Server Connection Licensing

for NetWare
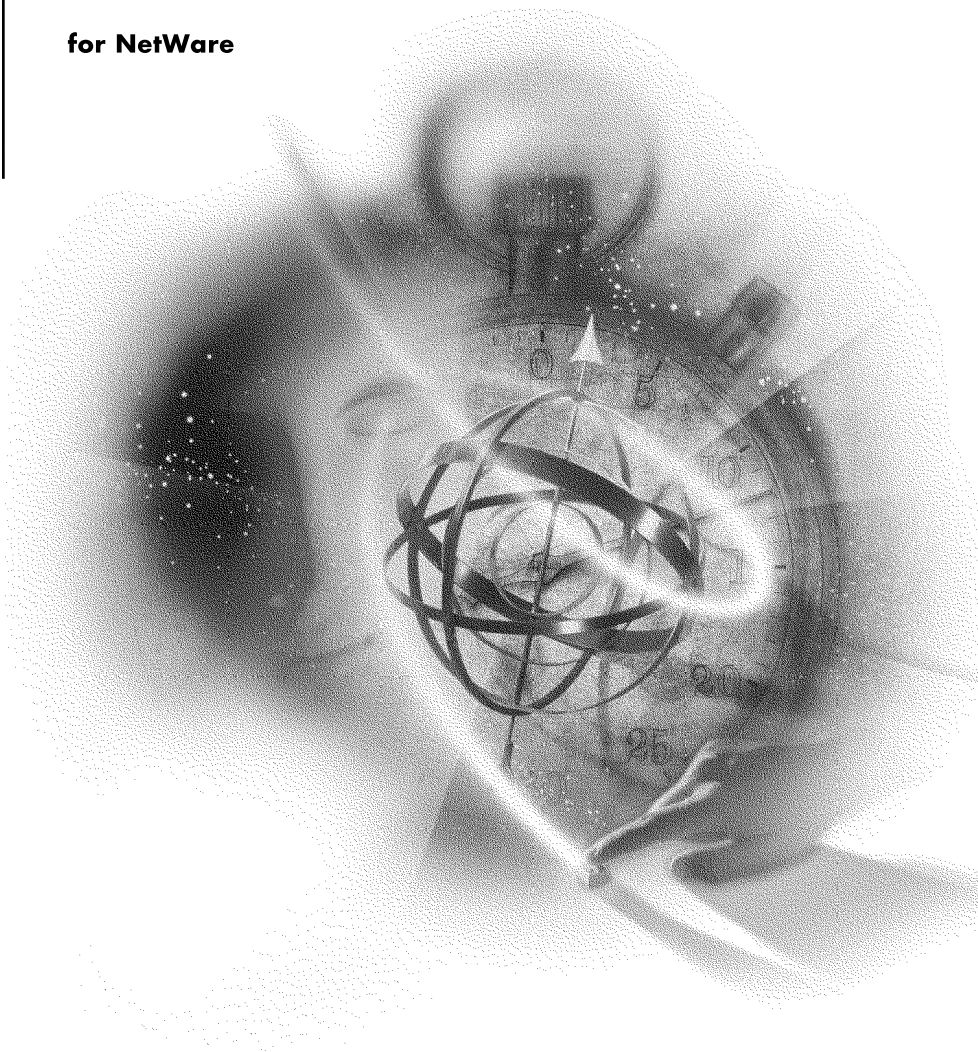
NetWare® 5.1

NETWORKING SOFTWARE

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Contents

Overview

This documentation assumes that you understand basics of NDS® and Novell® Licensing Services (NLS).

To review basics of NDS, see Directory Services in NetWare® 5.1 documentation at www.novell.com/documentation.

To review concepts about the licensing service and how NLS works, see Concepts: Novell Licensing Services in *NLS Administration*. Other chapters explain how to install NLS, how to use NetWare Administrator to manage license units, and how to troubleshoot the licensing service.

NetWare 5.1 uses the Server Connection Licensing (SCL) model to provide features and tools for monitoring and managing licensing on your network. With the reporting tools in NetWare Administrator, you can quickly access information about your NetWare license certificates:

- ◆ License units installed

- ◆ License units in use

- ◆ License units available

- ◆ Trending information about license units used

To review how NetWare 5.1 functions in the SCL model, see "How NetWare 5.1 Uses NLS" on page 9.

For information on licensing a NetWare 5.1 server, see "Installing License Certificates" on page 19.

For information on troubleshooting the license policy manager for NetWare 5, see "Troubleshooting Server Connection Licensing" on page 25.

1 How NetWare 5.1 Uses NLS

This chapter describes

- NetWare® 5.1 in the Server Connection Licensing (SCL) model
- Licensing kits and agreements
- How the licensing service differs from license certificates

NetWare 5.1 in the SCL Model

An understanding of the following concepts helps you manage license units on your NetWare 5.1 network.

- **NetWare 5.1 License Container Objects and License Certificates**

  NLS creates two License Container objects for NetWare 5.1: one for a server base license certificate and one for a connection license certificate. The *server base license certificate* is required to run the NetWare 5.1 operating system. Also, it allows the NetWare 5.1 operating system to provide authenticated connections for clients.

  A License Container object for a server base license displays as follows:

  Novell+NetWare 5 Server+510
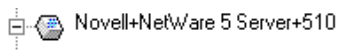
  Connection license certificates allow users to log in and use NetWare 5.1 services. A License Container object for a server connection license certificate displays as follows:

  Novell+NetWare 5 Conn SCL+510
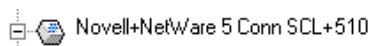
If licensing is not installed properly (for example, if you choose not to install NLS during NetWare 5.1 installation), you have two login connections (but not the 5, 50, or 1000 that you purchased). That is, you have a two-user server. These connections allow you to log in, troubleshoot, and install certificates.

Each license container has one or more license certificates (unless you move or delete them). The following figure shows:

 * A license container and certificate for a server connection license

 * A license container and certificate for a server base license
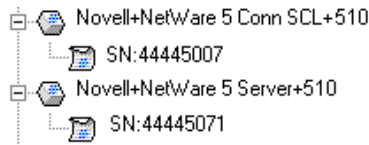
Using NetWare Administrator, you can view License Container and License Certificate objects as they appear in the NDS® tree.

 * **Searching for a license unit**

   The NLS client that requests the NetWare server and NetWare connection licenses is built into the NetWare server operating system. It is called the NetWare license Policy Manager. See Policy Manager in Key NLS Terms.

   When an NLS client requests a license unit, an LSP searches the server's context for an available license unit. If the LSP doesn't find an available unit there, it searches up the NDS tree for a license certificate that has an available license unit.

 * **Communicating with license certificates**

   NLS 5.02 can communicate with NLS 4.0 license certificates (installed with NetWare 5.0). However, NLS 4.0 cannot communicate with NLS 5.02 license certificates. (They might not have to.)

Scenario— Six months ago, network administrator Sandy installed NetWare 5.0 on server PUFFIN. The server base license and server connection license certificates were installed during server installation. NLS 4.0 on PUFFIN has communicated reliably with the NLS 4.0 license certificates.

Sandy, the network administrator, installs NetWare 5.1 on DYR, a new server. Sandy does not upgrade NLS 4.0 on PUFFIN to NLS 5.02. The server connection license certificate assigned to PUFFIN gets deleted. Using NetWare Administrator that ships with NetWare 5.1, Sandy reinstalls the server connection license certificate.

The connection certificate on PUFFIN is now an NLS 5.02 certificate. NLS 4.0 on PUFFIN can no longer communicate with the newly-installed NLS 5.02 certificate. Users are unable to log in to PUFFIN until Sandy upgrades PUFFIN to NLS 5.02.

Also, to access NLS-enabled software on a server running NLS 5.02, users must have

- An NDS Read/Write replica in their partition
- NLS 5.02 on a server in their partition

Scenario— Server TN-XENA12 is in partition EXEC, running NetWare 5.0 (NLS 4.0). Simi is already logged into and using TN-XENA12, but needs to access accounting software on server TN-XENA18.

Server TN-XENA18 is in partition OPS. Sandy has already upgraded the server to NetWare 5.1 (NLS 5.02). From NLS 4.0 software on TN-XENA12, Simi cannot access the license certificate for the accounting software.

Using Deployment Manager, Sandy upgrades TN-XENA12 to NLS 5.02. Simi can now access the accounting software.

Licensing Kits and Agreements

License certificates for NetWare 5.1 are available through regular distribution channels (from Novell® resellers) and agreements for large accounts. Although not documented here, special license certificates (demo, evaluation, First Look fulfillment, and education) are also available.

Kits for SCL Environments

Novell resellers provide you with off-the-shelf NetWare. You can customize orders by purchasing a NetWare 5.1 Server Plus 5 Connections kit and (optionally) NetWare 5.1 *x*-Connection Additive License kits.

These kits allow you to

- Install new NetWare 5.1 servers

- Upgrade from NetWare 3, NetWare 4, and NetWare 5.0 servers

- Add connection license certificates for existing NetWare 5.1 servers

Server Plus 5 Connections Kits

The NetWare 5.1 Server Plus 5 Connections kit is required to license your server and provide five connection licenses. The kit includes the following:

- CDs that have server and client software and documentation.

- A license diskette that has license certificates for the Server Plus 5 software. (One certificate has a server base license; the other has five connection license units.)

- An installation manual.

- A registration card.

  Upgrade kits contain an Activation Key form. To receive an activation key, you can either complete and fax this form or use the Web-delivery process.

The server base license certificate and connection license certificate in these kits require a server assignment. (Certificates for Master License Agreement accounts do not require a server assignment.) Typically, this server assignment is automatically made when you install or upgrade to NetWare 5.1.

If you check the Install without Licenses box during the server installation, you can later use NWCONFIG.NLM or NetWare Administrator to install the license certificates. When you use NWCONFIG.NLM, the certificates are installed in the server's context, and file server assignments are made automatically.

When you use NetWare Administrator, you need to

- Install the certificates in or above the server's context.

- Manually make a server assignment.

Additive License Kits

NetWare 5.1 *x*-Connection Additive License kits are optional. Because you can purchase combinations of connection license units that you need, these kits allow flexible configurations for your network. Options include 5-, 10-, 25-, 50-, 100-, 250-, and 500-license-unit certificates.

Additive License kits include the following:

- A diskette that has license units for the client connections.

- Either a registration card or an activation key card.

- Information on how to install the license certificates.

These connection license certificates require a server assignment. If you use NWCONFIG.NLM, the certificates are installed into the server's context and the file server assignments are made automatically. If you use NetWare Administrator, you need to set the server assignments manually.

Scenarios: Concurrent Connections and License Certificates

The SCL model uses concurrent connections. Users require a connection (and license unit) for each server that they are logged in to. If a user is concurrently logged into four servers, that user requires four license units: one for each server.

Scenario 1—Single Server. The VMP Company plans to place 140 employees on a new NetWare 5.1 network. The company purchases and installs the Server Plus 5 kit. The installation program assigns the license certificates to the server.

To provide 135 additional connection license units, the company purchases the following Additive License kits:

- One 100-license-unit kits
- One 25-license-unit kit
- One 10-license-unit kit

Using NWCONFIG.NLM, the network administrator installs the additional license certificates, and NWCONFIG.NLM automatically makes file server assignments.

Scenario 2—Multi-Server. The OptionsPlus Company, with 530 employees, plans to upgrade four NetWare 3 servers and provide license units for 1,125 connections. The company purchases and installs four Server Plus 5 kits. The installation program assigns license certificates to the servers they are installed on. Because the connections cannot be shared across servers, the OptionsPlus Company also purchases the following Additive License kits:

- One 500-license-unit kit and one 25-license-unit kit for server ROS (the mail server, so that all 530 employees can connect to it)
- One 250-license-unit kit and one 100-license-unit kit for server GRANITE (to allow 355 connections for Development and Production)
- One 100-license-unit kit, one 50-license-unit kit, and one 10-license-unit kit for server KNOX1 (to allow 165 connections for employees in Commerce)
- One 50-license-unit kit and two 10-license-unit kits for server IST (to allow 75 connections to the database server)

Using NWCONFIG.NLM, the network administrator installs the additional license certificates. (The network administrator could optionally use NetWare Administrator to install the certificates and then manually assign each certificate to a server.)

Scenario 3. The Puffin Company has already installed NetWare 5.1 on five servers. Because the company is hiring an additional 50 employees, and because each new employee must access each of the five servers, the company purchases five additional 50-license-unit kits.

Using NWCONFIG.NLM, the network administrator installs a 50-license-unit kit for each of the five servers, placing each certificate in or above the context where the server is located. With the additional license units available to each server, the 50 new employees are able to log in to each of the five servers. (The network administrator could optionally use NetWare Administrator to install the certificates and then manually assign each certificate to a server.)

License Certificates for Accounts with Agreements

Novell provides various license agreements, depending upon the size of the account: Master License Agreement (MLA), Corporate License Agreement (CLA), and Volume License Agreement (VLA).

- ◆ MLAs are for large, global organizations. An MLA license certificate is a Server Plus Unlimited Connections certificate. You can install the license certificate for as many connections as terms and conditions in the license agreement allow. See "Installing SCL License Certificates for MLA Accounts" on page 22.

  For more information about MLAs, see Novell Customer Connections (http://www.novell.com/programs/ncc/mla.html).

- ◆ CLAs are for medium-to-large-size organizations. See the Web page for CLA accounts (http://www.novell.com/programs/ncc/cla.html).

- ◆ VLAs are for small-to-medium-size organizations. See the Web page for VLA accounts (http://www.novell.com/programs/ncc/vla.html).

Clarifying Terms: Service and Certificates

When you bought NetWare 5.1, you purchased a *licensing service* and *license certificates*. NLS is the licensing service. The license certificates are NLS-enabled NetWare products.

The licensing service and the license certificates came in the Server Plus 5 Connection Licenses Kit.

Think of the *Server* part of that purchase as the following:

- The server's operating system (SERVER.EXE)
- All of the software technology for the server
- A licensing service
- A policy manager for your license units
- A server base license certificate

If you install just that much, you have a functional, licensed server. But you don't have any connection license units (except the two emergency grace connections).

Typically, the server base license certificate is installed during the server-installation process.

Think of the *Plus 5 Connection Licenses* as a license certificate containing five license units for workstations that log on to a server. After you install the license certificate, five users can connect or log on to the server. (Or one user can log in from five different workstations.) If you don't install these license units, the five users can't access network services.

Typically, the connection license certificate is installed during the server-installation process.

The server base license certificate and server connection license certificate are contained in the .NLF file on the license diskette in the Server Plus 5 Connections kit.

License certificates in Additive License kits can be installed

- During the server-installation process.

  New functionality enables you to install multiple .NLF or .NLS files. The files might be on one diskette or on two or more diskettes.

- After you order and receive additional license certificates.

  As your network grows, you add license certificates so that your company meets terms and conditions of its license agreement. You can use NetWare Administrator or NWCONFIG.NLM to install these license certificates.

2 Installing License Certificates

When you install a NetWare® 5.1 server or upgrade from NetWare 3, NetWare 4, or NetWare 5, the server-installation program automatically installs Novell® Licensing Services (NLS) on that server.

By default, the installation program also installs license certificates for a Server Connection Licensing (SCL) environment. However, you may have elected not to install the certificates.

You can install the certificates later using NetWare Administrator or NWCONFIG.NLM.

This section provides information about

- Guidelines for placing license certificates
- Installing SCL license certificates
- Installing SCL license certificates for an MLA account

Guidelines for Placing License Certificates

The following guidelines for placing license certificates apply to the Server Connection Licensing (SCL) model.

- ◆ Policies require that certificates be close to the requesting entity. Place server base license certificates and server connection license certificates in or above the same NDS® context as the server that you are licensing. It is assumed that the server is running NLSLSP.NLM.

- ◆ Smaller companies can place license certificates at the topmost Organizational Unit. Companies with more complex NDS trees can place license certificates at the Organizational Units beneath [Root].

- ◆ If you have a remote site and a WAN link, place a license certificate in the remote site's context.

  Scenario: Main and Remote Sites. The KwinTel Company has 4,600 users: 3,600 at the main site and 1,000 at a remote site. In the NDS tree, the organization is KwinTel and the remote site is an Organizational Unit named Venture.

KwinTel Company		Venture
A license certificate that has 3,600 licenses (units)	WANlink	A license certificate that has 1,000 licenses (units)
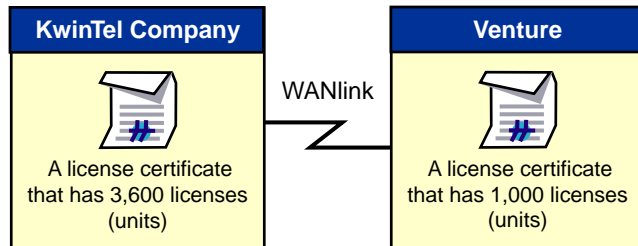
Instead of purchasing one certificate for 4,600 users, the company purchases two certificates:

- ◆ A 3,600-license unit certificate for the main site, installed in the KwinTel context

- ◆ A 1,000-license unit certificate for the remote site, installed in the Venture context

With these two certificates, the licensing service does not have to go across a remote link to get a license unit from a certificate.

Installing SCL License Certificates

If you check the Install without Licenses check box during an installation or upgrade to NetWare 5.1, you can later use NWCONFIG.NLM or NetWare Administrator to install the license certificates.

NOTE: If you check the Install without Licenses check box, the server-installation program won't install *license certificates* for NetWare 5.1. However, *licensing services* (NLS 5.02) will be installed and you will have two grace connections.

NWCONFIG.NLM automatically assigns license certificates to an LSP server. With NetWare Administrator, you manually assign the certificates.

1 At the server console, enter **NWCONFIG**.

2 Select License Options > Install Licenses.

3 Select or enter the path to the .NLF file that has the license certificate.

For example, select A:\LICENSE.

4 Log in.

Enter the complete name (for example, admin.ist.vmp) and password of the administrator.

5 At the Installable Licenses screen, select and install an envelope file.

An envelope file contains one or more license certificates. A sample envelope file is 426371D3.NLF.

After the file is installed, an asterisk appears in front of the filename.

6 Exit NWCONFIG.NLM.

You can now view the installed license certificates by using NetWare Administrator. The certificates typically resemble those in the following figure.
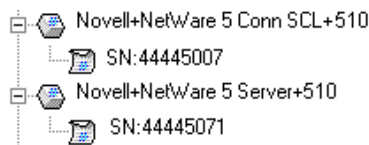
If the server console displays "Unable to get a Server Base license," use NetWare Administrator to delete and reinstall the license certificate. Manually assign a file server to the certificate.

Installing SCL License Certificates for MLA Accounts

License certificates for MLA accounts in SCL environments do not come with a server limit or connection limit. You can install (and reinstall) a license certificate for as many connections as the terms and conditions of the company's license agreement allows.

When the first NetWare 5.1 server is installed into an NDS tree, two license objects (the server base license and connection license) are created in the same container as the NetWare 5.1 server. If the certificates are "unlimited," they can be installed multiple times in a tree, but they cannot be installed more than once in any context.

Where to Install License Certificates

By default, the License Service Provider (LSP) searches to the [Root] of the NDS tree for license units. Although you could install the server base license certificate and server connection license certificate at the [Root] of the tree, doing so will not provide the best performance.

For best performance, install the license certificates once in each context that contains a NetWare 5.1 server. These multiple installations speed authentication. (When the first license unit is requested, the LSP has to scan the tree to find the certificate. After finding the license certificate, the server stores that certificate in memory.)

Not every server in an NDS context requires a server base license or connection license. In fact, you cannot install an MLA license certificate more than once in the same context. Although multiple occurrences of the same serial number can reside in the same NDS tree, the license certificates cannot be installed more than once in an Organization or Organizational Unit context.

NOTE: The license certificate has one common serial number. Attempting to reinstall the certificate into the NDS context generates a system message stating that the license certificate already exists.

Installing without Licenses

Only the first NetWare 5.1 server in an NDS context can be assigned a license certificate. When installing NLS on other servers in that context, check the Install without Licenses check box.

This means that some MLA servers might have an NLS_LSP_*servername* object without any associated License Container and License Certificate objects.

No Server Assignment

You *should not* assign a server to the license certificates. If you make a server assignment, other servers will not be able to use the license certificate.

3 Troubleshooting Server Connection Licensing

This section contains tips, answers to frequently asked questions, and a list of Technical Information Documents (TIDs).

Tips

No access to license units

Some NLS clients might not have access to licensing services if LSP objects are not well-placed in the NDS® tree.

For the Server Connection Licensing model, consider the following guidelines:

- Place license certificates so that NLS servers do not have to traverse slow WAN links to access license units.

- Install at least one LSP object in a container near the [Root] of the tree. Also, consider installing NLS software on servers that many or most users log in to in the NDS tree. These two actions distribute requests for license units.

- Identify license certificates that many users throughout the NDS tree will use. Place these license certificates in a context near the [Root] of the NDS tree.

The server beeps frequently

Problem: The server base license may not be consuming a license unit.

Possible cause: No license certificate is installed.

Action: Install a license certificate by running NWCONFIG.NLM. Select License Options > Install Licenses.

Possible cause: The server base license certificate is not assigned to a server.

Action: Using NetWare® Administrator, assign a server.

Questions and Answers

Question: Why do I get Policy Manager errors when I move a Server object in the NDS tree?

Answer: You might also have to move the license certificates to the server's new context. Also move the LSP object associated with the server.

Question: Why do I get Policy Manager errors when I use NWCONFIG.NLM to uninstall and then reinstall NDS?

Answer: If you uninstall NDS from a server and then reinstall NDS on that server, you must run NWCONFIG and select License Options > Set Up Licensing Service. You might also need to reinstall or move the license certificates.

Question: Why do I get Policy Manager errors when I rename a server that is using a Server Plus 5 license certificate?

Answer: You need to change the file server assignment on the license certificate so that it matches the new name of the server.

Question: Why do I get error code C0001002?

See Error Code C0001002 Displays.

Question: Why do I get error code C0001005?

See Error Code C0001005.

TIDs

The following Technical Information Documents (TIDs) might help you resolve some issues relating to NLS on your network. The TIDs are available at www.support.novell.com. Click Knowledgebase and enter the TID number.

TID	Description
2943750	Understanding NetWare 5 licensing
2945708	What to do when the Licensing Service is not available; prerequisites for licensing to install properly
2943405	What to do when the server is unable to obtain a valid server base license
2944797	Installing MLA certificates
2947496	What to do when the installation fails to assign a license certificate to a server
2925689	Renaming a server
2943157	Moving a server to a different NDS context
2949028	What to do when you can't install a license certificate because Admin doesn't have proper privileges
2947263	What to do when the system displays "NW5 GUI Install Error 0x0001003"
2907966	Adding license certificates when you have a two-user version of NetWare
2949634	Responding to a C0001002 message

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