server!

**Note** To start the administration server, load `admserv` at the system console.

## What's next?

To learn more about configuring the Enterprise Server for your specific needs, continue on to Chapter 5, "Configuring server preferences".

What's next?

## Configuring server preferences

**T**his chapter describes how to configure server preferences for your Netscape® Enterprise Server for NetWare® by using the Server Manager configuration forms.

### Starting and stopping the server

Once installed, the server runs constantly, listening for and accepting requests. If your server is running, you'll see the On icon and its green light (to the left of the servername) in the Server Administration page. You can start and stop the server by clicking the icon. You can also start, restart, and stop the server from the Server Manager.

To start or stop the server from the Server Manager, perform the following:

1. Click Server Preferences | On/Off.
2. Click On or Off.

If your server is on and you click Server On, the server will restart. If you've turned on or restarted your server, access it as a client by clicking Access *server\_name* as a client.

**Note** After you shutdown the server, it may take a few seconds for the server to complete its shutdown process and for the status to change to Off.

If your machine crashes or is taken offline, the server stops and any requests it was servicing may be lost.

## Setting the termination timeout

When you stop your server, the server stops accepting new connections. Then it waits for all outstanding connections to complete. The time the server waits before timing out is configurable in the `magnus.conf` file. By default it is set to 3 seconds. You probably do not need to change this value. If you do need to change the value, add a line in `magnus.conf` as follows:

```
TerminateTimeout seconds
```

where *seconds* represents the number of seconds you want to wait before timing out.

The advantages to configuring this value is that you can choose to wait longer for connections to complete. However, because most servers often have connections open from nonresponsive clients, if you increase the time the server waits, you will almost always have to wait the full time before your server shuts down.

## Restarting the server

To restart the server, perform the following:

1. At a console command line, type `unload nshttpd`

The `nshttpd` command unloads the NLM.

2. To restart the server, type `nvxwebdn`.

The `nsweb` command executes an NCF file that runs the server.

## Viewing server settings

You can view your server's technical and content settings from the Server Manager. You can also see if your server is running. The technical settings come from `magnus.conf`, and the content settings come from `obj.conf`. These files are located in the server root, in the directory `https-server_name\config`. For more information about the `magnus.conf` and `obj.conf` files, see *The NSAPI Programmer's Guide* on Netscape's DevEdge online documentation website at <http://developer.netscape.com/library/documentation/>

The following list explains the server's technical settings:

- **Server Root:** The directory where the server binaries are kept. You first specified this directory during installation.
- **Hostname:** The URL that clients use to access your server.
- **Port:** The port on your system that the server listens to for HTTP requests.
- **Error log:** The name and path of the server's error log file.
- **DNS:** The notification of whether DNS is enabled or disabled.

The server's content settings depend on how you've configured your server. Common server content settings include the server's document directory, its index filenames, name and location of its access log, and default MIME type.

## Restoring backup configuration files

You can view or restore a backup copy of your configuration files (`https-server_id.acl`, `magnus.conf`, `obj.conf`, `webpub.conf`, `agent.conf`, `mime.types`, `.acl` files, `rdm.conf`, `csid.conf`, `process.conf`, `robot.conf`, and `filter.conf`).

To view or restore a backup copy of your configuration files, perform the following:

1. Click **Server Manager | Server Preferences | Restore Configuration**.
2. Type the number of backups. The number you type here is the number of backups displayed on the form. Click **Change** to change the number.

3. If you want to view a backup version, click View next to the version you want. Click Restore if you want to restore that version. To restore all files to their state at a particular time, click Restore to *time*, which lists the specific time to which you want to restore.

## Tuning server performance

You can configure the server's technical options, including the number of maximum simultaneous requests, listen-queue size, and DNS usage.

### Configuring maximum simultaneous requests

You can set the number of maximum simultaneous requests, which is the number of active requests allowed for the server at one time. However, for general Internet or intranet use, you probably will not need to change the default value (128 requests).

To get the number of simultaneous requests, the server counts the number of active requests, adding 1 to the number when a new request arrives, subtracting 1 when it finishes the request. When a new request arrives, the server checks to see if it is already processing the maximum number of requests. If it has reached the limit, it defers processing new requests until the number of active requests drops below the maximum amount.

In theory, you could set the maximum simultaneous requests to 1 and still have a functional server. Setting this value to 1 would mean that the server could only handle one request at a time, but since HTTP requests generally have a very short duration (response time can be as low as 5 milliseconds), processing one request at a time would still allow you to process up to 200 requests per second.

However, in actuality, Internet clients frequently connect to the server and then do not complete their requests. In these cases, the server waits 30 seconds or more for the data before timing out. Also some sites do heavyweight transactions that take minutes to complete. Both of these factors add to the maximum simultaneous requests that are required. If your site is processing many requests that take many seconds, you may need to increase the number of maximum simultaneous requests.

If you need to change the number of maximum simultaneous requests, set the number before starting the server.

To reset the number, perform the following:

1. Click Server Manager | Server Preferences | Performance Tuning.
2. Type the number of requests.
3. Click OK.
4. Click Save and Apply.

## Enabling Domain Name System lookups

You can configure the server to use Domain Name System (DNS) lookups during normal operation. By default, DNS is not enabled; if you enable DNS, the server looks up the hostname for a system's IP address. Although DNS lookups can be useful for server administrators when looking at logs, they can impact performance. When the server receives a request from a client, the client's IP address is included in the request. If DNS is enabled, the server must look up the hostname for the IP address for every client making a request.

DNS causes multiple threads to be serialized when you use DNS services. If you do not want serialization, enable asynchronous DNS. You can enable it only if you have also enabled DNS. Enabling asynchronous DNS can improve your system's performance if you are using DNS.

**Note** When you turn off DNS lookups on your server, hostname restrictions won't work, and hostnames won't appear in your log files. Instead you'll see IP addresses.

You can also specify whether to cache the DNS entries. If you enable the DNS cache, the server can store hostname information after receiving it. If the server needs information about the client in the future, the information is cached and available without further querying. You can specify the size of the DNS cache and an expiration time for DNS cache entries. The DNS cache can contain 32 to 32768 entries. The default value is 1024 entries. Values for the time it takes for a cache entry to expire can range from 1 second to 1 year (specified in seconds). The default value is 1200 seconds (20 minutes).

To enable Domain Name System lookups, perform the following:

1. Create a file named `resolve.cfg`
2. Add the following strings to the new file:

```
domain <domain-name>
name server <dns-ip-address>
```

where *<domain-name>* refers to a qualified domain name (i.e. `www.novell.com`) and *<dns-ip-address>* refers to the IP address of your DNS server.

3. Save the new file in the root of `sys:/etc`
4. Either restart the server or reload TCP/IP.

## Configuring listen-queue size

The listen-queue size is a socket-level parameter that specifies the number of incoming connections the system will accept for that socket. The default setting is 48 incoming connections.

**Note** Normally you should *not* change the listen-queue size. The default setting is sufficient in most cases.

If you manage a heavily used website, you should make sure your system's listen-queue size is large enough to accommodate the listen-queue size setting from the Server Manager form. If you do change the listen-queue size, make sure that your system supports the new size. The listen-queue size set from the Server Manager form changes the listen-queue size requested by the server. If the server requests a listen-queue size larger than the system's maximum listen-queue size, the size defaults to the system's maximum.

**Caution** Setting the listen-queue size too high can degrade server performance. The listen-queue size was designed to prevent the server from becoming overloaded with connections it cannot handle. If your server is overloaded and you increase the listen-queue size, the server will only fall further behind.

## Configuring the HTTP persistent connection timeout

With HTTP 1.1, a connection can be set to be persistent (similar to keep alive in HTTP 1.0). However, even if a connection is persistent, it still needs to have a timeout setting, or it may consume system resources.

**Note** Normally you should *not* change the persistent connection timeout. The default setting is sufficient in most cases.

If you need to change the setting, perform the following:

1. Click Server Manager | Server Preferences | Performance Tuning.
2. In the HTTP Persistent Connection Timeout field, type a number in seconds.
3. Click OK.
4. Click Save and Apply.

## Configuring MIME types

MIME (Multi-purpose Internet Mail Extension) types control what types of multimedia files your mail system supports. You can also use MIME types to specify what file extensions belong to certain server file types, for example to designate what files are CGI programs.

To add a new MIME type, perform the following:

1. Click Server Manager | Server Preferences | Mime Types.
2. Select the category and type the content type and file suffix.
3. Click New Type.

To edit a MIME type, perform the following:

1. Click Edit next to the type you want to edit.
2. Change the category, content type, and file suffix as needed.

3. Click Change MIME Type to update.

To remove a MIME type, click Remove next to the type you want to remove.

**Note** Do not put spaces between the file suffixes when you are adding or editing a MIME type. If you put a space between them, you may receive an error or your server may not restart. If this happens, edit your `mime.types` file to delete the space. The `mime.types` file is in your server root in the `https-identifier-config` directory. After you have edited the file, from the Server Manager use Apply to apply your manual changes.

## Configuring network settings

You can change your server's network settings using the Server Manager.

### Changing the servername

The servername is the full hostname of your server machine. When clients access your server, they use this name. The format for the servername is *machinename.yourdomain.domain*. For example, if your full domain name is `novell.com`, you could install a server with the name `www.novell.com`.

If your system administrator has set up a DNS alias for your server, use that alias on the Network Preferences form. If not, use the machine's name combined with your domain name to construct the full hostname.

### Changing the server portnumber

Found on the Network Preferences form, server portnumber specifies the TCP port to which the server listens. The portnumber you choose can affect your users—if you use a nonstandard port, then anyone accessing your server must specify a servername and portnumber in the URL. For example, if you use port 8090, the user would specify something like this URL:

```
http://www.novell.com:8090
```

The standard unsecure webserver portnumber is 80; the standard secure webserver portnumber is 443. Technically, the portnumber can be any port from 1 to 33000.

## Changing the server binding address

At times you'll want the server machine to answer to two URLs. For example, you might want to answer both `http://www.netscape.com/` and `http://www.novell.com/` from one machine.

If you have already set up your system to listen to multiple IP addresses and want to use this feature, on the Network Preferences form use the Bind To Address field to tell the server which IP address is associated with this hostname.

## Changing the server's MTA host

To change the MTA (Message Transfer Agent) host, use the MTA Host field on the Network Preferences form to change the name of the SMTP mail server. You must enter a valid MTA host if you want to use the agent e-mail function.

## Changing the server's NNTP host

To change the NNTP (Network News Transfer Protocol) host, use the NNTP Host field to change the name of the news server.

# Customizing error responses

You can specify a custom error response that sends a detailed message to clients when they encounter errors from your server. You can specify a file to send or a CGI program to run.

You might want to change the way the server behaves when it gets an error for a specific directory. Instead of sending back the default file, you might want to send a custom error response instead. For example, if a client tries repeatedly to connect to a part of your server protected by access control, you might return an error file with information on how to get an account.

## What are the errors?

You can customize the response to several different kinds of errors:

- **Unauthorized:** Occurs when users without access permissions try to access a document on the server that is protected by access control. You might send information on how they can get access.
- **Forbidden:** Occurs when the server doesn't have file system permissions to read something or if the server is not permitted to follow symbolic links.
- **Not Found:** Occurs when the server can't find a document or when it has been instructed to deny the existence of a document.
- **Server Error:** Occurs when the server is not configured properly or when a catastrophic error occurs, such as the system running out of memory or producing a core dump.

## Setting up the response

Before you can set up the response, you need to write the HTML file to send or create the CGI program to run.

After you do this, set the response by performing the following:

1. Click **Server Manager | Server Preferences | Error Responses**.
2. From the **Resource Picker**, select the server resource you want to configure.
3. Select the error response you want to customize.
4. Type the absolute pathname to the file or CGI script that you want to return for that error code. Check the **CGI** box if the file is a CGI program that you want to run.

Repeat this process for each of the error responses you want to customize.

5. Click **OK**.
6. Click **Save and Apply**.

To remove a customization, return to the form and delete the filename from the text box next to the error code.

## What's next?

If you've read the previous chapters, you should now have the Enterprise Server installed, know how to start and stop it, and know how to configure it for your own needs. Chapter 6, "Managing your server," will show you how to manage the Enterprise Server by using the admin server.

What's next?

## Managing your server

**T**his chapter describes how to configure and manage your server using the Netscape® Server Administration page and the Server Manager.

During installation, you specified a portnumber for the administration server. The administration server helps you manage your Netscape Enterprise Server for NetWare® (or multiple servers) from a single interface—the Netscape Server Administration page. From this page you can access the Server Manager, which is a collection of forms you use to change options and control your webserver.

This section contains information about using the Server Administration page and Server Manager.

### Using the Server Administration page

You configure your administration server and access the configuration forms for other Netscape servers (including the Netscape Enterprise Server for NetWare) with the Netscape Server Administration page. This page contains links to the Server Managers for the Netscape servers you have installed.

You can perform the following webserver tasks from the Server Administration page:

- Choose a server to configure.
- Start and stop a webserver.

In addition, you can perform tasks for the administration server. For more information, see *Managing Netscape Servers*.

## Accessing the Server Administration page

You can access the Server Administration page by loading the admin server from the NetWare console or RCONSOLE. Once the server is running, you can use your web browser to access the Server Administration page.

To launch the server and navigate to the Server Administration page, perform the following:

1. At the console or RCONSOLE, type `nsweb`. The NSWEB command executes an NCF file that runs the server.
2. Once the administration service is running, you can use any browser that has access to the administration server to configure your servers.
3. Open a web browser and go to the following URL:

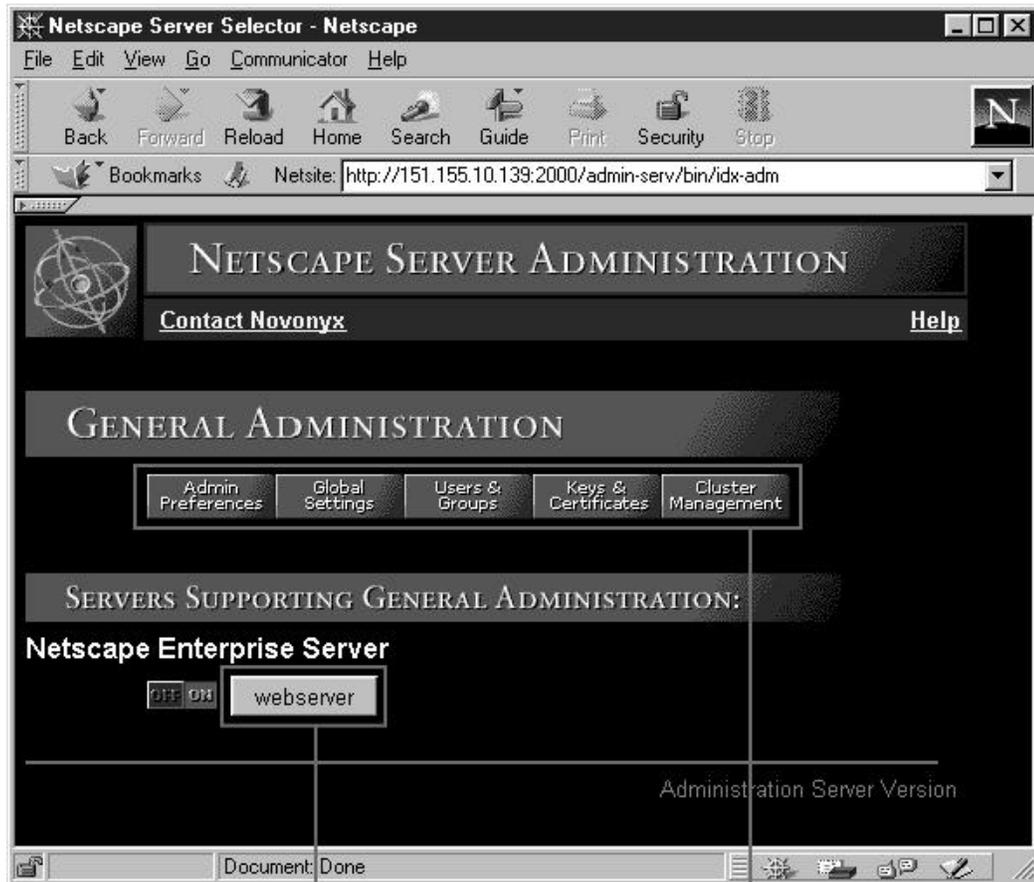
```
http://servername:portnumber/
```

Substitute `servername` with the name you gave your server during installation. Substitute `portnumber` with the number assigned during installation.

4. When prompted, type the username and password you chose during installation.
5. Click OK.

See Figure 6.1 for an example of the Server Administration page that will appear after you click OK.

Figure 6.1 The Server Administration page



Click this button to go to the Server Manager

These buttons configure the administration server forms for this server.

These buttons configure the administration server forms for this server.

## Remotely accessing the Server Administration page

As long as you have access to client software such as Navigator, you can access the Server Administration page to configure your webserver.

To remotely access the Server Administration page, perform the following:

1. Using a browser that supports frames and JavaScript™, such as Netscape Navigator®, type the URL for the administration server. The basic format is `http://servername.your_domain.domain:port_number/` The portnumber for the administration server that you specified during installation; this is not the portnumber for the webserver.
2. You'll be prompted for a username and password. Type the administration server username and password you specified during the installation. The Server Administration page appears.
3. The Server Administration page lists all the servers you've installed on this system. Click the name of the server you want to configure.

## Starting and stopping a webserver



You can start and stop the servers listed in the Server Administration page by clicking the On/Off icon located to the left of the servername.

## Setting up multiple servers

- You can use software virtual servers to simulate having multiple web servers on your system. Software virtual servers give you the ability to map a single IP address to multiple servernames. Each software virtual server can have its own homepage. One use for this is to host multiple websites from one IP address. However, in order for software virtual servers to work correctly, the users accessing the server must be using client software that supports the HTTP Host header. Software virtual servers must all have the same configuration.
- You can use hardware virtual servers to map multiple IP addresses to multiple document roots. For example, if you have two IP addresses, you could map the first IP address to one document root and the second IP address to another document root. While hardware virtual servers take fewer system resources than multiple instances of the server, they must share the same configuration information. For example, if one hardware virtual server has enabled security features or web publishing, they all must have it enabled.

For more information on virtual servers, see “Setting up hardware virtual servers” on page 61 and “Setting up software virtual servers” on page 61.

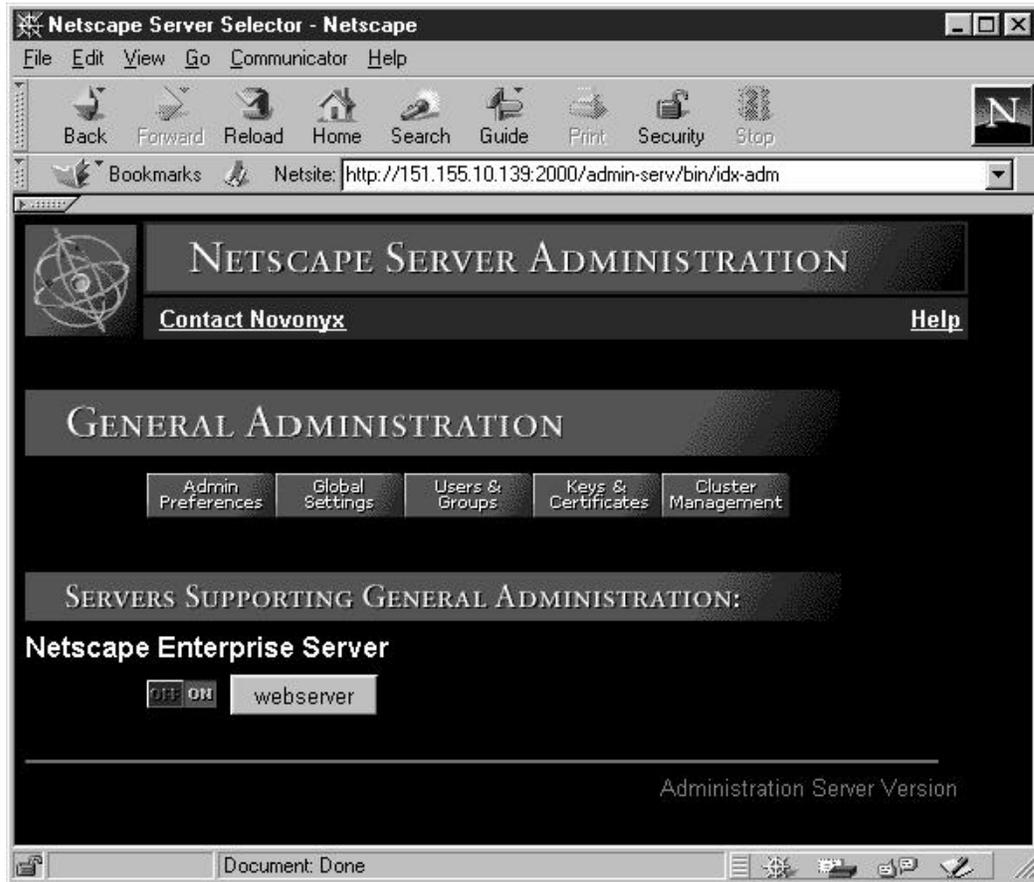
## Using the Server Manager

The Server Manager is the collection of forms you use to change options and control your server. From the Server Administration page, which lists all the servers installed on your system according to identifier, access the Server Manager by clicking the button showing the servername (located next to the On/Off icon). The Server Manager appears. (You can use the Server Manager from any remote system as long as the system you’re working on is one of the hosts that can access the administration server; you don’t need to be working at the system the server is installed on.)

**Note** When changing server information, you must save and apply your changes in order for your changes to take place. After you submit a form, you get a prompt to click Save and Apply.

You can return to the Server Administration page by clicking Server Administration in the upper-right corner of the Server Manager. The Server Manager is shown in Figure 6.2.

Figure 6.2 The Server Manager

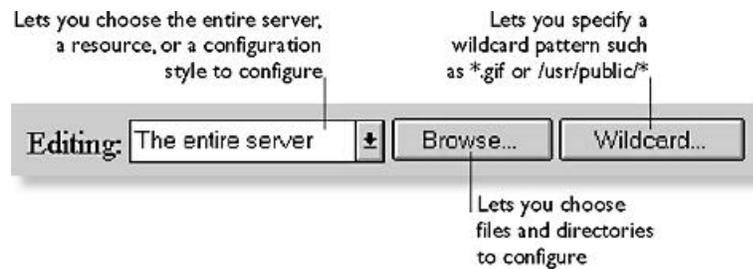


Use the server configuration buttons in the top frame to configure the server. After clicking a button, you'll see a list of items on the left. Click one of these links; the corresponding form comes up in the main frame. If you need more information about a form, click Help for context-sensitive help. In the help window, click Contents to see a list of online help manuals.

## Using the drop-down list

Most of the Server Manager forms configure the entire server. Some forms can configure either the entire server or files or directories that the server maintains. These forms have the drop-down, shown in Figure 6.3, at the top. The drop-down list lets you specify what resource to configure.

Figure 6.3 Drop-down list



Pick a resource from the drop-down list for configuration. Click Browse to browse your primary document directory. Click Options to choose other directories. Click Wildcard to configure files with a specific extension.

## Wildcards used in the drop-down list

In many parts of the server configuration, you specify wildcard patterns to represent one or more items to configure. Please note that the wildcards for access control and text search may be different from those discussed in this section.

Wildcard patterns use special characters. If you want to use one of these characters without the special meaning, precede it with a backslash (\) character.

Table 6.1 Drop-down list wildcard patterns

| Pattern | Use   |
|---------|---|
| *       | Match zero or more characters                 |
| ?       | Match exactly one occurrence of any character |

Table 6.1 Drop-down list wildcard patterns

| Pattern | Use   |
|---------|---|
|         | An <i>or</i> expression. The substrings used with this operator can contain other special characters such as * or \$. The substrings must be enclosed in parentheses, for example, (a b c), but the parentheses cannot be nested. |
| \$      | Match the end of the string. This is useful in <i>or</i> expressions.   |
| [abc]   | Match one occurrence of the characters a, b, or c. Within these expressions, the only character that needs to be treated as a special character is ]; all others are not special.   |
| [a-z]   | Match one occurrence of a character between a and z   |
| [^az]   | Match any character except a or z   |
| *~      | This expression, followed by another expression, removes any pattern matching the second expression.  |

Table 6.2 Drop-down list wildcard examples

| Pattern   | Result  |
|---|---|
| *.netscape.com                                      | Matches any string ending with the characters .netscape.com   |
| (quark energy).netscape.com                         | Matches either quark.netscape.com or energy.netscape.com  |
| 198.93.9[23].???                                    | Matches a numeric string starting with either 198.93.92 or 198.93.93 and ending with any 3 characters.                        |
| *.*   | Matches any string with a period in it  |
| *~netscape-*  | Matches any string except those starting with netscape-   |
| *.netscape.com~quark.netscape.com                   | Matches any host from domain netscape.com except for a single host quark.netscape.com   |
| *.netscape.com~(quark energy neutrino).netscape.com | Matches any host from domain netscape.com except for hosts quark.netscape.com, energy.netscape.com, and neutrino.netscape.com |
| *.com~*.netscape.com                                | Matches any host from domain com except for hosts from subdomain netscape.com   |

## What's next?

Now that you have learned how to use the admin server to manage and configure the Enterprise Server, you should continue on to Chapter 7, “Managing server content,” to learn how to manage HTML and other data that is stored and served up from your Enterprise Server.

What's next?

# Managing server content

**Y**ou can use the Server Manager to help manage your server's content. You can create HTML pages and other files such as graphics, text, sound, or video and then store those files on your server. When clients connect to your server, they can view your files provided they have access to them. This chapter describes how you can configure and manage your server's content.

## Setting the primary document directory

You probably don't want to make all the files on your file system available to remote clients. An easy way to restrict access is to keep all of your server's documents in a central location—known as the document root or primary document directory.

Another benefit of the document directory is that you can move your documents to a new directory (perhaps on a different disk) without changing any of your URLs because the paths specified in the URLs are relative to the primary document directory.

For example, if your document directory is `sys:novell\suitespot\docs`, a request such as `http://www.novell.com/products/info.html` tells the server to look for the file in

```
sys:novell\suitespot\docs\products\info.html
```

If you change the document root (you move all the files and subdirectories), you only have to change the document root that the server uses, instead of mapping all URLs to the new directory or somehow telling clients to look in the new directory.

To set your server's primary document directory, perform the following:

1. Click Server Manager | Content Management | Primary Document Directory.
2. In the Primary Directory field, type the full pathname of the directory that you want to make the primary document directory.
3. Click OK.
4. Click Save and Apply.

## Setting additional document directories

Most of the time, you keep all of your documents in the primary document directory. Sometimes, though, you may want to serve documents from a directory outside of your document root. You can do this by setting additional document directories. By serving from a document outside of your document root, you can let someone manage a group of documents without giving them access to your primary document root.

To add an additional document directory you first need to choose the URL prefix to map. Clients send this URL to the server when they want documents. Next, you specify the directory to map those URLs to. Finally, you might want to use an existing configuration style to specify how this directory should be configured.

To add additional document directories, perform the following:

1. Click Server Manager | Content Management | Additional Document Directories.
2. Type the URL prefix you want to map. For example, a mapped URL could be `http://www.novell.com/marketing/index.html` where *marketing/* is the prefix you specify.
3. Type the absolute path of the directory to which you want the URL prefix to map. For example, it could be `\novell\marketing\pubdocs\index.html`
4. If you want to, select a configuration style to apply to this directory's configuration.

5. Click OK.

**Note** When you update information, but don't save and apply changes, your information is retained so that you can view and edit it, even though the changes have not taken effect.

Three additional document directories are created *after* you install their associated features. For example, `/search-ui` appears only after you enable searching. They have the following prefixes:

- `/search-ui`
- `/webpub-ui`
- `/publisher`

You should restrict access to these directories so that users cannot write to them.

## Configuring document preferences

You can configure the following document preferences by clicking Server Manager | Content Management | Document Preferences.

### Index filenames

If a document name is not specified in the URL, and the server finds a file with this name in a document directory, it assumes that file is the index file. The server automatically displays this file when no specific file is requested. The defaults are `index.html` and `home.html`. If more than one name is specified, the server looks in the order in which the names appear in this field until one is found. For example, if your index filenames are `index.html`, `home.html`, the server first looks for `index.html` and if it doesn't find it, it looks for `home.html`.

### Directory indexing

In your document directory, you'll probably have several subdirectories. For example, you might create a directory called `products`, another called `people`, and so on. It's often helpful to let clients access an overview (or *index*) of these directories.

The server indexes directories using the following process:

- The server first searches the directory for an index file called `index.html` or `home.html`, which is a file you create and maintain as an overview of the directory's contents. (Note that these defaults are configurable for the whole server, so your server's files may vary. For more information, see "Index filenames" on page 57). You can specify any file as an index file for a directory by naming it one of these default names, which means you can also use a CGI program as an index if CGI is activated.
- If an index file isn't found, the server generates an index file that lists all the files in the document root. The generated index has one of the following formats:
  - "Fancy" directory indexing is fairly detailed. It includes a graphic that represents the type of file, the date the file was last modified, and the file size.
  - Simple directory indexing is less detailed but takes less time to generate.
  - You can also specify that no dynamic directory listing be generated if the server looks for index files and cannot find any. If the server does not find any index files, it will not create a directory listing to show the user and will return an error message.

## Server homepage

When users first access your server, they usually use an URL such as `http://www.novell.com/`. When the server receives a request for this document, it returns a document called a *homepage*. Usually this file has general information about your server and links to other documents.

By default the server finds the index file specified in the Index filename field and uses that for the homepage. However, you can also specify a file to use as the homepage by selecting Homepage and entering the filename for the homepage in the appropriate field.

## Default MIME type

When a document is sent to a client, the server includes a section that identifies the document's type, so the client can present the document in the right way. However, sometimes the server can't determine the proper type for the document because the document's extension is not defined for the server. In those cases, a default value is sent. For information about maintaining your server's MIME types, see "Configuring MIME types" on page 33.

The default is usually `text/plain`, but you should set it to the type of file most commonly stored on your server. Some common MIME types include the following:

- `text/plain`
- `text/html`
- `text/richtext`
- `image/tiff`
- `image/jpeg`
- `image/gif`
- `application/x-tar`
- `application/postscript`
- `application/x-gzip`
- `audio/basic`

## Setting document preferences

To set document preferences, perform the following:

1. Click **Server Manager | Content Management | Document Preferences**.
2. Type a new index filename or add a file in the **Index Filenames** field.
3. Select the kind of directory indexing you want.
4. Select whether you want users to see a specified homepage or an index file when they access your server.
5. Type the default MIME type you want the server to return if a client accesses a file with an extension that has not been set up as a MIME type on your server.
6. Select whether to parse the accept language header.
7. Click **OK**.

## Forwarding URLs

Redirection is a method for the server to tell a user that a URL has changed (for example, because you have moved files to another directory or server). You can also use redirection to seamlessly send a person who requests a document on one server to a document on another server.

To map a URL to another server, you must first specify the prefix of the URL you want the server to redirect. Then, you need to choose which URL to redirect to. You can redirect to a URL prefix if the directory on the new server is the same as in the mapped URL; you can also redirect to a fixed URL (hostname, directory, and filename).

To forward URLs, perform the following:

1. Click **Server Manager | Content Management | URL Forwarding**.
2. Type the URL prefix you want to redirect. For example, if the URL you want to map is `http://www.novell.com/info/movies`, you'd type `/info/movies` in the field.
3. Select whether you want to forward requests to a URL prefix or to a fixed URL. If you forward to a URL prefix, the forwarding keeps the full pathname, and substitutes one prefix for another. For example, if you forward `http://www.netscape.com/info/movies` to a prefix `novell.com`, the URL `http://www.netscape.com/info/movies` redirects to `http://novell.com/info/movies`.

However, if the directory structure on the new server is not the same as in the mapped URL, you could forward the URL to a fixed URL. For example, you could forward `http://www.netscape.com/info/movies` to `http://novell.com/new-files/info/movies`.

Sometimes you may want to redirect requests for all the documents in one sub-directory to a specific URL. For example, if you had to remove a directory because it was causing too much traffic or because the documents were no longer to be served for any reason, you could direct a request for any one the documents to a page explaining why the documents were no longer available. For example, a prefix on `/info/movies` could be redirected to `http://www.netscape.com/explain.html`.

4. Click **OK**.

## Setting up hardware virtual servers

A hardware virtual server is a way to have your server respond to multiple IP addresses without installing multiple servers. With hardware virtual servers, you map multiple IP addresses to multiple document roots. For example, if you have two IP addresses, you could map the first IP address to one document root and the second IP address to another document root.

Hardware virtual servers share the same server configuration information. For example, if you turn on encryption for one hardware virtual server, any other hardware virtual servers you create would also have encryption turned on.

If you need servers that respond to different IP addresses and require that they have separate configuration information, install separate instances of the server with specific IP addresses.

Before you set up hardware virtual servers, make sure you specified a specific bind-to address for your server on the Server Preferences | Network Settings page. If you left the Bind To Address field blank, you may experience errors when using hardware virtual servers. If you are an ISP using hardware virtual servers, the bind to address should be your main IP address.

To set up hardware virtual servers, perform the following:

1. Click Server Manager | Content Management | Hardware Virtual Servers.
2. Type the document root and its corresponding IP address in the appropriate fields.
3. Click OK.
4. Click Save and Apply.

Repeat the previous steps for each hardware virtual server.

## Setting up software virtual servers

A software virtual server is a way to host several websites on one computer without needing to have more than one IP address on it. For example, you can set up your system so that both `www.novell.com` and `www.netscape.com` resolve to 192.3.4.5, then set up software virtual servers to handle both servernames (for example, `http://www.novell.com/` and `http://www.netscape.com`).

The server can respond to requests differently depending upon the URL, even though the server only has one IP address. For example, one server can serve different pages for `http://www.novell.com/` and `http://www.netscape.com`

The following example shows how software virtual servers might be used. An Internet service provider (ISP) installs a webserver and then wants to set up a software virtual server for each of its customers (for example, customers *aaa*, *bbb*, and *ccc*) so that each customer can have an individual domain name.

The ISP first configures DNS to recognize that a customer's URL, `www.aaa.com`, resolves to the ISP's IP address. The ISP then creates a subdirectory for each company (*aaa*, *bbb*, and *ccc*) in the document root. These subdirectories contain the files for that company, including the homepage, `aaa/home.html`. Next the ISP sets up software virtual servers. The URL host would be `www.aaa.com` and the homepage would be `aaa/home.html`. The ISP would do this for all the companies.

Because software virtual servers use the HTTP Host header to direct the user to the correct page, not all client software works with software virtual servers.

**Note** Only the client software (such as Netscape Communicator™ or Netscape Navigator®) that supports the HTTP Host header works. However, if you want a software virtual server to be accessible to browsers that do not send the "Host:" header, you must keep the documents for each virtual server in a subdirectory of the document root and fully qualify the links to them. Or you must include a `<BASE HREF=" [name-of-subdirectory] ">` tag at the bottom of the homepage.

In the previous example, the ISP would set up the `index.html` file in the document root to be an index page that links to all the virtual servers hosted by the system, so all users could access the homepages.

To set up a software virtual server, perform the following:

1. Click Server Manager | Content Management | Software Virtual Servers.
2. Type the URL host whose custom homepage you want to set up.
3. Type the path to the homepage you want to use for this virtual server. If you type a full path, the server uses that specific document. If you type a partial path, the server interprets it as relative to your primary document directory.
4. Click OK.
5. Click Save and Apply.

## Specifying a document footer

You can specify a document footer, which can include the last-modified time, for all the documents in a certain section of your server without using server-parsed HTML. This footer works for all files except output of CGI scripts or parsed HTML (.shtml) files. If you need your document footer to appear on CGI-script output or parsed HTML files, enter your footer text into a separate file and add a line of code or another server-side include to append that file to the page's output.

To specify a document footer, perform the following:

1. Click Server Manager | Content Management | Document Footer.
2. From the Editing drop-down list, select the resource to which you want to apply the document footer.
3. Type the kind of files you want to include in the footer. The default is `text/html`.
4. Select the time format from the drop-down list, or type a date in the Custom Date Format field.
5. Type the footer text. The maximum number of characters for a document footer is 765. Type the string `:LASTMOD:` if you want to include the date the document was last modified.
6. Click OK.
7. Click Save and Apply.

When you change the document footer for an HTML page, the last-modified date doesn't change.

## Customizing parsed HTML

HTML is normally sent to the client exactly as it exists on disk without any server intervention. However, the server can search HTML files for special commands (it can *parse* the HTML) before sending documents. If you want the server to parse these files and insert request-specific information or files into documents, you must first enable HTML parsing.

To customize parsed HTML, perform the following:

1. Click Server Manager | Content Management | Parse HTML.
2. From the Editing drop-down, select the server resource to edit.
3. Select whether you want to activate parsed HTML. If you activate it, you need to choose whether to activate it with or without the `exec` tag. The `exec` tag allows an HTML file to execute an arbitrary program on the server. You might not want to allow the `exec` tag for security or performance reasons.
4. Select which files to parse.
  - The common (and default) choice is to parse only files with the extension `.html`. In this case, all files you want to parse must have the `.html` extension.
  - You can have the server parse all of its HTML files. Choosing this option can slow your server's performance.

## Working with configuration styles

Configuration styles are an easy way to apply a set of options to specific files or directories that your server maintains. For example, you can create a configuration style that sets up access logging. When you apply that configuration style to the files and directories that you want to log, you don't have to individually configure access logging for all the files and directories.

### Creating a configuration style

To create a configuration style, perform the following:

1. Click Server Manager | Configuration Styles | New Style.
2. Type the name you want to give the configuration style.
3. Click OK. The Edit Configuration Style form appears.

4. From the drop-down list, choose a configuration style to edit and click Edit this Style.
5. From the list of links available, click the category you want to configure for your style. You can configure the following information:
  - CGI file type: Allows you to activate CGI as a file type.
  - Character Set: Allows you to change the character set for a resource. For more information about character sets, see the online help.
  - Default Query Handler: Allows you to set a default query handler for a server resource.
  - Document Footer: Allows you to add a document footer to a server resource. For more information about document footers, see “Specifying a document footer” on page 63.
  - Error Responses: Allows you to customize the error responses that clients see when they encounter an error from your server. For more information about error responses, see the online help.
  - Log preferences: Allows you to set preferences for access logs. For more information about log preferences, see the online help.
  - Restrict Access: Allows you to restrict access to the entire server or parts of it. For more information about access control, see the online help.
  - Server Parsed HTML: Allows you to specify whether the server parses files before they are sent to the client. For more information about using parsed HTML, see “Customizing parsed HTML” on page 63.
6. Fill out the form that appears and then click OK.
7. Repeat Step 5 and Step 6 to make any other configuration changes to the configuration style.
8. Click OK.
9. Click Save and Apply.

When you choose a style to edit, your drop-down list contains configuration styles instead of other resources. After you have finished editing a style, click OK and Save and Apply. The drop-down list exits the styles mode. You can also choose to exit the styles mode by choosing Exit styles mode from the drop-down list.

## Editing a configuration style

To edit a configuration style, perform the following:

1. Click Server Manager | Configuration Styles | Edit Style.
2. From the drop-down list, select a configuration style to edit.
3. Click Edit this style.
4. From the list of links available, click the category you want to configure for your style. For more information on these categories, see “Creating a configuration style” on page 64.
5. Fill out the form that appears and then click OK.
6. Repeat Step 4 and Step 5 to make any other changes to the configuration style.
7. Click OK.
8. Click Save and Apply.

When you choose a style to edit, your drop-down list contains configuration styles instead of other resources. After you have finished editing a style, click OK and Save and Apply. The drop-down list exits the styles mode. You can also choose to exit the styles mode by choosing Exit styles mode from the drop-down list.

## Applying a configuration style

Once you’ve created a configuration style, you can apply it to files or directories in your server. You can specify either individual files and directories or wildcard patterns (such as \*.gif).

To apply a configuration style, perform the following:

1. Click Server Manager | Configuration Styles | Assign Configuration Style.
2. Type the prefix of the URL to which you are applying this configuration style. If you choose a directory inside the document root, only enter the path after the document root. If you enter `/*` after the directory, you apply the configuration style to all of the directory's contents.
3. Select the configuration style you want to apply. To remove any configuration style previously applied to the resource, apply the `None` configuration style.
4. Click OK.

## Removing a configuration style

Before removing a configuration style, apply the `None` configuration style to any files or directories that had the configuration style applied to them. If you do not do this before removing the configuration style, you must manually edit your `obj.conf` file, searching for the configuration style in the file and replacing it with `None`. If you don't do this search and replace, anyone who accesses the files or directories that had the deleted configuration style applied will get a server misconfiguration error message.

To remove a configuration style, perform the following:

1. Click Server Manager | Configuration Styles | Remove Configuration Style.
2. Select the configuration style you want to remove.
3. Click OK.

## Listing configuration style assignments

After you have created configuration styles and applied them to files or directories, you can get a list of the configuration styles and where you applied them.

To list configuration style assignments, perform the following:

1. Click Server Manager | Configuration Styles | List Assignments. The List Assignments form appears, showing the configuration styles you applied to server resources.

What's next?

2. To edit a configuration style assignment, click Edit next to the configuration style name.

## What's next?

Chapter 8, "Plug-Ins," includes information about two new plug-ins that you can order with the Netscape Enterprise Server for NetWare®.

## **QuickCam™**

The QuickCam is a digital camera connected to your computer that takes pictures at specified intervals and then updates the picture on your graphic file. For example, you can configure the QuickCam to take a picture every five minutes. After five minutes, the QuickCam will replace the previous picture with the new picture it has just taken. The QuickCam's uses include monitoring work areas and recording movies.

### **How to install and modify QuickCam**

To install and modify QuickCam, perform the following:

1. On your webserver, type load qc
2. Type the number or letter that corresponds to the function you want to modify
  - (1) Update video now: Updates your monitor to the most recent picture
  - (2) Set update rate: Modifies the interval at which the camera takes pictures. The default interval is 15 minutes. The shortest interval available is 1 minute.

## Web Counter

- (3) Set output file: Changes the name of the file and its path. Because the file is an HTML file, the file needs to be under the directory novonyx/suitespot/docs
- (4) Read in test pattern: Verifies that your camera functions properly. If your camera functions properly, a clean checkerboard of red, green, and blue squares will appear. If the checkerboard appears your software is working properly, but if the checkerboard is not clean then your camera isn't working or connected properly.
- (q) Quit the program: Stops the picture updates.

### **How to Properly Use QuickCam**

To properly use QuickCam and thus ensure the quality of your pictures, be aware of the following information:

- Use Connectix® Color Quickcam™ and Connectix Color Quickcam2™. The Connectix Quickcam VC is not compatible.
- Support through LPT1 only.
- Do not load the NLM without the camera connected. The NLM will lock up and not unload. Also, do not disconnect the camera once the NLM is unloaded.
- JPEG is the only output format supported. The default output file is /novonyx/suitespot/docs/qc.jpg

## Web Counter

The Web Counter is an LCGI program that records the number of times your homepage has been accessed. The recorded number appears on your homepage. This lcgi,count.nlm is located in /novonyx/suitespot/lcgi-bin

### **How to Install Web Counter**

To install Web Counter, perform the following:

1. Go to the HTML for your homepage.
2. At the location on the page where you want the Web Counter to appear, type `<img scr="/cgi/count.nlm?count"`

## What's next?

Chapter 9, "Getting Help," includes information about trouble-shooting installation and contacting technical support. For more information about the administration server, the web (Enterprise) server and how to take advantage of them, refer to the online documentation discussed in this book (see "Online help" on page 7).

What's next?

## Getting Help

**T**his chapter provides a list of installation troubleshooting hints as well as contact information on how to reach the Novell® Technical Support team.

### Troubleshooting installation

This section describes the most common installation problems and explains how to solve them.

#### **I accidentally denied all access to the Server Manager forms.**

Login to the system with the server's user account. In the `admin-serv\config` directory, edit the `ns-admin.conf` file. There is a line for allowed hosts or allowed addresses. Use wildcard patterns or modify the lines to include your host and address, save the file, and then restart the administration server.

#### **Clients can't locate the server.**

First try using the hostname. If that doesn't work, use the fully qualified name (such as `www.domain.com`), and make sure the server is listed in DNS. If that doesn't work, use the IP address.

### **The port is in use.**

Most likely, you didn't shut down a server before you migrated the settings. Shut down the old server, then manually start the new one.

The port might also be used by another installed server. Make sure the port you've chosen isn't already being used by another server.

### **The installation could not proceed.**

**Error: Can't open file for writing.**

**Can't write to file *filename*. The error was error code 32.**

Make sure you don't already have a webserver running on your system.

This error message might also appear if you partially completed the installation so that the executable was running and you're trying to install the server again. Shut down all the webserver services and reinstall the server.

### **I've forgotten the administration username and password.**

In the `admin-serv\config` directory in your server root directory, edit the `admpw` text file, which contains a line of text similar to the following:

```
admin:lnOVeixulqkmU
```

The text before the colon is the administration username (in this case, `admin`); the text following the colon is the password, which is encrypted.

Delete everything after the colon and save the file. Shut down the administration server and restart it. When prompted for the administration password, leave the password field blank. You should be able to access the administration server now. Be sure to create a new password for the administration server. For more information on creating a new password for the administration server, see *Managing Netscape Servers*.

## **Novell Technical Support**

Novell offers several technical support options designed to meet our customers' varied needs. Novell encourages customers to take the following steps in obtaining technical support:

1. Contact Novell Technical Support directly. This is a fee-based service. To purchase support on a pay-as-you-go basis, call 1-800-NETWARE or 1-800-429-5588 in the Americas, +49-211-5277-744 in Europe and the Middle East, and +61-2-925-3133 in Asia Pacific.
2. Use NetWire<sup>®</sup>, Novell's technical information forum that gives you access to the most up-to-date technical information about Novell products and technologies. When logged on to NetWire, you can search for and download information or troubleshoot your questions with help from other experienced users. Novell system operators (Sysops) monitor the CompuServe<sup>®</sup> forums and have direct access to Novell support engineers when necessary. The only fee for NetWire is the standard connect charge of the online service you use.

NetWire includes

- Downloadable files, patches, and drives
- Thousands of Technical Information Documents (TIDs)
- Product documentation
- NetWare Application Notes<sup>™</sup>
- GroupWare Professional's Guide
- Novell Labs certification bulletins.

You can visit NetWire at one of the following locations:

Table 9.1 Service Locations

|                |  |
|----------------|--|
| World Wide Web | <code>http://netwire.novell.com</code> or <code>http://netwire.de</code>   |
| FTP            | <code>ftp://ftp.novell.com</code> or <code>ftp://ftp.novell.de</code>      |
| Gopher         | <code>gopher://novell.com</code> or <code>gopher://gopher.novell.de</code> |
| CompuServe     | Enter GO NETWIRE at the CompuServe prompt                                  |

3. Use the Network Support Encyclopedia Professional Volume™ (NSEPro). The Network Support Encyclopedia is a knowledge based Novell technical information on CD-ROM. Updated and delivered twelve times a year, this extensive collection provides you with a convenient, hands-on information source and is accessible through Windows®, DOS, and Macintosh®.

The NSEPro includes

- Downloadable files, patches, and drivers
- Thousands of Technical Information Documents (TIDs)
- Product documentation
- Novell Application Notes
- GroupWare Professional's Guide
- Novell Labs certification bulletins.

To order your NSEPro annual subscription directly from Novell, call 1-800-377-4136 in the United States and Canada.

The NSEPro is also available from any Novell Authorized Reseller representative. For more information, call 1-800-828-3362.

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