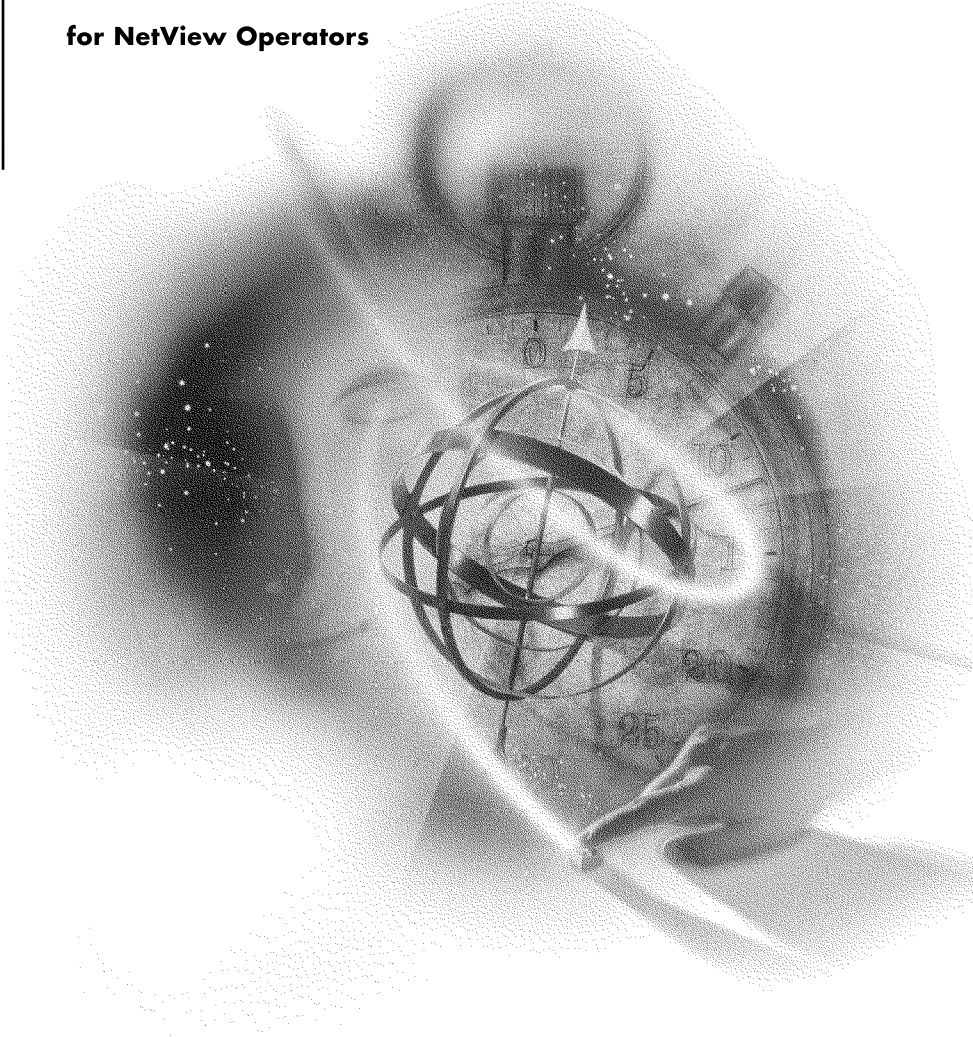


NetWare Reference Guide

for NetView Operators



Novell®

NetWare® 3.12
NETWORKING SOFTWARE

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About This Guide

This guide describes

- ◆ The NetWare[®] products that support NetView* network management
- ◆ The alert messages NetWare products send to NetView
- ◆ The commands NetWare accepts from NetView
- ◆ How to install NetWare code point messages for NetView

Who Should Read This Guide

This guide is written for the NetView operator. Read this guide if you want to

- ◆ Learn about NetWare products that support NetView network management
- ◆ Learn more about the alert messages NetWare sends to NetView
- ◆ Send commands to a NetWare server
- ◆ Install NetView code points

Content Overview

Chapter 1, “About NetWare Support for NetView,” on page 13: Describes the NetWare products that support NetView, introduces the new features in version 1.3 of these products, and describes the complete set of NetView support features provided by all versions of these products.

Chapter 2, “Alert Message Descriptions,” on page 27: Lists the alert messages that NetWare servers can send to NetView. Each message appears with a

description of the alert's cause, a suggested action to take, and the corresponding NetWare message that appears at the NetWare server console.

[Chapter 3, “Sending NetWare Commands,” on page 63](#): Describes how to send commands to NetWare servers. This chapter lists commands alphabetically by command action and by server component and provides a description of each command.

[Appendix A, “Installing NetWare Code Point Messages for NetView,” on page 99](#): Provides the procedure for installing NetWare code points for NetView. This procedure may not be required for your installation.

Conventions

This guide uses a variety of typographical conventions.

Typographic Conventions

This book uses the following typographic conventions. The bold monospace convention used in Chapter 2, as explained below, however, varies from that used in the rest of the book.

Bold monospace

When in bold, **monospace** font indicates commands that you enter at a prompt or select from a menu. For example:

RUNCMD

The letters and symbols that appear in the bold monospace typeface must be entered exactly as shown.

In Chapter 2, bold monospace type is used to show text that appears in the NetView Recommended Action for Selected Event panel.

Monospace

When not in bold, monospace type indicates messages that the system displays. For example:

Enter filename

Italics

Words appearing in italics represent variables that you must replace with the appropriate values. For example:

OP=userid

In the example above, you would type **OP=** and replace the variable *userid* with a valid NetWare user ID.

[]

Square brackets enclose optional values. Do not enter the brackets. When an option appears in **bold monospace**, enter the option as described in the command description. For example:

Rights= [ACEFMRSW]

In this example, you can enter any or all of the letters that appear between the brackets. Do not enter the brackets.

Additional Reading

The publications described in this section provide additional information on NetWare products that you can manage with NetView.

- ◆ The *NetWare for SAA v1.3 Administration Guide* (100-001166-002) describes the NetView support features in NetWare for SAA v1.3.
- ◆ The *NetWare for SAA v1.2 Administration Guide* (100-001166-001) describes the NetView support features in NetWare for SAA v1.2.
- ◆ The *NetWare Management Agent for NetView Administration Guide* (100-001479-002) describes the NetView support features in NMA for NetView v1.3.
- ◆ An ASCII version of the *NetWare Management Agent for NetView Administration Guide* is provided with a patch version of NMA for NetView v1.3 that supports NetWare v3.11. This version is distributed on the NetWare Express online software subscription service.
- ◆ The first edition of this manual is supplied with NetWare v3.11 and describes NMA for NetView v1.0.
- ◆ *NetWare Version 3.11 Concepts*
NetWare Version 3.11 Installation
NetWare Version 3.11 System Administration
NetWare Version 3.11 Utilities Reference

Bundled with NetWare v3.11 and v3.12, these books provide information on managing a NetWare local area network (LAN) and on NetWare LAN concepts.

- ◆ *NetWare v3.12 Concepts*

NetWare v3.12 Installation

NetWare v3.12 System Administration

NetWare v3.12 Utilities Reference

Bundled with NetWare v3.12, these books provide information on managing a NetWare local area network (LAN) and on NetWare LAN concepts.

- ◆ *NetWare 4.0 Utilities Reference*

NetWare 4.0 Concepts

Bundled with NetWare v4.0, these books provide information on managing a NetWare LAN and on NetWare LAN concepts.

1

About NetWare Support for NetView

This chapter introduces

- ◆ The NetWare® products that support NetView* network management
- ◆ The new features in version 1.3 for NetWare support of NetView
- ◆ The complete set of features for NetWare support of NetView

NetWare Products That Support NetView

The following NetWare products support NetView network management:

- ◆ NetWare for SAA* communication service
- ◆ NetWare Management Agent™ (NMA) for NetView

NetWare for SAA must run in a NetWare server (v3.1x or v4.0). NMA for NetView runs on a NetWare v3.1x server. The following subsections describe NetWare servers, NetWare for SAA, and NMA for NetView.

NOTE: *NetWare v3.1x* is any version of NetWare later than v3.1 and earlier than v4.0 (for example, NetWare v3.11 or NetWare v3.12).

NMA for NetView and NetWare for SAA servers are designed to support the NetView network management program from IBM*. These NetWare products support any other network management program that is 100 percent compatible with NetView. The NET/MASTER network management program from Systems Center is an example of a program that is designed to be compatible with NetView.

NetWare Servers

NetWare servers are software products that provide local area network (LAN) communications for personal computers. NetWare v3.11 was the first version that participated in NetView network management. NetWare v4.0 also

participates in NetView network management. Throughout this guide, the term *NetWare server* refers to a server running NetWare v3.11 or later.

NetWare servers do not independently support NetView. To support NetView, the NetWare server must be operating with either NetWare for SAA or NMA for NetView.

Each NetWare server package provides software for

- ◆ One NetWare server
- ◆ Multiple NetWare workstations

The server provides the following services to workstations:

- ◆ File services. Workstation users can use disk space on the server as if the space were a hard disk mounted on the workstation. Because many users can use the same disk space, the file services feature allows workstation users to share files. Security features on the server allow the NetWare administrator to control how users access the server disk space.
- ◆ Print services. Workstation users can send print jobs to a printer attached to the server. The server receives all print jobs, places the jobs in a queue, and prints the jobs in order.
- ◆ Additional services. The NetWare server software is an operating system that supports LAN communications for additional network services such as NetWare for SAA and NMA for NetView.

The NetWare v3.12 package includes NMA for NetView v1.3, which is described later in this chapter.

NetWare for SAA

NetWare for SAA is a software product that runs as an additional service in a NetWare server.

IMPORTANT: NetWare for SAA v1.3 or later is required in servers that run NetWare v4.0. NetWare v4.0 is not compatible with earlier versions of NetWare for SAA.

NetWare for SAA provides

- ◆ Communications between workstations and other computers using IBM's Systems Application Architecture (SAA) software
- ◆ NetView support services, which are described later in this chapter

Novell's implementation of SAA allows NetWare workstations to communicate with 3270 host computers and AS/400* host computers. NetWare for SAA also supports LU6.2 communications between NetWare workstations and other computers.

Throughout this guide, the term *NetWare for SAA server* refers to a NetWare server that is running both NetWare server software and NetWare for SAA.

NMA for NetView

NMA for NetView is a software product that runs as an additional service in a NetWare server. NMA for NetView provides NetView support services, which are described later in this chapter.

Throughout this guide, the term *NMA for NetView server* refers to a NetWare server that is running both NetWare server software and NMA for NetView.

IMPORTANT: NMA for NetView v1.0 is bundled with NetWare v3.11; NMA for NetView v1.2 is distributed via the NetWare ExpressSM online software subscription service. NMA for NetView v1.3 is bundled with NetWare v3.12. A patch release of NMA for NetView v1.3 that runs with NetWare v3.11 is distributed via NetWare Express.

What Is New in Version 1.3?

NetWare for SAA v1.3 and NMA for NetView v1.3 provide the following new NetView support features:

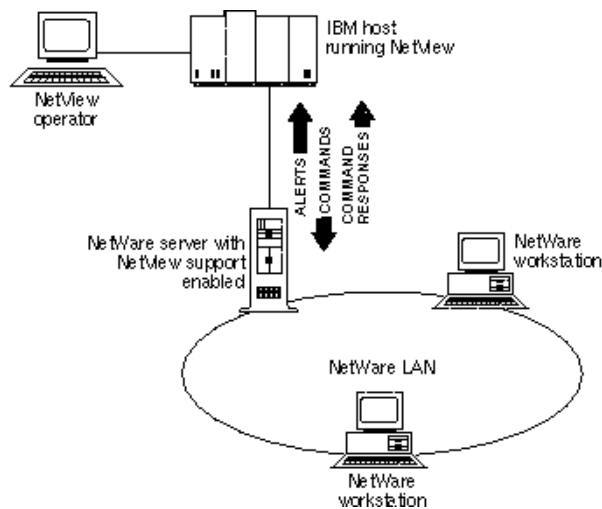
- ◆ Support for NetWare v4.0 (NetWare for SAA only).
- ◆ Additional alerts for the NetWare operating system and its component services. Also, some alert messages are changed.
- ◆ Additional commands for requesting server status and controlling some server features.
- ◆ A command filtering feature for disabling NetView access to one or more server commands.
- ◆ Support for NetWare for SAA v1.2 end point servers (NetWare for SAA only).
- ◆ Alert and command forwarding for applications that use the NetWare Open NetView interface.

These features are described with the complete set of NetView support features in the next section.

NetView Support Features

The NetView support features in NetWare for SAA and NMA for NetView allow you, the NetView operator, to manage NetWare servers from your NetView console. **Figure 1** shows how a NetWare server participates in NetView network management.

Figure 1 NetView Support in a NetWare Server



The NetWare server in **Figure 1** can be a NetWare for SAA server or an NMA for NetView server. The options for connecting a NetWare server to NetView are described in “**Host Connectivity Options**” on page 21.

NetWare for SAA and NMA for NetView provide the following features for NetView support:

- ◆ Alert generation
- ◆ Command processing
- ◆ Host connectivity options
- ◆ Feature control
- ◆ Support for the Open NetView interface

Alert Generation

Alerts are messages that are sent from NetWare servers to NetView. NetWare alerts appear in the following NetView Network Problem Determination Application (NPDA) panels:

- ◆ Alerts-Dynamic
- ◆ Alerts-Static
- ◆ Alerts-History

NetWare for SAA and NMA for NetView translate selected NetWare error and status messages into alerts for the following server processes:

- ◆ The TOKEN.LAN driver supplied with NetWare servers
- ◆ Logical link control (LLC) protocol components of token ring drivers
- ◆ LLC protocol components of Synchronous Data Link Control (SDLC) drivers and Qualified Logical Link Control (QLLC) drivers (NetWare for SAA servers only)
- ◆ The NetWare operating system and file services

IMPORTANT: NetWare alerts describe the operation of the NetWare server. The NetView support feature does not monitor, report, or control the status of NetWare LAN workstations. However, the server may forward alerts and commands for other applications that perform these functions (see [“Support for the Open NetView Interface” on page 25](#)).

The NetWare alerts are listed in [Chapter 2, “Alert Message Descriptions,” on page 27](#). Each message description in Chapter 2 includes the alert, an explanation of the alert's cause, a suggested action, and the corresponding NetWare message that appears on the server console.

Command Processing

Commands are messages that you send from NetView to a NetWare server via the NetView Network Communications Control Facility (NCCF). NetWare for SAA and NMA for NetView translate each NetView command into a NetWare command. After translation, the NetWare command is forwarded to the server component that normally executes the command.

IMPORTANT: The command processing feature is provided in NetWare for SAA v1.2 and later and in NMA for NetView v1.2 and later. Earlier versions of these products cannot process commands.

Command response messages contain information about the server or about the result of a server command. After a server processes a command from NetView, NetWare for SAA or NMA for NetView builds a command response, embeds it in a NetView message, and sends it to NetView.

NetWare servers process two types of commands:

- ◆ Server query commands
- ◆ Server control commands

This section describes the actions these commands produce. For detailed information on sending commands, see [Chapter 3, “Sending NetWare Commands,”](#) on page 63.

IMPORTANT: All the commands described in the following sections may be executed with NetWare for SAA v1.3 when the destination server is running NetWare v4.0. If the destination server is running NetWare for SAA v1.2, NMA for NetView v1.2, NMA for NetView v1.3, or NetWare v3.1x, some commands are not supported. The command tables and command descriptions in [Chapter 3, “Sending NetWare Commands,”](#) on page 63 identify which commands can be used with which servers.

Server Query Commands

Server query commands request command responses that contain information about server resources. These commands allow you to query for

- ◆ Server information such as the server date, server time, number of volumes on a server, the server's login status, and the server's internetwork address
- ◆ Volume information such as the volume number and configuration, the space allowed for a user, and the space used by a user
- ◆ Directory information such as the space allowed for a directory and a user's rights to the directory
- ◆ File information
- ◆ A user's usage of a volume and the remaining space allowed to the user
- ◆ The version number of a communication service, the Sequenced Packet Exchange™ (SPX™) protocol, or the Internetwork Packet Exchange™ (IPX™) protocol
- ◆ Some server configuration parameters
- ◆ The configuration of the SPX protocol
- ◆ The status of the Transaction Tracking System™ (TTS™)

Server Control Commands

Server control commands allow you to

- ◆ Enable or disable server login, shut down a server, and broadcast a message to server users
- ◆ Set the server date, server time, and a variety of server control parameters
- ◆ Set the volume space allowed to a user and add or remove a trustee from a volume
- ◆ Set the space allowed to a directory; add or remove a directory trustee; and set the owner, creation date, and creation time for a directory
- ◆ Add and remove file trustees and set the file owner, the creation date and time, the update date and time, the access date, and the archive date and time
- ◆ Enable or disable the TTS
- ◆ Load and unload a NetWare Loadable Module™ (NLM™) product
- ◆ Load or unload a communication service

Command Security

Both NetWare for SAA and NMA for NetView provide a command security feature. The command security feature checks each command you send for a valid NetWare user ID. If the command contains a valid user ID, the server executes the command. If the user ID is missing or invalid, the command is ignored.

IMPORTANT: The command security feature is provided in NetWare for SAA v1.2 and later and in NMA for NetView v1.2 and later. Earlier versions of these products cannot process commands.

NetWare for SAA allows the server administrator to enable or disable command security. When the command security feature is disabled, NetWare for SAA ignores the user ID and processes all commands.

The command security feature in NMA for NetView is always enabled.

Table 1 shows the NetWare user ID status required for command processing when the command security feature is enabled.

Table 1 NetWare User ID Status for Command Processing

Server Command Type	NetWare User ID Status Required for Processing
Query	File server console operator or supervisor
Control	Supervisor

NOTE: When the command security feature is enabled, a command must include a user ID (other than SUPERVISOR) with either supervisor-equivalent privileges or file server console operator status. Although the SUPERVISOR user ID has supervisor-equivalent privileges, the server rejects commands that include the SUPERVISOR user ID.

Command Filtering

The command-filtering feature allows the NetWare administrator to disable processing of select commands that you send to NetWare. The NetWare administrator can disable any number of commands by listing them in a file that the NetWare server reads when loading.

IMPORTANT: The command-filtering feature is new in NetWare for SAA v1.3 and NMA for NetView v1.3. Earlier versions of these products do not support command filtering.

When you send a command with attribute parameters that have been disabled by command filtering, NetWare for SAA responds as follows:

- ◆ If the command includes a single attribute parameter that has been disabled, NetWare for SAA returns the following message:

```
Cannot execute this NetView Runcmd
```
- ◆ If the command includes some attribute parameters that are enabled and some that are disabled, NetWare for SAA processes all enabled parameters and ignores all disabled parameters.

NOTE: The command-filtering feature is controlled by the NetWare administrator. Instructions for controlling this feature appear in the *NetWare for SAA v1.3 Administration Guide* and the *NetWare Management Agent for NetView Administration Guide* (for NMA for NetView v1.3).

Host Connectivity Options

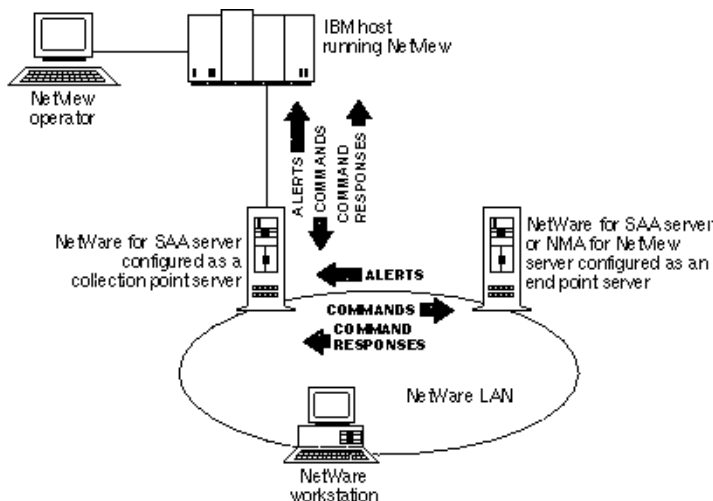
To connect to the NetView host, NetWare servers use one of the following options:

- ◆ Collection point
- ◆ End point
- ◆ Standalone

Collection Point Servers

Figure 2 shows a NetWare server that is configured as a collection point server.

Figure 2 Collection Point and End Point Servers



NetWare for SAA servers—version 1.2 or later—are the only servers that can be configured as collection point servers. A collection point server connects to the host via one of the following types of connections:

- ◆ Token ring
- ◆ SDLC
- ◆ Ethernet
- ◆ QLLC
- ◆ Custom data link

The collection point server does not depend on any intermediate servers for the NetView connection. The collection point server may, however, forward alerts and commands for end point servers.

End Point Servers

Figure 2 on page 21 shows a NetWare server that is configured as an end point server.

End point servers communicate with NetView via a collection point server. NetWare for SAA and NMA for NetView servers—version 1.2 and later—may be configured as end point servers. The connection between the end point server and the collection point server is the NetWare LAN.

When an end point server is ready to send an alert, it sends the alert over the NetWare LAN to the collection point server. The collection point server forwards the alert to NetView.

When you send a command from the NetView console to an end point server, NetView passes the command to the collection point server, which forwards the command over the NetWare LAN to the end point server. Command response messages from the end point server follow the same communications path as alert messages.

IMPORTANT: Version 1.3 end point servers cannot communicate with version 1.2 collection point servers.

End point servers can reduce the cost of NetView management in NetWare LANs with multiple servers. Because end point servers can use the existing NetWare LAN connection to communicate with NetView (via a collection point server), end point servers do not require additional hardware for a direct host connection.

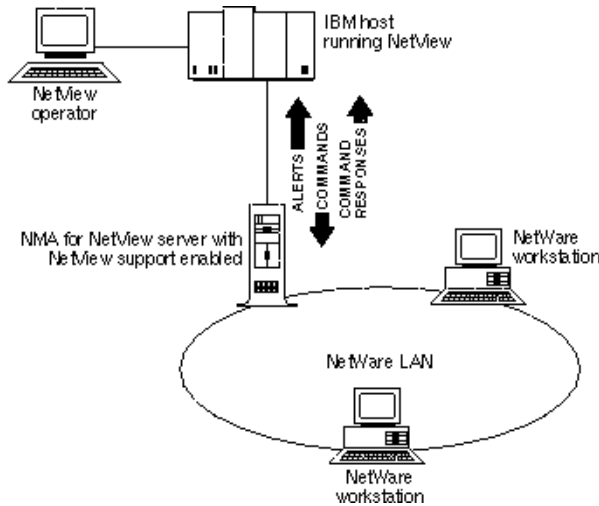
End point servers also can reduce the number of host connections required by NetWare servers. Each collection point server requires the allocation of a host physical unit (PU) Type 2.0 through which it communicates with NetView. End point servers communicate with NetView over the PU used by the collection point server. Therefore, end point servers do not require the allocation of additional host PUs.

NOTE: Messages that travel between NetWare and NetView flow over a session between the PU Type 2.0 and the system services control point (SSCP) host component. If a server is not configured to use a PU Type 2.0 session, configure the server as an end point server.

Standalone Servers

Figure 3 shows a NetWare server that is configured as a standalone server.

Figure 3 NetView Support in a Standalone NetWare Server



All versions of NMA for NetView may be configured as standalone servers. The connection between the standalone server and NetView must be a token ring LAN.

IMPORTANT: Standalone servers cannot communicate with collection point servers.

Configure your NMA for NetView server as a standalone server only when your LAN does not have a collection point server. If your LAN has a collection point server, you should configure the NMA for NetView server as an end point server.

Feature Control

The NetWare support features for NetView are controlled on a server-by-server basis. The NetWare administrator determines which features are enabled in each server. The rest of this section describes the features that may be enabled or disabled in NetWare for SAA and NMA for NetView servers.

NetWare for SAA

Beginning with NetWare for SAA v1.2, the NetWare administrator can control the NetView support features as follows:

- ◆ Enable or disable all NetView support features
- ◆ Enable or disable the sending of alerts to NetView
- ◆ Enable or disable NetView command processing
- ◆ Enable or disable the command security option
- ◆ Configure NetWare for SAA for collection point or end point communications
- ◆ Use command filtering to enable or disable processing of select commands (only in NetWare for SAA v1.3 and later)

The NetWare administrator uses a configuration utility program (CSCON) and a command-filter file to control these features.

IMPORTANT: Except for enabling or disabling of all NetView support, all the feature controls listed above apply only to the server that is being configured; these controls do not regulate communications with end point servers. For example, disabling command processing in a collection point server does not prevent command forwarding to end point servers.

NMA for NetView

In each NMA for NetView server, the NetWare administrator can control the NetView support features as follows:

- ◆ Configure NMA for NetView for standalone or end point communications (only in NMA for NetView v1.2 and above)
- ◆ Use command filtering to enable or disable processing of select commands (only in NMA for NetView v1.3 and above)

The NetWare administrator uses a utility program to select the communications option for the NMA for NetView server.

To enable all NetView support, the NetWare administrator must install NMA for NetView and start the program. When NMA for NetView starts, the following features are automatically enabled:

- ◆ Alert generation
- ◆ Command processing
- ◆ The command security option

Support for the Open NetView Interface

NetWare for SAA v1.3 and NMA for NetView v1.3 can provide a connection between NetView and other applications that conform to the NetWare Open NetView interface. When an application uses the Open NetView interface, a NetWare for SAA or NMA for NetView server can

- ◆ Receive alerts from the application and forward them to NetView
- ◆ Receive commands from NetView and forward them to the application

For more information on the NetView support provided by an application, refer to the documentation provided with the application.

Summary of NetWare Software Support for NetView

Table 2 summarizes the versions of NetWare software that provide support for NetView functions.

Table 2 Summary of NetWare Support Software for NetView

NetWare Support Software for NetView	Supported Version(s) of NetWare	Supported Features	Supported Configurations and Connections
NetWare for SAA v1.0	NetWare v3.11	Alert generation	Standalone—token ring connection to host
NetWare for SAA v1.2	NetWare v3.11	Alert generation Server query commands Server control commands Command security	Collection point— token ring, SDLC, Ethernet, QLLC, & custom data link connections to host End Point—token Ring connection to collection point Standalone—token ring connection to host

NetWare Support Software for NetView	Supported Version(s) of NetWare	Supported Features	Supported Configurations and Connections
NetWare for SAA v1.3	NetWare v3.1x (Patch procedure required before installing on a NetWare v3.11 server) NetWare v4.0	Alert generation Server query commands Server control commands Command security Command filtering Feature control Open NetView interface support	Collection point— token ring, SDLC, Ethernet, QLLC, & custom data link connections to host End point—token ring connection to collection point Standalone—token ring connection to host
NMA for NetView v1.0 (Supplied with NetWare v3.11)	NetWare v3.11	Alert generation	Standalone—token ring LAN connection to host
NMA for NetView v1.2 (Distributed via NetWare Express)	NetWare v3.11	Alert generation Server query commands Server control commands Command security	End Point—token ring connection to collection point Standalone—token ring LAN connection to host
NMA for NetView v1.3 (Supplied with NetWare v3.12. Patch release distributed via NetWare Express)	NetWare v3.1x (NetWare Express patch release required for installation on NetWare v3.11 server)	Alert generation Server query commands Server control commands Command security Command filtering Open NetView interface support	End Point—token ring connection to collection point Standalone—token ring LAN connection to host

2

Alert Message Descriptions

This chapter lists the NetWare alert messages that may appear in NetView display panels. These alerts appear in the following NetView NPDA panels:

- ◆ Alerts-Dynamic
- ◆ Alerts-Static
- ◆ Alerts-History

The messages in this chapter are generated by NetWare servers. To learn more about an alert from an application that uses the Open NetView interface, refer to the manual for that application.

When managing NetWare servers, remember the following:

- ◆ Earlier versions of NetWare for SAA and NMA for NetView produce reduced sets of alerts. For example, NMA for NetView v1.0 does not produce alerts for NetWare system messages.
- ◆ The NetWare message for each alert is from the software that generates that alert. Some messages are produced by the server's SERVER.EXE program, and others are produced by drivers and protocol stacks installed at the server. Different versions of software may produce different messages on the NetWare console.
- ◆ The NetWare message for each alert is from the latest version of software that generates that alert. For example, if NetWare v3.12 was the last version to generate the alert, the NetWare message listed is the message from NetWare v3.12. If NetWare v4.0 and NetWare v3.12 produce different messages for the same alert, the version 4.0 message is listed.

The Sender Hardware Product ID panel in NetView displays the following two values that represent parameters defined in NetWare servers:

- ♦ The *Machine Type*= value in the NetView user interface is the same as the Model Number of Server Machine parameter in NetWare.
- ♦ The *Serial Number:Sequence Number*= value in NetView is the same as the Serial Number of Server parameter in NetWare.

These parameters describe the NetWare server to which a PU is assigned. When these values appear in alerts from end point servers, they describe the collection point server, not the end point server.

Alert Description Format

The alert message descriptions in this chapter use bold text to represent text that appears on NetView display panels. Italicized text within a description indicates variable data received from the server. The message descriptions are listed in alphabetical order using the following format.

Alert Description: Probable Cause

User: This text appears after the **User Caused** label in the **NetView Recommended Action for Selected Event** panel. This text describes a problem that may be corrected by a user action.

Install: This text appears after the **Install Caused** label in the **NetView Recommended Action for Selected Event** panel. This text describes a problem that may have been caused by an installation error.

Failure: This text appears after the **Failure Caused** label in the **NetView Recommended Action for Selected Event** panel. This text describes a problem that may have been caused by a component failure.

NetWare message: This is the **NetWare** message that appears on a server console.

Explanation: Additional information on what the alert means.

Action: Recommendation for corrective action.

Alert Messages

The following section lists all the alerts that might be generated by NetWare for SAA v 1.3 and NMA for NetView v 1.3 servers.

Auto removal: Token-ring lobe

Failure: Local token-ring adapter Local access unit Local lobe cables

NetWare message: TOKEN-NW-237-Adapter *number-board number*: The adapter is beaconing. Ring status = *code*.

Explanation: Adapter left the ring as part of the beacon automatic recovery process.

Action: Ask the LAN administrator to review the link data.

Capacity exceeded: Logged in users

User: The Maximum Number of Users Supportable by the Server has been Exceeded Problem detected by *server*

NetWare message: Out of server connections. User connect request failed.

Explanation: When the system tried to allocate a connection number for a workstation, the maximum number of connections (250) was exceeded.

Action: Depends on frequency. A connection will become available when other users log out from the system. If this message appears frequently, consider adding another server to the network.

Capacity exceeded: Memory

User: Insufficient Memory Problem Detected by *server*

Failure: Loadable Software Module Server Software Component may have Excessive Memory Requirements.

NetWare message: Cache memory allocator out of available memory.

Explanation: The cache buffer limit is set to 0 (zero). All cache memory has been used.

Action: Add more memory to the file server.

Capacity exceeded: Storage subsystem

User: Insufficient Storage Media Space Insufficient Storage Media Space for *volume size K* of Storage is in Use by Deleted Files that Cannot be Purged Yet Problem Detected by *server*.

NetWare message: Volume *server/volume* out of disk space. *number K* of disk space is in use by deleted files.

Explanation: When the volume is out of disk space, the NetWare message (listed below) is broadcast to all users on the system. All attempts to write to files will fail because of insufficient disk space. The second line of the message indicates that deleted files have not been purged.

Action: If the server is running NetWare v3.1x, ask the NetWare administrator to complete one or more of the following actions:

- ♦ Run the NetWare PURGE command to free up space occupied by deleted files that have not been automatically purged.
- ♦ Use the NetWare SET command to change the Minimum File Delete Wait Time parameter so that files can be purged at shorter intervals.
- ♦ Delete unnecessary files from the volume.
- ♦ Add more disks to the volume.

Capacity exceeded: Storage subsystem

**User: Insufficient Storage Media Space Insufficient Storage Media Space for *volume*
There are no Deleted Files Using Storage Space. Problem Detected by *server***

NetWare message: Volume *server/volume* out of disk space. There are no deleted files using disk space.

Explanation: When the volume is out of disk space, the NetWare message (listed below) will be broadcast to all users on the system. All attempts to write to files will fail because of insufficient disk space.

Action: Delete unnecessary files from the volume, or add more disk space to the volume.

Capacity exceeded: Transmit/receive buffers

Install: System Transmit/Receive Buffer Threshold Set Too Low Problem Detected by *server*

Failure: Software Device Driver Communications/LAN Device Driver Communications Program Transmit/Receive Buffer Limit Reached – Buffers Are Not Being Released

NetWare message: LAN receive buffer limit reached. All buffers are in use.

Explanation: A SET command parameter limits the number of Packet Receive Buffers that the operating system can allocate for itself. This parameter is set too low.

Action: If the server is a NetWare v3.1x server, ask the NetWare administrator to use the NetWare SET command to correct the problem.

If the server is a NetWare v4.0 server, use the GET SERVER command (see “**GET SERVER**” on page 80) to display the Maximum Packet Receive Buffers parameter. Use the SET SERVER command (see “**SET SERVER**” on page 91) to change the Maximum Packet Receive Buffers parameter.

Directory search threshold reached: Application program

Install: Concurrent Directory Search Threshold for Workstations Set too Low Problem Detected by *server*

Failure: Application Program Workstation Concurrent Directory Search Threshold Reached

NetWare message: Connection *number* USER *name* exceeded outstanding NCP directory search limit.

Explanation: The directory search threshold has been reached.

Action: Contact the NetWare server administrator.

File directory entry limit exceeded: File directory structure

User: File Directory Table Full on *volume* Problem Detected by *server*

Install: Directory Size Limit too Low on *volume*

NetWare message: Error expanding *server/volume* directory because directory size limit was exceeded.

Explanation: When a new directory is created, NetWare allocates a directory block for that directory. The file server limits the amount of directory blocks to 1/32 of the total disk space. If that amount of space is exceeded, the attempt to expand the directory table will fail.

Action: Delete unused or unnecessary directories.

File directory may be corrupted: Storage subsystem

Failure: Storage Subsystem Disk Write Errors on *volume* Problem Detected by *server*

NetWare message: Error expanding *server/volume* directory due to disk write errors.

Explanation: A write error occurred on the system. This error may have been caused by a hard disk or channel failure.

Action: Check the disk drives and channel to see if a failure has occurred.

File directory may be corrupted: Storage subsystem

Failure: Storage Subsystem Error Writing Newly Allocated Directory Block on *volume* Problem Detected by *server*

NetWare message: Error writing to a newly allocated directory block on *server/volume*.

Explanation: A write error occurred while a directory on the named server was being written to. This error may have been caused by a hard disk or channel failure.

Action: Check the disk drives and channel to see if a failure has occurred.

File directory may be corrupted: Storage subsystem

Failure: Storage Subsystem Error Writing to Directory on *volume* Problem Detected by *server*

NetWare message: Error writing to the directory on *server/volume*.

Explanation: A write error occurred on the system that Hot Fix could not correct (For more information on Hot Fix, see *NetWare v3.11 Concepts*, *NetWare v3.12 Concepts*, or *NetWare 4.0 Concepts*.) This error may have been caused by a hard disk or channel failure.

Action: Check the disk drives and channel to see if a failure has occurred.

File lock threshold reached: Application program

Install: File Lock Threshold for Workstations Set too Low Problem Detected by server

Failure: Application Program Workstation File Lock Threshold Reached *number* Lock Requests Failed

NetWare message: Station *number* file lock threshold exceeded. Total violations *number*.

Explanation: The number of open files and file locks on the server has exceeded the maximum specified by the Maximum File Locks Per Connection parameter. The default value is 20000. The *number* variable indicates the number of open file and file lock requests that failed because the limit was exceeded.

Action: If the server is a NetWare v3.1x server, ask the NetWare administrator to use the NetWare SET command to correct the problem.

If the server is a NetWare v4.0 server, use the GET SERVER command (see “GET SERVER” on page 80) to display the Maximum File Locks Per Connection parameter. Use the SET SERVER command (see “SET SERVER” on page 91) to change the Maximum File Locks Per Connection parameter.

File lock threshold reached: Application program

Install: System File Lock Threshold Set too Low Problem Detected by server

Failure: Application Program System File Lock Threshold Reached *number* Lock Requests Failed

NetWare message: System file lock threshold exceeded. *number* file open or lock requests failed.

Explanation: The number of open files and file locks on the server has exceeded the maximum specified by the Maximum File Locks parameter. The default value is 10000. The *number* variable indicates the number of open file and file lock requests that failed because the limit was exceeded.

Action: If the server is a NetWare v3.1x server, ask the NetWare administrator to use the NetWare SET command to correct the problem.

If the server is a NetWare v4.0 server, use the GET SERVER command (see “GET SERVER” on page 80) to display the Maximum File Locks parameter. Use the SET SERVER command (see “SET SERVER” on page 91) to change the Maximum File Locks parameter.

LAN communications lost: Local LAN adapter

Failure: Local LAN Adapter *network* Inaccessible Due to LAN Adapter Failure Problem Detected by server

NetWare message: IPX local network *number* removed because LAN board is unreachable.

Explanation: You received this message for one of the following reasons:

- ◆ The LAN board failed. The driver detected an error and removed the board.
- ◆ A user unloaded the LAN driver with the NetWare UNLOAD command.

Action: If the LAN board failed, replace the board. If the driver was unloaded with the NetWare UNLOAD command, you do not need to take any action.

Link error: LAN LLC communications

Failure: LAN LLC communications DM received

NetWare message: Link lost: remote sent a DM. SAddr: *number*, SSAP: *number*, DAddr: *number*, DSAP: *number*

Explanation: Link disconnected: a disconnect mode (DM) request was sent by the server's partner station. The partner station issued a DM, which severed the logical connection between the partner station and the server.

Action: Reactivate the partner station. If the problem persists, contact the Systems Network Architecture (SNA) network administrator.

Link error: LAN LLC communications/remote node

Failure: LAN LLC communications/remote node Poll count exhausted

NetWare message: Link lost: remote is not responding. SAddr: *number*, SSAP: *number*, DAddr: *number*, DSAP: *number*

Explanation: Link disconnected: inactive remote station. The server's partner station does not respond to polling either because it is down or because there is a problem with the connection.

Action: Verify whether the partner station is active. If it is active, check the physical connection between the stations.

Link error: SDLC communications

Failure: SDLC communications error DM received

NetWare message: Link lost: remote sent a DM. Local DLC address: *number*, Remote DLC address: *number*

Explanation: Link disconnected: a disconnect mode (DM) request was sent by the server's partner station. The partner station issued a DM, which severed the logical connection between the partner station and the server.

Action: Reactivate the partner station. If the problem persists, contact the SNA network administrator.

Link error: SDLC communications/remote node

User: Remote device power off

Failure: SDLC communication/remote node Line Inactivity timer expired

NetWare message: Link lost: local station's inactivity timer has expired. Local DLC address: *number*, Remote DLC address: *number*

Explanation: Link disconnected: the inactivity timer of the local station expired. The server has not received anything for the amount of time specified by the server's inactivity timer.

Action: Verify whether there is an active partner station. If there is, check the physical connections.

Link error: SDLC communications/remote node

User: Remote device power off

Failure: SDLC communications/remote node Line Poll count exhausted

NetWare message: Link lost: remote is not responding. Local DLC address: *number*, Remote DLC address: *number*

Explanation: Link disconnected: inactive remote station. The server's partner station does not respond to polling either because it is down or because there is a problem with the connection.

Action: Verify whether the partner station is active. If it is active, check the physical connection between the stations.

Link error: SDLC communications/remote node

User: Remote device power off

Failure: SDLC communication/remote node Line XID poll count exhausted

NetWare message: Link lost: local station's XID retry limit has been exceeded. Local DLC address: *number*, Remote DLC address: *number*

Explanation: Link disconnected: the exchange station ID (XID) retry limit was exceeded on the local station. The server sent an XID, which the partner station either did not receive or ignored.

Action: Verify whether the partner station is active. If it is active, check the physical connection.

Memory threshold reached: Server configuration

Install: Memory Threshold Set too Low *number* Memory Allocation Requests Failed
Problem Detected by *server*

NetWare message: Alloc Short Term Memory allocator requests exceeded the configuration limit. *number* short-term memory allocation requests failed.

Explanation: The request for short-term memory failed because the system limit was exceeded.

Action: Ask the NetWare administrator to use the NetWare SET command to increase the setting for the Maximum Alloc Short Term Memory parameter. (Note that only NetWare v3.1x servers produce this alert.)

Memory usage threshold reached: Loadable software module

User: Insufficient Memory Problem detected by *server*

Install: Memory Lower Limit Set too High

Failure: Loadable Software Module Server Software Component may have Excessive Memory Requirements

NetWare message: Cache memory allocator exceeded minimum cache buffer left limit. <or> Number of cache buffers is getting too low.

Explanation: The server is running out of memory.

Action: Ask the NetWare server administrator to determine how memory is being used in the server. If memory is being used properly, add more memory. If a software component is using excessive memory or the Memory Lower Limit value is set too high, correct the problem.

Network addressing conflict: Server configuration

Install: File Server Assigned Duplicate LAN Logical Address server Duplicates LAN Logical Address of Alert Originator Problem Detected by server

NetWare message: Router configuration error detected. *name* is claiming my same internet address.

Explanation: Another server on the network is claiming to be at the same address as this server. This claim is occurring because two NetWare servers have been given the same IPX internal network number.

Action: Assign each NetWare server a unique network address.

Network addressing conflict: Server configuration

Install: File Server Assigned Duplicate LAN Logical Network Address Identity of Offending Server is Unknown Problem Detected by server

NetWare message: Router configuration error detected. Another router is claiming the same internet address.

Explanation: Another server claims to have the same network and node addresses as this server.

Action: Find out which server has the incorrect network and node addresses; then change the configuration accordingly.

Network addressing conflict: Server configuration

Install: File Server Assigned Incorrect LAN Logical Identifier File Server at *node* Assigned *network_name_a* – Alert Originator Assignment on Same Network is *network_name_b* Problem Detected by server

NetWare message: Router configuration error detected. Router at node *number1* claims network *number2* should be *number3*.

Explanation: The NetWare BIND command that was issued to bind IPX to a LAN driver specified an incorrect network number. Other routers or servers on the network list a different network number for the cabling system.

Action: Ask the NetWare administrator to unbind the LAN driver; then bind the LAN driver with the correct network number. The correct number is specified by the *network_name_b* variable.

Open failure: Token-ring duplicate station address

Install: Token-ring duplicate station address assigned

NetWare message: TOKEN-NW-233-Adapter *number*-Board *number*: The adapter detected a duplicate station during the insertion process. Error code = *code*.

Explanation: Adapter detected another station with the same address during the insertion process.

Action: Ask the LAN administrator to review the link data.

Open failure: Token-ring fault domain

Failure: Token-ring fault domain

NetWare message: TOKEN-NW-236-Adapter *number*-Board *number*: The ring was beaconing during the insertion process. Error code=*code*.

Explanation: Adapter detected a beaconing condition on the ring during the insertion process.

Action: Ask the LAN administrator to reopen the adapter (reload the token ring driver). After this message appears, the administrator should wait 30 seconds before attempting to reopen the adapter.

Open failure: Token-ring lobe

Failure: Local token-ring adapter Local access unit Local lobe cables

NetWare message: TOKEN-NW-235-Adapter *number*-Board *number*: The adapter cable was disconnected during the insertion process. Error code = *code*.

Explanation: Adapter detected a problem on its lobe during the insertion process.

Action: Ask the LAN administrator to reopen the adapter (reload the token ring driver). After this message appears, the administrator should wait 30 seconds before attempting to reopen the adapter.

Open failure: Token-ring lobe

Failure: Local token-ring lobe Token-ring LAN component Interference

Explanation: An unknown error was detected during the insertion process resulting in an incomplete insertion.

Action: Ask the LAN administrator to review the link data.

Open failure: Token-ring remove command received

User: Token-ring remove adapter command received

NetWare message: TOKEN-NW-234-Adapter *number*-board *number*: The adapter received a Remove MAC Frame during the insertion process. Error code = *code*.

Explanation: The adapter received a Remove Ring Station MAC frame during the insertion process.

Action: Ask the LAN administrator to review the link data.

Password encryption error: Application program

Install: Client Application Program Sent an Unencrypted Password to a Server Configured for Encrypted Passwords Only Request Originated from *node* on *network* Problem Detected by *server*

NetWare message: Station *number* attempted to use an unencrypted password call.

Explanation: An application, utility, or NetWare shell tried to log in, verify a password, or change a password without first encrypting the password. The NetWare server is configured to accept only encrypted passwords.

Action: Either replace the application, utility, or NetWare shell, or reconfigure the server to accept unencrypted passwords. You can ask the NetWare administrator to replace the utility with one that encrypts passwords. If the

utility is a NetWare 2.x utility or shell, it should be replaced with a 3.x utility or shell.

To reconfigure the server, do one of the following:

- ♦ If the server uses NetWare v4.0, set the server to accept unencrypted passwords by using the SET SERVER command (see “**SET SERVER**” on page 91) with the Allow Unencrypted Passwords parameter.
- ♦ If the server uses NetWare v3.1x, ask the NetWare administrator to use the NetWare SET command to configure the NetWare server so that it accepts unencrypted passwords.

Possible file allocation table corruption: Storage subsystem

Failure: Storage Subsystem Error Writing File Allocation Table for *volume* Problem Detected by *server*

NetWare message: Error writing FAT table for volume *server/volume*.

Explanation: A write error occurred on the system. This error may have been caused by a hard disk or channel failure.

Action: Check the disk drives and channel to see if a failure has occurred. Correct the failure if possible. Ask the NetWare administrator to run VREPAIR.

Possible file corruption: Storage subsystem

Failure: Storage Subsystem File Read Error Server Requested Operation Detailed Data Contains Path Information for the File - Path Shown may be Incomplete Problem detected by *server*

NetWare message: Error reading file *filename*. Offset *number* data stream *number*. Read was requested by the SERVER. File path *volume:path*.

Explanation: The operating system was unable to read the specified file. The file is corrupted or the disk has failed.

Action: Complete one of the following:

- ♦ If the file is corrupted, restore the file from a backup copy.

- ♦ If the disk has failed, check for faulty hardware components (cable, power supply, controller, or hard disk).

Possible file corruption: Storage subsystem

Failure: Storage Subsystem File Read Error *user* on *station_number* Requested Operation File Name Inaccessible Problem Detected by *server*

NetWare message: File read error at offset *number* data stream *number*. Error getting file name. Read was requested by user *name* on station *number*.

Explanation: A read error occurred on the system. This error may have been caused by a hard disk or channel failure. Some data was lost that would cause the user's applications to fail when reading data from files. The data stream number is listed in the Actions area of the Recommended Action for Selected Event display and indicates the name space stream.

Action: Check the disk drives and channel to see if a failure has occurred.

Possible file corruption: Storage subsystem

Failure: Storage Subsystem File Read Error Server Requested Operation File Name Inaccessible Problem Detected by *server*

NetWare message: File read error at offset *number* data stream *number*. Error getting file name. Read was requested by the **SERVER.**

Explanation: A read error occurred on the system. This error may have been caused by a hard disk or channel failure. The data stream number is listed in the Actions area of the Recommended Action for Selected Event display and indicates the name space stream.

Action: Check the disk drives and channel to see if a failure has occurred.

Possible file corruption: Storage subsystem

Failure: Storage Subsystem File Read Error *user* on *station_number* Requested Operation Detailed Data Contains Path Information for the File - Path Shown may be Incomplete Problem Detected by *server*

NetWare message: Error reading file *filename*. Offset *number* data stream *number*. Read was requested by user *name* on station *number*. File path *volume:path*.

Explanation: A read error occurred on the system. This error may have been caused by a hard disk or channel failure. Some data was lost that would cause the user's applications to fail when reading data from files. The data stream number is listed in the Actions area of the Recommended Action for Selected Event display and indicates the name space stream.

Action: Check the disk drives and channel to see if a failure has occurred.

Possible file corruption: Storage subsystem

Failure: Storage Subsystem File Write Error Server Requested Operation Detailed Data Contains Path Information for the File - Path Shown may be Incomplete Problem Detected by *server*

NetWare message:Error writing to file *filename* data stream *number*. Write was requested by the SERVER. File path *volume:path*.

Explanation: An error occurred while the file named in the Event Detail display was being written to. This error may have been caused by a hard disk or channel failure.

Action: Check the disk drives and channel to see if a failure has occurred.

Possible file corruption: Storage subsystem

Failure: Storage Subsystem File Write Error Server Requested Operation File Name Inaccessible Problem Detected by server

NetWare message: Error writing to file (file name not accessible) data stream *number*. Write was requested by the server.

Explanation: A write error occurred while data was being written to disk. A file has been lost or corrupted. The write error may be due to a hard disk or channel failure. The disk may have other problems with data integrity. The data stream number is listed in the Actions area of the Recommended Action for Selected Event display and indicates the name space stream.

Action: Ask the NetWare administrator to do the following:

1. Check the system console and the history base for messages concerning disk and disk partition problems.
2. Run the disk manufacturer's diagnostic programs to determine the exact disk problem.
3. Run VREPAIR to correct minor problems.
4. Repair or replace the disk and disk controller if necessary.
5. Notify users that they may have lost data.
6. If an adequate backup was done, restore damaged files.

Possible file corruption: Storage subsystem

Failure: Storage Subsystem File Write Error *user* on *station_number* Requested Operation Detailed Data Contains Path Information for the File - Path Shown may be Incomplete Problem Detected by server

NetWare message: Error writing to file *filename* data stream *number*. Write was requested by user *name* on station *number*. File path *volume:path*.

Explanation: An error occurred while the file named in the Event Detail display was being written to. The data stream number is listed in the Actions area of the Recommended Action for Selected Event display and indicates the name space stream.

Action: Check the disk drives and channel to see if a failure has occurred.

Possible file corruption: Storage subsystem

Failure: Storage Subsystem File Write Error *user* on *station_number* Requested Operation File Name Inaccessible Problem Detected by *server*

NetWare message: Error writing to file (file name not accessible) data stream *number*. Write was requested by user *name* on station *number*.

Explanation: A write error occurred while data was being written to disk. A file has been lost or corrupted. The write error may be due to a hard disk or channel failure. The disk may have other problems with data integrity. The data stream number is listed in the Actions area of the Recommended Action for Selected Event display and indicates the name space stream.

Action: Ask the NetWare administrator to do the following:

1. Check the system console and the history base for messages concerning disk and disk partition problems.
2. Run the disk manufacturer's diagnostic programs to determine the exact disk problem.
3. Run VREPAIR to correct minor problems.
4. Repair or replace the disk and disk controller if necessary.
5. Notify users that they may have lost data.
6. If an adequate backup was done, restore damaged files.

Possible file corruption: Storage subsystem

Failure: Storage Subsystem File Write Pre-Read Error Server Requested Operation Detailed Data Contains Path Information for the File -Path Shown may be Incomplete Problem Detected by *server*

NetWare message: File *filename* write pre-read error. Offset *number* data stream *number*. Read was requested by the SERVER. File path *volume:path*.

Explanation: A disk failure occurred. A write pre-read operation occurs when NetWare writes a partial block and subsequently needs to write the rest of the block. NetWare must first read the partial block and then write the entire block. If the read fails, a write pre-read error occurs.

Action: Check for faulty hardware components in the disk channel (cable, power supply, controller, or hard disk).

Possible file corruption: Storage subsystem

Failure: Storage Subsystem File Write Pre-Read Error Server Requested Operation File Name Inaccessible Problem Detected by server

NetWare message: File write pre-read error. Offset *number* data stream *number*. Error getting file name. Read was requested by the SERVER.

Explanation: A disk failure occurred. A write pre-read operation occurs when NetWare writes a partial block and subsequently needs to write the rest of the block. NetWare must first read the partial block and then write the entire block. If the read fails, a write pre-read error occurs.

Action: Check for faulty hardware components in the disk channel (cable, power supply, controller, or hard disk).

Possible file corruption: Storage subsystem

Failure: Storage Subsystem File Write Pre-Read Error user on *station_number* Requested Operation Detailed Data Contains Path Information for the File -Path Shown may be Incomplete Problem Detected by server

NetWare message: File *filename* write pre-read error. Offset *number* data stream *number*. Read was requested by user *name* on station *number*. File path *volume:path*.

Explanation: A disk failure occurred. A write pre-read operation occurs when NetWare writes a partial block and subsequently needs to write the rest of the block. NetWare must first read the partial block and then write the entire block. If the read fails, a write pre-read error occurs.

Action: Check for faulty hardware components in the disk channel (cable, power supply, controller, or hard disk).

Possible file corruption: Storage subsystem

**Failure: Storage Subsystem File Write Pre-Read Error *user* on *station_number*
Requested Operation File Name Inaccessible Problem Detected by *server***

NetWare message: File write pre-read error. Offset *number* data stream *number*. Error getting file name. Read was requested by user *name* on station *number*.

Explanation: A disk failure occurred. A write preread operation occurs when NetWare writes a partial block and subsequently needs to write the rest of the block. NetWare must first read the partial block and then write the entire block. If the read fails, a write preread error occurs.

Action: Check for faulty hardware components in the disk channel (cable, power supply, controller, or hard disk).

Record lock threshold reached: Application program

Install: Record Lock Threshold for Workstations Set too Low Problem Detected by *server*

**Failure: Application Program Workstation Record Lock Threshold Reached *number*
Lock Requests Failed**

NetWare message: Station *number* record lock threshold exceeded. Total violations *number*.

Explanation: The number of record locks on the server has exceeded the Maximum Record Locks Per Connection system parameter. The default value is 20000. Applications that request record locks do not function properly until record locks are released by other applications.

Action: If the server is a NetWare v3.1x server, ask the NetWare administrator to increase the setting for the Maximum Record Locks Per Connection parameter.

If the server is a NetWare v4.0 server, use the GET SERVER command (see “**GET SERVER**” on page 80) to display the Maximum Record Locks Per Connection parameter. Use the SET SERVER command (see “**SET SERVER**” on page 91) to change the Maximum Record Locks Per Connection parameter.

Record lock threshold reached: Application program

Install: System Record Lock Threshold Set too Low Problem Detected by server

Failure: Application Program System Record Lock Threshold Reached *number* Lock Requests Failed

NetWare message: System record lock threshold exceeded. *number* record lock requests failed.

Explanation: The number of record locks on the server has exceeded the Maximum Record Locks parameter. The default value is 20000. Applications that lock records will not function properly.

Action: If the server is a NetWare v3.1x server, ask the NetWare administrator to increase the setting for the Maximum Record Locks parameter.

If the server is a NetWare v4.0 server, use the GET SERVER command (see “GET SERVER” on page 80) to display the Maximum Record Locks parameter. Use the SET SERVER command (see “SET SERVER” on page 91) to change the Maximum Record Locks parameter.

Remove adapter command received: LAN manager operator

User: Token-ring remove adapter command received

NetWare message: TOKEN-NW-242-Adapter *number*-board *number*: The Remove MAC Frame process shut down the adapter. Ring status = *code*.

Explanation: The reporting station's adapter received a Remove Adapter command from a LAN manager and, as a result, left the LAN.

Action: Contact the LAN administrator and report the adapter number and error code, which appear in the Actions area of the Recommended Action for Selected Event display.

Required software attempted termination: Application program

Failure: Application Program Problem Detected by *server*

NetWare message: Error unloading killed loadable module

Explanation: An error occurred while a module was being unloaded. The module is still loaded. The error may occur when another module references public symbols exported by this module.

Action: Unload the module that is using the public symbols; then unload this module.

Resource nearing capacity: Storage subsystem

User: Insufficient Storage Media Space Insufficient Storage Media Space Available for *volume* Problem Detected by *server*

NetWare message: Volume *server/volume* almost out of disk space.

Explanation: The volume is almost out of disk space.

Action: Ask the NetWare administrator to delete unnecessary files from the volume or add more disk space to the volume.

When the server is running NetWare v4.0, you can manage disk space usage and reporting with the following SET SERVER command parameters:

- ◆ Immediate Purge of Deleted Files
- ◆ Volume Low Warn All Users
- ◆ Volume Low Warning Threshold

Software program error: LAN LLC communications

Failure: Communications program in remote node I-field receive when not permitted

NetWare message: Link lost: remote station sent an Information field at the wrong time. SAddr: *number*, SSAP: *number*, DAddr: *number*, DSAP: *number*

Explanation: Link disconnected: an information field was sent at the wrong time by a remote station. A partner station sent an information field when it was not permitted to do so. The server sent a frame reject.

Action: Wait for the communication service to reestablish the link. If the problem persists, contact the SNA network administrator.

Software program error: LAN LLC communications

Failure: Communications program in remote node Invalid N(r) received

NetWare message: Link lost: remote station sent an invalid N(r). SAddr: *number*, SSAP: *number*, DAddr: *number*, DSAP: *number*

Explanation: Link disconnected: the number of frames received (*Nr*) from the remote station does not match the number of frames sent (*Ns*). There is a discrepancy between the number of frames the server received and the number of frames the partner station sent.

Action: Wait for the communication service to reestablish the link. If the problem persists, contact the SNA network administrator.

Software program error: LAN LLC communications

Failure: Communications program in remote node Invalid/unsupported command or response received

NetWare message: Link lost: remote station sent an invalid or unsupported frame. SAddr: *number*, SSAP: *number*, DAddr: *number*, DSAP: *number*

Explanation: Link disconnected: an invalid command or response was sent by remote station. A partner station sent a command or response that is not supported by the server. The server sent a frame reject.

Action: Wait for the communication service to reestablish the link. If the problem persists, contact the SNA network administrator.

Software program error: LAN LLC communications

Failure: Communications program in remote node Received I-field exceeded maximum length

Explanation: Link disconnected: too long an information field was sent by a remote station. A partner station sent an information field that was larger than the frame size specified for NetWare for SAA.

Action: Ensure that Netware for SAA's frame size matches the frame size specified on the partner station.

Software program error: LAN LLC communications

Failure: Communications program in remote node SABME received while in ABME

NetWare message: Link lost: remote sent SABME while in Data Transfer Mode. SAddr: *number*, SSAP: *number*, DAddr: *number*, DSAP: *number*

Explanation: Link disconnected: link was in Data Transfer mode when a SABME request was sent by a remote station. The server's partner station requested set asynchronous balanced mode extended (SABME) while data was already being sent in that mode.

Action: Wait for the communication service to reestablish the link. If the problem persists, contact the SNA network administrator.

Software program error: LAN LLC communications

Failure: Software program Frame reject received: I-field sent when not permitted

**NetWare message: Link lost: local station sent an Information field at the wrong time.
SAddr: *number*, SSAP: *number*, DAddr: *number*, DSAP: *number***

Explanation: Link disconnected: an information field was sent at the wrong time by the local station. The server sent an information field when it was not permitted to do so. The server's partner station sent a frame reject.

Action: Wait for the communication service to reestablish the link. If the problem persists, contact the SNA network administrator.

Software program error: LAN LLC communications

Failure: Software program Frame reject received: invalid N(r) sent

NetWare message: Link lost: local station sent an invalid N(r). SAddr: *number*, SSAP: *number*, DAddr: *number*, DSAP: *number*

Explanation: Link disconnected: the number of frames received (*Nr*) from the local station does not match the number of frames sent (*Ns*). There is a discrepancy between the number of frames the server's partner station received and the number of frames the server sent.

Action: Wait for the communication service to reestablish the link. If the problem persists, contact the SNA network administrator.

Software program error: LAN LLC communications

Failure: Software program Frame reject received: Invalid/unsupported command or response sent

**NetWare message: Link lost: local station sent an invalid or unsupported frame.
SAddr: *number*, SSAP: *number*, DAddr: *number*, DSAP: *number***

Explanation: Link disconnected: an invalid command or response was sent by the local station. The server sent a command or response that is not supported by the server's partner station. The partner station sent a frame reject.

Action: Wait for the communication service to reestablish the link. If the problem persists, contact the SNA network administrator.

Software program error: LAN LLC communications

Failure: Software program Frame reject received: maximum I-field length exceeded

NetWare message: Link lost: local station sent too long an I frame. SAddr: *number*, SSAP: *number*, DAddr: *number*, DSAP: *number*

Explanation: Link disconnected: too long an information field was sent by the local station. The server sent an information field that was larger than the frame size specified on the server's partner station.

Action: Ensure that the NetWare for SAA frame size matches the frame size specified on the partner station.

Software program error: SDLC communications

Failure: Communications program in remote node I-field received when not permitted

NetWare message: Link lost: local station sent an Information field at the wrong time. Local DLC address: *number*, Remote DLC address: *number*

Explanation: Link disconnected: an information field was sent at the wrong time by the local station. The server sent an information field when it was not permitted to do so. The server's partner station sent a frame reject.

Action: Wait for the communication service to reestablish the link. If the problem persists, contact the SNA network administrator.

Software program error: SDLC communications

Failure: Communications program in remote node Invalid N(r) received

NetWare message: Link lost: local station sent an invalid N(r). Local DLC address: *number*, Remote DLC address: *number*

Explanation: Link disconnected: the number of frames received (Nr) from remote station does not match the number of frames sent (Ns). There is a discrepancy

between the number of frames the server received and the number of frames the server's partner station sent.

Action: Wait for the communication service to reestablish the link. If the problem persists, contact the SNA network administrator.

Explanation: Link lost: local station sent an invalid N(r).

Local DLC address: *number*, Remote DLC address: *number*

Software program error: SDLC communications

Failure: Communications program in remote node Invalid/unsupported command or response received

NetWare message: Link lost: remote station sent an invalid or unsupported frame. Local DLC address: *number*, Remote DLC address: *number*

Explanation: Link disconnected: an invalid command or response was sent by the local station. The server sent a command or response that is not supported by the server's partner station. The partner station sent a frame reject.

Action: Wait for the communication service to reestablish the link. If the problem persists, contact the SNA network administrator.

Software program error: SDLC communications

Failure: Communications program in remote node Receive window size exceeded

NetWare message: Link lost: local station receive window size is exceeded. Local DLC address: *number*, Remote DLC address: *number*

Explanation: Link disconnected: the receive window size was exceeded because a remote station sent too many information (I) frames. A server's partner station sent more information (I) frames than specified by the receive window size.

Action: Check the remote station's window size. Reconfigure the receive window size as discussed in the remote station's documentation.

Software program error: SDLC communications

Failure: Communications program in remote node SNRM received while in NRM

NetWare message: Link lost: remote sent an unexpected SNRM frame. Local DLC address: *number*, Remote DLC address: *number*

Explanation: Link disconnected: an SNRM request was sent by a remote station while the station was already in use. The server's partner station requested set normal response mode (SNRM) while data was already being sent in normal response mode.

Action: Wait for the communication service to reestablish the link. If the problem persists, contact the SNA network administrator.

Software program error: SDLC communications

Failure: Software program Frame reject received: I-field sent when not permitted

NetWare message: Link lost: remote station sent an Information field at the wrong time. Local DLC address: *number*, Remote DLC address: *number*

Explanation: Link disconnected: an information field was sent at the wrong time by a remote station. The server's partner station sent an information field when it was not permitted to do so. The server sent a frame reject.

Action: Wait for the communication service to reestablish the link. If the problem persists, contact the SNA network administrator.

Software program error: SDLC communications

Failure: Software program Frame reject received:invalid N(r) sent

NetWare message: Link lost: remote station sent an invalid N(r). Local DLC address: *number*, Remote DLC address: *number*

Explanation: Link disconnected: the number of frames received (*Nr*) from the local station does not match the number of frames sent (*Ns*). There is a discrepancy between the number of frames the server's partner station received and the number of frames the server sent.

Action: Wait for the communication service to reestablish the link. If the problem persists, contact the SNA network administrator.

Software program error: SDLC communications

Failure: Software program Frame reject received: invalid/unsupported command or response sent

NetWare message: Link lost: local station sent an invalid or unsupported frame. Local DLC address: *number*, Remote DLC address: *number*

Explanation: Link disconnected: an invalid command or response was sent by a remote station. The server's partner station sent a command or response that is not supported by the server. The server sent a frame reject.

Action: Wait for the communication service to reestablish the link. If the problem persists, contact the SNA network administrator.

Software program error: SDLC communications

Failure: Software program Frame reject received: maximum I-field length exceeded

NetWare message: Link lost: remote station sent too long an I frame. Local DLC address: *number*, Remote DLC address: *number*

Explanation: Link disconnected: too long an information field was sent by a remote station. The server's partner station sent an information field that was larger than the frame size specified for NetWare for SAA.

Action: Ensure that the NetWare for SAA frame size matches the frame size specified on the partner station.

Software program error: SDLC communications

Failure: Software program Frame reject received: no reason specified

NetWare message: Link lost: A Frame Reject packet was received with no reason specified. Local DLC address: *number*, Remote DLC. address: *number*

Explanation: Link disconnected: a remote station rejected a frame without including information about why it rejected the frame. The remote station is the server's partner station.

Action: Contact the SNA network administrator.

System file unusable: Storage subsystem

Failure: Storage Subsystem Unable to Open/Create VOL\$LOG.ERR on *volume* Problem Detected by *server*

NetWare message: Unable to create VOL\$LOG.ERR on *volume*.

Explanation: The volume's error file, VOL\$LOG.ERR, could not be created because either the volume was out of room or a disk error occurred.

Action: Make sure the volume has enough available space. Add more disk space and delete unused and unnecessary files.

Explanation: Unable to create VOL\$LOG.ERR on *volume*.

System file unusable: Storage subsystem

Failure: Storage Subsystem Unable to Write to VOL\$LOG.ERR on *volume* Problem Detected by *server*

NetWare message: Unable to write to VOL\$LOG.ERR on *volume*.

Explanation: The system was unable to write to the volume's error file because of a disk failure.

Action: Contact the NetWare server administrator. Additional messages indicating what went wrong should appear on the system console. Correct the problem

as suggested by those messages. Check for disk integrity and fix any disk problems you find.

Token-ring inoperative: Token-ring fault domain

Failure: Token-ring fault domain

Explanation: Ring has been beaconing and is inoperative.

Action: Ask the LAN administrator to review the link data.

Unauthorized access attempted: File server user

User: Unauthorized Access Attempted on *account* Request Originated from *node* on *network* Problem Detected by *server*

NetWare message: Intruder lock-out on account *username* [*number:number*].

Explanation: This notice appears on the NetWare server console and in the error log that can be viewed in SYSCON (a NetWare server utility). A user repeatedly entered an invalid password in an attempt to log in to the NetWare server. The number of invalid passwords exceeded the Incorrect Login Attempt limit allowed for the period of time specified in the NetWare Bad Login Count Retention Time parameter. The user's account has been disabled for the time specified by the NetWare Length of Account Lockout parameter.

Action: The NetWare administrator must run SYSCON to clear the lockout, or the user must wait the specified lockout time.

Wire fault: Token-ring lobe

Failure: Local access unit Local lobe cables Local token-ring adapter

NetWare message: TOKEN-NW-240-Adapter *number-board number*: Cable is disconnected at the MAU. Board is resetting. Ring status = *code*. <or> TOKEN-NW-239-Adapter *number-board number*: Cable is disconnected at the board. Board is resetting. Ring status = *code*.

Explanation: Wire-fault condition detected on the ring.

Action: Ask the LAN administrator to check the cable connections.

X.25 Error: Logical Link Control

Install: Configuration error

Failure: Received I-field exceeded maximum length

NetWare message: Link lost: remote station sent too long an I frame. SAddr: *number*; DAddr: *number* LCN: *number*

Explanation: The local station sent a frame reject (FRMR) response after it received a protocol data unit (PDU) with an information (I) field that was too long.

Action: If the problem occurs repeatedly, contact the X.25 network information service.

X.25 Error: Logical Link Control

Failure: X.25 Communications Error Frame reject received: invalid/unsupported command or response sent

NetWare message: Link lost: local station sent an invalid or unknown Control field. SAddr: *number*; DAddr: *number* LCN: *number*

Explanation: The local station sent a frame reject (FRMR) response after it received a protocol data unit (PDU) with an invalid or unknown control field.

Action: If the problem occurs repeatedly, contact the X.25 network information service.

X.25 Error: Logical Link Control

Failure: X.25 Communications Error Frame reject received: I-field sent when not permitted

NetWare message: Link lost: local station sent an invalid I frame. SAddr: *number*; DAddr: *number* LCN: *number*

Explanation: The local station sent a frame reject (FRMR) response after it received a protocol data unit (PDU) with an invalid information (I) field.

Action: If the problem occurs repeatedly, contact the X.25 network information service.

X.25 Error: Logical Link Control

Failure: Configuration Error

NetWare message: Link lost: local station sent too long an I frame. SAddr: *number*; DAddr: *number* LCN: *number*

Explanation: X.25 Communications Error Frame reject received: Maximum I-Field Length Exceeded

Explanation: The local station sent a frame reject (FRMR) response after it received a protocol data unit (PDU) with an information (I) field that was too long.

Action: If the problem occurs repeatedly, contact the X.25 network information service.

X.25 Error: Logical Link Control

Failure: X.25 Communications Error Frame reject received: Invalid N(r) sent

NetWare message: Link lost: local station sent an invalid N(r). SAddr: *number*; DAddr: *number* LCN: *number*

Explanation: The local station sent a frame reject (FRMR) response after it received a protocol data unit (PDU) with an invalid number of frames received (*Nr*) value.

Action: If the problem occurs repeatedly, contact the X.25 network information service.

X.25 Error: Logical Link Control

Failure: X.25 Communications Error Invalid/Unsupported command or response received

NetWare message: Link lost: remote station sent an invalid or unknown Control field. SAddr: *number*; DAddr: *number* LCN: *number*

Explanation: The local station sent a frame reject (FRMR) response after it received a protocol data unit (PDU) with an invalid or unknown control field.

Action: If the problem occurs repeatedly, contact the X.25 network information service.

X.25 Error: Logical Link Control

Failure: X.25 Communications Error I-Field received when not permitted

NetWare message: Link lost: remote station sent an invalid I frame. SAddr: *number*; DAddr: *number* LCN: *number*

Explanation: The local station sent a frame reject (FRMR) response after it received a protocol data unit (PDU) with an invalid information (I) field.

Action: If the problem occurs repeatedly, contact the X.25 network information service.

3

Sending NetWare Commands

This chapter describes how to send commands from the NetView* Network Communications Control Facility (NCCF) to the following types of NetWare® servers:

- ◆ NetWare for SAA* v1.2 and later
- ◆ NMA for NetView v1.2 and later

These versions of NetWare for SAA and NMA for NetView support commands for the operating system and file services features of NetWare v3.11 and later servers.

IMPORTANT: This chapter does not describe how to send commands to an application that has been designed to use the Netware Open NetView interface. For information on sending commands to this type of application, refer to the manual for that application.

How to Send Commands

NetWare servers support the RUNCMD feature in NetView NCCF. The format for a RUNCMD for a NetWare server is

```
RUNCMD SP=service_point_name, APPL=NETWARE,  
       SName=server_name [OP=userid] action resource  
       attribute_parameter resource_qualifier  
       command_qualifier
```

Table 3 on page 64 divides the NetWare RUNCMD into three components.

Table 3 NetWare RUNCMD Components

Command Components	Command Parameters
Command routing	<code>RUNCMD SP=service_point_name, APPL=NETWARE, SName=server_name</code>
Command security	<code>OP=userid</code>
Server command parameters for NetWare v3.1x and NetWare v4.0 servers	<code>action</code> <code>resource</code> <code>attribute_parameter</code> <code>resource_qualifier</code> <code>command_qualifier</code>

The following sections describe how to route commands to the destination server, comply with NetWare security, and assemble server command parameters for NetWare v3.1x and NetWare v4.0 servers.

NOTE: The NetWare RUNCMD format is a combination of NetView RUNCMD parameters and parameters for NetWare. For additional information on NetView RUNCMD parameters and options, see the *NetView Operation* (SC31-6019) manual from IBM.

IMPORTANT: When NCCF displays the message "No NetView Response received," the message indicates that an end point server did not respond to your command. This message is generated by the collection point server.

Command Routing

The format for the command routing portion of a NetWare RUNCMD is

```
RUNCMD SP=service_point_name, APPL=NETWARE,  
       SName=server_name
```

Table 4 shows how to address the NetWare RUNCMD routing parameters for different types of NetWare servers.

Table 4 Command Routing Parameter Settings

Destination Server Type	Parameter Setting for	Parameter Setting for
	SP= <i>service_point_name</i>	SName= <i>server_name</i>
End point server	Enter the PU name of a collection point server.	Enter the name of the end point server.
Collection point server or stand-alone server	Enter the PU name of the collection point server or the standalone server.	Enter the name of the collection point server or the standalone server.

Command Security

The format for the command security portion of a NetWare RUNCMD is
`[OP=userid]`

This command parameter is optional when the NetView security option is disabled on the destination server.

When the security feature is enabled on the destination NetWare server, you must include this parameter and replace the *userid* variable with a valid NetWare user ID. If your NetWare user ID has been designated as a file server console operator, you are restricted to sending NetWare QUERY commands, which request information from the file server. If your NetWare user ID has supervisor-equivalent privileges, you can use all the commands supported by the server.

IMPORTANT: When NetView security is enabled at the NetWare server, a RUNCMD must include a user ID (other than SUPERVISOR) with either supervisor-equivalent privileges or file server console operator status. Although the SUPERVISOR user ID has supervisor-equivalent privileges, the server rejects RUNCMDs that include the SUPERVISOR user ID.

The command security feature is always enabled on NMA for NetView servers. (You must provide a user ID.) On NetWare for SAA servers, the NetWare administrator can enable or disable this feature.

Server Command Parameters

The format of the server command parameters portion of a NetWare RUNCMD is

```
action resource attribute_parameter resource_qualifier  
command_qualifier
```

Table 5 on page 66 lists and describes each of the server command parameters for NetWare for SAA and NMA for NetView servers.

Table 5 **Server Command Parameters**

Parameter	Description
<i>action</i>	<p>The <i>action</i> parameter specifies what action is to be executed on the NetWare server. Valid actions include</p> <ul style="list-style-type: none">AddBroadcastDisableDownEnableGetLoadQueryRemoveSetUnload <p>The first table in “Command Tables” on page 69 alphabetically lists the server command parameters according to the action parameter. “NetWare Command Descriptions” on page 75 describes the function and format of each group of server command parameters.</p>

resource

The *resource* parameter specifies the server component that the command action affects. Valid command resources include

Communication service (CS)

Directory

File

IPX

NLM

Server

SPX

TTS

User

Volume

The second table under “[Command Tables](#)” on page 69 alphabetically lists the server command parameters according to the resource parameter. “[NetWare Command Descriptions](#)” on page 75 describes the function and format of each group of server command parameters.

attribute_parameter

This parameter identifies the resource attribute the command affects. In the QUERY SPX VERSION command, for example, the VERSION attribute_parameter identifies the SPX parameter (Version) to be returned. Some commands do not use this parameter.

The tables under “[Command Tables](#)” on page 69 and “[NetWare Command Descriptions](#)” on page 75 list the commands you can send to NetView. If a table lists one or more attribute parameters for a single command, you must enter at least one attribute parameter before sending the command. You may include multiple attribute parameters in the same command.

resource_qualifier

This parameter usually names the resource to receive the action. Some commands do not use this parameter.

The tables under “[Command Tables](#)” on page 69 and “[NetWare Command Descriptions](#)” on page 75 list the commands you can send to NetView. If the resource qualifier for a command is not enclosed in brackets ([]), you must enter the resource qualifier.

command_qualifier

This parameter further defines the action to be taken on the resource. Some commands do not use this parameter.

The tables under “[Command Tables](#)” on page 69 and “[NetWare Command Descriptions](#)” on page 75 list the commands you can send to NetView. If the command qualifier for a command is not enclosed in brackets ([]), you must enter the command qualifier.

Command Examples

The following is a sample RUNCMD for a NetWare server:

```
RUNCMD SP=NWSAA1, APPL=NetWare,  
SName=Sales OP=JSmith Query User DiskSpaceLeft  
      UserName=jbowman  
VolName=pubs
```

The command routing parameters define the PU name of a NetWare for SAA server (*NWSAA1*), the application name (*NetWare*) of the service, and the destination server name (*Sales*).

The *JSmith* variable represents the NetWare ID of the NetView operator.

The server command parameters in the RUNCMD operate as follows:

- ◆ The QUERY keyword represents the action.
- ◆ The USER keyword indicates the resource to be queried.
- ◆ The DISKSPACELEFT (disk space left) attribute parameter defines what user information the query will return.
- ◆ The *jbowman* variable in the USERNAME resource qualifier names the user for which the command will retrieve information.
- ◆ The *pubs* variable in the VOLNAME command qualifier identifies the volume for which the command will retrieve information.

The following command is an example of a command with multiple attribute parameters.

```
RUNCMD SP=NWSAA1, APPL=NetWare,  
SName=Sales OP=JSmith Query Server Date Time
```

In this example, both DATE and TIME are attribute parameters for the QUERY SERVER command. When this command is sent, NetWare returns the date and time for the specified server.

Command Tables

This section lists the server command parameters for NetWare v3.1x and NetWare v4.0 servers. [Table 6](#) lists the server command parameters according to the action being performed. [Table 7 on page 72](#) lists the server command parameters according to the resource on which the action is being performed (for example, a file or directory).

The command tables use the following conventions:

- ◆ When the phrase *(v1.3 & later)* appears in the *Action* column, the command and all its parameters can be used only with NetWare for SAA v1.3 and later and NMA for NetView v1.3 and later.
- ◆ When the phrase *(v1.3 & later)* appears adjacent to a single attribute parameter or qualifier, the phrase indicates that parameter or qualifier can be used only with v1.3-and-later servers. Unmarked parameters and qualifiers may be used with v-1.2-and-later servers.
- ◆ When the phrase *(NetWare v4.0 & later)* appears in the *Action* column, the command and all its parameters can be used only with NetWare for SAA servers that use NetWare v4.0 and later. These commands do not work with servers that use NetWare v3.1x.

IMPORTANT: These tables list the server command parameters for each command you can send to NetWare. These commands should always be preceded with the following command routing and command security parameters:

```
RUNCMD SP=service_point_name, APPL=NETWARE
      SName=server_name OP=userid
```

Table 6 NetWare Commands Sorted by Action

Action	Resource	Attribute	Parameter	Resource Qualifier	Command Qualifier
Add	Directory	Trustee		Path= <i>path</i>	UserName= <i>uname</i> Rights= [ACEFMRSW]
Add	File	Trustee		Path= <i>path</i>	UserName= <i>uname</i> Rights= [ACEFMRSW]
Add <i>(v1.3 & later)</i>	Volume	Trustee		VolName= <i>vname</i>	UserName= <i>uname</i> Rights= [ACEFMRSW]

Action	Resource	Attribute Parameter	Resource Qualifier	Command Qualifier
Broadcast	Server			Msg= "message" [UserName= uname]
Disable	Server	Login		
Disable	TTS			
Down	Server			[Opts= [01]]
Enable	Server	Login		
Enable	TTS			
Get (v1.3 & later NetWare v4.0 & later)	Server	Parm= "parameter"		
Load	CS	CSName= name		[Args= "argument"]
Load	NLM	NLMName= name		
Query	CS	Version		
Query	Directory		Path=path	
Query	Directory	Rights	Path=path	[UserName= uname]
Query	Directory	SpaceAllowed	Path=path	
Query	File		Path=path	[UserName= uname] (v1.3 & later)
Query	File	Rights	Path=path	[UserName= uname]
Query	IPX	Version		
Query	Server			
Query (v1.3 & later)	Server	Date Time		
Query	Server	InternetAddr		

Action	Resource	Attribute Parameter	Resource Qualifier	Command Qualifier
Query	Server	LoginStatus		
Query	Server	NumOfVols		
Query (v1.3 & later)	Server	Volumes		
Query	SPX	Config		
Query	SPX	Version		
Query	TTS	Status		
Query	User	DiskSpaceLeft	UserName= <i>uname</i>	VolName= <i>vname</i>
Query	User	DiskUsage	UserName= <i>uname</i>	VolName= <i>vname</i>
Query	Volume		VolName= <i>vname</i>	
Query	Volume	DiskUsage	VolName= <i>vname</i>	UserName= <i>uname</i>
Query	Volume	USpaceAllowed	VolName= <i>vname</i>	UserName= <i>uname</i>
Remove	Directory	Trustee	Path= <i>path</i>	UserName= <i>uname</i>
Remove	File	Trustee	Path= <i>path</i>	UserName= <i>uname</i>
Remove	Volume	Trustee	VolName= <i>vname</i>	UserName= <i>uname</i>
Set	Directory	ADate= <i>date</i> ArDate= <i>date</i> ArTime= <i>time</i> CDate= <i>date</i> CTime= <i>time</i> Owner= <i>name</i> UDate= <i>date</i> UTime= <i>time</i>	Path= <i>path</i>	

Action	Resource	Attribute Parameter	Resource Qualifier	Command Qualifier
Set	Directory	SpaceAllowed= <i>space</i>	Path= <i>path</i>	
Set	File	ADate= <i>date</i> ArDate= <i>date</i> ArTime= <i>time</i> CDate= <i>date</i> CTime= <i>time</i> Owner= <i>name</i> UDate= <i>date</i> UTime= <i>time</i>	Path= <i>path</i>	
Set (<i>v1.3 & later</i>)	Server	Date= <i>date</i> Time= <i>time</i>		
Set (<i>v1.3 & later, NetWare v4.0 & later</i>)	Server	Parm= "parameter"	Value= <i>value</i>	
Set	Volume	USpaceAllowed = <i>space</i>	VolName= <i>vname</i>	UserName= <i>uname</i>
Set (<i>v1.3 & later</i>)	Volume	NoRestriction	VolName= <i>vname</i>	UserName= <i>uname</i>
UnLoad	CS	CSName= <i>name</i>		
UnLoad	NLM	NLMName= <i>name</i>		

Table 7 NetWare Commands Sorted by Resource

Action	Resource	Attribute Parameter	Resource Qualifier	Command Qualifier
Load	CS	CSName= <i>name</i>		
Query (<i>v1.3 & later</i>)	CS	Version		
UnLoad	CS	CSName= <i>name</i>		
Add	Directory	Trustee	Path= <i>path</i>	UserName= <i>uname</i> Rights= [ACEFMRSW]
Query	Directory		Path= <i>path</i>	

Action	Resource	Attribute Parameter	Resource Qualifier	Command Qualifier
Query	Directory	Rights	Path= <i>path</i>	UserName= <i>uname</i>
Query	Directory	SpaceAllowed	Path= <i>path</i>	
Remove	Directory	Trustee	Path= <i>path</i>	UserName= <i>uname</i>
Set	Directory	ADate= <i>date</i> ArDate= <i>date</i> ArTime= <i>time</i> CDate= <i>date</i> CTime= <i>time</i> Owner= <i>name</i> UDate= <i>date</i> UTime= <i>time</i>	Path= <i>path</i>	
Set	Directory	SpaceAllowed= <i>space</i>	Path= <i>path</i>	
Add	File	Trustee	Path= <i>path</i>	UserName= <i>uname</i> Rights= [ACEFMRSW]
Query	File		Path= <i>path</i>	[UserName= <i>uname</i>] (v1.3 & later)
Query	File	Rights	Path= <i>path</i>	UserName= <i>uname</i>
Remove	File	Trustee	Path= <i>path</i>	UserName= <i>uname</i>
Set	File	ADate= <i>date</i> ArDate= <i>date</i> ArTime= <i>time</i> CDate= <i>date</i> CTime= <i>time</i> Owner= <i>name</i> UDate= <i>date</i> UTime= <i>time</i>	Path= <i>path</i>	
Query	IPX	Version		

Action	Resource	Attribute Parameter	Resource Qualifier	Command Qualifier
Load	NLM	NLMName= <i>name</i>		[Args= <i>"argument"</i>]
UnLoad	NLM	NLMName= <i>name</i>		
Broadcast	Server			Msg= <i>"message"</i> [UserName= <i>uname</i>]
Disable	Server	Login		
Down	Server			[Opts= [01]]
Enable	Server	Login		
Get (<i>v1.3 & later, NetWare v4.0 & later</i>)	Server	Parm= <i>"parameter"</i>		
Query	Server			
Query (<i>v1.3 & later</i>)	Server	Date Time		
Query	Server	Internet_Addr		
Query	Server	LoginStatus		
Query	Server	NumberOfVols		
Query (<i>v1.3 & later</i>)	Server	Volumes		
Set	Server	Date=date Time=time		
Set (<i>v1.3 & later, NetWare v4.0 & later</i>)	Server	Parm= <i>"parameter"</i>	Value= <i>value</i>	
Query	SPX	Config		
Query	SPX	Version		
Disable	TTS			
Enable	TTS			

Action	Resource	Attribute Parameter	Resource Qualifier	Command Qualifier
Query	TTS	Status		
Query	User	DiskSpaceLeft	UserName= uname	VolName= vname
Query	User	DiskUsage	UserName= uname	VolName= vname
Add (v1.3 & later)	Volume	Trustee	VolName= vname	UserName= uname Rights= [ACEFMRSW]
Query	Volume		VolName= vname	
Query	Volume	DiskUsage	VolName= vname	UserName= uname
Query	Volume	USpaceAllowed	VolName= vname	UserName= uname
Remove	Volume	Trustee	VolName= vname	UserName= uname
Set	Volume	USpaceAllowed =space	VolName= vname	UserName= uname
Set (v1.3 & later)	Volume	NoRestriction	VolName= vname	UserName= uname

NetWare Command Descriptions

This section describes the function and the server command parameters for each command you can send to NetWare. The server command parameters in each command should always be preceded with the following command routing and command security parameters:

```
RUNCMD SP=service_point_name, APPL=NETWARE
      SName=server_name [OP=userid]
```

Many command descriptions include tables that use the following conventions:

- ◆ When the phrase (*v1.3 & later*) appears in the action column, the command and all its parameters can be used only with NetWare for SAA v1.3 and later and NMA for NetView v1.3 and later.

- ◆ When the phrase (*v1.3 & later*) appears adjacent to a single attribute parameter or qualifier, the phrase indicates that the parameter or qualifier can be used only with v1.3-and-later servers. Unmarked parameters and qualifiers may be used with v1.2-and-later servers.
- ◆ When the phrase (*NetWare v4.0 & later*) appears in the action column, the command and all its parameters can be used only with NetWare for SAA servers that use NetWare v4.0 and later. These commands do not work with servers that use NetWare v3.1x.

ADD VOLUME, DIRECTORY, or FILE TRUSTEE

The ADD commands allow you to add a trustee to a volume, directory, or file on a NetWare server. A trustee is a NetWare user that is entitled to use the volume, directory, or file. [Table 8](#) shows the server command parameters for each ADD command.

Table 8 NetWare ADD Commands

Action	Resource	Attribute	Parameter	Resource Qualifier	Command Qualifier
Add	Directory	Trustee		Path= <i>path</i>	UserName= <i>uname</i> Rights= [ACEFMRSW]
Add	File	Trustee		Path= <i>path</i>	UserName= <i>uname</i> Rights= [ACEFMRSW]
Add (<i>v1.3 & later</i>)	Volume	Trustee		VolName= <i>vname</i>	UserName= <i>uname</i> Rights= [ACEFMRSW]

The *path* variable specifies the NetWare directory path to the volume, directory, or file. The path may include the volume, directory, subdirectory, and filename. For example:

```
Volume:MyDir\MySubDir\MyFile.txt
```

The *uname* variable specifies the name of the user that will be allowed access to the volume, directory, or file.

The Rights command qualifier specifies how the user will be able to use the directory, file, or volume. The Rights command qualifier must be followed by one or more of the letters shown in [Table 9 on page 77](#).

Table 9 NetWare Rights

Letter	Right	Description
A	Access Control	Allows users to modify trustee assignments and Inherited Rights Masks.
C	Create	Allows users to create files and subdirectories.
E	Erase	Allows users to delete files and subdirectories.
F	File Scan	Allows users to see files.
M	Modify	Allows users to change directory and file attributes and to rename subdirectories and files.
R	Read	Allows users to open and read files.
S	Supervisory	Grants all rights to the directory or file.
W	Write	Allows users to write to files.

When you enter the rights letters, enter them according to the following rules:

- ◆ The letters may be entered in any sequence.
- ◆ The letters you type may be uppercase or lowercase letters.
- ◆ Do not enter spaces before, between, or after the letters.
- ◆ To assign all rights, enter **ALL** after the **Rights=** command qualifier. You can enter ALL in any combination of uppercase and lowercase letters.

NOTE: The Rights command qualifier simultaneously defines all new rights for the directory, file, or volume. To add rights to a directory, file, or volume, you must include the letters for the new rights and the letters for all existing rights that are to be retained. To review the rights assigned to a directory or file, use the QUERY DIRECTORY RIGHTS or QUERY FILE RIGHTS command. For more information on path or NetWare rights, see *NetWare v3.1x Concepts* or *NetWare 4.0 Concepts*.

BROADCAST

The BROADCAST command sends a message to workstation users that are connected to the destination NetWare server. You can broadcast a message to one user or to all users. Consider using this command to warn users before shutting down a server.

The BROADCAST command requires the following parameters:

```
Broadcast Server Msg="message" [UserName=uname]
```

When sending commands, replace the *message* variable with the message you want to send (the quotation marks are required).

To send a message to all workstation users that are currently logged in, do one of the following:

- ◆ Send the command without the **UserName=uname** command qualifier.
- ◆ Send the command with the **UserName=uname** command qualifier and replace the *uname* variable with ALL (**UserName=ALL**).

To send a message to one or more users, send the command with a **UserName=uname** command qualifier for each user. For example:

```
Broadcast Server Msg="Server is going down in 5 minutes."  
[UserName=jbowman] [UserName=vjang]
```

The *uname* variable specifies the NetWare user ID of the user that will receive the message.

DISABLE SERVER LOGIN or TTS

The DISABLE commands can be used to disable server login by workstations or to disable the TTS.

Consider disabling server login when you have performance problems with the server. Disabling server login prevents additional workstations from logging in. Workstations that are already logged in remain logged in.

Novell® recommends that you do not disable TTS. TTS protects database applications from corruption caused when a server, workstation, or network failure interrupts a database transaction. TTS protects the database by backing out incomplete transactions that result from a failure in a network component.

Table 10 shows the parameters required by the DISABLE SERVER LOGIN and DISABLE TTS commands.

Table 10 NetWare DISABLE Commands

Action	Resource	Attribute	Parameter	Resource Qualifier	Command Qualifier
Disable	Server	Login			

Action	Resource	Attribute Parameter	Resource Qualifier	Command Qualifier
Disable	TTS			

DOWN SERVER

The DOWN SERVER command brings down the NetWare server. This command uses the following parameters:

Down Server [Opts= [01]]

When the DOWN SERVER command is entered without the [Opts= [01]] command qualifier, the server shuts down immediately, regardless of the current state of server files. If files are open, changes made to those files may be lost.

NOTE: The server may shut down before it responds to the DOWN SERVER command. When this happens, NCCF may display a command timeout message.

When the DOWN SERVER command is entered with the [Opts= [10]] command qualifier, you must choose option 1 or option 0 (zero). Option 1 (opts=1) shuts down the server immediately, regardless of the current state of server files. Option 0 (opts=0) shuts down the server only when no server files are open; if any server files are open, the server is not shut down.

WARNING: When you bring down a server, the server is instantly unavailable to all users and to the NetWare administrator. Before bringing down a server, consider using the Broadcast command to warn all users. Also, you should warn the NetWare administrator before bringing down a server.

ENABLE SERVER LOGIN or TTS

The ENABLE commands can be used to enable server login by workstations or to enable TTS.

TTS protects database applications from corruption caused when a server, workstation, or network failure interrupts a database transaction. TTS protects the database by backing out incomplete transactions that result from a failure in a network component.

[Table 11 on page 80](#) shows the parameters required for the ENABLE commands.

Table 11 NetWare ENABLE Commands

Action	Resource	Attribute Parameter	Resource Qualifier	Command Qualifier
Enable	Server	Login		
Enable	TTS			

GET SERVER

The GET SERVER command allows you to display the value of select server parameters. [Table 12](#) shows the syntax of the GET SERVER command.

Table 12 NetWare GET SERVER Command

Action	Resource	Attribute Parameters	Resource Qualifier	Command Qualifier
Get (v1.3 & later, NetWare v4.0 & later)	Server	Parm= "parameter"		

The GET SERVER command operates only on NetWare v4.0 servers. To view one of the server parameters, enter the command and replace the *parameter* variable with one of the following parameters:

```

Allow Unencrypted Passwords
Immediate Purge of Deleted Files
Maximum Directory Cache Buffers
Maximum File Locks
Maximum File Locks Per Connection
Maximum Outstanding NCP Searches
Maximum Packet Receive Buffers
Maximum Record Locks
Maximum Record Locks Per Connection
Minimum Directory Cache Buffers
Minimum File Cache Buffers
Volume Low Warn All Users
Volume Low Warning Threshold
  
```


You can enter a parameter name in uppercase or lowercase letters. You must enter a single space character between each pair of words in the parameter name, and you must enclose the parameter name in quotation marks. Do not enter additional space characters before or after the parameter name.

NOTE: The NetWare administrator can use the NetWare GET command to view the settings of all these parameters on NetWare v3.1x and NetWare v4.0 servers.

Descriptions of these attribute parameters are in [“Allow Unencrypted Passwords” on page 92](#).

LOAD CS or NLM

The LOAD commands load a communication service or NLM. [Table 13](#) lists the parameters used by the LOAD commands.

Table 13 NetWare LOAD Commands

Action	Resource	Attribute Parameter	Resource Qualifier	Command Qualifier
Load	CS	CSName=	name	
Load	NLM	NLMName=	name	[Args= "argument"]

The *name* variable must be replaced with the name of the communication service or NLM. When loading an NLM, you may use the optional **[Args="argument"]** command qualifier to include any arguments or parameters that are required when you are loading the command from the NetWare console. These arguments or parameters must replace the *argument* variable and be enclosed in quotation marks. For more information on LOAD NLM parameters, refer to the NetWare documentation for the NLM.

WARNING: If you send a LOAD command with an incomplete set of parameters for an NLM or communication service, a prompt for the missing parameters may appear on the server console. The NLM or communication service does not continue execution until the missing information is entered at the server console. You are not notified about the missing parameters, and the NLM or communication service may appear to be operating when it is not.

NOTE: When loading an NLM that has arguments, separate the arguments with space characters.

QUERY CS VERSION

The QUERY CS VERSION command returns the version level of the communication executive. This command uses the following parameters:

Query CS Version

IMPORTANT: The QUERY CS VERSION command operates only with NetWare for SAA v1.3 or later.

QUERY DIRECTORY

As shown in [Table 14](#), the QUERY DIRECTORY command has three forms.

Table 14 NetWare QUERY DIRECTORY Commands

Action	Resource	Attribute	Parameter	Resource Qualifier	Command Qualifier
Query	Directory			Path=path	
Query	Directory	Rights		Path=path	UserName= uname
Query	Directory	SpaceAllowed		Path=path	

When the QUERY DIRECTORY command is used without an attribute parameter, the command returns the following information:

- ◆ Volume where the directory resides
- ◆ Directory owner
- ◆ Inherited rights mask
- ◆ Access date and time
- ◆ Modification date and time
- ◆ Creation date and time
- ◆ Archive date and time
- ◆ Owner rights

The QUERY DIRECTORY RIGHTS command returns the rights assigned to the specified NetWare user for the specified directory. The rights are listed in [Table 9 on page 77](#).

The QUERY DIRECTORY SPACEALLOWED command returns the amount of available space in the specified directory and the amount of space reserved for the directory.

Use the *path* variable to specify the directory for which you want information. When using the QUERY DIRECTORY RIGHTS command, use the *uname* variable to specify the user for which you want information.

QUERY FILE

As shown in Table 15, the QUERY FILE command has two forms.

Table 15 NetWare QUERY FILE Commands

Action	Resource	Attribute Parameter	Resource Qualifier	Command Qualifier
Query	File		Path= <i>path</i>	[UserName= <i>uname</i>] (v1.3 & later)
Query	File	Rights	Path= <i>path</i>	UserName= <i>uname</i>

When the QUERY FILE command does not include an attribute parameter, the command returns the following information:

- ◆ Volume where the file resides
- ◆ Mode
- ◆ Attributes
- ◆ Size
- ◆ Owner
- ◆ Inherited rights mask
- ◆ Access date and time
- ◆ Modification date and time
- ◆ Archive date and time
- ◆ Creation date and time
- ◆ Name space values
- ◆ User rights if a user name is included. The user name is optional.

When the QUERY FILE command includes the Rights attribute parameter, the command returns only the rights assigned to the specified user.

Use the *path* variable to specify the file for which you want information. The *uname* variable specifies the user whose file rights you want to view.

The USERNAME command qualifier is optional when the QUERY FILE command is entered without the Rights attribute parameter. To display the file information and the rights for a specific user, include the USERNAME command qualifier and replace the *uname* variable with the user's NetWare ID.

QUERY IPX VERSION

The QUERY IPX command returns the IPX version information. This command uses the following parameters:

Query IPX Version

QUERY SERVER

Table 16 lists the parameters used by each of the QUERY SERVER commands.

Table 16 NetWare QUERY SERVER Commands

Action	Resource	Attribute Parameter	Resource Qualifier	Command Qualifier
Query	Server			
Query (v1.3 & later)	Server	Date Time		
Query	Server	InternetAddr		
Query	Server	LoginStatus		
Query	Server	NumOfVols		
Query (v1.3 & later)	Server	Volumes		

When the QUERY SERVER command is used without an attribute parameter, the command returns the following information:

- ◆ NetWare version number
- ◆ Maximum number of connections supported
- ◆ Number of connections in use
- ◆ System Fault Tolerance (SFT) level
- ◆ TTS level
- ◆ Maximum number of volumes supported
- ◆ Security restriction level

When the QUERY SERVER command includes an attribute parameter, NetWare returns the information requested by the parameter (see [Table 17](#)).

Table 17 QUERY SERVER Attribute Parameters

Attribute Parameter	Information Sent to NetView
Date	The server date.
InternetAddr	The network and node addresses of the server.
LoginStatus	The server login status. The status is either <i>enabled</i> or <i>disabled</i> .
NumOfVols	The number of server volumes.
Time	The server time.
Volumes	A list of the volumes mounted on the server.

QUERY SPX

As shown in [Table 18](#), the QUERY SPX command has two forms.

Table 18 NetWare QUERY SPX Commands

Action	Resource	Attribute Parameter	Resource Qualifier	Command Qualifier
Query	SPX	Config		
Query	SPX	Version		

The QUERY SPX CONFIG command returns the maximum number of SPX connections supported and the number of available connections. The QUERY SPX VERSION command returns the SPX version number.

QUERY TTS

The QUERY TTS command returns the status of the TTS, which is either *enabled* or *disabled*. TTS protects database applications from corruption caused when a server, workstation, or network failure interrupts a database transaction. TTS protects the database by backing out incomplete transactions that result from a failure in a network component.

The format for this command is

Query TTS Status

QUERY USER

The QUERY USER command has forms, which are listed in [Table 19](#).

Table 19 NetWare QUERY USER Commands

Action	Resource	Attribute Parameter	Resource Qualifier	Command Qualifier
Query	User	DiskSpaceLeft	UserName= uname	VolName= vname
Query	User	DiskUsage	UserName= uname	VolName= vname

The QUERY USER DISKSPACELEFT command returns the amount of remaining volume disk space allocated to the user. The QUERY USER DISKUSAGE command returns the number of directories, files, and blocks being used by a user.

The *uname* variable specifies the user for which you want information. The *vname* variable specifies the volume for which you want the information.

QUERY VOLUME

Table 20 on page 87 lists the three forms of the QUERY VOLUME command.

Table 20 NetWare QUERY VOLUME Commands

Action	Resource	Attribute Parameter	Resource Qualifier	Command Qualifier
Query	Volume		VolName= <i>vname</i>	
Query	Volume	DiskUsage	VolName= <i>vname</i>	UserName= <i>uname</i>
Query	Volume	USpaceAllowed	VolName= <i>vname</i>	UserName= <i>uname</i>

When used without an attribute parameter, the QUERY VOLUME command returns

- ◆ Volume number
- ◆ Number of sectors per block
- ◆ Total number of blocks
- ◆ Starting block number
- ◆ Total available blocks
- ◆ Total directory slots
- ◆ Available directory slots
- ◆ Maximum directory slots used
- ◆ Volume status (mounted, hashing, or removable)

The QUERY VOLUME DISKUSAGE command returns the number of directories, files, and blocks being used by a user. The QUERY VOLUME USPACEALLOWED command returns the amount of space allowed to the specified user.

The *vname* variable specifies the volume for which you want information; the *uname* variable specifies the user for which you want information.

REMOVE VOLUME, DIRECTORY, or FILE TRUSTEE

The REMOVE commands allow you to remove a trustee from a volume, directory, or file on a NetWare server. A trustee is a NetWare user that is entitled to use the volume, directory, or file.

Table 21 on page 88 shows the parameters used by the REMOVE commands.

Table 21 NetWare REMOVE Commands

Action	Resource	Attribute Parameter	Resource Qualifier	Command Qualifier
Remove	Directory	Trustee	Path= <i>path</i>	UserName= <i>uname</i>
Remove	File	Trustee	Path= <i>path</i>	UserName= <i>uname</i>
Remove	Volume	Trustee	VolName= <i>vname</i>	UserName= <i>uname</i>

When using the REMOVE DIRECTORY TRUSTEE and REMOVE FILE TRUSTEE commands, the *path* variable specifies the NetWare directory path to the volume, directory, or file from which the trustee will be removed. The path may include the volume, directory, subdirectory, and filename. For example:

```
Volume:MyDir\MySubDir\MyFile.txt
```

For more information on specifying a directory or file path, see *NetWare v3.1x Concepts* or *NetWare 4.0 Concepts*.

The *uname* variable specifies the name of the user that will be denied access to the file or directory.

When using the REMOVE VOLUME TRUSTEE command, the *vname* variable specifies the volume from which the trustee will be removed.

SET DIRECTORY

The SET DIRECTORY commands allow you to set one or more properties of a directory with a single command. Table 22 on page 89 shows the parameters used by the SET DIRECTORY commands.

Table 22 NetWare SET DIRECTORY Commands

Action	Resource	Attribute Parameters	Resource Qualifier	Command Qualifier
Set	Directory	ADate= <i>date</i> ArDate= <i>date</i> ArTime= <i>time</i> CDate= <i>date</i> CTime= <i>time</i> Owner= <i>name</i> UDate= <i>date</i> UTime= <i>time</i>	Path= <i>path</i>	
Set	Directory	SpaceAllowed = <i>space</i>	Path= <i>path</i>	

The attribute parameters in [Table 22](#) define the directory properties to be set. [Table 23](#) shows the properties that each attribute parameter controls.

Table 23 SET DIRECTORY Attribute Parameters

Attribute Parameter	Property Defined
ADate= <i>date</i>	File access date. Replace the <i>date</i> variable with the new access date for the file.
ArDate= <i>date</i>	File archive date. Replace the <i>date</i> variable with the new archive date for the file.
ArTime= <i>time</i>	File archive time. Replace the <i>time</i> variable with the new archive time for the file.
CDate= <i>date</i>	Directory creation date. Replace the <i>date</i> variable with the new creation date for the directory.
CTime= <i>time</i>	Directory creation time. Replace the <i>time</i> variable with the new creation time for the directory.
Owner= <i>name</i>	Directory owner. Replace the <i>name</i> variable with the user ID for the new owner of the directory.
UDate= <i>date</i>	File update date. Replace the <i>date</i> variable with the new update date for the file.
UTime= <i>time</i>	File update time. Replace the <i>time</i> variable with the new update time for the file.

Attribute Parameter	Property Defined
<code>SpaceAllowed=space</code>	The maximum space allowed for all files and subdirectories within the directory. Replace the <i>space</i> variable with a number that represents the maximum size of the directory. You cannot specify unlimited space; you must specify a value.

The *path* variable identifies the directory to be modified.

SET FILE

The SET FILE command allows you to set one or more properties of a file with a single command. Table 24 shows the parameters used by the SET FILE command.

Table 24 NetWare SET FILE Commands

Action	Resource	Attribute Parameters	Resource Qualifier	Command Qualifier
Set	File	<code>ADate=date</code> <code>ArDate=date</code> <code>ArTime=time</code> <code>CDate=date</code> <code>CTime=time</code> <code>Owner=name</code> <code>UDate=date</code> <code>UTime=time</code>	<code>Path=path</code>	

The attribute parameters in Table 24 defines the directory properties to be set. Table 25 shows the properties that each attribute parameter controls.

Table 25 SET FILE Attribute Parameters

Attribute Parameter	Property Defined
<code>ADate=date</code>	File access date. Replace the <i>date</i> variable with the new access date for the file.
<code>ArDate=date</code>	File archive date. Replace the <i>date</i> variable with the new archive date for the file.
<code>ArTime=time</code>	File archive time. Replace the <i>time</i> variable with the new archive time for the file.

Attribute Parameter	Property Defined
CDate= <i>date</i>	File creation date. Replace the <i>date</i> variable with the new creation date for the file.
CTime= <i>time</i>	File creation time. Replace the <i>time</i> variable with the new creation time for the file.
Owner= <i>name</i>	File owner. Replace the <i>name</i> variable with the user ID for the new owner of the file.
UDate= <i>date</i>	File update date. Replace the <i>date</i> variable with the new update date for the file.
UTime= <i>time</i>	File update time. Replace the <i>time</i> variable with the new update time for the file.

The *path* variable identifies the directory path to the file you are modifying. The *path* variable must include the name of the file.

SET SERVER

The SET SERVER commands allow you to set one or more properties of a server with a single command. Table 26 shows the parameters used by the SET SERVER commands.

Table 26 NetWare Set Server Commands

Action	Resource	Attribute Parameters	Resource Qualifier	Command Qualifier
Set (v1.3 & later)	Server	Date= <i>date</i> Time= <i>time</i>		
Set (v1.3 & later, NetWare v4.0 & later)	Server	Parm= " <i>parameter</i> "	Value=	<i>value</i>

To set the server date, use the Date attribute parameter and replace the *date* variable with the new date. To set the server time, use the Time attribute parameter and replace the *time* variable with the new server time.

To set one of the server parameters, use the Parm attribute parameter and replace the *parameter* variable with one of the following parameters:

Allow Unencrypted Passwords
Immediate Purge of Deleted Files
Maximum Directory Cache Buffers
Maximum File Locks
Maximum File Locks Per Connection
Maximum Outstanding NCP Searches
Maximum Packet Receive Buffers
Maximum Record Locks
Maximum Record Locks Per Connection
Minimum Directory Cache Buffers
Minimum File Cache Buffers
Volume Low Warn All Users
Volume Low Warning Threshold

NOTE: The SET SERVER PARM command operates only with NetWare v4.0 servers. If you need to adjust one of these parameters in a NetWare v3.1x server, contact the NetWare administrator. The NetWare administrator can use the NetWare SET command to set all these parameters on NetWare v3.1x and NetWare v4.0 servers.

You can enter a parameter name in uppercase or lowercase letters. You must enter a single space character between each pair of words in the parameter name, and you must enclose the parameter name in quotation marks. Do not enter additional space characters before or after the parameter name.

The following subsections provide additional information on each of these attribute parameters. For more information on a parameter, see the *NetWare 4.0 Utilities Reference*.

Allow Unencrypted Passwords

This parameter controls the use of unencrypted passwords. An ON setting allows users to use both unencrypted and encrypted passwords. An OFF setting allows users to use only encrypted passwords.

Supported values: ON and OFF

Default: OFF

Immediate Purge of Deleted Files

This parameter controls the salvageable file feature.

Supported values: ON and OFF

Default: OFF

If this parameter is set to OFF, files can be salvaged with a utility program. See SALVAGE in the *NetWare Version 3.1x Utilities Reference* or FILER in the *NetWare 4.0 Utilities Reference*.

If this parameter is set to ON, all files are immediately purged when they are deleted. The ON setting disables all NetWare salvage features.

Maximum Directory Cache Buffers

This parameter sets the maximum cache buffers used for directory cache buffers. When the operating system allocates a directory cache buffer, the allocation is permanent until the file server reboots; the buffers do not return to file caching when the need for directory cache buffers decreases.

This parameter keeps the operating system from allocating too many directory cache buffers so that memory is available for other server processes.

Supported values: 20 to 4000

Default: 500

Maximum File Locks

This parameter controls how many opened and locked files the operating system can handle.

Supported values: 100 to 100000

Default: 10000

Maximum File Locks Per Connection

This parameter controls how many opened and locked files a station can use at one time.

Supported values: 10 to 1000

Default: 250

Maximum Outstanding NCP Searches

This advanced parameter determines the maximum number of NetWare Core Protocol™ (NCP™) directory searches that can be processed at the same time.

Supported values: 10 to 1000

Default: 51

Maximum Packet Receive Buffers

This parameter determines the maximum number of packet receive buffers that the operating system can allocate.

Supported values: 50 to 200

Default: 100

Maximum Record Locks

This parameter controls how many record locks the operating system can handle.

Supported values: 100 to 200000

Default: 20000

Maximum Record Locks Per Connection

This parameter controls how many record locks a station can use at one time.

Supported values: 100 to 10000

Default 500

Minimum Directory Cache Buffers

This parameter reserves memory for directory cache buffers.

Supported values: 10 to 2000

Default: 20

If directory searches take too long, increase this parameter in small increments until directory searches can be done quickly. Do not increase this parameter beyond the value that provides satisfactory performance. Once memory is

assigned to directory cache buffers, it cannot be used for any other server process.

Minimum File Cache Buffers

This parameter sets the minimum number of cache buffers that the operating system can allow for file caching. All memory not allocated for other processes is given to file caching. As memory is requested for other uses, the file server gives up cache buffers. This limit specifies when the file server should stop giving file cache buffers to other processes.

Supported values: 20 to 1000

Default: 20

If you set the minimum too high, other server processes may not be able to allocate necessary memory resources. For example, a loadable module could fail to load because the server has run out of available memory.

Volume Low Warn All Users

This parameter controls whether the operating system warns users when a volume is almost full.

Supported values: ON and OFF

Default: ON

IMPORTANT: If you choose not to warn your users, check the volume usage daily with the QUERY VOLUME command.

Volume Low Warning Threshold

This parameter defines the volume usage level that triggers a "volume low" warning message to volume users. When the unused volume space decreases to below the value set by this parameter, a warning is issued if the Volume Low Warn All Users parameter is set to ON.

Supported values: 0 to 1000000 blocks

Default: 256 blocks

If your volumes have been assigned different block sizes, each volume will have a different amount of free space when the warning is issued.

SET VOLUME

As shown in [Table 27](#), the SET VOLUME command has two forms.

Table 27 SET VOLUME Attribute Parameters

Action	Resource	Attribute Parameters	Resource Qualifier	Command Qualifier
Set	Volume	USpaceAllowed = <i>space</i>	VolName= <i>vname</i>	UserName= <i>uname</i>
Set (<i>v1.3 & later</i>)	Volume	NoRestriction	VolName= <i>vname</i>	UserName= <i>uname</i>

The SET VOLUME USPACEALLOWED command defines the total amount of space that can be allocated to the specified user on the specified volume.

The SET VOLUME NORESTRICTION command removes all restrictions on the amount of space the specified user can use on the specified volume. This command operates only with NetWare for SAA v1.3 or later and NMA for NetView v1.3 or later.

The *space* variable defines the allocated space in kilobytes, while the *vname* and *uname* variables define the volume and user to which the command applies.

UNOLAD CS or NLM

This command unloads a communication service or NLM. [Table 28](#) lists the parameters used by the UNLOAD CS and UNLOAD NLM commands.

Table 28 NetWare UNLOAD Commands

Action	Resource	Attribute Parameter	Resource Qualifier	Command Qualifier
UnLoad	CS	CSName= <i>name</i>		
UnLoad	NLM	NLMName= <i>name</i>		

The *name* variable must be replaced with the name of the communication service or NLM to be unloaded.

WARNING: If you send an UNLOAD command for an NLM or communication service, the command will fail if the NLM or communication service is exporting

functions and symbols to another NLM or communication service. If the UNLOAD command fails, a message appears on the system console. You are not notified about the failure, and the NLM or communication service may appear to be unloaded when it is not.

A

Installing NetWare Code Point Messages for NetView

This appendix describes

- ◆ How to determine whether you need to install NetView* code points
- ◆ An overview of the installation procedure
- ◆ How to install NetView code points on a Virtual Machine* (VM*) system
- ◆ How to install NetView code points on a Multiple Virtual Storage (MVS) system

Do You Need to Install?

Beginning with NetView v2.1, all versions of NetView contain all the code point messages required to display NetWare alerts. To find out the version of NetView you are using, contact a NetView operator or your systems programmer. If the host is running NetView v2.1 or higher, you do not need to install code point messages.

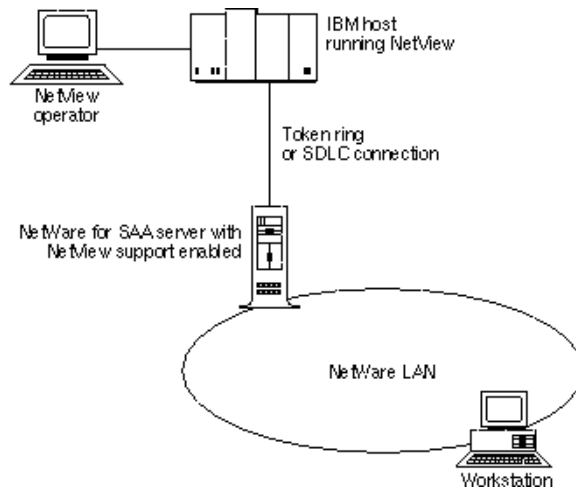
If the host is running an older version of NetView (before v2.1), you might need to install additional code points as described later in this appendix. You do not need to install the code points if the code points for NetWare for SAA v1.2 or later are already installed on the NetView host. Once the code points are installed for one v1.2 server, the installed code points support all v1.2-and-later servers.

Installation Overview

This section provides a general overview of the installation process. Detailed procedures for the VM and MVS host systems appear later in this appendix.

Figure 4 shows the equipment you may need for installing the code points in NetView.

Figure 4 Installation Overview



To install the code point messages, you must perform the following tasks:

- ♦ *Task 1. Prepare to transfer files to the host.*
 - ♦ The NetWare[®] administrator should install NetWare for SAA (or a product with similar features). The NetWare administrator must be able to access the host from a workstation on the NetWare LAN.
 - ♦ Using a workstation configured with NetWare 3270 LAN Workstation[™] software with file transfer capabilities (or a product with similar features), the NetWare administrator establishes a host session and accesses the NetView *RUN* disk.
- ♦ *Task 2. Install the code point messages.*
 - ♦ Using the NetWare 3270 LAN Workstation (or a product with similar features), the NetWare administrator transfers the code point files from the *NetView Support Files* disk to the NetView *RUN* disk.

- ◆ Using a host terminal or the NetWare 3270 LAN Workstation, compile the code point files.
- ◆ Using a NetView console or NetView on the NetWare 3270 LAN Workstation, edit the NetView startup command file.
- ◆ Using a NetView console or NetView on the NetWare 3270 LAN Workstation, restart NetView and set the NetView recording and viewing filters.

Detailed instructions for these tasks appear in the following sections.

Preparing for File Transfer (VM and MVS Installations)

To prepare for transferring code point files to the host, follow the procedures below.

- 1** Complete the NetWare for SAA* installation so that the NetWare administrator can access the host from a workstation on the NetWare LAN.
- 2** Locate the disk with the code point files.
 - ◆ The code point files are located on the diskette labeled *NetView Support Files* in the NetWare for SAA package.
 - ◆ The code point files are located in the CP directory on *NMA for NetView v1.3, Disk 2*.
- 3** Start up a NetWare 3270 LAN Workstation that has file transfer software installed; then establish a host session.

You must use a workstation with a 3.5-inch floppy disk drive. To establish the host session, you can use

- ◆ NetWare 3270 LAN Workstation for Windows™ software
- ◆ NetWare 3270 LAN Workstation for DOS™ software

File transfer software is integrated into NetWare 3270 LAN Workstation for Windows*. When using NetWare 3270 LAN Workstation for DOS, use the SEND program to transfer files to the host.

For additional information on using the NetWare 3270 LAN Workstation software and on transferring files, refer to the publications for the products you are using.

Installing NetView Code Points in VM Systems

Before starting the procedures in this section, complete the procedures in [“Preparing for File Transfer \(VM and MVS Installations\)”](#) on page 101.

The following procedure is based on recommendations in the *NetView Customization Guide* (IBM* publication SC31-6016). Novell® recommends that you review the information on creating user-defined generic code points before attempting to install the code points.

To continue installing the NetView code points, use the following procedure.

- 1 Using a host session in the NetWare 3270 LAN Workstation, log on to MAINT; then access the NetView *RUN* disk by entering

```
ACCESS 334 A
```

If you do not know how to log on to MAINT, contact your host systems programmer.

- 2 Using the file transfer software on the NetWare 3270 LAN Workstation, transfer the code point files to the NetView *RUN* disk.

When transferring the files, use the ASCII, CRLF, and fixed record format options. If you are using the SEND.EXE program, for example, enter the following at the DOS prompt (>):

```
SEND BNJ81UTB.NCC BNJ81UTB NCCFLST A (ASCII CRLF RECFM
F
SEND BNJ82UTB.NCC BNJ82UTB NCCFLST A (ASCII CRLF RECFM
F
SEND BNJ92UTB.NCC BNJ92UTB NCCFLST A (ASCII CRLF RECFM
F
SEND BNJ93UTB.NCC BNJ93UTB NCCFLST A (ASCII CRLF RECFM
F
SEND BNJ94UTB.NCC BNJ94UTB NCCFLST A (ASCII CRLF RECFM
F
SEND BNJ95UTB.NCC BNJ95UTB NCCFLST A (ASCII CRLF RECFM
F
SEND BNJ96UTB.NCC BNJ96UTB NCCFLST A (ASCII CRLF RECFM
F
```

- 3 Using a host terminal or a host session in the NetWare 3270 LAN Workstation, compile the transferred files on the host by entering

```
CNMSVM07 NUMBER=81 NETLNK=NOVELL
CNMSVM07 NUMBER=82 NETLNK=NOVELL
```

```
CNMSVM07 NUMBER=92 NETLNK=NOVELL
CNMSVM07 NUMBER=93 NETLNK=NOVELL
CNMSVM07 NUMBER=94 NETLNK=NOVELL
CNMSVM07 NUMBER=95 NETLNK=NOVELL
CNMSVM07 NUMBER=96 NETLNK=NOVELL
```

- 4 Using a host terminal or host session in the NetWare 3270 LAN Workstation, open the NetView startup command file for editing by typing

```
XEDIT NETSTRT GCS
```

- 5 Within the NetView startup file, locate the GLOBAL command; insert the word **NOVELL** immediately after the word **LOADLIB**; save the change; and close the file.

This step includes the Novell library in the list of NetView libraries that are loaded at startup. The modified GLOBAL command will appear similar to

```
'GLOBAL LOADLIB NOVELL PROPMX USER NCCF STATMON NLDM
NPDA'
```

- 6 Log on to a NetView console and shut down NetView by entering the following NetView command:

```
CLOSE IMMED
```

WARNING: This command brings down NetView. To avoid untimely interruption of NetView services, consider performing this step during a scheduled system maintenance period.

- 7 When NetView has completed shutting down, log on to the NetView virtual machine; then start up NetView by entering the following VM command:

```
CP IPL GCS
```

While NetView is starting up, the startup messages may include

```
BNJ090I NETVIEW USER CODE POINT TABLE BNJ92UTB IS
AVAILABLE
```

```
BNJ090I NETVIEW USER CODE POINT TABLE BNJ93UTB IS
AVAILABLE
```

```
BNJ090I NETVIEW USER CODE POINT TABLE BNJ94UTB IS
AVAILABLE
```

```
BNJ090I NETVIEW USER CODE POINT TABLE BNJ95UTB IS
AVAILABLE
```

```
BNJ090I NETVIEW USER CODE POINT TABLE  BNJ96UTB IS
AVAILABLE

BNJ090I NETVIEW USER CODE POINT TABLE  BNJ81UTB IS
AVAILABLE

BNJ090I NETVIEW USER CODE POINT TABLE  BNJ82UTB IS
AVAILABLE
```

The preceding messages indicate that the code point files for NetWare are available. If these messages are directed to another console, they will not appear.

- 8** Disconnect from the NetView virtual machine by entering the command
`#CP DISC`
- 9** Log on to NetView. When the NetView main menu appears, select NPDA by entering
`NPDA`
- 10** From the NetView NPDA prompt, set the NetView recording and viewing filters by entering the following NetView commands:

```
srf arec pass e paff
srf arec pass e temp
srf arec pass e impd
svf pass e paff
svf pass e temp
svf pass e impd
```

NOTE: In order for NetWare messages to be displayed, the recording and viewing filters must be set each time NetView is started. To simplify NetView startup, enter these commands in a CLIST.

Installing NetView Code Points in MVS Systems

Before starting the procedures in this section, complete the procedures in [“Preparing for File Transfer \(VM and MVS Installations\)”](#) on page 101.

The following procedure is based on recommendations in the *NetView Customization Guide* (IBM publication SC31-6016). Novell recommends that you review the information on creating user-defined generic code points before attempting to install the code points.

To continue installing the NetView code points:

- 1** Using a host session in the NetWare 3270 LAN Workstation, log on with a Time Sharing Option (TSO) user ID that has sufficient access rights to be able to create or update a system data set such as SYS1.xxxx.
- 2** Using a NetWare 3270 LAN Workstation host session and the Interactive System Productivity Facility (ISPF), allocate a partitioned data set (PDS) that is to contain the code point files.

Give the data set a name like SYS2.NTVW.CODE.POINTS. Make sure to set the allocation parameters to the following values:

- ◆ LRECL = 80
- ◆ RECFM = FB
- ◆ Directory blocks should be 5
- ◆ Primary allocation should be at least one cylinder or the equivalent in fixed-block architecture (FBA) blocks
- ◆ Secondary allocation should be at least one cylinder or the equivalent in FBA blocks

- 3** Exit ISPF by entering

=X

- 4** Using the file transfer software on the NetWare 3270 LAN Workstation, transfer the INSTALL.JCL file and the code point files to the host.

When transferring the files, use the ASCII and CRLF options. If you are using the SEND.EXE program, for example, enter the following at the DOS prompt (>):

```
SEND BNJ92UTB.NCC 'SYS2.NTVW.CODE.POINTS(BNJ92UTB) '  
  ASCII CRLF  
SEND BNJ93UTB.NCC 'SYS2.NTVW.CODE.POINTS(BNJ93UTB) '  
  ASCII CRLF  
SEND BNJ94UTB.NCC 'SYS2.NTVW.CODE.POINTS(BNJ94UTB) '  
  ASCII CRLF  
SEND BNJ95UTB.NCC 'SYS2.NTVW.CODE.POINTS(BNJ95UTB) '  
  ASCII CRLF  
SEND BNJ96UTB.NCC 'SYS2.NTVW.CODE.POINTS(BNJ96UTB) '  
  ASCII CRLF  
SEND BNJ81UTB.NCC 'SYS2.NTVW.CODE.POINTS(BNJ81UTB) '  
  ASCII CRLF
```

```
SEND BNJ82UTB.NCC 'SYS2.NTVW.CODE.POINTS(BNJ82UTB) '  
ASCII CRLF  
SEND INSTALL.JCL 'SYS2.NTVW.CODE.POINTS(INSTALL) '  
ASCII CRLF
```

- 5 From a host terminal or a NetWare 3270 LAN Workstation host session, use the ISPF editor to open the member

```
'SYS2.NTVW.CODE.POINTS(INSTALL) '
```

- 6 Follow the directions inside the job control language (JCL) listing.

These instructions appear under the label

```
TO EXECUTE THIS JCL:
```

For a sample JCL listing for code points installation see Example A-1 at the end of this appendix.

For additional information on using listings similar to this one, refer to the *Network Program Products Samples* book (SC30-3352) from IBM.

- 7 Submit the job.

After successful completion of this job, the code points load library member should be installed correctly.

- 8 Log on to a NetView console and bring down NetView by entering the following NetView command:

```
CLOSE IMMED
```

WARNING: This command brings down NetView. To avoid untimely interruption of NetView services, consider performing this step during a scheduled system maintenance period.

- 9 At the primary MVS operator console, start NetView by entering the following command:

```
S CNMPROC
```

While NetView is starting up, the startup messages should include

```
BNJ090I NETVIEW USER CODE POINT TABLE    BNJ92UTB IS  
AVAILABLE
```

```
BNJ090I NETVIEW USER CODE POINT TABLE    BNJ93UTB IS  
AVAILABLE
```

```
BNJ090I NETVIEW USER CODE POINT TABLE    BNJ94UTB IS  
AVAILABLE
```

```
BNJ090I NETVIEW USER CODE POINT TABLE    BNJ95UTB IS  
AVAILABLE
```

```
BNJ090I NETVIEW USER CODE POINT TABLE   BNJ96UTB IS
AVAILABLE

BNJ090I NETVIEW USER CODE POINT TABLE   BNJ81UTB IS
AVAILABLE

BNJ090I NETVIEW USER CODE POINT TABLE   BNJ82UTB IS
AVAILABLE
```

The preceding messages indicate that the code point files for NetWare are available. If these messages are directed to another console, they will not appear.

- 10** Log on to NetView. When the NetView main menu appears, select NPDA by entering

```
NPDA
```

- 11** From the NetView NPDA prompt, set the NetView recording and viewing filters by entering the following NetView commands:

```
srf arec pass e paff
srf arec pass e temp
srf arec pass e impd
svf pass e paff
svf pass e temp
svf pass e impd
```

NOTE: To display NetWare messages, the recording and viewing filters must be set each time NetView is started. To simplify NetView startup, enter these commands in a CLIST.

Example Code Point Installation JCL

```
//          JOB
//*****
//*
//* DESCRIPTION: PARSE, ASSEMBLE, AND LINKEDIT USER DEFINED CODE *
//* POINT TABLES. *
//* *
//* NOTE ==> THIS JCL ASSUMES: *
//*     1.) THE CODE POINT SOURCE IS CONTAINED IN A *
//*     SINGLE LIBRARY *
//*     2.) THE MEMBER NAMES ARE FORMATTED AS AAABBCCC *
//*     WHERE AAA = BNJ *
//*           BB = CODE POINT TABLE NUMBER *
//*           CCC = UTB (MODIFIABLE BY SYMBOLIC *
//*                VARIABLE "NAME") *
//* *
//* TO EXECUTE THIS JCL: *
//*     1.) PUT YOUR OWN JOB CARD ON THE JOB *
//*     2.) MODIFY SYMBOLIC VARIABLE "NETLNK" TO POINT TO THE *
//*     NETVIEW LOAD LIBRARY YOU WANT THE CODE POINTS LINKED *
//*     INTO *
//*     3.) MODIFY SYMBOLIC VARIABLE "USERLIB" TO POINT TO THE *
//*     SOURCE LIBRARY NAME CONTAINING THE CODE POINTS. *
//*****
//CNMUSER PROC    NUMBER=,
//      NAME=UTB,
//      NETLNK='CNM.USERLNK',      ** USER CODE POINT LIBRARY
//      REG=1,                    ** REGION SIZE IN MEG
//      SOUTA='*',                ** DEFAULT PRINTED OUTPUT CLASS
//      UNIT=SYSDA,               ** DEVICE TYPE FOR DASD
//      USERLIB='SYS2.NTVW.CODE.POINTS', ** CODE POINTS SOURCE
//      PS=3,                    ** PRIMARY CYLINDER ALLOCATION
//      SS=1                      ** SECONDARY CYLINDER ALLOCATION
//
//*****
//* VERIFY USER TABLE INPUT
//*****
//PARSE EXEC PGM=BNJUSTBL,REGION=&REG.M,
//      PARM='&NUMBER'
//STEPLIB DD DSN=SYS1.NPDALIB,DISP=SHR
//INTABLE DD DSN=&USERLIB(BNJ&NUMBER&NAME),DISP=SHR
//OUTTABLE DD DSN=&&OUTDCB,DISP=(NEW,PASS),UNIT=&UNIT,
//      SPACE=(CYL,(&PS,&SS)),
//      DCB=(DSORG=PS,LRECL=80,BLKSIZE=3120,RECFM=FB)
//SYSPRINT DD SYSOUT=&SOUTA
//SYSUDUMP DD DUMMY
//SYSUT1 DD UNIT=&UNIT,SPACE=(CYL,(&PS,&SS))
```

```

//*****
//* ASSEMBLE STEP
//*****
//ASM EXEC PGM=IFOX00, PARM='LOAD,NODECK,OBJECT',
// REGION=&REG.M, COND=(4,LT)
//SYSPRINT DD SYSOUT=&SOUTA
//SYSLIB DD DSNAME=SYS1.MACLIB, DISP=SHR
//SYSUT1 DD UNIT=&UNIT, SPACE=(CYL,(1,1))
//SYSUT2 DD UNIT=&UNIT, SPACE=(CYL,(1,1))
//SYSUT3 DD UNIT=&UNIT, SPACE=(CYL,(1,1))
//SYSGO DD DSNAME=&&SYSGO, DISP=(NEW,PASS), UNIT=&UNIT,
// SPACE=(CYL,(&PS,&SS)),
// DCB=(DSORG=PS, LRECL=80, BLKSIZE=3120, RECFM=FB)
//SYSIN DD DSN=*.PARSE.OUTTABLE,
// DISP=(OLD,DELETE)
//*****
//* LINKEDIT STEP
//*****
//LINK EXEC PGM=IEWL,
// PARM='XREF,LET,LIST,SIZE=(512K,128K),NCAL,REUS',
// REGION=&REG.M, COND=(4,LT)
//SYSPRINT DD SYSOUT=&SOUTA
//SYSUT1 DD SPACE=(CYL,(1,1)), DISP=(NEW,PASS), UNIT=&UNIT
//SYSLMOD DD DSN=&NETLNK(BNJ&NUMBER&NAME),
// DISP=SHR
//SYSLIN DD DSNAME=&&SYSGO, DISP=(OLD,DELETE)
// PEND
//STEP1 EXEC PROC=CNMUSER, NUMBER=92
//STEP2 EXEC PROC=CNMUSER, NUMBER=93
//STEP3 EXEC PROC=CNMUSER, NUMBER=94
//STEP4 EXEC PROC=CNMUSER, NUMBER=95
//STEP5 EXEC PROC=CNMUSER, NUMBER=96
//STEP6 EXEC PROC=CNMUSER, NUMBER=81
//STEP7 EXEC PROC=CNMUSER, NUMBER=82

```

