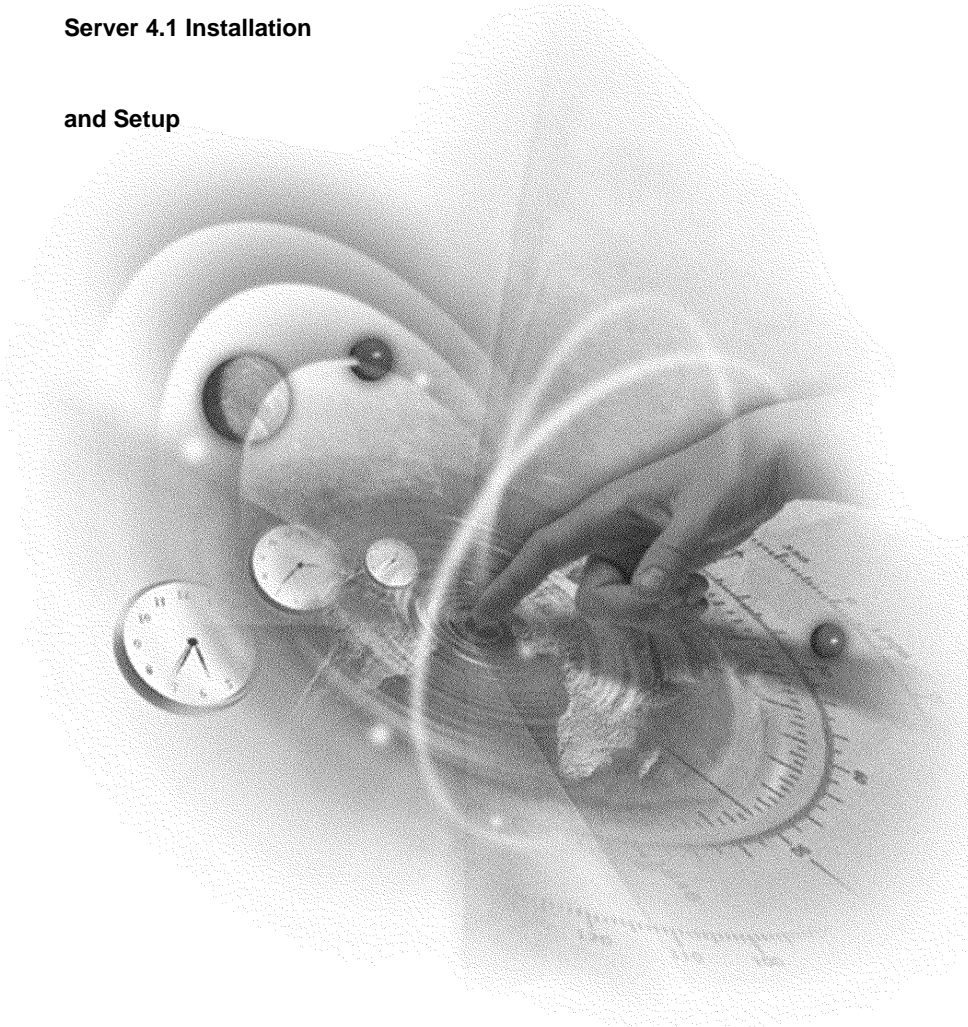


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Novell® Internet Access

Server 4.1 Installation

and Setup



# Novell®

# BorderManager

INTEGRATED BORDER SERVICES SOFTWARE

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# About This Guide

Novell® Internet Access Server enables users to transparently connect NetWare® networks to the Internet or corporate intranets. It provides a remote computing solution for complete and secure Internet and intranet access for NetWare LANs. It provides the following networking solutions:

- ◆ Routing—The Novell Internet Access Server routing software is Novell's routing solution for corporate-wide networks. It provides wide area connectivity over ISDN, frame relay, leased lines, and dial-up connections.
- ◆ Remote access—Novell Internet Access Server remote access is a NetWare server-based solution for accessing LANs from remote locations. It can be scaled from one port for small offices to 128 ports per server for large, enterprise-wide installations.



Novell Internet Access Server does not support Novell's SFT III™ system fault tolerance product.

This document describes how to prepare for installation, install the software, and complete an initial configuration. Instructions for advanced configuration and additional information on product features can be found in the service-specific documents provided with the Novell Internet Access Server documentation collection.





# **Installing Novell Internet Access Server**

This chapter describes how to install Novell® Internet Access Server and contains the following sections:

- ◆ “Prerequisites” on page 10  
This section explains disk space and RAM requirements for installing Novell Internet Access Server.
- ◆ “Installing from CD-ROM” on page 10  
This section explains the requirements for installing Novell Internet Access Server from CD-ROM.
- ◆ “Installation Procedure” on page 11  
This section includes a step-by-step procedure for installing Novell Internet Access Server.

Novell Internet Access Server can be installed on NetWare® 4.2 or later software. You must install or upgrade to one of these Novell operating systems before you install Novell Internet Access Server.

The Novell Internet Access Server installation program supports local server environment checking before installation, including

- ◆ NetWare operating system version checking
- ◆ Disk space requirement checking
- ◆ Product compatibility checking

Novell Internet Access Server can be installed as an upgrade to Novell Internet Access Server 4, the NetWare Connect™ 2.0 software, or the NetWare MultiProtocol Router™ 3.1 software.



Note

When you upgrade from NetWare Connect 2.0, Novell Internet Access Server will keep all previously defined groups, restrictions, and definitions; however, Remote Node Services are no longer supported. Refer to *Novell Internet Access Server Remote Access Configuration* on the Online Documentation CD-ROM for additional information on new features provided by remote access.

## Prerequisites

This section lists the disk space and RAM requirements for the server software.

### Disk Space Requirements

To support Novell Internet Access Server, we suggest 60 MB of available disk space with an additional 40 MB during installation.

### RAM Requirements

To support Novell Internet Access Server, we suggest 64 MB of RAM.

## Installing from CD-ROM

Novell Internet Access Server can be installed only from the console of the server on which the INSTALL program is running. Installation from CD-ROM requires access to a CD-ROM drive. You can mount the CD-ROM drive as a DOS device or as a NetWare volume.

To mount a CD-ROM drive as a NetWare volume, refer to Appendix A, “Mounting a CD-ROM as a NetWare Volume,” on page 27. To mount a CD-ROM as a DOS device, refer to the manufacturer’s instructions.



Warning

A CD-ROM device that is managed by a DOS device driver and that shares a SCSI bus with a disk subsystem containing volumes to which NetWare installation files are copied (typically the SYS: volume) might lock the keyboard during file copy.

Possible solutions are as follows:

1. Mount the CD-ROM drive as a NetWare volume.
2. If the CD-ROM device has a parallel-to-SCSI adapter, reconfigure the CD-ROM under DOS to use this adapter instead of the shared SCSI bus.

3. Obtain a separate SCSI board for the CD-ROM device and repeat the installation. Load the NetWare SCSI driver for the SCSI board only.

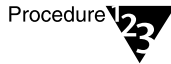


Note

For additional information, see the Novell Internet Access Server FAQ at <http://support.novell.com/cgi-bin/search/tidfinder.cgi?2928106>. If you are using the Novell Knowledge Base search function, the TID number is 2928106.

## Installation Procedure

To install Novell Internet Access Server, complete the following steps:



Procedure

**If necessary, mount the CD-ROM drive as a NetWare volume or DOS device.**

When you install Novell Internet Access Server, the source image files can reside on any of the following:

- ◆ CD-ROM drive mounted as a NetWare volume on the server
- ◆ CD-ROM drive mounted as a DOS device on the server
- ◆ CD-ROM files copied to a NetWare volume on the server
- ◆ CD-ROM files copied to a NetWare volume on a remote server



Hint

We recommend installing from a CD-ROM drive mounted as a NetWare volume. Installing from a CD-ROM mounted as a DOS device is slower and might interfere with the operation of the server, possibly causing the loss of connections.

We also recommend that, if possible, you restart the server with no services running or that you stop most services before installing Novell Internet Access Server.

- 1. At the server prompt, enter `LOAD INSTALL`.**

The Installation Options menu appears.

- 2. From the Installation Options menu, select `Product Options`.**

The Other Installation Actions menu appears.

- 3. From the Other Installation Actions menu, select `Install a Product Not Listed`.**

A message that begins with `Product will be installed from A:\` is displayed.



Help screens that explain the various options are available throughout the Novell Internet Access Server installation. Press F1 to view these screens.

**4. Insert the CD-ROM in the CD-ROM drive and specify the correct path to the Novell Internet Access Server installation software.**

- ◆ If you are installing the software from a local CD-ROM drive mounted as a NetWare volume, press F3, enter the volume name of the CD-ROM, then press Enter.

Example: **NIAS41 :**

- ◆ If you are installing the software from a local CD-ROM drive mounted as a DOS device, press F3, enter the drive designator of the CD-ROM, then press Enter.

Example: **D: \**

- ◆ If you are installing the software to the local server from a NetWare volume on a remote server, press F4, enter the source path, then press Enter.

Example: *SERVER/VOL:*

**5. If you are installing from a CD-ROM mounted as a DOS device, a warning message is displayed. You can ignore this message and select the “Continue and access the CD-ROM” option.**

**6. Press F10 to begin the installation process.**

The message `Welcome to the Novell Internet Access Server Installation Program` is displayed.

**7. To continue the installation, press Enter; to cancel (abort) the installation, press Esc.**

If you press Enter, the File Copy Status (Main Copy) window appears and the Novell Internet Access Server files are installed. When the installation is complete, a window appears showing the paths to the log files.

**8. Press Enter to continue.**

The Other Installation Actions menu is displayed.

9. **From the Other Installation Actions menu, select View/Configure/Remove Installed Products and press Enter.**

The Currently Installed Products list appears with an entry for each of the products that you installed. Verify that all the products you selected were installed successfully.

10. **Press Esc twice to return to the Installation Options menu.**

11. **From the Installation Options menu, select NCF Files Options and press Enter.**

The Available NCF Files Options menu is displayed.

Editing the STARTUP.NCF file is necessary if current parameter values are less than those required.

12. **From the Available NCF Files Options menu, select Edit STARTUP.NCF File and press Enter.**

A message is displayed asking you to specify the path to the SERVER.EXE file, which is used to start the server.

Example: `C:\NWSERVER`

13. **If necessary, specify the correct path to the directory that contains the SERVER.EXE file and press Enter.**

The STARTUP.NCF file is displayed.

14. **Add these SET commands to the STARTUP.NCF file:**

```
SET MINIMUM PACKET RECEIVE BUFFERS=400
```

```
SET MAXIMUM PACKET RECEIVE BUFFERS=1000
```

```
SET MAXIMUM PHYSICAL RECEIVE PACKET SIZE=<value>
```

The value of the Maximum Physical Receive Packet Size parameter should be set to the largest value used by your LAN media or the largest value used by your applications, whichever is smaller. Typical values for different media are shown in the following table.

Media Type	Value
Ethernet	1524
4-MB token ring	4540
16-MB token ring	4540
FDDI	4540
ARCnet*	618
LocalTalk*	618



The values shown in the previous table have been increased to add 10 bytes for the Point-to-Point Protocol (PPP) as follows: 4 bytes for the PPP header, 2 bytes for asynchronous PPP connections, and 4 bytes for PPP data compression. If you are not using PPP asynchronous connections or PPP data compression, you can decrease the value shown by the appropriate number of bytes.

- To exit the STARTUP.NCF file, press F10 or Esc, select Yes to save the changes, then press Enter.**

The Available NCF Files Options menu is displayed again.

- Press Esc to return to the Installation Options menu.**
- To exit the installation program, select Exit from the Installation Options menu and press Enter. When prompted, select Yes to exit the installation program and press Enter.**

The server console prompt is displayed.

- Bring down and restart the server to ensure that you load the new versions of the NetWare Loadable Module™ (NLM™) files that you have installed. At the installation server's console prompt, enter**

```
DOWN
RESTART SERVER
```

Now that you have completed the Novell Internet Access Server installation, you must complete the basic configuration instructions contained in the following chapter, “Configuring Novell Internet Access Server” on page 15.

## Configuring Novell Internet Access Server

This chapter provides a step-by-step procedure for configuring Novell® Internet Access Server using the Fast Setup option of the Internetworking Configuration utility and contains the following sections:

- ◆ “Configuration Requirements” on page 15  
This section lists the parameter-specific information required to configure Novell Internet Access Server.
- ◆ “Configuring Novell Internet Access Server” on page 16  
This section includes a step-by-step procedure for configuring Novell Internet Access Server using the Fast Setup option of the Internetworking Configuration utility.

### Configuration Requirements

A first-time configuration of Novell Internet Access Server requires that you specify certain parameter values for the type of configuration (LAN or WAN) being performed. The following parameter-specific information is required to configure the server following the installation of Novell Internet Access Server:

- ◆ Protocols (for example, the Internetwork Packet Exchange™ [IPX™] protocol and TCP/IP)
  - ◆ IPX network number
  - ◆ IP addresses and subnet masks
- ◆ Driver types (for example, NE2000.LAN and SYNCPLUS.LAN)
- ◆ Board parameters (for example, interrupt, I/O base, and slot)
- ◆ Physical hardware connection types (for example, RS-232)

- ◆ Type of connections (for example, Ethernet and Point-to-Point)
- ◆ Frame types and network numbers (LAN)
- ◆ Name and IP addresses of Domain Name System (DNS) servers

If you are adding Novell Internet Access Server to an existing network, record your existing IPX network address. To obtain the IPX address in an existing network, enter the command **CONFIG** at an installed server or router on the network. The IPX network address appears in the LAN Protocol field. The Novell Internet Access Server installation program attempts to read the network address, but you must verify that the address is correct.

If you are installing the first server or router in a network, the installation program provides a random internal IPX network address. You can use this random address, or you can enter your own address.

## Configuring Novell Internet Access Server

The Novell Internet Access Server Configuration utility (NIASCFG) enables the configuration of Novell Internet Access Server and supports the configuration of various Data-Link-layer and Network-layer protocols. NIASCFG employs a series of menus and windows to configure related sets of parameters.



If you are configuring Novell Internet Access Server for the first time, review “Configuration Requirements” on page 15.

NIASCFG provides two interchangeable options for configuring your server: Fast Setup and standard mode. These options enable you to set new parameter values or modify existing parameter values.

The Fast Setup option employs default parameter values and provides basic options for configuring and applying new settings. Fast Setup is useful for first-time configurations and for adding and configuring new boards.

Standard mode is the default mode for a previously configured system, providing greater flexibility. It is commonly used for more complicated configurations. If the default parameter settings applied using Fast Setup are not suitable for your configuration, use the standard mode to modify existing values and apply new values. Refer to *Novell Internet Access Server Routing Configuration* for detailed information on router configuration procedures.



Fast Setup can be used to configure the following:

- ◆ IPX protocol
- ◆ NetWare Link Services Protocol™ (NLSP™) software in RIP/SAP compatibility mode only
- ◆ All LAN boards
- ◆ PPP permanent synchronous connections
- ◆ Frame relay
- ◆ TCP/IP (RIP only)
- ◆ WAN boards (SYNCPLUS.LAN, NW2000.LAN, and some third-party drivers)

New configuration parameter values are applied by bringing down the server and restarting it, or by using the REINITIALIZE SYSTEM command from within NIASCFG or at the server prompt. The REINITIALIZE SYSTEM command dynamically applies configuration parameters.

Fast Setup does not support advanced configuration as required for the following:

- ◆ AppleTalk\*
- ◆ Asynchronous PPP connections
- ◆ Asynchronous Transfer Mode (ATM)
- ◆ Tunneling
- ◆ On-demand calls
- ◆ Open Shortest Path First (OSPF) protocol
- ◆ X.25
- ◆ Simple Network Management Protocol (SNMP)
- ◆ Static routes

- ◆ Source route bridge
- ◆ AUTOEXEC.NCF file edit
- ◆ STARTUP.NCF file edit
- ◆ Network management
- ◆ Some third-party WANs

For detailed information about these configurations, refer to *Novell Internet Access Server Routing Configuration*.

## Command Keys

Each NIASCFG display provides command key descriptions. Use the following command keys to select options, advance to new menus or windows, and provide input to the configuration:

- ◆ **Esc**—Exits the current configuration window and returns to the preceding menu or window.
- ◆ **Enter**—Selects an option and advances to a new menu or window.
- ◆ **Ins**—Adds a new configuration.
- ◆ **Del**—Removes a configured option.
- ◆ **Up-arrow** and **Down-arrow**—Highlight menu options and indicate the current selection.

## Configuring with Fast Setup

To load NIASCFG and configure Novell Internet Access Server using the Fast Setup options, complete the following steps:



1. **Enter `LOAD NIASCFG` at the server prompt.**

The first time you load NIASCFG following the installation of Novell Internet Access Server, the following message is displayed:

```
In order for NIAS to run properly, all driver load
and bind commands must be moved from AUTOEXEC.NCF
```

to a file called NETINFO.CFG. This operation may take a few minutes.

**2. Press Enter to perform the move.**

When the move is completed, the following message is displayed:

```
NIAS has completed copying the LOAD and BIND
commands to NETINFO.CFG.
```

**3. Press Enter to continue.**

The NIAS Options menu is displayed.

**4. From the NIAS Options menu, select Configure NIAS > Protocols and Routing > Go To Fast Setup.**

NIASCFG checks for an existing configuration and reads description files, if any, to identify the number of ports, media types, and Transport-layer information. If this information exists, it is displayed in the Configuration Summary window.

**5. Review the information displayed in the Configuration Summary window. To display the Configuration Options menu, select any interface and press Enter.**

The options on this menu enable you to configure interface boards and modify interface parameters.



If Fast Setup is used to modify an existing set of parameters, previous settings for that interface and protocol bindings will not be retained.

**6. Select an option from the Configuration Options menu.**

- ◆ Accept the board configurations shown above

If you accept and save the default configuration settings shown in the Configuration Summary display, the Novell Internet Access Server configuration is completed and you are returned to the server prompt.

If any of the configuration settings are modified during this session, you are asked if you want to make the changes effective now. If you select Yes, the system is reinitialized and you are returned to the NIAS Options menu. If you select No, the changes are made in the NETINFO.CFG file, but they will not take effect

until you issue a REINITIALIZE SYSTEM command or restart the server.

- ◆ **Configure a new board**

This option adds a new board. You are required to specify parameter values as described in “Configuration Requirements” on page 15. Ensure that you have all the necessary configuration data for the board.

- ◆ **Reconfigure a board shown above**

This option launches the Select a Board menu. This menu enables you to modify hardware parameter settings and protocol bindings for the board selected. If the board you select has no existing configuration, this menu option is not displayed.



This Fast Setup option removes all existing configuration information for the board selected. To modify hardware parameter settings only, use standard mode.

- ◆ **Delete a board shown above**

This option removes a board and its protocol bindings from the configuration. If previous board configurations do not exist, this menu option is not displayed.

- ◆ **Go to INETCFG main menu**

This option launches the standard Internetworking Configuration menu. This menu provides options for advanced parameter configuration.

**7. To configure a LAN or WAN board, select Configure a New Board from the Configuration Options menu and press Enter.**

The first time you select this option, the program reads all the driver files installed in SYS:SYSTEM and displays a list of the files.

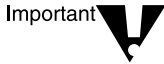
**7a. Use the Up-arrow and Down-arrow keys to select a driver, or type the first letter of the driver name, then press Enter.**

**7b. If the driver you want to configure is not listed, press Ins to add it.**

You are prompted for the location of the driver file.

**7c. Specify the location of the driver file and press Enter.**

NIASCFG copies the driver file to SYS:SYSTEM. NIASCFG can only configure drivers that reside in SYS:SYSTEM.



Some third-party WAN drivers might require other installation steps. These drivers are located in the WAN\_SUPP directory on the Novell Internet Access Server CD-ROM. Subdirectories for each driver vendor are located in this directory.

Open the vendor subdirectory and locate the desired product subdirectory. The product subdirectory contains a README file with instructions for creating an install diskette with the product drivers.

This task usually can be accomplished in one of two ways: using a self-extracting archive that generates the diskette directly or using disk images that must be copied directly to the diskette according to the subdirectory name.

## 8. Configure the selected driver.

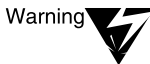
The Board Configuration window displays default parameter settings for the selected driver. Select from the menu options and accept or modify the default parameter values.



NIASCFG reads the description file associated with a particular driver to identify and obtain parameter values. If a description file does not exist, an error message is displayed and driver parameters must be entered manually.

## 9. If you elect to modify parameter settings, ensure that the values you select match those of the interface board.

Parameter settings vary from driver to driver. The Board Configuration window displays default parameter values. If you elect to modify the default settings, a subsequent menu for each parameter is displayed.



If you elect to configure optional parameters, make sure you understand the effect of modifying each value. Refer to the driver documentation for a complete description.

## 10. If you are configuring for a LAN, go to Step 11. Otherwise, NIASCFG prompts you to individually configure each WAN interface. Select Yes to configure a network interface.

Each interface selected must be configured for a Data-Link-layer protocol (frame relay, PPP, or X.25). Supported protocols vary from driver to driver. If more than one protocol type is supported, a list is displayed.

**10a. Change the name of the interface, if desired.**

**10b. Select an appropriate Data-Link-layer protocol.**

Each Data-Link-layer protocol requires a set of configuration parameters specific to that protocol. Refer to *Novell Internet Access Server Routing Configuration* for information on configuring Data-Link-layer protocol parameters.

**10c. Select Yes to run IPX.**

NIASCFG creates the driver LOAD command, WAN call destination, and IPX BIND command. A permanent outgoing IPX call is initiated on the interface each time the server is restarted. If not previously configured, IPX runs in NLSP with RIP/SAP compatibility mode.

**10d. Select Yes to run TCP/IP.**

NIASCFG creates the driver LOAD command, WAN call destination, and TCP/IP BIND command. A permanent outgoing unnumbered call is initiated on the interface each time the server is restarted. If not previously configured, TCP/IP runs in RIP mode.



Standard mode must be used to create a TCP/IP WAN connection using numbered links.

**10e. Go to Step 14. Step 11 through Step 13 apply to LAN configurations only.**

**11. NIASCFG loads the selected LAN driver. If the driver is not loaded successfully, return to the Board Configuration window to modify driver parameters.**

The IPX Configuration window displays the current bindings between IPX network numbers and driver frame types. If the IPX network is active, the network number is displayed. These values can be modified.



The IPX Configuration list shows IPX network numbers for active IPX network connections only. At least one entry must be assigned an IPX network number to enable the board to support an IPX LAN.

**12. If the IPX network numbers in the IPX Configuration window are correct, select Yes and use these frame types and network numbers.**

NIASCFG creates the necessary driver LOAD commands and the protocol BIND commands that enable IPX to run over this network interface.

**13. Select Yes to run TCP/IP over the network interface.**

**13a. Enter the IP address assigned to the interface.**

Provide the host's local IP address. An IP address has four fields, each separated by a decimal. The value for each field can range from 0 to 255. These addresses are unique and are usually assigned by the network administrator.

**13b. Enter the subnet mask.**

The subnet mask must match the mask used by other hosts on the network. The subnet mask has four fields, each separated by a decimal. The value for each field can range from 0 to 255.

If you do not specify a subnet mask, a standard IP network mask is used. The standard mask sets each bit of the network address to 1 and sets each bit of the host address to 0. The default subnet mask is valid if the network does not use subnets.

It is not necessary to change the value of other parameters.

NIASCFG creates the necessary driver LOAD commands and the protocol BIND commands that allow TCP/IP to run over this network interface.



If not previously configured, TCP/IP will be configured to act as a router running RIP. By default, filtering, OSPF, Exterior Gateway Protocol (EGP), and static routes are disabled.

The Configuration Summary window is redisplayed listing the newly configured board. One entry appears for each frame type used by this driver. Each entry includes an IPX network number or associated IP address.

**14. Review the configuration summary. To return to the Configuration Options menu, press Enter.**

**15. From the Configuration Options menu, select Accept the Board Configuration Shown Above, or select from the menu options and continue.**

**16. When you have completed the configuration, press Esc.**

The NIAS Options menu is displayed.

**17. From the NIAS Options menu, select Exit and press Enter.**

The prompt `Exit Program?` is displayed.



**18. Select Yes to save the configuration settings, reinitialize the system, and return to the server prompt.**

You have completed the Novell Internet Access Server basic configuration procedures. For instructions on advanced or custom configuration, refer to the service-specific documents provided with the Novell Internet Access Server documentation collection.



# Mounting a CD-ROM as a NetWare Volume

This appendix describes the prerequisites for mounting a CD-ROM as a NetWare® volume and how to accomplish this task.

## Prerequisites

Make sure your server meets the following requirements:

- ◆ Access to the server console or a remote console session with the server
- ◆ SYS: volume mounted
- ◆ An installed Host Bus Adapter (HBA) that is compatible with the NetWare software and that supports CD-ROM devices
- ◆ The NetWare Peripheral Architecture™ module (NPA) specific to your operating system: NWPA for NetWare 4.2
- ◆ The disk driver file and necessary support modules

Some disk drivers consist of more than one file and some HBA devices require additional support modules for CD-ROM functionality. These files should accompany the HBA. For specific file requirements, consult your adapter documentation.

NetWare 4.2 includes the third-party HBA device drivers that are certified for NetWare 4.2 by Novell. If the HBA is certified to support CD-ROM devices, the necessary support modules are also included with NetWare.

You can copy these files during installation or you can copy them from the distribution media using NWXTRACT. For information about using NWXTRACT, refer to the *NetWare Utilities Reference*.

# Procedure

To mount your CD-ROM disc drive as a NetWare volume, complete the following steps:



**1. At the server console prompt, load the disk driver by entering**

```
LOAD [path]disk_driver
```

Replace *path* with the correct path to the disk driver file.

Replace *disk\_driver* with the name of the disk driver specified in the HBA documentation.

You might be prompted to supply command-line values such as a port or slot number for the HBA. Consult your HBA documentation for this information.

For example, to load the disk driver for the Adaptec\* AHA-1522 SCSI HBA, enter

```
LOAD [path]AHA1520.DSK
```

```
LOAD [path]ASPICD.DSK
```

Some files might be loaded automatically. In this example, ASPITRAN.DSK is loaded automatically when AHA1520.DSK is loaded.

If your disk driver automatically loads the ASPITRAN.DSK driver, you must load either ASPICD.DSK or CDNASPI.DSK.

**2. Load the NWPA NLM™ file that interfaces with the Media Manager by entering**

```
LOAD NWPA.NLM
```

**3. Load the CDROM NLM program by entering**

```
LOAD CDROM
```



When you mount a CD-ROM or change a CD-ROM, CD-ROM devices might be deactivated. Do not be alarmed. This deactivation occurs because device configuration information is being updated.

**4. Mount the CD-ROM as a volume by entering**

```
CD MOUNT [object number] | [volume name] /R
```

Replace *object number* with the object number or replace *volume name* with the volume name of the CD-ROM.

For example, to mount the NetWare\_2 CD-ROM, enter

```
CD MOUNT NetWare_2 /R
```

It might take several minutes to mount the volume, depending on the size of the CD-ROM and the speed of your computer.

**5. To mount the CD-ROM as a NetWare volume each time the server comes up, do the following:**

**5a. Edit your STARTUP.NCF file.**

Add the following lines to the file:

```
LOAD [path] disk_driver  
LOAD [path] ASPICD.DSK  
LOAD [path] NWPA.NLM
```

If your disk driver automatically loads the ASPITRAN.DSK driver, load either ASPICD.DSK or CDNASPI.DSK.

**5b. Edit your AUTOEXEC.NCF file.**

Add the following lines to the file:

```
LOAD CDROM  
CD MOUNT [object number] | [volume name]
```

**6. If you are using the Novell® Directory Services™ (NDS™) software, you must create an NDS volume object.**

Use the NetWare Administrator utility to create a volume object so that the documentation volume appears in the Directory tree.



# **T**rademarks

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