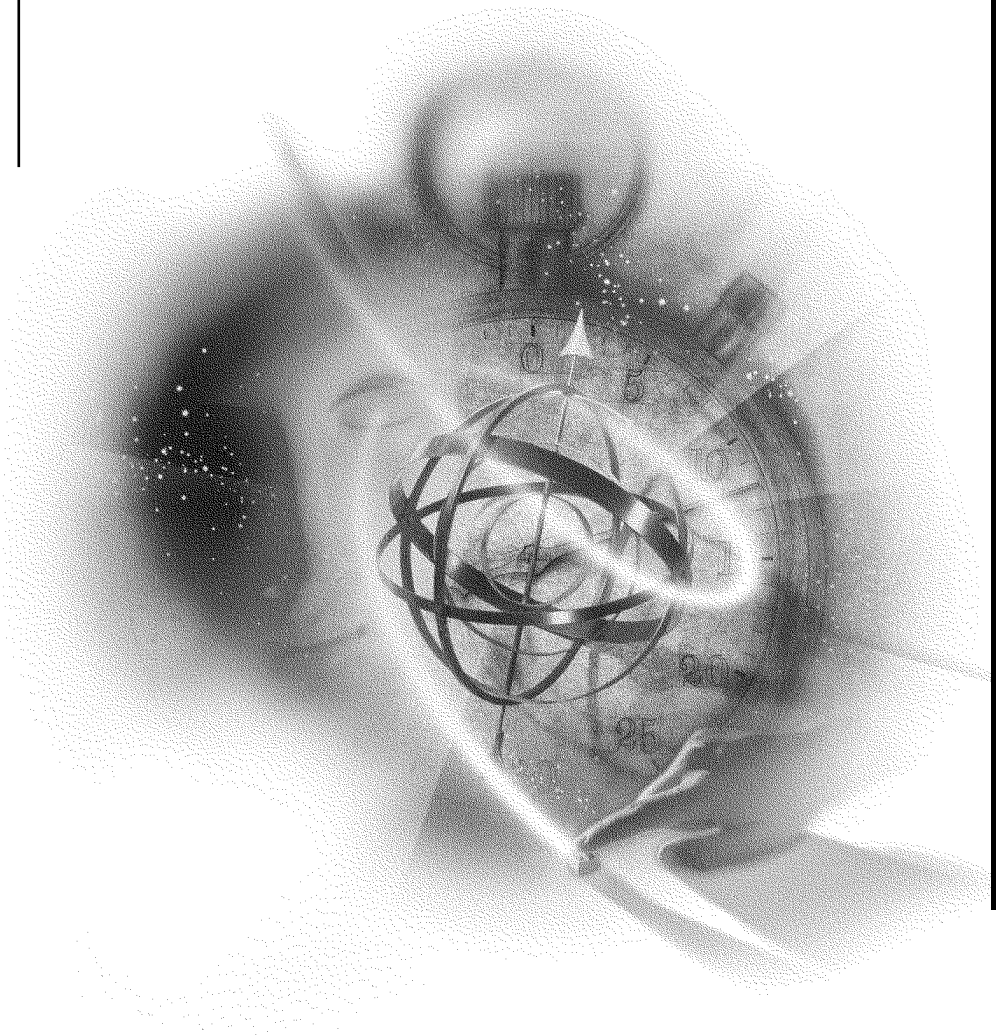
VERSION 5

NetWare® 5™

NETWORK SOFTWARE

Quick Starts



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About This Guide

WHAT ARE QUICK STARTS?

Quick Starts are NetWare® installation procedures designed for experienced users who want to get started installing NetWare right away.

Quick Starts procedures do not contain the detailed explanations found in the printed installation manual or in the online documentation.

Quick Starts usually provide the default or the simplest installation path.

WHO SHOULD USE QUICK STARTS?

If this is your first experience installing NetWare, we recommend you use the printed installation manual and the online documentation, where you will find background and planning information and detailed explanations of each installation step.

If you are familiar with NetWare and with general networking terms and concepts, using the NetWare Quick Starts may be the fastest way to install NetWare 5™ and enable many of its key features.

FOR MORE INFORMATION

For more detailed information about installing and using NetWare, refer to these sources:

- For server installation and upgrade procedures, see the printed *NetWare 5 Overview and Installation* manual.
- For all other information, including background and conceptual information, network management, and general reference material, see the online documentation on the NetWare documentation CD.

Installing a NetWare 5 Server

NetWare® 5™ includes an installation program that guides you through each step required to install a NetWare 5 server.

PREREQUISITES

- ❑ Plan your NDS™ tree.
- ❑ Read the README.TXT file.

SYSTEM REQUIREMENTS

- ❑ A server-class PC with a Pentium or higher processor.
- ❑ VGA or higher resolution display adapter (SVGA recommended).
- ❑ 64 MB of RAM (128 MB recommended to run Java-based applications).
- ❑ 600 MB available disk space (50 MB for a boot partition, 550 MB for a NetWare partition).
- ❑ One or more network boards.
- ❑ A PS/2 or serial mouse (recommended).
- ❑ A CD-ROM drive that can read ISO 9660-formatted CD-ROM disks. Computers with bootable CD-ROM drives must fully support the El Torito specification.
- ❑ A PS/2 or serial mouse is recommended, but not required.

The system requirements listed above are minimum requirements. You can optimize the server performance by increasing the amount of server memory, disk space, and processor speed.

SOFTWARE REQUIREMENTS

- ❑ NetWare 5 Operating System CD-ROM.
- ❑ DOS 3.3 or later. (Novell DOS 7 is included on the NetWare 5 License diskette. Do not use the version of DOS that ships with Windows 95, Windows 98, or Windows NT operating systems.)
- ❑ DOS CD-ROM drivers.
- ❑ NetWare 5 License diskette.
- ❑ Novell Client for DOS and Windows 3.1*x* (optional, for installing from a network).
- ❑ An IP address (optional, if the server will connect to the Internet).
- ❑ Network board and storage device properties such as the interrupt and port address. For more information, contact your hardware manufacturer.

NETWORK REQUIREMENTS

- ❑ All servers on the network must be updated to NDS version 5.99 or higher.
- ❑ All servers must be running Novell Licensing Services.

For more information on updating your network, see \PRODUCTS\411_UPG\411_UPG.TXT located on the NetWare 5 Operating System CD-ROM.

SET UP SERVER

1. Back up any desired data to another computer or off-line storage media.
2. Boot computer with DOS 3.3 or later.

3. Use FDISK to create a 50MB boot partition and make it active.
4. Use FORMAT /S to format and transfer system files to the boot partition.
5. If installing from CD-ROM, install the software necessary to access the CD-ROM drive.
6. If installing from the network, install Novell Client for DOS and Windows 3.1*x* to access the network.
7. Make sure that the CONFIG.SYS file contains the following commands: **`FILES=40`** and **`BUFFERS=30`**.

INSTALL NETWARE OPERATING SYSTEM

1. Insert the NetWare Operating System CD-ROM or log in to the server containing the installation files.
2. At the CD-ROM drive or network prompt, enter **`Install`**.
3. Select the type of installation and regional settings.
4. Select and set the properties for a platform support module (if required), a PCI Hot Plug module (if required), and a storage adapter.
5. Select and set properties for a storage device and a network board.
6. Create a NetWare partition and volume SYS.
7. Name the NetWare 5 server.
8. Install the NetWare server file system.
9. Install and configure networking protocols.
10. Set the server time zone.
11. Set up NDS, Novell's directory technology.
12. License the NetWare server.
13. Install other networking products.
14. Customize the installation by clicking Customize on the Product Summary screen.
15. After file copy has completed, click Finish to reboot the server.

Upgrading to NetWare 5

As part of the installation program, NetWare® 5™ includes an upgrade option that guides you through an upgrade from a NetWare 3.1x or a NetWare 4.1x server to NetWare 5.

PREREQUISITES

- ❑ Back up your server data.
- ❑ Plan your NDS tree.
- ❑ Read the readme.txt file.

SYSTEM REQUIREMENTS

- ❑ A server-class PC with a Pentium or higher processor.
- ❑ VGA or higher resolution display adapter (SVGA recommended).
- ❑ 64 MB of RAM (128 MB recommended to run Java-based applications).
- ❑ 35 MB of available disk space on boot partition.
- ❑ 550 MB of available disk space on volume SYS.
- ❑ One or more network boards.
- ❑ A CD-ROM drive that can read ISO 9660-formatted CD-ROM disks. Computers with bootable CD-ROM drives must fully support El Torito specification.
- ❑ A PS/2 or serial mouse is recommended, but not required.

The system requirements listed above are minimum requirements. You can optimize the server performance by increasing the amount of server memory, disk space, and processor speed.

SOFTWARE REQUIREMENTS

- ❑ A server running NetWare 3.1*x* or 4.1*x* software. This is the server you upgrade.
- ❑ NetWare 5 Operating System CD-ROM.
- ❑ DOS 3.3 or later. (Novell DOS 7 is included on the NetWare 5 License diskette. Do not use the version of DOS that ships with Windows 95, Windows 98, or Windows NT operating systems.)
- ❑ DOS CD-ROM drivers.
- ❑ NetWare 5 License diskette.
- ❑ Novell Client for DOS and Windows 3.1*x* (optional, for upgrading from a network).
- ❑ An IP address (optional, if the server will connect to the Internet).
- ❑ Network board and storage device properties such as the interrupt and port address. For more information, contact your hardware manufacturer.

NETWORK REQUIREMENTS

- ❑ All servers on the network must be updated to NDS version 5.99 or later.
- ❑ All servers must be running Novell Licensing Services.

For more information, see \PRODUCTS\411_UPG\411_UPG.TXT located on the NetWare 5 Operating System CD-ROM.

PREPARING TO UPGRADE FROM NETWARE 3.1*X* OR 4.1*X*

1. Back up any desired data to another computer or off-line storage media.
2. Boot the server with DOS 3.3 or higher.
3. If upgrading from CD-ROM, install the software necessary to access the CD-ROM drive on the server.
4. If upgrading from the network, install Novell Client for DOS and Windows 3.1*x* to access the network.
5. Make sure that the CONFIG.SYS file contains the following commands: **`FILES=40 BUFFERS=30`**.

INSTALL NETWARE OPERATING SYSTEM

1. Insert the NetWare Operating System CD-ROM or log in to the server containing the installation files.
2. At the CD-ROM drive or network prompt, enter **`Install`**.
3. From the Welcome screen, select Upgrade from a 3.1*x* or 4.1*x* Server.
4. Select and set the properties for a platform support module (if required), a PCI Hot Plug module (if required), and a storage adapter.
5. Select and set properties for the storage device.
6. Select and set properties for the network board.
7. Create additional volumes (if required).
8. Add additional networking protocols.
9. Set the server time zone.
10. Set up NDS, Novell's directory technology (if required).
11. License the NetWare 5 server.
12. Install other networking products.
13. Customize the installation by clicking Customize on the Product Summary screen.
14. After file copy has completed, click Finish to reboot the server.

Upgrading Across the Wire

Upgrading across the wire (frequently referred to as a “migration”) involves copying a NetWare 3.1x server’s bindery and file system to an existing NDS tree via the network. In the process, the bindery objects are upgraded to NDS objects.

PREREQUISITES

- ❑ Install NetWare 5 on the destination server.
- ❑ On a workstation where you will administer the migration, install the Novell Upgrade Wizard using the self-extracting executable file in the following location on the NetWare 5 *Operating System* CD-ROM:

  products/upgrdwzd/upgrdwzd.exe
- ❑ Back up NDS and the NetWare 5 server volumes you're migrating to.
- ❑ Verify that you have Supervisor or equivalent rights to the source server and destination tree.
- ❑ Disable SAP filtering on the server involved in the migration.
- ❑ (Conditional) If you are using older NLM™ versions on the source server, update the NLM programs with any of those located in products\nw3x and then reboot the source server.
- ❑ On the source server, load tsa311.nlm or tsa312.nlm.
- ❑ Load and add any necessary name spaces to destination volumes.

SYSTEM REQUIREMENTS

- ❑ You must use a proper version of the Novell Client for Windows* 95* (version 3.0 or higher) or Windows NT* (version 4.5 or higher).

PROCEDURE

1. Launch the Novell Upgrade Wizard and follow the instructions in the wizard pages until the Project Window appears.
2. Click and drag the NetWare 3.1*x* source server bindery and volume contents to a desired location in the destination NDS tree.
3. Click Verify to verify that the bindery and file system can be migrated as specified.
4. Correct any errors that will impede the migration.
5. Click Proceed to migrate the bindery and file system.
6. Review both the error and success log files.
7. Perform any of the applicable post migration procedures documented in the Novell Upgrade Wizard help system.

Installing Netscape FastTrack Server

When you install the Netscape® FastTrack Server for NetWare, two servers are installed: the administration server, used to manage and configure servers; and the Web server, used to deliver Web pages to the Internet or an intranet.

PREREQUISITES

- ❑ NetWare 4.11 or later installed on the server
- ❑ The latest version of the Novell Client for Windows 95 or Windows NT installed on a workstation
- ❑ An installed Internet browser (Netscape Communicator* 4.04 recommended)
- ❑ Long.nam installed on NetWare servers for long file names
- ❑ Connection to a NetWare 5 network

SERVER HARDWARE REQUIREMENTS

- ❑ Minimum 100 MB free disk space on Sys volume
- ❑ Minimum 32 MB RAM (64 MB RAM recommended)

CLIENT HARDWARE REQUIREMENTS

- ❑ 486 processor or better
- ❑ Minimum 100 MB free disk space
- ❑ Minimum 64 MB RAM

SOFTWARE INCOMPATIBILITIES

Novell cannot guarantee that the FastTrack Server for NetWare will work with the following software:

- ❑ Microsoft* Client for NetWare networks
- ❑ Microsoft file and printer sharing for NetWare networks
- ❑ Microsoft Service for Novell Directory Services™
- ❑ Microsoft Internet Explorer

PROCEDURE

1. At the client workstation, insert the FastTrack CD-ROM and run setup.exe from the root CD drive (for example, d:\setup.exe).
2. Follow the on-screen instructions.

   Note: Once the FastTrack Server for NetWare is successfully installed, you can begin using the server by accepting all of its default settings.

   Otherwise, you can use the administration server to change the default configuration.

   For more information, see the Netscape FastTrack Server Getting Started information, found on the NetWare online documentation CD.

Running the Novell JVM and the NetWare Servertop

NetWare 5 includes Java-based components that let you run Java-based applets and applications from the server. The following instructions explain how to load the Novell JVM for NetWare and how to start the Java-based servertop (NetWare's Graphical User Interface).

PREREQUISITES

- ❑ NetWare 5 installed on the server
- ❑ TCP/IP loaded

LOADING THE NOVELL JVM

1. To load the Novell JVM, enter the following at the server console:

   JAVA

   Once the JVM is loaded, you can set environment variables, run Java-based applets and applications, and run the Novell Object Request Broker (ORB).

   See the Novell online documentation for more information.

2. To unload the Novell JVM, enter:

   UNLOAD JAVA

STARTING THE SERVERTOP

The NetWare servertop is a Java-based Graphical User Interface for the NetWare server. The servertop is loaded automatically whenever the server is started. You can also load and unload it manually.

1. If the servertop has been unloaded, load it by entering the following at the server console prompt:

   STARTX

   The Novell JVM is loaded automatically and the servertop is displayed.

2. Click the Novell button (in the lower left corner of the screen) to display the servertop menu.

   Use the menu to load the ConsoleOne management utility, access tools to change the screen resolution and keyboard language, and perform other tasks.

3. Click Novell > Exit GUI to unload the servertop.

Installing Novell Clients

The Novell® Client™ Setup utility installs the client software. When you use this utility, you can select the client you want to install from a list of available clients.

PREREQUISITES

- ❑ Long.nam installed on NetWare® servers for long file names in Windows* 95* and Windows NT*
- ❑ Connection to a NetWare network
- ❑ Applicable server patches installed

HARDWARE REQUIREMENTS

Windows 95

- ❑ 486 processor or higher
- ❑ Minimum 28 MB free disk space
- ❑ Minimum 16 MB RAM

Windows NT 4.0

- ❑ Minimum hardware requirements of Windows NT 4.0

DOS and Windows 3.1*x*

- ❑ 386 processor or higher
- ❑ Minimum 15 MB free disk space
- ❑ Minimum 8 MB RAM
- ❑ A memory manager

SOFTWARE REQUIREMENTS

One of the following client operating systems:

- ❑ Windows 95 with Windows 95 CD-ROM or the Windows .cab files, or
- ❑ Windows NT 4.0, or
- ❑ A DOS operating system such as:
  - Novell DOS™ 7
  - MS-DOS* 5.*x* or 6.*x*
  - PC-DOS 5.*x*, 6.*x*, or 7.0
  - Windows 3.1*x* or Windows for Workgroups 3.11

PROCEDURE

Note: Documentation explaining network installation methods is available in the NetWare 5™ online documentation CD. This documentation can be viewed on 32-bit workstations.

1. Insert the Z.E.N.works™ CD-ROM.

   If the Setup utility does not start automatically, run winsetup.exe from the Products directory.
2. Click a language for the installation.
3. Click the platform you want to install.
4. Click the software you want to install.
5. Follow the on-screen instructions.

SOFTWARE INCOMPATIBILITIES

Windows 95

- ❑ Microsoft* Client for NetWare networks
- ❑ Microsoft file and printer sharing for NetWare networks
- ❑ Microsoft Service for Novell Directory Services™
- ❑ Novell NetWare workstation shell 3.*x* (NETX)
- ❑ Novell NetWare workstation shell 4.0 and later (VLM™)
- ❑ Novell IPX™ ODI™ protocol

Windows NT

- ❑ Incompatibilities listed in the readme

Planning Your NDS Tree

A properly planned tree allows NDS™ to function efficiently, provides the optimal fault tolerance, and gives the greatest reliability.

PREREQUISITES

- ❑ You should be familiar with the layout of the WAN and LAN, including the locations of servers and routers.
- ❑ You should know in general terms how many objects (users, printers, applications, and such) will be in each workgroup.

PROCEDURE

1. Review the defaults.

   The default NDS tree includes a single Organization, which contains all objects. This is generally sufficient for trees with centralized network management, fewer than 1,000 objects, and no WAN links.

2. If you have more than eight server sites separated by WAN links, add top-level Organizational Units for each region.

3. Add the next level of Organizational Units for each site.

4. Further subdivide the tree as necessary with Organizational Units for each 1,000 users.

5. Further subdivide the tree as necessary, planning workgroup Organizational Units.

   Workgroup Organizational Units simplify the administration of login scripts and rights for all objects in the container.

6. Create conventions to standardize property values such as names and telephone numbers.

   Standardized property values make it easier to search the NDS Directory.

   Once you have designed the NDS tree, you can proceed with the installation of NDS servers and the creation of other objects.

   You actually create the NDS tree when you install the first NDS server, or when you upgrade an existing non-NDS server to NDS.

Creating and Managing NDS Objects

Once you've created a tree, use the following procedures to create the objects within the tree. Objects represent users, groups, servers, and other entities in your network.

PREREQUISITES

- ❑ Windows* 95* or Windows NT* workstation
- ❑ Novell® Client™ software installed on the workstation, with a connection to the NDS tree
- ❑ A drive mapped to the Sys volume of any NetWare® 5™ server in the NDS tree
- ❑ Administrative rights appropriate for the action you'll be performing

CREATING AN OBJECT

1. Run sys:public\win32\nwadmn32.exe, which is found on any NetWare 5 server in your tree.
2. Select the container that will hold the object.
3. Select Object > Create.
4. Select the object type.
5. Fill in the properties.

MANAGING AN OBJECT

1. Run sys:public\win32\nwadmn.exe
2. Select the object.
3. Select Object > Details.
4. Make the changes.

Installing the DNS/DHCP Management Console

The DNS/DHCP Management Console is a Java-based interface used to set up and configure DNS and DHCP services. You must install the utility on a Windows 95 or Windows NT client, where it can function independently or as a snapin to NetWare Administrator.

PREREQUISITES

- ❑ Client software that was delivered with NetWare 5 installed on the client workstation
- ❑ A drive mapped to sys:public on a NetWare 5 server
- ❑ Minimum 12.5 MB disk space
- ❑ Minimum of 32 MB RAM, 64 MB recommended

PROCEDURE

1. Run sys:public\dnsdhcp\setup.exe.
2. Launch the DNS/DHCP Management Console.

Setting Up DHCP

Dynamic Host Configuration Protocol (DHCP) is a TCP/IP protocol that allows a DHCP server to assign IP addresses and configuration parameters to clients.

PREREQUISITES

- ❑ The NDS schema extended in the tree by activating DNS/DHCP Services during NetWare 5 installation.
- ❑ NetWare 5 installed on all servers that will operate as DHCP servers.
- ❑ Novell Client software installed on client workstations that will be used to administer DHCP.
- ❑ The DNS/DHCP Management Console installed on client workstations that will be used to administer DHCP.
- ❑ The administrator has rights to the DNS/DHCP Locator object and to the part of the network he or she manages.
- ❑ The administrator has access to NetWare Administrator or the DNS/DHCP Management Console at the client workstation.
- ❑ If importing existing DHCP information, a file is available with data in DHCP version 2.0 or 3.0 format.

IMPORTING DHCP INFORMATION

1. Launch the DNS/DHCP Management Console and select DHCP Service.
2. Select Our Network and click the Import icon.
3. Enter the location of existing DHCP information and click Next.
4. Select one or more subnets from the list and provide the NDS context where the subnets will reside.
5. Double check the entries in the import window and click Import.
6. Select a default NCP server to function as a DHCP server.

SETTING UP DHCP

1. Launch the DNS/DHCP Management Console and select DHCP Service.
2. Click the Global Preferences icon.
3. Click Global DHCP Options > Modify.
4. Select the desired options and provide any additional information required to support the option.
5. Click Create > DHCP Server > OK.

6. Enter the desired server's name (or click to browse the selected context) and click Create.

7. Click Create > Subnet > OK.

8. Provide the requested configuration information and click Create.

9. In the left window of the DNS/DHCP Management Console, select the Subnet under which to create Subnet Address Range objects, then click Create.

   The Create New DHCP Object dialog box is displayed.

10. Select Subnet Address Range > OK.

11. Provide the requested configuration information including the Subnet Address Range's name, starting address, and ending address, then click Create.

    You can provide more detailed configuration information by clicking the Define Additional Properties checkbox.

12. In the left window of the DNS/DHCP Management Console, select the Subnet under which to create IP Address objects, then click Create.

    The Create New DHCP Object dialog box is displayed.

13. Select IP Address > OK.

    The Create IP Address dialog box is displayed.

14. Enter the IP Address to be assigned or excluded, select Assignment Type > Create.

    If you choose Manual Assignment Type, the Define Additional Properties checkbox is automatically checked enabling you to provide more detailed information.

15. At the server console of each DHCP server, enter **LOAD DHCPSRVR.**

Setting Up DNS

The Domain Name System (DNS) is a distributed database that provides domain-name-to-IP-address mapping for computers on an internetwork or the Internet. The DNS software in Novell DNS/DHCP Services integrates DNS information into the NDS database.

PREREQUISITES

- ❑ The NDS schema extended in the tree by activating DNS/DHCP Services during NetWare 5 installation.
- ❑ NetWare 5 installed on all servers that will operate as DNS name servers.
- ❑ Novell Client software installed on client workstations that will be used to administer DNS.
- ❑ The DNS/DHCP Management Console installed on a client workstation that will be used to administer DNS.
- ❑ The administrator has rights to the DNS/DHCP Locator object and to the part of the network he or she manages.
- ❑ The administrator has access to NetWare Administrator or the DNS/DHCP Management Console at the client workstation.
- ❑ If importing existing DNS information, the data is available in BIND Master file format.

IMPORTING A BIND MASTER FILE

1. Launch the DNS/DHCP Management Console and click the DNS Service tab.
2. Click the Import icon and provide the path to the DNS BIND Master file.
3. Enter the NDS context where the zone records are to be stored.
4. Select a DNS server to manage the zone.
5. Double check the information and click import.

SETTING UP DNS

1. Launch the DNS/DHCP Management Console and click the DNS Service tab.
2. Click the Create icon > DNS Server > OK.
3. Enter the desired server's name (or browse the selected context) and click Create.
4. Click the Create icon > Zone > OK.
5. Provide the requested configuration information.

   If you configure the zone as secondary, you must specify the IP address of the master server.
6. Assign DNS servers to each zone to ensure that they will respond to queries for the zone.
7. Specify one server to be the designated server.

8. If you have created a Primary zone, use the DNS/DHCP Management Console to create resource records for the zone, or import existing DNS data by clicking the Import icon on the tool bar.

9. At the server console of each name server, enter **LOAD NAMED.**

Setting Up Novell PKI Services

PKI Services enables the use of public key cryptography and public key certificates in an NDS-enabled network. PKI Services lets you request, manage, and store public key certificates and their associated key pairs in the NDS tree.

PREREQUISITES

- ❑ NetWare 5 installation program running.
- ❑ Secure Authentication Services (SAS) and the Secure Sockets Layer (SSL) protocol installed. In the installation interface, choose Other Products and Services > Secure Authentication Services (SAS).
- ❑ Novell PKI Services installed. In the installation interface, choose Other Products and Services > Novell PKI Services.

CREATE THE NDS TREE CERTIFICATE AUTHORITY (CA)

You must create the NDS tree CA object before you can perform any administrative tasks using PKI Services.

1. Launch NetWare Administrator.
2. Set the context so that the [Root] object is visible.
3. Right- click the Security Container and choose Create.
4. From the list box, choose Certificate Authority and click OK.
5. Follow the prompts in the wizard.

CREATE KEY MATERIAL OBJECTS

You must create a Key Material object in the container where a NetWare 5 server resides. You should create a separate Key Material object for each application that will use PKI Services (such as LDAP Services for NDS™).

1. Identify the NetWare 5 server that is going to run applications that will use PKI Services.
2. Launch NetWare Administrator.
3. Right-click the container object containing the server identified in Step 1 and choose Create.
4. From the list box choose the Key Material object and click OK.

Creating a Novell Storage Services (NSS) Volume

Novell® Storage Services™ (NSS) is a modular product that runs alongside the traditional NetWare® file system. NSS offers large numbers of volumes, large volumes, directories, and files, and fast volume remounts, plus support for other file system interfaces. If you created an NSS volume when you installed NetWare 5™, you don't need to complete this procedure unless you want to create another NSS volume.

PREREQUISITES

- ❑ NetWare 5 installed on the server
- ❑ A Sys volume on the server
- ❑ Minimum 10 MB free disk space for an NSS volume; this free space must be outside a partition

PROCEDURE

To create a new NSS volume, do the following:

1. At the server console, enter **`nss`**.
2. Enter **`nwconfig`**.
3. Select NSS Disk Options > Storage.
4. Select Update Provider Information and choose a provider.
5. Select Assign Ownership and choose a storage deposit.
6. Confirm your choice.
7. At the Available NSS Options menu, select NSS Volume Options.
8. Authenticate to NDS™ using your full context.
9. Select Create > NSS Volume and choose a managed object marked Single.
10. Name your NSS volume.
11. Click Yes to confirm your decision.

    Your NSS volume is added to NDS automatically.
12. Mount your NSS volume by entering **`mount`** *volume_name*.

Setting Up Novell Distributed Print Services

Novell® Distributed Print Services™ (NDPS) allows administrators to take advantage of the most advanced features of today's printers, to manage printing resources more easily, and to improve overall printing performance and ease of use.

PREREQUISITES

- ❑ One or more printers physically installed on the network
- ❑ NDPS™ installed on one or more servers
- ❑ The latest version of Novell Client™ installed on each workstation that will be using NDPS

PROCEDURE

1. Create an NDPS Manager in NetWare® Administrator.
   - **1a.** Select the container where you want the NDPS Manager object to reside.
   - **1b.** From the Object menu, select Create > NDPS Manager.
   - **1c.** Type a name of your choice in the NDPS Manager Name field.
   - **1d.** Browse for the Resident Server where you want this Manager assigned.
   - **1e.** Browse for the Database Volume where you want the NDPS Manager database assigned.
   - **1f.** Click Create.
2. Create one or more NDPS Printer Agents.
   - **2a.** In NetWare Administrator, select the container where you want the NDPS Printer object to reside.
   - **2b.** From the Object menu, select Create.
   - **2c.** Type in a name for the printer.
   - **2d.** Select Printer Agent Source > Create a New Printer Agent > Create.
   - **2e.** Select the NDPS Manager you want to assign the Printer Agent to.
   - **2f.** Select the printer and gateway type you want to use.
     - Use a third-party gateway if one is available for your printer.
     - Use the Novell Gateway if your printer is attached directly to your server, to a workstation, or to a remote file server.
   - **2g.** Complete the tasks associated with this gateway.
   - **2h.** If prompted, select the printer driver for each client operating system.
   - **2i.** Click Continue.

3. Install printers on workstations.

   You can either designate printers to be installed automatically using the Remote Printer Manager in NetWare Administrator or install them manually using the Novell Printer Manager workstation utility.

Installing NetWare Print Services for UNIX

NetWare Print Services for UNIX* provides bi-directional print services for UNIX machines and NetWare 5 servers. UNIX users can send print jobs to NetWare printers and NetWare users can send print jobs to UNIX printers.

PREREQUISITES

- ❑ NetWare 5 installed on the server.
- ❑ 12 MB RAM in addition to NetWare requirements.
- ❑ 8 MB free space in Sys volume.
- ❑ TCP/IP loaded, configured, and bound to Ethernet_II.
- ❑ DOS running on the server.
- ❑ Before beginning installation, you might find it helpful to complete the installation worksheets found in the Planning section of the *NetWare Print Services for UNIX* online documentation on the NetWare 5 documentation CD.

PROCEDURE

1. Edit the sys:\etc\nwparams file to include the context of the NetWare server where Print Services will be installed.
2. If you run TCP/IP-based software that relies on the sys:\etc\hosts file, edit the sys:\etc\nwparams file to set the WRITELOCALFILES parameter to 1.

   The parameter is in the [NETDB] section of the nwparams file.

   This prevents the sys:\etc\hosts file from being deleted.
3. At the server consol, load NWCONFIG and select Product Options > Install a Product Not Listed.
4. Press F3 and enter the path to the Print Services files on the CD (~\nwuxps\nwuxps).
5. Select the appropriate Name Service option. If upgrading, select the same service as before.
6. If this is a new installation, modify the entries in the Setup Name Services dialog box and press Esc.

   If this is an upgrade, accept the default Network Information Services (NIS) and DNS addresses. Select Yes to continue, then No to prevent initialization of name service databases.

   In a new installation, the default address for each local database is the IP address of the server on which you are installing the product.

   If you choose your local NetWare server as the master NIS server, the installation process creates your zone and database and then starts the name services.
7. Reboot the server, if prompted.

USING PRINT SERVICES

To use Print Services, you must incorporate UNIX users and hosts into the NetWare network, convert the source information into your NIS database, and configure the print services you want to use.

To manage host information, you can use the NIS server, which is part of this product, or the DNS Server supplied with NetWare 5.

Configuration and administration of the DNS database can be done using the client utility.

Refer to the *NetWare Print Services for UNIX* online documentation on the NetWare 5 Documentation CD for information about these configuration tasks.

Installing Z.E.N.works Starter Pack

Z.E.N.works™ is an integrated set of technologies that lets you deliver and manage applications, configure Windows* desktops, and remotely repair workstation software problems using a single management utility--NetWare® Administrator.

SCOPE OF THE STARTER PACK

The Z.E.N.works Starter Pack does not include all the features of Z.E.N.works. Features available only in the full Z.E.N.works product include an NDS™ enabled help desk request system, hardware inventory, software metering, and remote control. For more information about Z.E.N.works features, see http://nal.netpub.com.

PREREQUISITES

- ❑ NetWare 4.11 or later
- ❑ 70 MB of available memory and 205 MB available disk space on the NetWare server
- ❑ The Supervisor right to the NetWare server where you install Z.E.N.works
- ❑ The Supervisor right to the NDS container where you install Z.E.N.works
- ❑ Rights to modify the schema of the NDS tree where you are installing Z.E.N.works
- ❑ Z.E.N.works client software on each workstation participating in Z.E.N.works

PRODUCT DOCUMENTATION

To view comprehensive overview and procedural information once NetWare Administrator 32 and Z.E.N.works are installed, choose Z.E.N.works from the NetWare Administrator 32 Help Contents.

To view the help file from the CD without installing Z.E.N.works, browse to the products\zenworks\public\nls\<*language*> directory and double-click dmpolicy.hlp.

For guidelines on designing NDS for Z.E.N.works, see the Planning Z.E.N.works section of the help file.

To view Novell® Client™ documentation directly from the CD, double-click viewdoc.exe under \novdocs.

To view the Z.E.N.works home page on the Web, go to http://nal.netpub.com.

NDS OBJECTS UNIQUE TO Z.E.N.WORKS

The power of Z.E.N.works lies in its use of new NDS objects (Workstation, Workstation Group, and Policy Package objects), and existing NDS objects (User, Group, Organizations, Organizational Units, and Application objects).

Workstation objects are created when you register and import workstations in your NDS tree. They represent physical workstations, and allow you to manage the applications and desktop configurations of Windows workstations from your office.

The Workstation Group object allows you to manage a group of workstations as if they were one machine, just as the Group object allows you to manage a group of users as if they were one user.

You can use NetWare Administrator to create Policy Packages and associate them at the User, Group, Workstation, Workstation Group, or container level.

Within Policy Packages are policies that you can enable. For example, a Windows 95* User Policy Package contains policies that allow you to configure the desktop and set up login restrictions.

Once you enable one or more policies in a User Policy Package, all Users–and Users within Groups or containers–associated with the Policy Package will be affected by the policies in the package.

You can associate a Policy Package with a container and affect all Users in the container. You can then create a new Policy Package and associate it with a single User in the same container. Enabled policies associated at the User level override policies associated higher up the tree.

INSTALLING AND SETTING UP Z.E.N.WORKS

1. From a Windows 95 or NT* workstation, log in to the NDS tree as Admin (or as a Supervisor equivalent).
2. Insert the Z.E.N.works CD-ROM.
3. When the auto-start installation screen appears, follow the prompts, choose all defaults, and install Z.E.N.works.
4. When prompted, upgrade your clients with new Novell Client software. Access online help if you need assistance.
5. Set up Z.E.N.works administrative workstations by creating an icon on each workstation that points to NetWare Administrator 32 in sys\public\win32 on the NetWare server.

   When Z.E.N.works is installed, the NWAdmn32 Application object is created. You can distribute the Application object automatically using Application Launcher (formerly NAL). Upon delivery, all necessary registry changes are made automatically.

   To take advantage of all the features of Z.E.N.works, you should use NetWare Administrator 32. However, you can use older versions of NetWare Administrator by modifying the workstation's registry.

   To modify a workstation's registry, run zenfull.reg, located in the same directory (on the NetWare server) as the older version of NetWare Administrator.

PREPARING TO USE Z.E.N.WORKS

In order to use Z.E.N.works, you must

- Create a User Policy package and enable the Workstation Import policy
- Register workstations in your tree
- Import the registered workstations
- Reregister workstations in your tree to allow NDS to discover them

CREATE A USER POLICY PACKAGE AND ENABLE WORKSTATION IMPORT

1. Launch NetWare Administrator 32 and select the Organization or Organizational Unit where you want to store Z.E.N.works policy packages.
2. Right-click the Organization or Organizational Unit and select Create > Policy Packages > OK.
3. In the Create Policy Package dialog, select a User Package, give it a name, check Define Additional Properties, and then select Create.

   Note: If you want to import Windows 95 workstations into your NDS tree, select WIN95 User Package.
4. From the User Package Policies page, check the Workstation Import Policy check box and click Details.
5. From the Workstation Location page, choose the container where you want Workstation objects to be created.
6. From the Workstation Naming page, choose how you want the workstations named and select OK.
7. Select the Associations page, associate this package with containers of users whose workstations you want to import, and select OK.

   You can also associate the User Policy Package with Users or Groups.

   All Users–and Users within Groups or containers–associated with a User Policy Package will be affected by the enabled policies in the package.

REGISTER WORKSTATIONS

Because you have installed the latest clients, workstation registration is completed automatically by a scheduler on each workstation which runs the necessary registration file each time a user logs in.

The registration file creates a Workstation entry in the Workstation Registration page (in NetWare Administrator) of the user's container.

IMPORT THE REGISTERED WORKSTATIONS

1. Launch NetWare Administrator 32 and select the immediate container of User objects that you have associated with the policy package, then choose Details.
2. Choose the Workstation Registration page, choose the registered workstations that you want to import, and then click Import.

   Note: You will not see workstation registration entries in the list until users that have been associated with the User policy package have rebooted.

   Once the workstation is imported, a Workstation object is created in the context you specified in the Workstation Import policy of the User Policy package.

REREGISTER WORKSTATIONS

The Workstation Registration program must run again on the workstation to complete the registration process (to allow NDS to discover the workstation). The workstation does not become synchronized with NDS until this occurs.

If you are using the new Windows 95 or 3.1 clients, this should occur automatically when the user logs in again. If you are using the new Windows NT client, this could occur sooner.

FOR MORE INFORMATION

Once Z.E.N.works are installed, view comprehensive documentation in NetWare Administrator 32 Help Contents (choose Help > Help Topics > Z.E.N.works).

Enabling Storage Management Services

Storage Management Services™ (SMS) provides data backup and restore programs that can be run on the server or on a Windows* 95* or Windows NT* workstation. These services include a collection of components that are independent of operating systems and hardware.

PREREQUISITES

- ❑ NetWare® 5™ installed on the server
- ❑ A server running with the backup device drivers loaded
- ❑ A supported backup device installed

SYSTEM REQUIREMENTS

- ❑ A PC compatible with a 486, Pentium*, or higher processor and at least 32 MB RAM (48 MB is recommended)
- ❑ A supported NetWare 5 SCSI adapter and backup device

PROCEDURE

During NetWare 5 installation, your NLM™ programs were copied to the sys:system directory for you. To set up for SMS backup to a device on a *server*, do the following:

1. Load the necessary device drivers.
2. Load the backup engine drivers in the following order:
   - **2a.** smdr.nlm. This loads the requester and responder.
   - **2b.** tsa500.nlm. This loads the TSA.
   - **2c.** smsdi.nlm.
   - **2d.** qman.nlm. This prompts you for queue context information to create a queue. This applies only to the first time you load qman.
   - **2e.** sbsc.nlm.
   - **2f.** sbcon. This prompts you for context information and launches the backup program on the server.
3. Select Job Administration > Backup.
4. Follow the menus to back up your data.

PROCEDURE

To set up for SMS backup to a device on a server from a Windows 95 or Windows NT *workstation*, do the following:

1. Log in to the NDS™ tree that contains the server with the attached backup device.
2. Click Network Neighborhood > *servername*_sys: > Public.
3. Click nwback32.exe to start the Enhanced SBACKUP utility.
4. In the dialog box, log in to the server that contains the backup engine. (You have to do this only the first time.)
   - **4a.** Enter the server name to log in to.

4b. Enter the username.

4c. Enter the password.

5. Set up NDS information in the next dialog box. (You have to do this only the first time.)

5a. Enter the tree name.

5b. Enter the SMDR (submitter) context.

5c. Enter the SMDR group context.

5d. Check Use SAP for Name Resolution to select IPX™. Make sure the box is unchecked if you want to use TCP/IP.

6. Click Backup or other SMS options at the main menu in Quick Access or the menus.

7. Follow the screens and Help to perform your tasks.

Installing Novell Documentation

Novell® Online Documentation is provided to answer your technical questions. Online documentation can be either installed on a workstation or on the network, or viewed directly from CD-ROM.

PREREQUISITES

- ❑ If you will install the documentation on a network drive, make sure the workstation is connected to the network.

SYSTEM REQUIREMENTS

- ❑ A PC with a 386, 486, Pentium, or higher processor
- ❑ Windows* 95* or Windows NT*
- ❑ A CD-ROM drive that can read ISO 9660 formatted CD-ROM disks
- ❑ 16 MB RAM
- ❑ 150 MB available hard disk space (for all documentation components)

VIEW DOCUMENTATION FROM THE CD-ROM

1. Insert the NetWare® 5™ Documentation CD-ROM.
2. Select View Documentation.

INSTALL DOCUMENTATION ON A NETWORK OR LOCAL DRIVE

1. Insert the NetWare 5 Documentation CD-ROM.
2. Click Install Documentation and follow the prompts.

CONFIGURE A WORKSTATION TO VIEW DOCUMENTATION INSTALLED ON THE NETWORK

NetWare's HTML documentation can be viewed in any browser; however, search and print capabilities available for the documentation require that browser plug-ins be installed.

You can configure a workstation either by putting the CD-ROM into a workstation's CD-ROM drive and selecting Workstation Install in the window that appears, or you can run a setup program found on the server on which the documentation has been installed already.

During Workstation Install, you are asked to give the location of Novell's HTML documentation. Have this information ready before you begin; otherwise, you can browse for the location.

If you do not have the Product Documentation CD, go to the network server where the documentation is installed by default under \novdocs. Look for and run \install\kserver\setup.exe for each workstation from which the documentation will be viewed.