TME® 10 Software Distribution
for NetWare

Quick Beginnings

Version 3.1.5

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for NetWare

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Version 3.1.5

Third Edition (October 2000)

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About This Book

This book describes the general concepts, installation, and configuration of TME 10 Software Distribution, Version 3.1.5 for NetWare, hereafter also referred to as TME 10 Software Distribution.

Who Should Use This Book

This book is intended for information systems professionals who require a basic understanding of TME 10 Software Distribution in order to evaluate its suitability for software and data distribution and change control in networks based on the NetWare operating system.

How This Book Is Organized

This book has the following parts and chapters:

Part 1, "Introduction to TME 10 Software Distribution"
This part includes chapters that provide conceptual information about the product. They are:

- Chapter 1, "Overview of TME 10 Software Distribution" describes the benefits you obtain by using change control functions to manage a network of workstations. It introduces different network topologies supported by TME 10 Software Distribution, outlines product users, and tells you how to start and stop the product.

- Chapter 2, "Setting Up a TME 10 Software Distribution Network" provides the information you need to configure the workstations in your network as TME 10 Software Distribution targets.

- Chapter 3, "Preparing Software for Change Control" describes what must be done to prepare software in the format required by TME 10 Software Distribution.

- Chapter 4, "Using Change Control Operations" describes change control and distribution functions, and introduces how to schedule operations in your network.

- Chapter 5, "Tracking Change Control" describes the facilities provided by TME 10 Software Distribution to keep track of the hardware and software configurations on workstations in your network.

- Chapter 6, "Using Security Functions" describes the security facilities provided by TME 10 Software Distribution.

- Chapter 7, "Finding and Using TME 10 Software Distribution Information" indicates where you can turn to find additional information required to use TME 10 Software Distribution functions.

How This Book Is Organized

Part 2, "Installing and Configuring TME 10 Software Distribution"
This part provides you with the information you need to install and configure the product. It includes the following chapters:

- Chapter 8, "Planning the Installation" identifies the hardware and software requirements for installing a TME 10 Software Distribution for NetWare server or client.

- Chapter 9, "Installing a TME 10 Software Distribution for NetWare Server" explains how to install a TME 10 Software Distribution for NetWare server or client.

- Chapter 10, "Installing a TME 10 Software Distribution Client" explains how to install a TME 10 Software Distribution for NetWare server.

- Chapter 11, "Editing the Base Configuration File" explains the contents of the base configuration file.

- Chapter 12, "Defining Users and Targets" explains how to define users and targets.

- Chapter 13, "Editing SNA/DS Configuration Files" describes how to configure remote connections in SNA/DS networks.

- Chapter 14, "Configuring STS Remote Connection Files" describes how to configure remote connections in STS networks.

- Chapter 15, "Configuring NetWare for SAA 2.0 for SNA/DS Connections" describes how to configure the NetWare for SAA 2.0 product to interact with TME 10 Software Distribution for NetWare.

- Chapter 16, "Configuring Communication with TME 10 Software Distribution Nodes" explains the configuration required at other TME 10 Software Distribution product sites to interact with TME 10 Software Distribution for NetWare.

Part 3, "Appendixes"
The manual has the following appendixes:

- Appendix A, "Configuring NetWare for SAA 1.3B for SNA/DS Connections" describes how to configure the NetWare for SAA 1.3B product to interact with TME 10 Software Distribution for NetWare.

- Appendix B, "Replacing the Quiesce Check" describes how the quiesce check can be replaced at a target. It is used to see whether users are logged on at a target before operations are begun.

- Appendix C, "Writing Change Control Scripts" describes change management scripts and how to create them.

TME 10 Software Distribution Publications

For conceptual information and installation instructions for the TME 10 Software Distribution family of products, consult the appropriate publications:

- *TME 10 Software Distribution for AIX Quick Beginnings*, SH19-4333

- *TME 10 Software Distribution for OS/2 Quick Beginnings*, SH19-4334

- *TME 10 Software Distribution for Windows NT and Windows 2000 Quick Beginnings*, SH19-4335

- *TME 10 Software Distribution for NetWare Quick Beginnings*, SH19-4341

- *TME 10 Software Distribution for NetWare Command Reference*, SH19-4342

- *TME 10 Software Distribution Clients Installation and Configuration*, SH19-4337

Notation Used in This Book

This book uses the following highlighting conventions in text:

Bold
: Bold print indicates choices made from a menu or action bar. It is also used to highlight fields and push buttons on panels.

Italics
: Italic print is used for introducing new terms in the text or for emphasis.

`Monospacing`
: Monospacing indicates system messages, special characters, statuses, directory names, user input, and examples.

UPPERCASE
: Uppercase letters are used for commands, devices, and file names.

<angle brackets>
: Angle brackets are used to enclose the names of variables where you must substitute an appropriate value.

Where a command and its associated parameters are too long to be shown on one line, the symbol "➤" at the end of a line means that the next line is a continuation of the command string. When you enter the command, enter it all on one line.

What's New in This Release

Release 3.1.5 of TME 10 Software Distribution contains the following new or changed functionalities:

Support for New Platforms

TME 10 Software Distribution, Version 3.1.5 adds support for the following platforms:

- Windows 2000 (Professional and Server)
- Windows NT 4.0 (Service Pack 5 and 6a)
- OS/2, version 4.5 (Warp server for e-business)
- AIX, version 4.3.*x*

New Pristine Scenarios

TME 10 Software Distribution, Version 3.1.5 Client can be installed on a pristine workstation in the following environments:

- Windows 2000 Professional
- Windows 2000 Server
- Windows NT 4.0 Server/Workstation
- OS/2 4.5 (Warp Server for e-business)
- AIX 4.3.3

This is in addition to the following pristine installation environments, which are maintained from the previous release:

- Windows 3.11
- Windows 95
- Windows NT Version 3.51
- OS/2 3.0.*x* (Warp)

Complete Platform Support Table

Table 1 on page xviii shows details of the platforms on which TME 10 Software Distribution is available. The columns in the table contain the following information:

Server Scratch   Indicates whether the Server software can be installed from scratch. Scenarios describing how to carry out the scratch installations can be found in the relevant Quick Beginnings manuals.

Server Upgrade   Indicates which version of the TME 10 Software Distribution Server can be upgraded, by supplying a reference that can be looked up in Table 2 on page xix. Scenarios describing how to carry out the upgrade can be found in the README file.

Client Scratch   Indicates whether the Client software can be installed from scratch. Scenarios describing how to carry out the scratch installations can be found in the Client Installation and Customization manual.

Support for New Platforms

Client Pristine Indicates whether the Client software can be installed on a pristine workstation (i.e. a workstation with no operating system installed). Scenarios describing how to carry out the pristine installations can be found in the Pristine and Migration Scenarios manual or the Installation Scenarios for AIX manual.

Client Upgrade Indicates which version of which Client software can be upgraded, by supplying a reference that can be looked up in Table 2 on page xix. Scenarios describing how to carry out the upgrade can be found in the relevant README files.

Platform		Server		Client		
OS	**Version**	**Scratch**	**Upgrade**	**Scratch**	**Pristine**	**Upgrade**
Windows	2000 Professional	Y		Y	Y	
	2000 Server	Y		Y	Y	
	NT 4.0 (SP5 & 6a)	Y	1	Y	Y	5
	NT 3.51	Y	1	Y	Y	5
	98			Y		6
	95			Y	Y	6
	3.11			Y	Y	7
OS/2	3.0*x*	Y	2	Y	Y	8, 11
	4.0	Y	2	Y		8, 11
	4.5 (Warp server for e-business)	Y		Y	Y	
AIX	3.2.5 - 4.2.1	Y	3	Y		9
	4.3.3	Y	3	Y	Y	9
NetWare	4.11 - 4.2*x*	Y	4	Y		10

Table 1. TME 10 Software Distribution, Version 3.1.5 Platform Support

Table 2 on page xix shows the products (and versions) that can be upgraded to TME 10 Software Distribution, Version 3.1.5; the Reference column refers to Table 1.

Table 2. Products from which TME 10 Software Distribution, Version 3.1.5 can be upgraded		
Reference (see Table 1)	**Version installed**	**CSD or Fix Pack installed**
TME 10 Software Distribution		
1	3.1.3 Server for Windows NT	XR21923
2	3.1.3 Server for OS/2	XR21923
3	3.1.4 Server for AIX	99/10
4	3.1.3 Server for NetWare	XR21924
5	3.1.3 Client for Windows NT	XR21923
6	3.1.3 Client for Windows 9x	XR21923
7	3.1.3 Client for Windows 3.1	XR21923
8	3.1.3 Client for OS/2	XR21923
9	3.1.4 Client for AIX	99/10
10	3.1.3 Client for NetWare	XR21924
NetView DM/2		
11	2.1	

Deletion of Pending Requests from Host

In the circumstances where TME 10 Software Distribution is executing software distribution requests from a focal point running Tivoli NetView Distribution Manager (NetView DM for MVS) Release 7, the MVS focal point can now issue a request to delete any distribution requests that are waiting to be processed or are being processed at the TME 10 Software Distribution server.

- In the case of a distribution request waiting to be processed, the original request will be deleted, and a report sent to the focal point confirming the deletion.

- In the case of a distribution request that is in execution when the deletion request arrives, the original request will be completed, and a report sent to the MVW focal point confirming the successful completion of the original request; no report concerning the unfulfilled deletion request will be sent.

In the case of nodes in a distribution network that are not running TME 10 Software Distribution, Version 3.1.5 (i.e. older versions of TME 10 Software Distribution or NetView DM/2) the deletion requests from the MVS focal point will be ignored.

This functionality runs in the background with no intervention required by the operator of the TME 10 Software Distribution server.

Note: As a consequence of this new functionality global names starting with $DELETE.$PENDING are reserved, and may not be used.

Changes to Statuses Reported by 'stattg'

The `stattg` command gives details of the status of the agent at the local target. A new parameter has been added to the command to reveal additional information.

In the previous releases, and when used without the new parameter, the command reports these statuses:

Available   Agent running and ready to process a request

Not Available   Agent not running or not accessible

Busy   Agent running a request and not available to process any other request.

There are circumstances in which it is possible for the server to have in its database more than one workstation name for the same agent.

For example, if a workstation has been re-defined to the server for some reason, the operator may have supplied a different workstation name than that originally used, but have used the original hostname. In this event, the agent now has the new workstation name, but the server has both workstation names defined; prior to this release the agent reported itself as being *Available* under both workstation names.

With this release, by using the parameter `-c`, in the event that the agent is *Available* and not *Busy*, the command now returns the status *Unknown* if the hostname of the agent is correct but the workstation name in the status request does not match the workstation name of the agent. Thus, by using the `-c` parameter, polling both workstation names will allow you to identify which is the correct one, as one will return the status *Available* and the other *Unknown*. If the parameter is not used, the original functionality is maintained.

However, before using this parameter you should consider the question of the timing of the `stattg` requests. When an agent receives a `stattg` request it sends the status to the server but is then not immediately available to satisfy another request. This means that a second request, received within, say, one minute of the first request, will return the status *Not Available*. If you are polling two suspect workstation names you should wait for this period before sending the second request.

This also means that if you send a `stattg` request using the asterisk wildcard to obtain the status of all or a group of workstations, the results received will depend on whether the *incorrect* workstation name comes before or after the *correct* one in the server's database:

Incorrect workstation name is polled first
> The status of the *incorrect* workstation name will be given as *Unknown*, while the *correct* workstation will give *Not Available*

Correct workstation name is polled first
> The status of the *correct* workstation name will be given as *Available* while the *incorrect* workstation will give *Not Available*

| Thus, after using the asterisk wildcard with the -c parameter, you should individually
| poll each workstation name given as *Not Available*, waiting for approximately one
| minute before issuing each command. Workstations that are genuinely unavailable will
| report the same status as before; workstations that were unavailable while they were
| recovering from a previous stattg command will now report their true status.

| The full details of the stattg command are given in *TME 10 Software Distribution
| Command Reference*, *TME 10 Software Distribution for NetWare Command Reference*
| and *TME 10 Software Distribution for AIX Reference*.

Part 1. Introduction to TME 10 Software Distribution

This part provides you with basic information about TME 10 Software Distribution. Its purpose is to help you understand how to use the product effectively to perform data distribution and change control tasks in your network. It includes:

Chapter 1. Overview of TME 10 Software Distribution

Distributed computer systems are essential to the information technology strategies of many companies. The added benefits resulting from automated work processes, however, bring to the forefront additional concerns—the electronic distribution, installation, and maintenance of the software used to perform these processes. How can base software, applications, related configuration data, and user data files on hundreds, even thousands, of workstations be kept up-to-date, consistent, and maintained in a cost-effective and efficient way?

This manual describes how TME 10 Software Distribution, a client/server systems management product, can help solve this complex problem in your enterprise. With TME 10 Software Distribution you can:

- **Electronically distribute and install software from a central site**

  When a system software component or an application that runs on numerous workstations located at different sites, or even in different cities, has to be updated or upgraded, TME 10 Software Distribution can completely automate the procedure. You can prepare and package software at one workstation, send it to the affected target workstations, and install it automatically.

  You can facilitate the administration of software installation and maintenance on large numbers of heterogeneous workstations by taking advantage of TME 10 Software Distribution's dynamic functions. By organizing your target workstations into dynamic groups whose members change according to the criteria you establish, you can selectively administer software. You can also organize the content of software packages dynamically, so as to install only certain files on certain workstations.

- **Keep track of hardware and software installed across the network on server and client workstations**

  TME 10 Software Distribution automatically stores a history and inventory record of all the hardware and software installed on each workstation in a network. This means that you are always aware of the configuration of all the workstations in your network, and consequently of the activities that need to be performed to ensure consistency where you require it.

- **Distribute and collect data**

  System data files and user data files (such as user flat files or database exports) can be exchanged between the central site and target workstations and across workstations in the network. You can distribute data from the central site to targets by grouping workstations that need to receive the same files. Data distribution operations also provide data compression and page code translation options.

- **Manage a multiplatform environment**

  You can take advantage of the benefits of TME 10 Software Distribution in a multiplatform environment. Workstations running OS/2, Windows 3.11, Windows 95, Windows 98, Windows NT, Windows 2000, or Netware can be

controlled from a TME 10 Software Distribution for NetWare server. TME 10 Software Distribution for NetWare servers can also interoperate with servers running different operating systems (such as NetWare, AIX, OS/2, and Windows NT) in the same network. A NetView DM for MVS Release 7 or TME 10 Software Distribution for AIX site can also act as a central site for software and data distribution.

TME 10 Software Distribution can, therefore, become a key element in ensuring the productivity and efficiency of your workstations and users by providing you with the means to:

- *Save resources, time, and money*

  When you install software manually on individual workstations, the process is time-consuming both for those who perform the installation and for those who work at the workstation. When you use TME 10 Software Distribution to automate software management, *one* person (the administrator) from *one* workstation can update thousands of computers, and plan the installation for a convenient time when it does not interfere with anyone's work schedule. What's more, you can automatically create backups of old software, which can immediately be reinstalled should an installation be unsuccessful.

- *Improve efficiency*

  Controlling *all* the software installed on *all* the workstations means ensuring constant compatibility and consistency across your network. No longer will different versions of software be run on different workstations. Unpleasant surprises of incompatibility between workstations will no longer be a common occurrence.

In this book the functions provided by the product are referred to as software distribution and change control.[1] The same term is used across the TME 10 Software Distribution family of products.

Using TME 10 Software Distribution in a Network

You can use TME 10 Software Distribution functions in many different network topologies, which differ greatly in complexity. In the simplest networks, TME 10 Software Distribution is installed on a workstation that is referred to as the network *distribution server* (server). The other workstations in the network become *distribution clients* (clients) that can work in conjunction with a TME 10 Software Distribution server.

Figure 1 on page 5 shows a simple network with a server and its clients. Clients controlled by a server are referred to as *local targets*. The set of local clients, together with the server that controls them, is known as a change control *domain*.

---

[1] In TME 10 Software Distribution terminology, *change control* is at times referred to as *change management*.

Using TME 10 Software Distribution in a Network
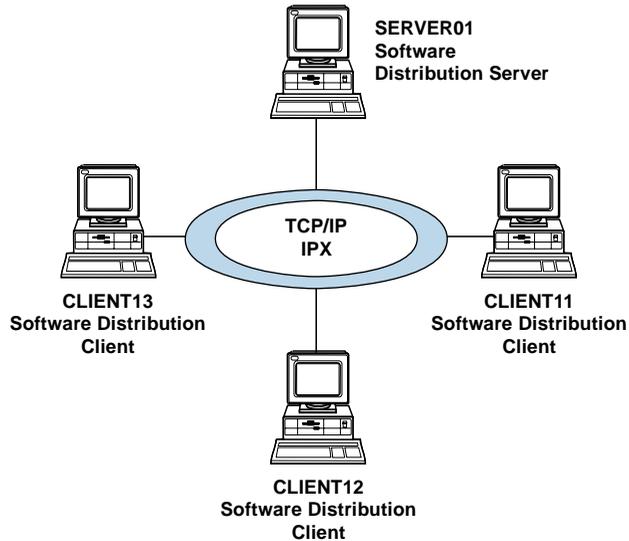
Figure 1. A Single-server TME 10 Software Distribution network

Change control and distribution activity in a network is usually initiated from a server. However, if a client is configured with the necessary authorizations, it can be an *active* client, meaning that it can initiate operations on other clients in the network. A *passive* client can only have operations performed on it.

More complex networks can combine interconnected domains. Servers and clients in other domains are referred to as *remote targets*. Figure 2 on page 6 shows a network with two domains.

In the figure, SERVER01 can perform data distribution and change control on the clients in DOMAIN02.

Using TME 10 Software Distribution in a Network
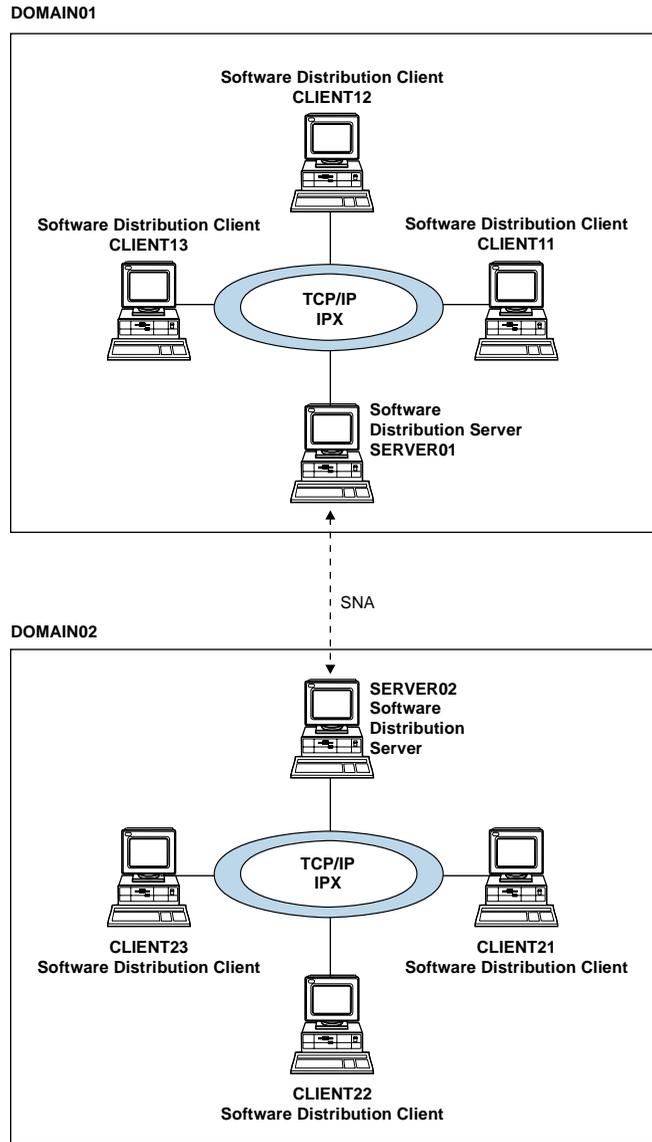
DOMAIN01

Figure 2. Interconnected domains

Servers can be controlled from one or more central NetView DM for MVS or
TME 10 Software Distribution for AIX sites that maintain a total picture of the entire
change control network. Figure 3 on page 7 shows a NetView DM for MVS system
managing multiple TME 10 Software Distribution domains, and Figure 4 on page 8
shows a similar configuration with a TME 10 Software Distribution for AIX system as
the central site.
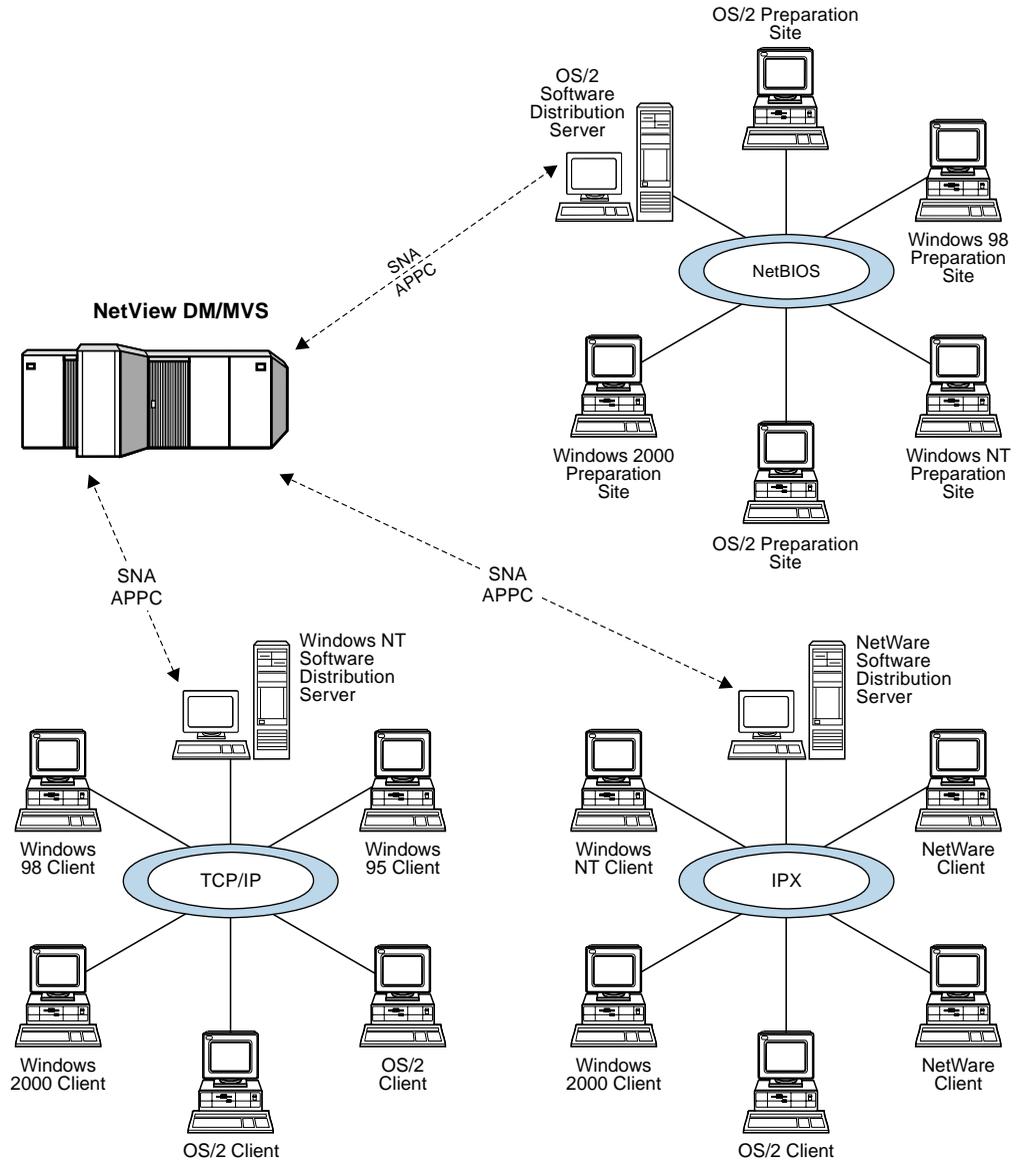
Figure 3. Software distribution from MVS

Using TME 10 Software Distribution in a Network
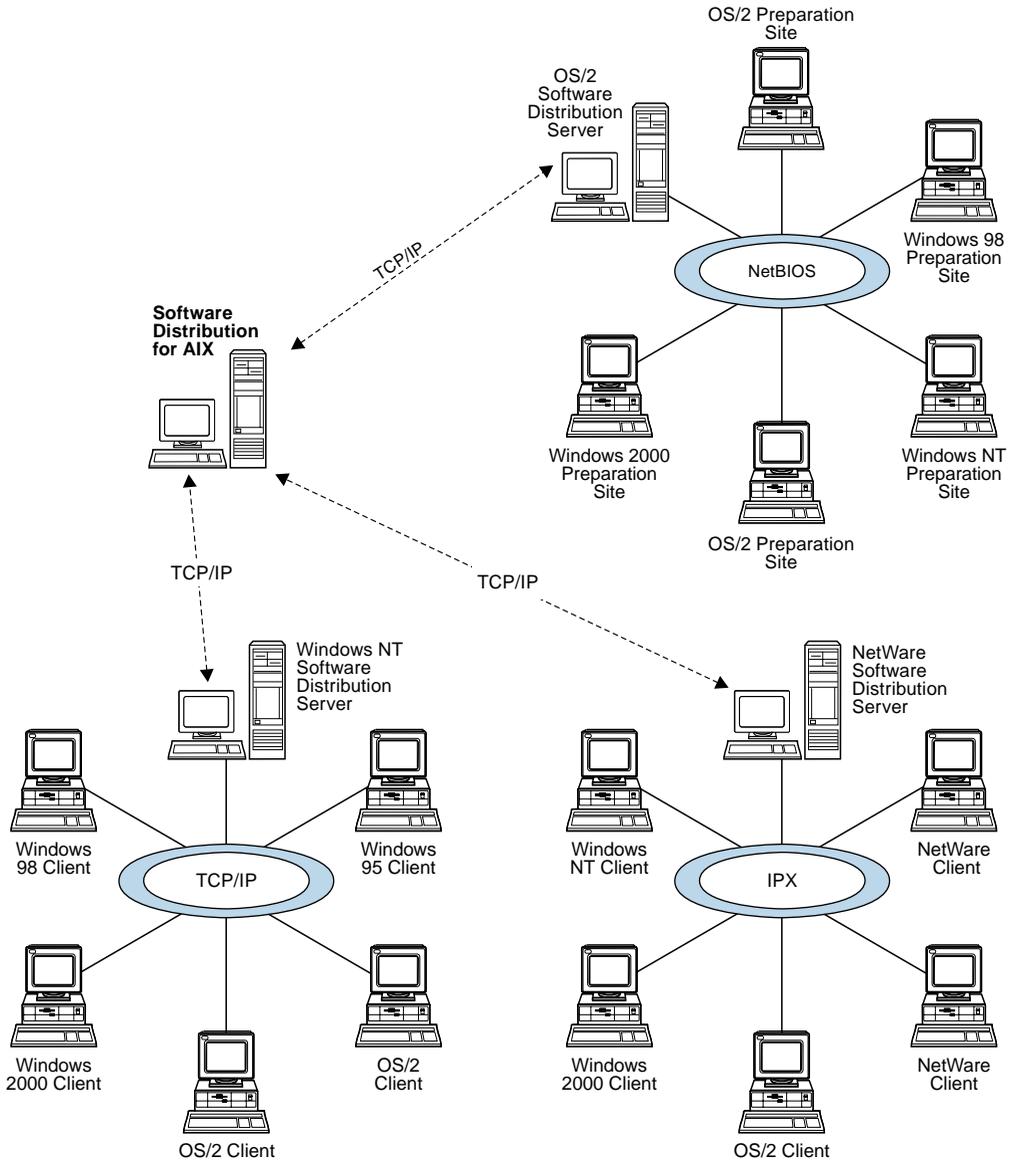
Figure 4. Software distribution from AIX

Networks can also include remote connections to systems running any of the products in the TME 10 Software Distribution/NetView DM for MVS family.

TME 10 Software Distribution Users

Three default classes of users are defined in a TME 10 Software Distribution system:

- Administrator
- Builder
- User

Change Control Administrator

A TME 10 Software Distribution *administrator* is responsible for ensuring that software packages are installed across the network, kept up-to-date, and removed when no longer required. Administrators use TME 10 Software Distribution typically to:

- Define the targets that a server can communicate with, both in its own domain and in remote domains

- Define the users of the product and their authorizations

- Define target, user, and software access authorizations

- Initiate the distribution of data files

- Initiate the managed installation of software packages by the server on client workstations

- Change the software installed on workstations across the network

- View the status of the software packages already installed on client workstations

- Track the status of change control and distribution operations across a network

- Run applications on remote, unattended workstations across the network

In addition to using a server workstation, the administrator can carry out software installation and data distribution functions from any client workstation that is configured in *user-interface-only* (UI only) mode. A UI only client provides an interface to access the server and the capability to initiate change control actions across targets in the network, but no change control operations can be directed to it.

Builder

The *builder* is typically a programmer who is authorized by the change control administrator to prepare the software to be installed using TME 10 Software Distribution. Each separate application or system software product must be prepared as a package suitable for installation by the client program it is destined for.

The builder uses either a server or a client workstation as a *preparation site* for software. The builder can also use a *single node* as a preparation site.

TME 10 Software Distribution User Interfaces

User

The *user* is anyone who uses the services of TME 10 Software Distribution on a client workstation to:

- Perform change control and distribution functions on their own or on other workstations in a network

- Distribute data files across the network to any workstation with a client product installed on it.

User Profiles

User profiles that correspond to these descriptions are installed automatically with the product. However, administrators of the system can create customized profiles that authorize product users to perform any combination of tasks.

TME 10 Software Distribution User Interfaces

You can work with TME 10 Software Distribution through a command line interface. On OS/2 and Windows clients, you can also use a graphical user interface.

Command Line Interface

On a TME 10 Software Distribution for NetWare server or client, you carry out TME 10 Software Distribution tasks through the command line interface.

The command line interface is composed of commands that you issue from a command prompt. A command is a string of letters with corresponding parameters that you use to make specific requests. You can use > or >> at the end of a command to redirect the output to a file.

You can perform all TME 10 Software Distribution operations using this interface. For example, to install the change file called `test.file.ref.1.1.2` on a group of targets called `groupone` at 10:00 on March 14, 2000, you would use this line command:

```
inst test.file.ref.1.1.2 -w groupone -d "14/3/2000" -t "10:00"
```

Line commands and their syntax are documented in the *Command Reference* manual.

Starting and Stopping the Command Line Interface

To load the command line interface after starting the product, enter the command:

```
load nvdm
```

To load the command line interface without starting the product, add SYS:SOFTDIST\BIN to the search path and then enter the command:

```
load fndload nvdm
```

In either case, you can then enter TME 10 Software Distribution commands from the command line screen.

To stop the command line interface, at the NVDM > prompt, enter:

```
quit
```

Graphical User Interface

For OS/2 and Windows clients, a graphical user interface is available. See the *Quick Beginnings* manual for TME 10 Software Distribution for OS/2 or Windows NT for an overview of the graphical user interface.

Starting TME 10 Software Distribution

You start a TME 10 Software Distribution for NetWare server or client by entering the `nvdmstrt` command.

You can start and stop OS/2 and Windows clients through the graphical user interface. See the *Quick Beginnings* manual for TME 10 Software Distribution for OS/2 or Windows NT for an overview of the graphical user interface.

Stopping TME 10 Software Distribution

To stop TME 10 Software Distribution from the command line interface, stop the command line interface and then enter the following command from the NetWare console:

```
nvdmstop
```

Chapter 2. Setting Up a TME 10 Software Distribution Network

This chapter provides information to help you set up workstations in your network as TME 10 Software Distribution targets, and to configure their communication links. It also describes the functions you can use to keep track of the hardware configuration of the workstations in your network.

Types of Target in a TME 10 Software Distribution Network

Targets are defined in a TME 10 Software Distribution network according to the role they are to perform and how they are to perform that role (specified as target *mode*). This section describes the various roles you can assign to targets.

Targets are either local or remote, depending on their location in the network. A target that is in the same domain as the target communicating with it is a *local* target. When targets perform data distribution across domains in multidomain networks, they are *remote* targets.

Types of Local Target that Can Be Defined

You can define local targets to perform one of the roles described in the following sections.

Server

Servers contain the catalog where change files and data files, as well as change control history records, are stored. They also contain the configuration information for all the targets they can communicate with, be they local or remote. Whenever a client communicates with another target, the communication is routed through its server.

A server can initiate change control and distribution operations on targets in their own domain. They can also perform distribution operations on remote targets.

Role	Target Type	Target Mode
Initiate change control on targets	Server	Push
Initiate distribution on targets	Server	Push

Client

Client targets work in conjunction with a server, and must have a TME 10 Software Distribution Client product installed. A local client can:

- Be the object of change control operations initiated by a server, when configured in *push* mode

- Distribute data files (send, retrieve, and delete them) to other clients in its domain

- Initiate change control operations on itself, using any software available to it from the server catalog, when configured in *pull* mode

Types of Local Target that Can Be Defined

- Build change files and store them in the server catalog

- View information about the software installed on its workstation, as well as information about the other clients and software available in the network

- Catalog and uncatalog data files

The following modes can be defined for a client target:

Role	Target Type	Target Mode
Server/other client initiates change control	Client	Push
Initiates change control on self	Client	Pull
Prepare change files	Client	Push or pull
Send, retrieve, delete data files	Client	Push or pull

Mobile Client

Mobile clients are local targets on which it is possible to do change management operations without connection to a server.

You connect a mobile client using the GUI or the **connect** command on the command line. With this command you can also establish the time when the connection window is opened, the connection duration, and a recursive daily connection. You disconnect a mobile client using the GUI or the **disconnect** command on the command line. With this command you can also stop the established recursive daily connection from the client to the server. See the helps or the *Command Reference* for more details.

Because mobile clients are not always connected with a server whose catalog they can access, they have their own local catalog. Once a mobile client's catalog has been updated, the client can perform the following operations locally:

- Install software and software changes

- Remove software

- Accept changes to software

- Activate pending changes on your workstation

- Uninstall software packages and software changes, along with any updates or fixes applied

- Catalog and uncatalog files in the local catalog

- Import change files from external devices

- View change file information

- View and purge pending requests

Note that NetWare clients cannot function as mobile clients.

Mobile clients are not forced to work locally; they can connect to a server and function as non-mobile clients, performing all the tasks described in "Client" on page 13.

Mobile clients can also function as *fully disconnected* clients, meaning that they never connect to a server. They update their local catalog with change files manually from external media (CD-ROMs, tapes, diskettes), and then perform change control on themselves. Change control status information stored in the server catalog for fully disconnected mobile clients can then be updated manually, using the **updcm** command. A fully disconnected client must set the FULLY DISCONNECTED keyword in its base configuration file to YES.

Define the following attributes for mobile clients:

Role	Target Type	Target Mode
Work as mobile client	Mobile	Push or pull
Work as fully disconnected mobile client	Client	Disconnected

User Interface Only Client

These targets can be used *only* to run the TME 10 Software Distribution user interfaces. This type of target is useful when you have an environment with more than one server. It allows an administrator to access all servers from the same target, either to perform administrative tasks or to schedule operations.

A workstation configured in this manner is used to initiate change control on *other* targets, or to request distributions to and from the server. User interface only targets cannot be the object of change control instructions from the same server they are defined as a user interface only target for.

Define the following attributes for this type of target:

Role	Target Type	Target Mode
User interfaces at server	UI only	None

Types of Remote Target that Can Be Defined

Remote targets can perform a greater variety of roles, in networks with more complex topologies. The possibilities are described in the following sections.

Server

Servers contain the catalog where change files and data files, as well as change control history records, are stored. They also contain the configuration information for all the targets they can communicate with, be they local or remote. Whenever a client communicates with another target, the communication is routed through its server.

A server can initiate change control and distribution operations on targets in their own domain. They can also perform distribution operations on remote targets.

Types of Remote Target that Can Be Defined

Role	Target Type	Target Mode
Initiate change control on targets	Server	Push
Initiate distribution on targets	Server	Push

Intermediate Node

Remote servers can act as intermediate nodes, whose task is to fan out requests to downstream nodes. The fan-out operation creates multiple copies of the same object to be distributed to a number of, or a group of, targets.

Using intermediate nodes is often an efficient and cheaper way of distributing large quantities of data to numerous destination targets, because they eliminate the need for a direct connection between the target that originates an operation and the targets addressed by the operation.

Role	Target Type	Target Mode
Fan-out change control requests	Server	Push

Single Node

You can use single-node targets as preparation sites for software.

Role	Target Type	Target Mode
Act as preparation site	Single	Push

Defining Client Targets Automatically

You do not have to configure all client targets in a network individually from a server. You can set up your network so that they are configured automatically, or autoregistered, the first time a client target connects to a server. For autoregistration to take place, the AUTOMATIC TARGET REGISTRATION keyword in a server's base configuration file must be set to YES, and the TARGET ADDRESS keyword must be specified in the client base configuration file. See Chapter 11, "Editing the Base Configuration File" on page 57 for a description of the base configuration file.

When a client is automatically configured, its address and mode are inserted in its server database. Any other parameters for the client target must be specified manually using the graphical interface or the command line interface.

Platforms Supported in a TME 10 Software Distribution Network

TME 10 Software Distribution networks can include workstations that are connected across local and remote links. As a rule, local links connect servers to their clients and remote links connect servers to other servers in different domains.

Client Platforms Supported

You can connect a server to clients that run any of the following operating systems, provided they have the corresponding TME 10 Software Distribution Client product installed:

Table 3. Client Platforms Supported by TME 10 Software Distribution

Platform	Product
AIX/6000®	TME 10 Software Distribution for AIX Client
OS/2	TME 10 Software Distribution for OS/2 Client
Windows 2000	TME 10 Software Distribution for Windows 2000 Client
Windows NT	TME 10 Software Distribution for Windows NT Client
Windows 95 & 98	TME 10 Software Distribution for Windows 9x Client
Windows 3.11	TME 10 Software Distribution for Windows 3.11 Client
NetWare	TME 10 Software Distribution Client for NetWare

Remote Platforms Supported

You can connect a server to workstations in other domains. As described in "Types of Remote Target that Can Be Defined" on page 15, these workstations can be configured as:

- Servers configured as managers or focal points
- Intermediate nodes
- Single nodes

Remote workstations can run any of the following operating systems, provided they have the corresponding TME 10 Software Distribution product installed. Table 4 lists supported platforms and counterpart products, and the roles they perform within the network.

Table 4 (Page 1 of 2). Remote Platforms Supported by TME 10 Software Distribution

Platform	Product	Role
AIX/6000	TME 10 Software Distribution for AIX	Manager Focal point Intermediate node Remote server (data distribution only)
OS/2	TME 10 Software Distribution for OS/2	Remote server (data distribution only) Intermediate node Single node

Table 4 (Page 2 of 2). Remote Platforms Supported by TME 10 Software Distribution		
Platform	**Product**	**Role**
Windows 2000	TME 10 Software Distribution for Windows 2000	Remote server (data distribution only) Intermediate node Single node
Windows NT	TME 10 Software Distribution for Windows NT	Remote server (data distribution only) Intermediate node Single node
NetWare	TME 10 Software Distribution for NetWare	Remote server (data distribution only) Intermediate node Single node
MVS	NetView DM for MVS Release 7	Manager Focal point

Communication Protocols that Can Be Used to Link Nodes

TME 10 Software Distribution for NetWare clients, servers, and TME 10 Software Distribution/NetView DM for MVS family products can be linked in a network using different transmission protocols:

TCP/IP or IPX

To connect a server and its clients.

SNA/DS across APPC or TCP/IP

You can configure SNA/DS across APPC or TCP/IP for remote server/server connections to another NetWare server or an AIX server. You can also configure SNA/DS across APPC for connections to a Windows NT server or an OS/2 server acting as an intermediate node. You can also connect to a NetView DM for MVS focal point over APPC.

STS across TCP/IP or IPX

STS is the acronym for the term *server-to-server*. This is an internal TME 10 Software Distribution transport mechanism that can be configured in networks connected:

- Over TCP/IP or IPX for remote server/server connections to an OS/2, NetWare or Windows NT server,

- Over TCP/IP for remote server/server connections to an AIX server.

over TCP/IP or IPX.

STS communication offers better performance for many transmission operations, as well as these additional functions:

- You can send, retrieve, and delete data files that are not stored in the catalog, called *uncataloged* files. Uncataloged data files can also be used as procedures to be executed at targets.

- You can authorize data files so that they can be executed at remote targets.

"Communications Protocols" on page 44 provides full details of the communications protocols that can be used from a server with TME 10 Software Distribution, Version 3.1.5 for NetWare installed to any client or server with which TME 10 Software Distribution can communicate.

How Grouping Targets Can Facilitate Change Control Operations

Grouping targets into homogeneous units can be a useful aid in organizing and scheduling change control operations, especially when you are dealing with an extensive network. When you request change control and distribution operations for a group, the operation is performed on all the targets included in it.

Groups can include local and remote targets, whose mode can be either push, pull, manager, or focal. What's more, you can define *static groups*, whose members are always the same, or *dynamic groups*, whose members change according to criteria you define for populating the group.

A dynamic group can contain both static and dynamic members. The static members are always included in the group, while the dynamic members change according to the filters and rules you establish for populating the group. Filters allow you to define the members of a group according to:

- Target names
- Target types (client, mobile, server, single, UI only)
- Target modes (push, pull, focal point, manager)
- Target operating systems
- Target access keys

Rules are statements that specify the logical relationship between values you specify for any of these tokens:

Target installation parameters
  Tokens substituted during the installation process. Installation parameters usually correspond to directory and path names.

Hardware tokens
  Hardware requirements specified when targets are defined individually to the system.

Change management statuses
  The statuses that form part of the history records stored in the catalog for change files and targets.

The following examples give you an idea of how you can use static and dynamic groups to your advantage:

- If you must send DATA_A1 to all the targets in EuroTravel's branch offices every week, you can create a static group called BRANCHES, that holds all the targets the file must be sent to. Then every week you simply have to send DATA_A1 to BRANCHES.

Grouping Targets to Facilitate Change Control Operations

- Suppose you have to install a new version of a word processor only on those targets in EuroTravel offices where the word processor is already installed. You can create a dynamic group called `HAVE_WORDPROC`; the rule used to populate the group would state "include those targets whose change management status is equal to install for the `EURO.WORDPROC.REF.0` change file". Then install the word processor on `HAVE_WORDPROC`.

Chapter 3. Preparing Software for Change Control

This chapter describes what you must do to the software package so that it can be used in change control operations.

Change Files

Changes to software on a workstation are distributed in packages that contain software files together with instructions about how they are to be installed. These packages are called *change files*.

Contents of a Change File

The main information included in change files is:

- Specifications of the files to be included in the package and their location.

- Specifications of the location of files stored in directories at a *remote site*. These remote directories are mounted from a target when an installation or other change control operation is performed. When you use this remote source method, you can make use of file servers in your network and create smaller change files that occupy minimum disk space at both the server and clients.

  Note that the remote site cannot be a NetWare target.

- Specifications of directories to be created or deleted at the target workstation.

- Response files (for packages with CID conformance only; see "CID Change Files" on page 23).

- Information about hardware and software prerequisites and corequisites, including disk storage space requirements. TME 10 Software Distribution checks for the presence of prerequisite and corequisite software and the amount of disk space available for a package before attempting to install it.

- Scripts or programs that tailor the installation and other operations to be executed on the target.

- A description of each product or file that is included in the change file. This information is convenient for tracing change file history.

- Compression options and packing instructions to apply if transmitting or storing the change file in compressed format. You can also specify if each file in the change file is to be compressed at build time and decompressed at install time.

Types of Change File

You create different types of change file depending on whether you have to install new software, update existing software, or apply fixes to existing software at targets. These types of change file are referred to by the following *change names*:

Refresh (REF)   Change files that contain a complete new copy of the software or data item being changed to a new level, release, or version.

Update (UPD)   Change files that contain an update to a component and are installed on top of the original. Updates change the level of the component ID. To install an update, you must first install a refresh change file as not removable.

Fix (FIX)   Change files that contain a fix for an existing component and are installed on top of the original or an update. Fixes do not change the level of the component ID. To install a fix, you must first install a refresh change file as not removable.

Naming Change Files

The names you assign to change files follow the convention for *global names*. Using global names ensures that each change file is identified uniquely. A global name consists of three main elements:

- The name of the component or software package
- The type of change to the component or software package (refresh, update, or fix)
- The level of change to the component or software package.

The following conventions apply when you create a global name:

- The name can have from 2 to 10 parts
- Parts must be separated by a period
- The global name cannot start or end with a period
- Each part cannot exceed 16 characters
- The global name, including periods, cannot exceed 64 characters
- Numbers, uppercase letters, and the characters $, #, @, and _ can be used in global names.
- Global names starting with *$DELETE.$PENDING* are reserved, and may not be used.

Change File Platform Dependencies

A change file's format must be compatible with the method used at a target to install software. When builders create change files, they must specify the type of installation procedure that will be used, which can be:

- Generic
- CID

The software installation methods supported by TME 10 Software Distribution depend on the type of workstation where the installation is being performed. All the methods described below require that change files be stored at the server. A change file can, however, contain the specification of software files to be accessed remotely for the actual installation process. This applies whether the software installation process is initiated from a server or from an active client workstation.

Generic Change Files

Generic change files are created when the generic installation method is used. It is a robust all-purpose method that can be used to install on targets on all supported platforms. This method replicates the files contained in a software package.

CID Change Files

The configuration, installation, and distribution (CID) method can be used to prepare software for clients on all supported platforms.

Use CID change files for:

- IBM products, such as Database Server or Communications Server
- Other products that conform to the CID standards and that are extensively affected by the target workstation hardware and software configurations

The CID method of installation uses redirection of code images from files installed on the hard disk of any workstation within the same domain as the target workstation. The code images are not required to be stored on the server. Response files that allow for unattended installation are prepared at the preparation site.

The redirection of code images can be performed by the Network File System (NFS) or by the IBM File Server/Requester. The method used depends on the workstation from which the code images are to be redirected.

The TME 10 Software Distribution Catalog

The TME 10 Software Distribution catalog is a change control history database maintained on the server. The catalog contains a list of the names of all change files and data files that are available to authorized users of client workstations across the network. It also lists the status of change files at each workstation.

Items in catalogs are identified using global names so that each is unique across a multiserver, multidomain environment. Parts of the change file's global name can also be used to identify the software platform a target runs under.

Items can be added to or removed from the catalog by any authorized user. The objects named in the catalog can reside on the server or on any of the clients in the domain.

The catalog can be used by all the clients associated with the server on a single-server network to check the availability of new software packages, updates to existing software

packages, and data files that are available for general distribution to authorized client workstations.

Installing the Same Change File on Different Workstations

You can create change files that are *static*, meaning that the installations they trigger are always the same regardless of the workstations they are installed on, or *dynamic*, meaning that the installation procedures are different depending on the configuration of the workstations they are performed on.

Dynamic change files are defined by expressing conditions that must be satisfied before a corresponding operation takes place. You can specify dynamic conditions in relation to:

- The hardware installed on a workstation

- The software installed on a workstation

- The operating system running on a workstation

- The directory the software is to be installed in, or already resides in if the software is being uninstalled or removed

- Procedures to be run at the workstation before or after operations are performed.

For example, you can take advantage of the flexibility offered by dynamic change files to install software on two types of workstation: small machines or big machines. To do so you would include these conditions:

```
DYNAMIC SECTION: big_machine
   CONDITION:              DRIVE_SIZE >= 180M
   PRE-INSTALL:            <product_directory>\pre-install

DYNAMIC SECTION: small_machine
   CONDITION:              DRIVE_SIZE < 180M
   PRE-INSTALL:            <product_directory>\pre-install-small

OBJECT:
   DYNAMIC SECTION:       small_machine
   SOURCE NAME:          <product_directory>\file_small
   TYPE:                  FILE
   ACTION:                COPY
```

Software Preparation Interfaces

On a TME 10 Software Distribution for NetWare server or client, you create change files using the command line interface by first creating an ASCII change file profile and then issuing the build command against it.

On OS/2 and Windows clients, two other methods are available as well:

Graphical interface preparation notebook
The graphical interface allows you to create both basic change files that simply contain software files and any scripts or procedures, and advanced change files that include additional functions such as dynamic conditions and remote directory sources.

Graphical interface DiskCamera function
The DiskCamera function available in the graphical interface facilitates the creation of change files by "taking pictures" of a hard disk before and after a software product is installed on it. The two pictures are compared by DiskCamera, which generates a change file that includes all new files the comparison found on the drive as well as any changes that were made to system files as a result of the installation.

Chapter 4. Using Change Control Operations

This chapter describes change control operations made available through TME 10 Software Distribution, and how to schedule their use in your network.

Change Control Operations

TME 10 Software Distribution offers you a fully automated method for distributing and installing software. You can use it to schedule and install software and updates to previously installed software, as well as to uninstall updates and restore the software to its previous state. TME 10 Software Distribution performs the following functions in a network:

- ***Installs software packages on workstations***

  A new software package can be installed automatically, with no user intervention, on all workstations in the network. Installed software is available for use immediately after a client is restarted. This is done using the *install* function for a *refresh* change file.

  Software changes can also be distributed over a network so that software files are either updated or removed automatically on all workstations on which the software was originally installed. An installation request can also check that prerequisite and corequisite software is present on a target before installing software packages.

- ***Applies updates to a current software level***

  When a new level of a software product is released, it can be applied to existing software as an update.

- ***Applies fixes to software***

  When fixes to installed software are released, these can be applied to all existing installed copies. This is done using the *install* function for a *fix* change file.

- ***Installs software from remote workstations***

  Software files to be installed can be stored in a remote directory that is mounted at a target (other than a NetWare target) during the installation process. When you do not mount remote directories for installations, files are sent to a target, stored in the work area during installation, and then deleted when the installation is complete. This means that a target must have double the amount of disk space required by a product.

  When you take advantage of the remote mount capabilities offered by TME 10 Software Distribution, you can redirect installations:

  – To directories located on a server.

    You do so by specifying the name of the directory to be exported and the options required for the remote mount using specific shared tokens (`SERVERREPOS`, `SEVEREXPOP`, `REMOTEREPOS`, `REMREPMNTOP`). You specify them when you define target parameters using the **addpm** command.

– To directories located on another workstation in the domain.

You do so by specifying the directory to be exported and the remote mount information when you build a change file using either the graphical interface or the **bld** command.

- **Installs software on unattended workstations**

  You can use TME 10 Software Distribution to send a command to a client workstation to install, update, or delete changes to its software while it is unattended and has no user logged on.

- **Rolls back (backs up) to the previous level of software**

  An installation operation can also include a request to back up the version of software currently installed on a workstation. Any files deleted or modified by the installation process are automatically saved, and if the installation is unsuccessful, the previous version can be restored, or rolled back. The current level of the application must be *installed* with the *removable* option in order for the *remove* function to perform a roll-back.

- **Makes changes permanent**

  If the software package was installed on one or a group of clients with the backup option, a single *accept* request to make this version permanent can be submitted to all the clients. After software has been accepted, the previous version or level cannot be restored.

- **Uninstalls one or more software packages installed previously by TME 10 Software Distribution**

  The *uninstall* function removes, in a single operation, selected software packages from one or more clients. The software packages must have been installed originally by TME 10 Software Distribution.

- **Activates software on one or a group of workstations**

  The *activate* function restarts one or a group of workstations in a single operation after TME 10 Software Distribution has been used to install software packages on them.

Scheduling Change Control Operations in the Network

You can schedule the distribution of data and software and change control operations to occur at specific times, according to when it is both necessary and most convenient. Using appropriate schedules you can achieve network-wide synchronization of the installation of particular software. The scheduling facilities provided by TME 10 Software Distribution are flexible, and provide you with alternative methods to express when and how often operations should take place. You can:

- **Specify change control windows for targets**

  Each client workstation that is a target for software installation can be configured with a *change control time window*, a period of time during which installation of the software can take place. Installation of software that is scheduled for times outside

the change control window for a client workstation is suspended until the change control window is open.

You specify change control windows when you define targets to the network.

- *Specify origin or destination operation times*

  You can schedule operation times for either the workstation where the operation originates, or the workstation where the operation is to take place. This makes it possible to schedule requests that are to take place in time zones different from the zone of the origin workstation. You can also schedule a period of time *before* and *after* which an operation cannot take place.

- *Specify high-priority operations*

  Change control operations that are urgent can be transmitted as high-priority, meaning that they will take place as soon as the currently executing operation has completed.

- *Specify recursive operations*

  A *recursive* operation is one that is performed repeatedly at specified intervals. Intervals can be specified on a monthly, weekly, daily, or hourly basis, depending on business requirements.

  The execution of occurrences of recursive plans can be conditioned on the success of previous occurrences. This means that a subsequent transmission can take place only if the previous one produced the expected result. If Monday's sales data was not sent successfully, Tuesday's occurrence of the same operation will not be generated and transmitted.

- *Hold operations at targets*

  A user at a client workstation can temporarily suspend or prevent the execution of change control activities requested by the administrator by holding change control activity or by turning the workstation off. The functions are held and are executed when the workstation is switched on or the workstation is released.

Distributing Data Files

The term *data distribution* refers to the exchange of data files between client and server workstations within and across domains. You can use TME 10 Software Distribution facilities to distribute or retrieve data files such as:

- User data files
- Software packages and documentation
- Problem management data files such as dumps, log files, and trace files

TME 10 Software Distribution can distribute data files whether they have been cataloged or not. In addition, it provides facilities to compress and translate data during distribution.

Distributing Data Files

Compressing Data Files

When large volumes of data are transmitted across a network, transmission efficiency is a significant factor in reducing time and cost.

TME 10 Software Distribution can send or retrieve data in compressed form. The compression format used can be either SNA, LZW, or based on a user-supplied algorithm. Compression substantially reduces both line transmission time and storage space requirements. After transmission, data can be expanded into its original form.

Translating Data

When different environments in your network use different data encoding techniques, TME 10 Software Distribution can perform data translation on files containing character data. A typical example of this requirement is transmitting data between systems that use ASCII encoding and those that use EBCDIC encoding.

Data translation facilities are available for data exchange within and across domains.

Data Distribution Functions

The distribution functions of TME 10 Software Distribution are:

Send   The send function is used to send a file from a source target, which must be either the server or a local client workstation, to a destination target or group of targets, which can be either local or remote. The send function can be used from both server and client workstations. The action can be immediate or deferred until a specified time and date. It can also be issued with the replace option.

Retrieve The retrieve function is used to retrieve a file from another target, which can be local or remote, onto a local server or client workstation. The retrieve function can be used from both server and client workstations. The action can be immediate or deferred until a specified time and date.

Delete   The delete function is used to delete files at local or remote targets.

Chapter 5. Tracking Change Control

TME 10 Software Distribution for NetWare includes functions for keeping track of the status of software installed on client workstations, and for tracking the progress of change control operations.

Change Control Status Information

Change control status is stored in the server catalog for each software package installed on each client workstation in a domain. The catalog also includes the change control history for the software installed on the server itself. When a change control operation is executed on a client workstation, a report of the operation results is generated and routed to the workstation in the network that originated the operation.

The status information in the catalog can report a change file as being:

Active/Inactive: The change file is installed either in the active area of the target file storage or only in the service area.

Available/Not authorized: The change file is stored on the server and is available for use by the target, or the target has not been authorized to use it.

Back level: The change file is a previous version of the software that was backed up after a more recent version was installed, but is reactivated because the more recent version was removed.

Discovered: The change file was discovered by an inventory discovery procedure. It is installed on the workstation, but was not installed by a TME 10 Software Distribution procedure.

Distributed: The change file was distributed to this target from another target.

Distribution pending: The change file is currently being distributed.

In error: A change control operation using the change file has failed without recovery, leaving the installation in an unpredictable state.

Installed/Not installed/In progress: The change file is either installed, is not installed, or the installation is currently in progress.

Reboot required: When the change file was installed, REBOOT REQUIRED=YES was specified. To use the new software, restart the workstation so that the changes in the file become operative.

Removable/Not removable: The change file is installed on the target and can be removed and replaced with an earlier version (rolled back), or cannot be removed.

Tracking the Progress of Change Control Operations

Before sending change files to clients, you can check the status of the software on the client. The operations that you can schedule for a client depend on the status of software, as shown in Table 5. You can use change control status information to specify conditions in dynamic change files and dynamic groups (see "How Grouping Targets Can Facilitate Change Control Operations" on page 19 and "Installing the Same Change File on Different Workstations" on page 24). For example, you can schedule a remove operation only on those workstations in your network where the status of a change file is *in error*.

Table 5. Change File Status and Associated Functions					
Status	**Install**	**Accept**	**Activate**	**Remove**	**Uninstall**
Available	Yes	No	No	No	No
Distributed	Yes	No	No	No	No
In error	Yes	Yes	Yes	Yes	Yes
In progress	No	No	No	No	No
Installed, Removable, Active	No	Yes	No	Yes	Yes
Installed, Not removable, Active	No	No	No	No	Yes
Installed, Removable, Inactive	No	Yes	Yes	Yes	Yes
Installed, Not removable, Inactive	No	No	Yes	No	Yes

Tracking the Progress of Change Control Operations

Change control and distribution operations that have been submitted to the system for execution are referred to as *requests*. You can display requests to follow their progress and take any necessary remedial action. Detailed filtering mechanisms allow you to display only those requests you are immediately interested in. You can view the progress of requests according to:

- The servers they were submitted from
- The request queue sequence number
- The global name of the files included in them
- The type of operation being performed (install, remove, accept, activate)
- Their status (in progress, successful, waiting, held, deleted, failed, not started)
- The severity level returned for errors (failed, warning, severe, hardware failure)
- The scheduled date and time
- The domains or the targets they address

You can then act upon a request by:

- Holding or releasing its execution
- Deleting it
- Rescheduling it
- Restarting it

Chapter 6. Using Security Functions

TME 10 Software Distribution provides security mechanisms that you can use to prevent unauthorized use of product functions and safeguard the privacy of sensitive data. You can define:

- User profiles that limit the functions a user can perform
- User access to targets
- User access to data
- Target authorizations for specific change files
- Security checks to be performed on the files in change files before they are installed on workstations.

TME 10 Software Distribution users must have a user ID to access the product. You can provide additional security by assigning passwords to users as well.

The following sections describe the authorizations contained in user profiles, and how to define user access to data and to targets.

Defining User Authorization Profiles

User authorization profiles define the functions that each user can perform with the product. You can define profiles to be used by groups of users who perform similar tasks, or you can define individual profiles for each user.

You can take advantage of three default authorization profiles, which are created during installation and stored at the server.

Administrators (FNDADMN)

Administrators have access to *all* operations, including the administrative and configuration functions.

When you define user authorizations, keep in mind that all FNDADMN users can perform operating system specific operations that require root and bin authorizations.

Table 6 on page 34 lists the values set for this profile.

Defining User Authorization Profiles

Table 6. Administrator Profile (FNDADMN)	
Function	**Authorization**
Change management	Install, Remove, Accept, Uninstall Execute Activate Authorize, Unauthorize, Delete History All targets
Distribution	Send Retrieve, Delete
Preparation	Build, Unbuild, Catalog, Delete, Create, View
Queues	Manage
System administration	Modify
Configuration	Modify
Erase requests	Authorize
Manage requests	All

Builders (FNDBLD)

Builders are authorized to perform change control preparation functions. That is, they can prepare and build change files. Table 7 lists the values set for this profile.

Table 7. Builder Profile (FNDBLD)	
Function	**Authorization**
Change management	Install, Remove, Accept, Uninstall Execute Activate All targets
Distribution	Send Retrieve, Delete
Preparation	Build, Unbuild, Catalog, Delete, Create, View
Queues	View
System administration	View
Configuration	View
Erase requests	Authorize
Manage requests	All

Users (FNDUSER)

Users can distribute files and display the configuration. Table 8 lists the values set for this profile.

Table 8. User Profile (FNDUSER)

Function	Authorization
Change management	Install, Remove, Accept, Uninstall Execute Activate Only on target where the user is working
Distribution	None
Preparation	None
Queues	View
System administration	None
Configuration	None
Erase requests	No authorization
Manage requests	None

Defining User Access to Data and Targets

Define data access keys (DAKs) to determine the objects in the catalog that a user can work with, and define target access keys (TAKs) to determine the targets a user can access. You define them in the following way:

- When you build or catalog a change file, a data file, or a plan, you specify the DAK associated with it. A catalog entry can have only one DAK, but you do not have to assign it one at all if it is not necessary. No DAK is the default.

  In the same way, when you define a target you specify the TAK associated with it.

- When you define a user, you determine the catalog entries the user can access by specifying the DAKs the user is associated with, and the targets the user can access by specifying the user's TAKs. A user can have up to 32 DAKs and TAKs (which is the maximum number defined to the system). The default is no DAKs or TAKs, in which case the user can work only with objects or targets that do not have DAKs or TAKs.

  When a user issues a command against a catalog entry or for a target, the system checks to verify that the object or target and the user have the same DAK or TAK.

Defining Data Security

Since change files are usually prepared at preparation site workstations, then stored on servers before being distributed around a network and installed, it is important to ensure that their contents are not tampered with before an actual installation takes place. This is especially critical when a change file contains sensitive data.

When you are building a remote source change file, specify **Secure package** in order to:

- Verify that the remote files specified are accessible, when the change file is built.
- Verify that the files are *the same* as those specified when the change file was built, when the change file is installed.

Chapter 7. Finding and Using TME 10 Software Distribution Information

This chapter tells you where you can find more information about TME 10 Software Distribution functions and how to use them.

It makes reference to files that can be found on the media on which the product is provided. TME 10 Software Distribution is provided on two CD-ROMs:

CD Number	CD Name	Product Number
LK3T-5087-00	TME 10 Software Distribution, Version 3.1.5 for OS/2, Windows 2000, Windows NT, Windows 95/98, Windows 3.1x, NetWare	5698-SWD
LK3T-5088-00	TME 10 Software Distribution, Version 3.1.5 for AIX	5698-SWD

Information about Messages and Error Codes

All TME 10 Software Distribution messages are logged in the message log. You can view it by entering the `nvdmlog` command from a command prompt. On an OS/2 or Windows client, you can view the message log in the Message Log window of the graphical interface.

Command Line Help

To see a full list of the available commands, first load the command line interface, as explained in "Starting and Stopping the Command Line Interface" on page 10.

Then type:

```
help
```

To see the full list of parameters for a particular command, specify the name of the command as well. For example, to see the parameters for the **rentg** command, which renames a target, enter:

```
help rentg
```

Viewing Online Information

A set of INF files containing viewable information is provided on the product CD-ROM in the directory SD4NW\BOOKS. You can copy the files to an OS/2 or Windows workstation and view them with the VIEW or XVIEW command. The files are:

- Quick Beginnings, an INF file (FNDNWMST.INF) of this book.

- Clients Installation and Configuration, an INF file (FNDCIMST.INF) of the manual that explains how to install and configure clients for the OS/2, AIX, Windows 2000, Windows NT, Windows 98, Windows 95, and Windows 3.11 platforms.

Printing the Documentation

- A Readme file (README.INF), which contains information about limitations and about changes made to the TME 10 Software Distribution products or to the publications after the publications went to press.

- Command Reference, an INF file (FNDR6MST.INF) of the manual that contains reference information about the TME 10 Software Distribution command line interface.

- Message Reference, an INF file (FNDM6MST) that contains reference information about the messages issued by TME 10 Software Distribution.

- Trademarks, an INF file (TRADEM.INF) that lists trademarks used in the product.

Printing the Documentation

TME 10 Software Distribution documentation is available on the product CD in PostScript and PDF formats.

PostScript Format

Files of the TME 10 Software Distribution documentation formatted for a PostScript printer are supplied on the product CD-ROM under the directory SD4DOCPS, which contains the following files:

Filename	Document name
FNDNTMST.PS	TME 10 Software Distribution for Windows NT Quick Beginnings
FNDOSMST.PS	TME 10 Software Distribution for OS/2 Quick Beginnings
FNDNWMST.PS	TME 10 Software Distribution for NetWare Quick Beginnings
FNDAXMST.PS	TME 10 Software Distribution for AIX Quick Beginnings
FNDR6MST.PS	TME 10 Software Distribution for Windows NT and OS/2 Command Reference
FNDA6MST.PS	TME 10 Software Distribution for AIX Reference
FNDNRMST.PS	TME 10 Software Distribution for NetWare Command Reference
FNDCIMST.PS	TME 10 Software Distribution Clients Installation and Configuration
FNDM6MST.PS	TME 10 Software Distribution Message Reference
FNDS6MST.PS	TME 10 Software Distribution Pristine and Migration Scenarios
FNDI6MST.PS	TME 10 Software Distribution for AIX Installation Scenarios
README.PS	TME 10 Software Distribution README

You can print them before or after you install TME 10 Software Distribution, Version 3.1.5 for NetWare, using whatever method you have set up for printing to a PostScript printer. Because the files are large, use of a high-speed PostScript printer is recommended.

| ## PDF Format

| The TME 10 Software Distribution manuals are also available in PDF format, allowing
| them to be viewed or printed using Adobe Acrobat Reader, which can be downloaded
| free of charge from Adobe's Internet site (www.adobe.com); see the site for full details
| of platforms supported by Acrobat. The directory which holds the PostScript files also
| holds the same manuals in PDF format, where the filename of the manual is the same
| as that of the PostScript version but the extension is changed to `.PDF`.

| The manuals are fully hyperlinked, so that you link directly to pages from the Table of
| Contents and the Index, as well as from specific references in the text.

Calling IBM Service

The IBM Support Center provides telephone assistance in problem diagnosis and
resolution in the United States and Puerto Rico. You can call the IBM Support Center
at any time; you will receive a return call within eight business hours (Monday through
Friday, 8 a.m. to 5 p.m., your local time). The number to call is (800) 237-5511.

Outside the United States and Puerto Rico, contact your local IBM representative or
your authorized IBM supplier.

Part 2. Installing and Configuring TME 10 Software Distribution

This part describes what you must do to install the product and configure the network it will be running in. It includes these chapters:

- Chapter 8, "Planning the Installation" on page 43

- Chapter 9, "Installing a TME 10 Software Distribution for NetWare Server" on page 47

- Chapter 10, "Installing a TME 10 Software Distribution Client" on page 53

- Chapter 11, "Editing the Base Configuration File" on page 57Chapter 12, "Defining Users and Targets" on page 69

- Chapter 13, "Editing SNA/DS Configuration Files" on page 77

- Chapter 14, "Configuring STS Remote Connection Files" on page 91

- Chapter 15, "Configuring NetWare for SAA 2.0 for SNA/DS Connections" on page 99

- Chapter 16, "Configuring Communication with TME 10 Software Distribution Nodes" on page 109

Information about how to install and configure OS/2 and Windows clients is in the *Installation and Configuration* book for the client products.

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Chapter 8. Planning the Installation

This chapter describes the requirements for installing and using TME 10 Software Distribution for NetWare.

Hardware Requirements

TME 10 Software Distribution for NetWare requires the following hardware:

- The processor and memory of the platform should be adequate for the version of the Operating System to be installed on it; see the appropriate documentatoin for the Operating System.

- Network cards that are used as communication between a TME 10 Software Distribution server and its clients and for SNA communication must be supported by Novell

- CD-ROM drive on the machine from which installation is done

Disk Space Requirements
- 35 MB for a TME 10 Software Distribution server
- 15 MB for a TME 10 Software Distribution client

Memory Requirements
- 96 MB for a TME 10 Software Distribution server
- 64 MB for a TME 10 Software Distribution client

Note: These figures include the operating system and the TME 10 Software Distribution software.

Software Requirements

This section lists the software that is needed to run TME 10 Software Distribution for NetWare.

Software Requirements for a Distribution Server
The following software is needed to run a TME 10 Software Distribution for NetWare server:

- NetWare Version 4.x

- NetWare for SAA Version 1.3B or 2.0 (if you want to use SNA communication)

    If you are using NetWare for SAA 2.0, the Attach Manager must be dated November 15, 1995, or later. If your Attach Manager is older, apply the CSD issued by Novell on November 15, 1995, which replaced the Attach Manager.

Software Requirements for a Distribution Client

A TME 10 Software Distribution for NetWare client requires NetWare Version 4.x.

For software requirements for OS/2 and Windows clients, see the *TME 10 Software Distribution Client Installation and Configuration* manual.

Communications Protocols

Communications protocols are required for server and client communication and for connecting a NetWare distribution server to an MVS or AIX focal point.

Protocols to Connect to Another Server

The following protocols are supported for a NetWare Server communicating with another TME 10 Software Distribution Server.

Server-to-Server (STS) Protocols

Table 9. STS Protocols to Connect to Another Server

Platform	Communications Potocol
OS/2	IPX TCP/IP
NetWare	IPX TCP/IP
Windows NT or Windows 2000	IPX TCP/IP
AIX	TCP/IP

SNA/DS Protocols

Both APPC and TCP/IP protocols can be used to connect to servers using SNA/DS.

Protocols to Connect to a Client

The following protocols are supported for a NetWare server communicating with a TME 10 Software Distribution Client.

Table 10. Protocols to Connect to A Client

Platform	Communications Potocol
OS/2	IPX TCP/IP
NetWare	IPX TCP/IP
Windows NT or Windows 2000	IPX TCP/IP
Windows 95 or Windows 98	TCP/IP
Windows 3.11	TCP/IP
AIX	TCP/IP

| **Protocols to connect to a focal point**

| For communication with an MVS focal point the APPC-TCP/IP protocol should be used.

| **Prerequisites on the Host System**

| To perform software distribution from an MVS system to TME 10 Software Distribution,
| the MVS system must have NetView DM for MVS Release 6.2 or 7 installed; however,
| if you wish to enable the host to delete pending requests at the server, it must be
| Release 7.

| To perform TME 10 Software Distribution from an AIX system to TME 10 Software
| Distribution, the AIX system must have TME 10 Software Distribution 3.1.4 for AIX, or
| later, installed.

Chapter 9. Installing a TME 10 Software Distribution for NetWare Server

You can install the TME 10 Software Distribution for NetWare server either locally or remotely. The machine from which you do the installation must have a CD-ROM drive.

As part of this installation, you will do a basic configuration of the product. After installation, you can refine the configuration by editing the base configuration file, as shown in Chapter 11, "Editing the Base Configuration File" on page 57.

To install the product, follow these steps:

1 If you are doing a remote installation, make sure that BROUTER.NLM is running on the machine from which you are doing the installation, and that BSPXCOM.NLM is running on the machine on which you are installing TME 10 Software Distribution.

2 Mount the TME 10 Software Distribution CD-ROM (numbered `LK3T-5087-00`)

3 From the machine from which you are doing the installation, type:

`load install`

4 From the Installation Options menu, select **Product Options.**

5 For NetWare 4.1, select **Install a product not listed** from the Other Installation Options menu.

For NetWare 3.12, press Ins.

6 NetWare requests the path to the source files. Enter:

`<CD-ROM volume>:SD4NW\server`

7 On the Main menu, shown in Figure 5 on page 48, specify whether you are installing on this NetWare server or another NetWare server.

Installing a TME 10 Software Distribution for NetWare Server
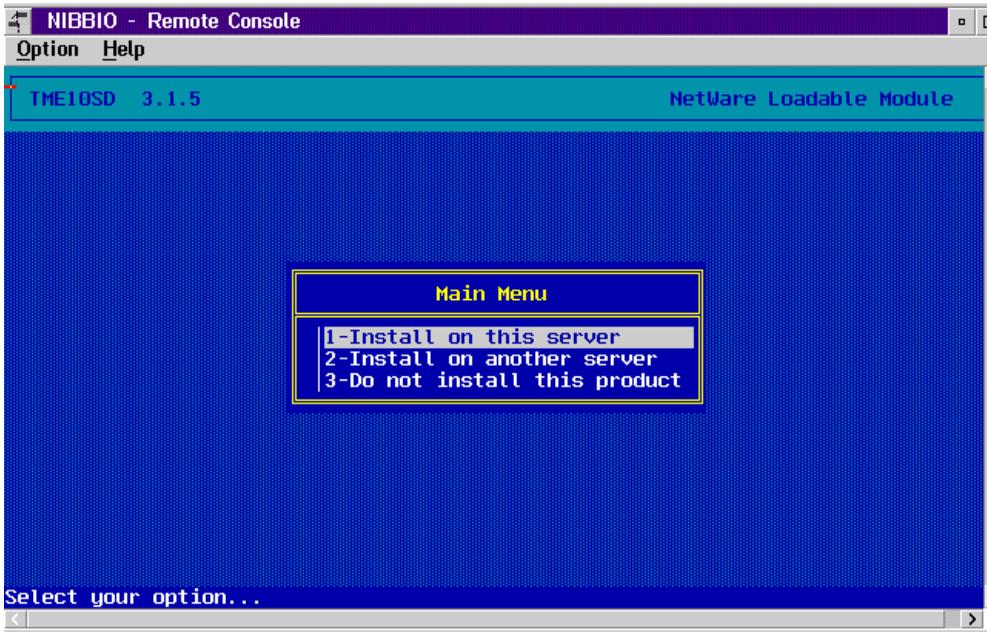
Figure 5. Server installation main menu

If you are installing on a remote NetWare server, log on to that server through the Logon to remote server menu, shown in Figure 6 on page 49.
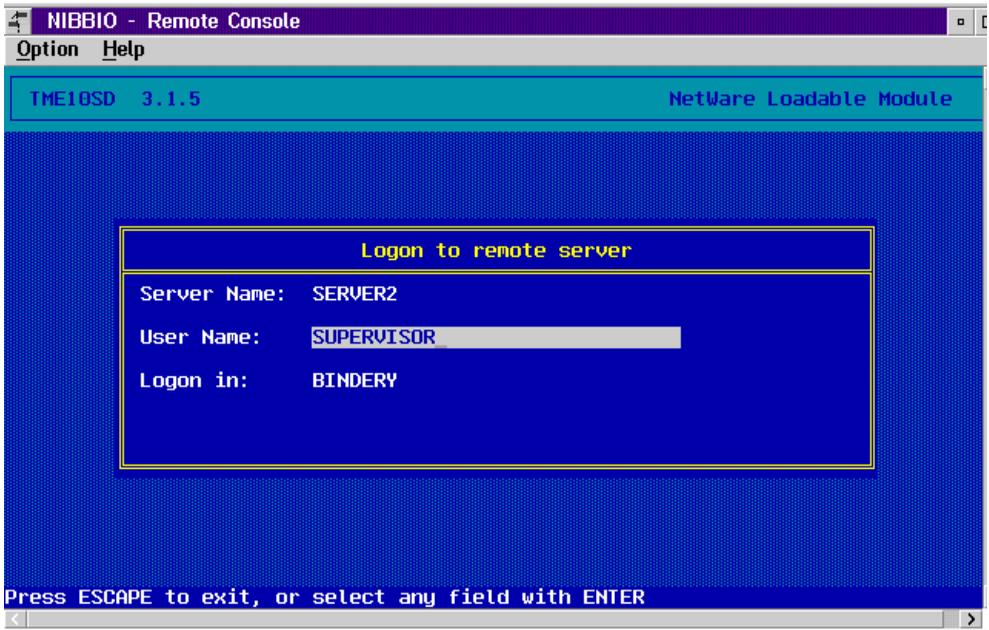
Figure 6. Server installation remote logon

If you are installing on NetWare 4.1, you can use the **Logon in** field to select BINDERY or NDS. If you select NDS, the user name must be a complete NDS name, with a period at the end; for example,

admin.nvdm_dev.

8 Enter the destination directory when it is requested. The default is SYS:SOFTDIST. Note that if the directory you select is not empty, its contents will be deleted.

9 The Configuration parameters menu is displayed, as shown in Figure 7 on page 50.

Installing a TME 10 Software Distribution for NetWare Server
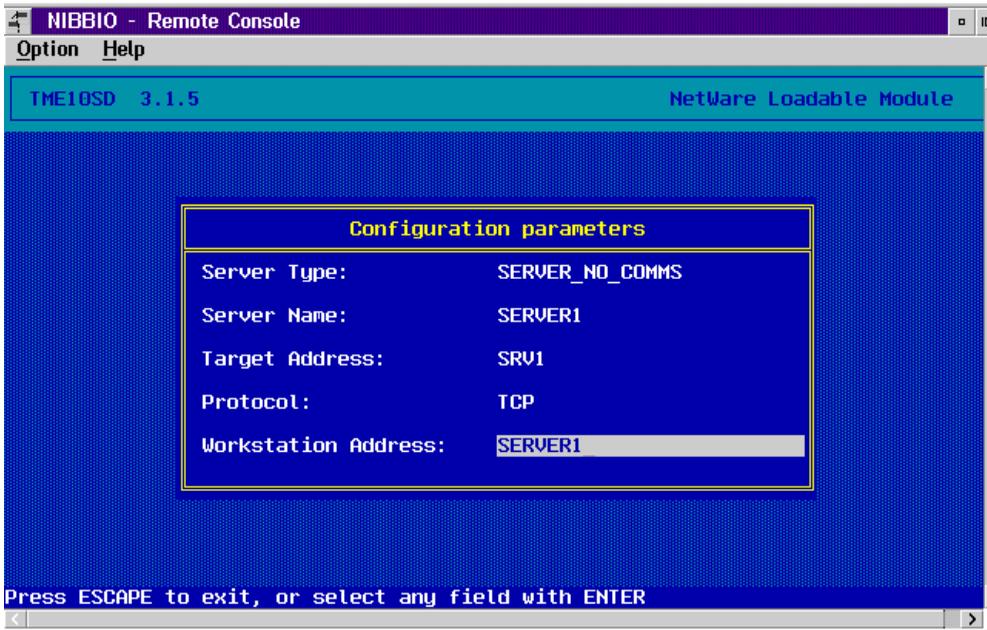
Figure 7. Configuration parameters for a TME 10 Software Distribution Server

Enter the parameters as follows:

Server Type The configuration of the server:

> **SERVER_NO_COMMS**
> Server with no remote connections to other servers.
>
> **SERVER_WITH_COMMS**
> Server with remote connections to other servers using TCP/IP or NetWare for SAA 1.3.
>
> **SERVER_WITH_COMMS2**
> Server with remote connections to other servers using NetWare for SAA 2.0.

Server Name The name by which the server is known to its clients.

> Note that the server name MYSELF is used by the system for local mobile client connections, and thus cannot be used to name any other server.

Target Address The name that uniquely identifies this workstation in the TME 10 Software Distribution network.

> This field can be up to 8 characters long. The only valid characters are uppercase alphabetic characters and numbers. If you enter lowercase characters, they are converted to uppercase.

Protocol   A transmission protocol used to communicate with clients. Select **TCP/IP** or **IPX**. To add a second protocol, edit the base configuration file after you finish installation.

Workstation Address   The TCP/IP hostname or IPX SAP name of the machine where the product is being installed.

10   Press Esc to start installation. Use the confirmation panel to confirm that you are ready to start. A message informs you when installation is complete.

At this point one user, named SDADMIN, has been defined. The product is registered in the currently installed product table. To remove it, select the product name in the table and press Del.

Chapter 10. Installing a TME 10 Software Distribution Client

You can install the TME 10 Software Distribution for NetWare client either locally or remotely. The machine from which you do the installation must have a CD-ROM drive.

As part of this installation, you will do a basic configuration of the product. After installation, you can refine the configuration by editing the base configuration file, as shown in Chapter 11, "Editing the Base Configuration File" on page 57.

To install the product, follow these steps:

1 If you are doing a remote installation, make sure that BROUTER.NLM is running on the machine from which you are doing the installation, and that BSPXCOM.NLM is running on the machine on which you are installing TME 10 Software Distribution.

2 Mount the CD-ROM.

3 From the machine from which you are doing the installation, type:

load install

4 From the Installation Options menu, select **Product Options.**

5 For NetWare 4.1, select **Install a product not listed** from the Other Installation Options menu.

For NetWare 3.12, press Ins.

6 NetWare requests the path to the source files. Enter:

<CD-ROM volume>:SD4NW\client

7 On the Main menu, shown in Figure 8 on page 54, specify whether you are installing on this NetWare server or another NetWare server.

Installing a TME 10 Software Distribution for NetWare Client
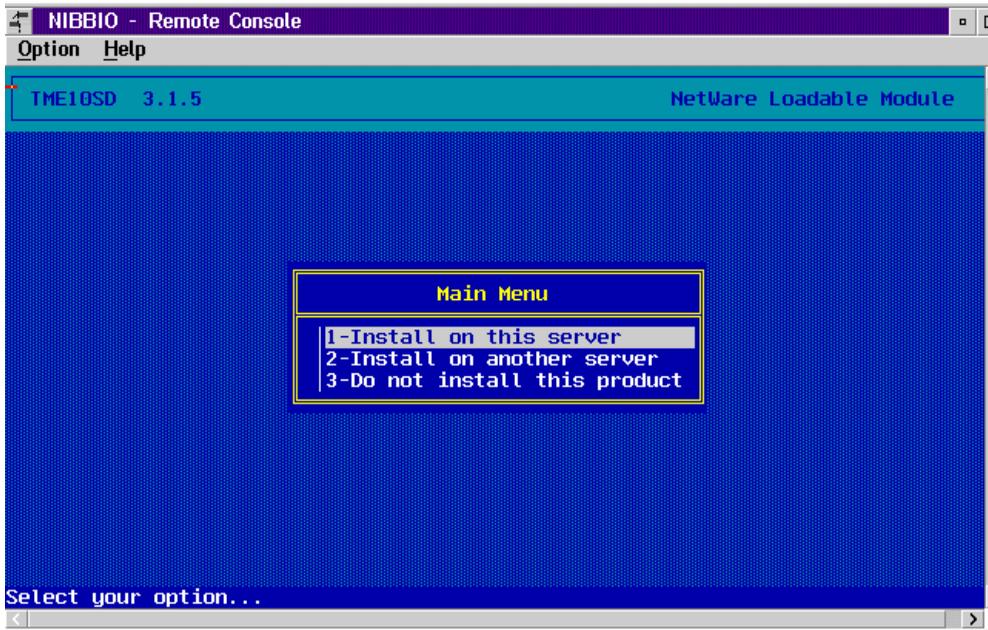
Figure 8. Client installation main menu

If you are installing on a remote NetWare server, log on to that server through the Logon to remote server menu, shown in Figure 9 on page 55.
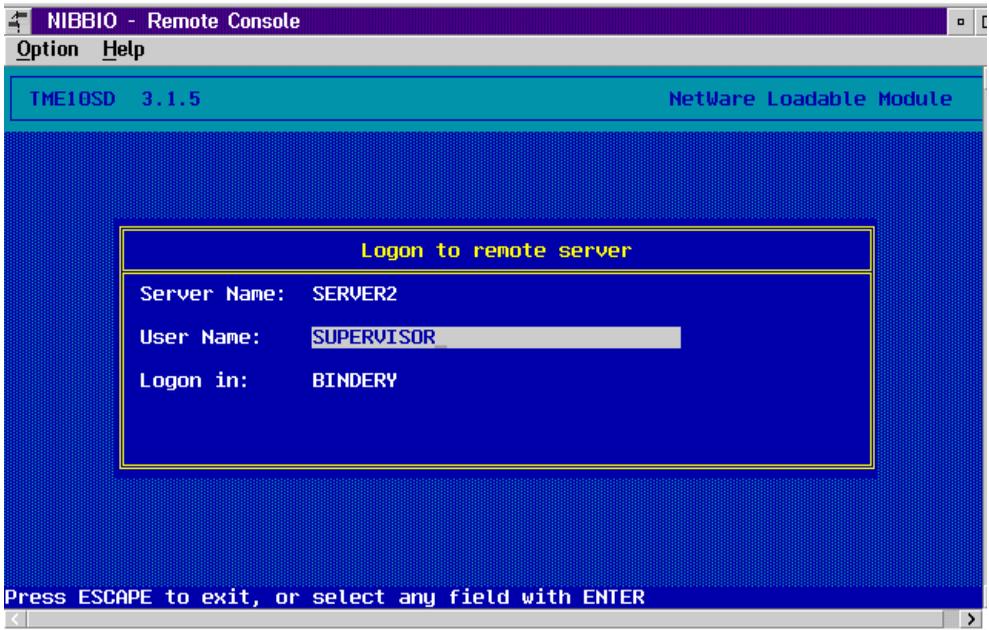
Figure 9. Client installation remote logon

If you are installing on NetWare 4.1, you can use the **Logon in** field to select BINDERY or NDS. If you select NDS, the user name must be a complete NDS name, with a period at the end; for example,

admin.nvdm_dev.

8 Enter the destination directory when it is requested. The default is SYS:SOFTDIST. Note that if the directory you select is not empty, its contents will be deleted.

9 The Configuration parameters menu is displayed, as shown in Figure 10 on page 56.

Installing a TME 10 Software Distribution for NetWare Client

```
NIBBIO - Remote Console                                              □ II
 Option  Help

  TME10SDA  3.1.5                              NetWare Loadable Module



               Configuration parameters

        Workstation Name:        ROGER

        Server Name:             SERVER1

        Target Address:          SHORTLU

        Protocol:                TCP

        Workstation Address:     ROGER




Press ESCAPE to exit, or select any field with ENTER
```
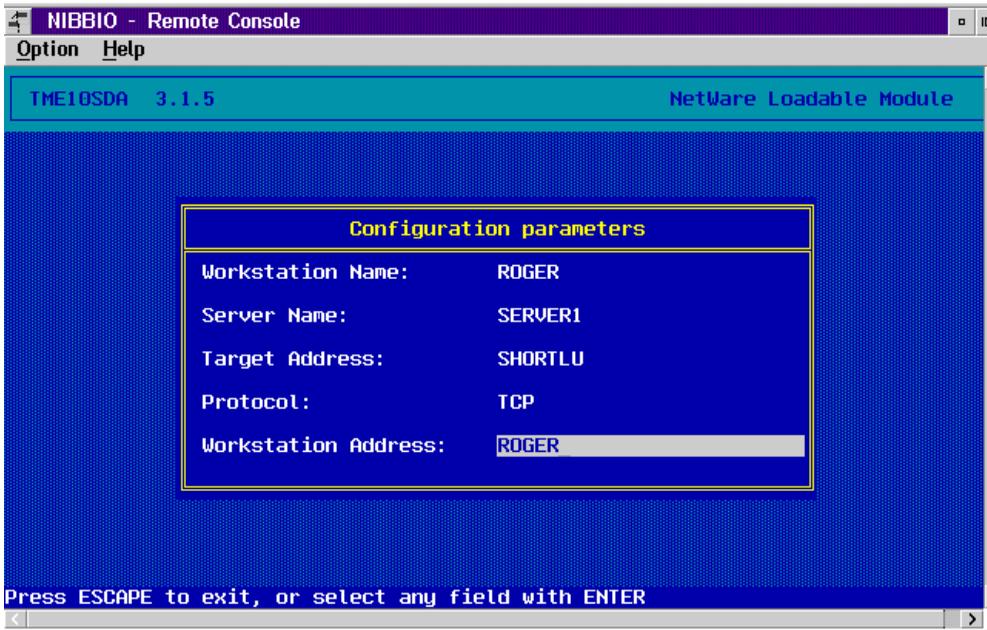
Figure 10. Configuration parameters for a TME 10 Software Distribution Client

Enter the parameters as follows:

Workstation Name The name of the client workstation. The server uses this name to identify this workstation as a target.

Server Name The name of the server the client is linked to, as specified as WORKSTATION NAME in the base configuration file of the server.

Target Address The name that uniquely identifies this workstation in the TME 10 Software Distribution network.

This field can be up to 8 characters long. The only valid characters are uppercase alphabetic characters and numbers. If you enter lowercase characters, they are converted to uppercase.

Protocol The transmission protocol used to communicate with the server. Select **TCP/IP** or **IPX**.

Workstation address The TCP/IP hostname or IPX SAP name of the machine where the product is being installed.

10 Press Esc to start installation. Use the confirmation panel to confirm that you are ready to start. A message informs you when installation is complete.

At this point the product is registered in the currently installed product table. To remove it, select the product name in the table and press Del.

Chapter 11. Editing the Base Configuration File

The first configuration activities you perform on a newly installed TME 10 Software Distribution, Version 3.1.5 for NetWare system are at the distribution server. First, you must define it as a target. You then work from it to perform the configuration activities required to set up your network.

Basic distribution server configuration is performed during the installation process and the information is stored in the base configuration file. This section describes the format of this file and the values that you can enter in its fields.

The base configuration file is named NVDM.CFG. It contains the system parameters for controlling TME 10 Software Distribution, Version 3.1.5 for NetWare. The NVDM.CFG file generated at installation does not contain all possible parameters; rather, it contains a default subset of them. You can add or remove parameters and change their values by editing the file using a text editor.

There are a few circumstances under which you edit a client's base configuration file:

- When you rename your client, you must change the workstation name stored in the file.
- When you rename your server, you must change the name of the server stored in the client's base configuration file.
- When you change the TCP/IP port number or IPX address of the server, you must change the value stored on the client.
- When you want to change the client's log file size.
- When you want to change the client's trace file size.
- When you want to change the client's API file size.

The base configuration file is stored in a fixed text format. Each line starts with one of the keywords described in Table 11 on page 58. Keywords must be entered in uppercase and followed by a colon. Each keyword, except for PROTOCOL and SET, can be used only once. The order of keywords in the file is not important, and blank and comment lines can be included. Comment lines begin with a number sign character (#).

To make modifications to the file operative, you must stop and then restart TME 10 Software Distribution for NetWare from the NetWare console using the commands:

```
nvdmstop
nvdmstrt
```

Note that if incorrect entries are entered in the base configuration file, the product may not start.

Editing the Base Configuration File

Table 11 (Page 1 of 11). Base Configuration File Parameters

Keyword	Description
API TRACE FILE SIZE	The maximum size of the TME 10 Software Distribution API trace files, in bytes. When the trace file is full, it is automatically backed up and a new trace file is started. You can change this value but it should not normally be necessary. A large value requires more disk space. A small value degrades performance very slightly, because the trace file is backed up more often.
AUTHORIZE **(server only)**	This keyword authorizes pull mode clients to install a change file or to execute a data file. **NONE** No target is authorized to install a change file or to execute a data file unless it is authorized through the `auth` command. **ALL** Any target is authorized to install a change file or to execute a data file unless it is unauthorized through the `unauth` command. The default is NONE. Set the AUTHORIZE keyword as soon as you have installed TME 10 Software Distribution, Version 3.1.5 for NetWare.
AUTOMATIC TARGET INVENTORY **(server only)**	This keyword causes clients, when they are added via command line or via GUI, to automatically perform a hardware and software inventory and store the results in the server database. Valid values are: **YES** The target inventory is performed when the target is added via command line or via GUI **NO** The target inventory is performed only when an automatic registration occurs. See the AUTOMATIC TARGET REGISTRATION keyword. The default is NO.

Table 11 (Page 2 of 11). Base Configuration File Parameters	
Keyword	**Description**
AUTOMATIC TARGET REGISTRATION (server only)	This keyword enables clients to automatically register themselves in the server database as one of the server's local targets. The registration is performed the first time a client connects to the server, if the client is not already registered.
	Valid values are:
	Y Enables targets to be registered at the server.
	N Does not enable targets to be registered at the server.
	The default is N.
	For automatic registration to be performed, the TARGET ADDRESS keyword must be set in the client's base configuration file, and the CONFIGURATION keyword in the client's base configuration file must be CLIENT.
	When an automatic target registration is performed an inventory is automatically scheduled.
BACKUP AREA	The name of the directory where change files are stored when they are installed as removable. The default is `SYS:SOFTDIST\BACKUP`. If you change the default path, you must copy all files into the new path; otherwise change control history information is lost. If the default path for the backup area is changed, it is not removed automatically if the product is uninstalled.
CONFIGURATION	For a server, the configuration of your TME 10 Software Distribution, Version 3.1.5 for NetWare node. The name is set up during installation and cannot be changed. It can be one of the following:
	SERVER_NO_COMMS Server with no remote connections to other servers.
	SERVER_WITH_COMMS Server with remote connections to other servers using TCP/IP or NetWare for SAA 1.3.
	SERVER_WITH_COMMS2 Server with remote connections to other servers using NetWare for SAA 2.0.
	The value of the field in the distribution server base configuration file can be displayed using the **lsbs** command.
	For a client, the value for this keyword is always CLIENT.

Editing the Base Configuration File

Keyword	Description
Table 11 (Page 3 of 11). Base Configuration File Parameters	
Keyword	**Description**
CONNECTION WINDOW DURATION (server only)	The value you specify for this parameter becomes the default value for the **d** option on the **connect** command.
	It represents the amount of time, in minutes, that the connection window from the server to the client is to remain open.
	The default value is 60 minutes.
DACA IDLE TIME (server only)	The time in seconds after which an idle client-server connection is considered failed.
	Enter a value from 0 to 32 767. The default is 300.
DACA RETRY TIME (server only)	The time in seconds before a failed client-server connection is retried.
	Enter a value from 0 to 32 767. The default is 600.
FILE SYSTEM	The name of the file system that the operating system supports. Based on this keyword, TME 10 Software Distribution chooses the local name when a request provides multiple local names.
	The default is one of the following numeric values, depending on the operating system:
	1 AIX **2** OS/2, Windows 3.11, DOS **3** NetWare **5** Windows 2000, Windows NT, Windows 98, Windows 95
INVENTORY PROGRAM	The name of the program invoked when the **inv** command is issued. It creates the `fndswinv` file.
LAN AUTHORIZATION (server only)	Valid entries are:
	0 LAN address authorization is not required.
	1 TME 10 Software Distribution, Version 3.1.5 for NetWare validates LAN addresses on all LAN messages received by the distribution server.
	If you specify LAN address authorization, you must supply the LAN address of each local target.
	The LAN authorization level can be set for individual work sessions using the **updbs** command at the command line interface or using the graphical interface. However, if you use one of the interfaces to change the value, it is not changed in the base configuration file, but is only modified for your current work session.

Table 11 (Page 4 of 11). Base Configuration File Parameters

Keyword	Description
LOG FILE SIZE	The maximum size of the TME 10 Software Distribution, Version 3.1.5 for NetWare message log file, in bytes. When the log file is full it is automatically backed up, and a new log file is started.
	You can change this value but it should not normally be necessary. A large value requires more disk space. A small value degrades performance slightly, because the log is backed up more often.
MAX ATTEMPTS (client only)	The maximum number of failed attempts by a client to connect to the distribution server before the system temporarily revokes the access to the server. The default is 5.
MAX CONNECTIONS (server only)	The maximum number of local targets allowed to process requests simultaneously. The default is 10.
MAX LOCAL TARGETS (server only)	The total number of local targets that can be configured for a server. The maximum number is 2000. The default is 100.
MAX REQUESTS (server only)	The maximum number of requests that can be active simultaneously.
	Enter a value from 1 to 65 536. The default is 512.
MAX SERVER CONNS (server only)	The maximum number of connections to remote server DACAs that can be open simultaneously. These STS connections receive requests from remote servers to perform operations. The MAX STS keyword, on the other hand, defines those STS connections that initiate operations *to* remote servers.
	Enter a value from 0 to 256. The default is 10.
MAX SERVER TARGETS (server only)	The total number of non-adjacent server targets that can be configured for a server. The total includes remote servers and single node targets. The MAX SNADS ROUTES and MAX STS ROUTES keywords are used to specify the number of these targets connected across either SNA/DS or STS connections. The default is 10.
MAX SNADS ROUTES (server only)	The maximum number of SNA/DS connections that can be defined. The default is 20.

Editing the Base Configuration File

Table 11 (Page 5 of 11). Base Configuration File Parameters	
Keyword	**Description**
MAX STS (server only)	The maximum number of STS processes that can be simultaneously handling connections to remote distribution servers. These STS connections send requests for remote servers to perform operations. The MAX SERVER CONNS keyword, on the other hand, defines those STS connections that receive requests *from* remote servers.
	Enter a value from 0 to 256. The default is 20.
MAX STS ROUTES (server only)	The maximum number of STS connections that can be defined. The default is 20.
MAX TARGETS (server only)	The total number of local and/or remote targets that can be configured.
	This value must be greater than the sum of MAX LOCAL TARGETS and MAX SERVER TARGETS.
	The formula MAX TARGETS minus MAX LOCAL TARGETS minus MAX SERVER targets determines the number of remote targets that can be configured at a server, for which there is no keyword in the base configuration file. The default is 120.
MAX USER INTERFACES	The maximum number of simultaneous GUI and command line sessions. The default is 10.
MESSAGE LOG LEVEL	This field defines the log level that should be used by distribution clients before they establish a connection to the distribution server and discover the level configured for them there.
	Three log levels are available:
	M Minimal **N** Normal **D** Diagnostic

Table 11 (Page 6 of 11). Base Configuration File Parameters

Keyword	Description
PROTOCOL	A transmission protocol used for client/server connections. Enter a value using the following syntax:
	`<protocol_name> <address>`
	Where:
	<protocol_name> Is either TCP (for TCP/IP) or IPX
	<address> If `protocol_name` is TCP, specify:
	`TCP` *hostname port_number* ► *max_connections*
	If `protocol_name` is IPX, specify:
	`IPX` *IPX_address*
	or:
	`IPX` *hostname*
	For a server, enter the `IPX_address` using the following syntax:
	`<internal_network> <server_address>` ► `<socket>`
	Where:
	<Internal_network> is the value reported on the `IPX Internal Network Number` line of the output that you receive when you enter the config command on a NetWare console. It is 8 characters long.
	<Server_address> is 000000000001 in a NetWare server. It is 12 characters long.
	<socket> is 869F for a NetView DM for MVS server.
Continued overleaf	The resulting string must be 24 characters long.

Editing the Base Configuration File

Table 11 (Page 7 of 11). Base Configuration File Parameters	
Keyword	**Description**
PROTOCOL (continued)	For a client, enter the IPX_address using the following syntax: `<network_ID> <Mac_address> <socket>` Where: <network_ID> is the value reported on the `Lan protocol: IPX network...` line of the output that you receive when you enter the config command on a NetWare console. On an OS/2 workstation it is the value that you find in the `Lantran.log` file. On a Windows NT workstation it is the value that you receive when you enter the Net config command. It is 12 characters long. <Mac_address> is the physical address of the card you are using. It is 12 characters long. <socket> is 869F for a NetView DM for MVS server. The resulting string must be 24 characters long.
REPOSITORY	The name of the repository where TME 10 Software Distribution, Version 3.1.5 for NetWare stores its objects. The default repository is `SYS:SOFTDIST\REPOS`. If the default repository path is changed, the repository is not removed automatically if the product is uninstalled.

Table 11 (Page 8 of 11). Base Configuration File Parameters	
Keyword	**Description**
SERVER	For a server, its own system name.
	For a client, the name of the server the client is linked to. It is set up automatically on the server during installation. If you do not know this name, you can find it in the server base configuration file.
	Note that the server name `MYSELF` is used by the system for local mobile client connections, and thus cannot be used to name any other server.
	Enter a SERVER value using the following syntax:
	`<server> <transport>` ► `<server_hostname>`
	1. If the server is connected to this client through TCP/IP, specify:
	`SERVER:` *(server_name)* `TCP` ► *(hostname)*
	2. If the server is connected to the client through IPX, specify:
	`SERVER:` *(server_name)* `IPX` ► `IPX_address`
	The *IPX_address* is shown in the PROTOCOL keyword of the server.
	or:
	`SERVER:` *(server_name)* `IPX` `hostname`
	If you do not perform an automatic registration of the client, use the nvdm addtg command as follows:
	`addtg <client_name> -s` ► `<short_name> ... -tp IPX:<client_address>`
	The value of the client address is shown in the PROTOCOL session.
SERVICE AREA	The name of the directory for storing files and information pertaining to change files that require activation. The directory should belong to a local file system mounted during startup. The default is `SYS:SOFTDIST\SERVICE`. If you change the default path, you must copy all files into the new path; otherwise change control history information is lost. If the default path for the service area is changed, it is not removed automatically if the product is uninstalled.

Editing the Base Configuration File

Keyword	Description
SET	This keyword can have the following values:
	FNDITRC=*trace_level* or FNDITRC=*trace_level**. The value for *trace_level* can be 0-5, where 0 causes the most trace information to be collected and 5 the least. An asterisk next to *trace_level* specifies that the trace is to be written to a screen as well as to the trace files.
	FNDUSER=*name* specifies the user name. When the `load nvdm` command is entered to load the command line interface, the system assumes the user is *name* rather than requesting a user ID.
	FNDPASSWORD=*password* specifies a password for the user specified in SET: FNDUSER. When the `load nvdm` command is entered to load the command line interface, the system assumes that *password* is the password for the user *name* rather than requesting a password.
	LANG=*EN_US* sets the language of the product. It is optional. If you use it you must specify EN_US. At this time no other values exist.
	LOGCONSOLE=YES causes the message log to be written to a screen as well as to a file.
STS IDLE TIME (server only)	The time in seconds after which an idle STS connection is considered failed.
	Enter a value from 0 to 32 767. The default is 60.
STS RETRY TIME (server only)	The time in seconds before a failed STS connection is retried.
	Enter a value from 0 to 32 767. The default is 300.

Table 11 (Page 9 of 11). Base Configuration File Parameters

Table 11 (Page 10 of 11). Base Configuration File Parameters	
Keyword	**Description**
TARGET ADDRESS	The address used to identify the target throughout the TME 10 Software Distribution domain. The address can be up to 8 alphanumeric characters. For remote communication, it must be unique throughout the entire network.
	A complete address is composed of two parts, one of which is defined here. For TME 10 Software Distribution nodes, the complete address is expressed as:
	`<server_name>.<target_address>`
	For a server, `<server_name>` and `<target_address>` must be the same.
	In SNA environments, the two elements of the complete address are referred to as:
	`<routing_group_name>.<routing_element_name>`
	or:
	`<RGN>.<REN>`
	For NetView DM for MVS, the complete name consists of:
	`<Network_ID>.<LU_name>`
	Thus the `<target_address>` entered in this field must correspond to a target's LU name.
	In most organizations, target addresses are allocated from a central authority at the host processor because these are the names to which change control instructions are sent. In a large network, it may be impossible to make this field meaningful. You may need to resort to the use of digits to produce unique names.
TARGET PASSWORD AUTHENTICATION	This keyword activates target password authentication.
	Valid values are:
	• **YES** • **NO**
	The default is **NO**.
TCP/IP PORT	The TCP/IP port number is set to 729. It must be the same for clients and server.

Editing the Base Configuration File

Table 11 (Page 11 of 11). Base Configuration File Parameters	
Keyword	**Description**
TRACE FILE SIZE	The maximum size of the TME 10 Software Distribution, Version 3.1.5 for NetWare internal trace files, in bytes. Two trace files are used and when one is full, tracing automatically switches to the other.
	You can change this value but it should not normally be necessary. A large value requires more disk space. A small value degrades performance very slightly, because the log is backed up more often.
	Refer to the Message Reference file for information about the TME 10 Software Distribution, Version 3.1.5 for NetWare internal tracing.
WORK AREA	The name of the directory where temporary work files are created and used. The default is `SYS:SOFTDIST\WORK`. If the default path for the work area is changed, it is not removed automatically if the product is uninstalled.
WORKSTATION NAME	The name of the workstation that is running your TME 10 Software Distribution, Version 3.1.5 for NetWare node. The name is set up during installation.

Chapter 12. Defining Users and Targets

This chapter provides the information needed to define users and targets in a network. You can find a complete description of how to define them using the command line interface in the online Command Reference for the product.

Defining Users

Users are defined at a database at the TME 10 Software Distribution server. A user definition includes the user's name and password, a description of the user, and security mechanisms that you can use to prevent unauthorized use of product functions and safeguard the privacy of sensitive data. They are:

- The definition of user profiles that enable the user to perform TME 10 Software Distribution, Version 3.1.5 for NetWare functions. The system administrator can define profiles to be used by groups of users, or individual profiles for users. Three default authorization profiles are installed with the product; FNDADMN for system administrators, FNDBLD for change file builders, and FNDUSER for users.

- The definition of target access keys (TAK) that enable a user to work with specific targets.

- The definition of data access keys (DAK) that enable a user to work with specific objects, or data.

- The definition of the targets the user is authorized to login at

Defining Targets

In TME 10 Software Distribution, Version 3.1.5 for NetWare, the term *target* refers to all workstations in a network to which change control and distribution activities are directed. The following table contains a description of the parameters you use to define targets in a network.

Table 12 (Page 1 of 7). Target Definition Parameters

Parameter	Description
Name	Each target in a network has a unique name. When you communicate with a target, you use that unique name to identify it. A target name can contain up to 63 characters, excluding *, ?, and \.
Description	Text that describes the target. Up to 59 characters can be included in a description.

Defining Targets

Table 12 (Page 2 of 7). Target Definition Parameters	
Parameter	**Description**
Change management	This parameter defines a target's *mode*. Targets can be configured in one of the following modes: **Push mode** Change control operations on a push mode target are controlled by the administrator at a TME 10 Software Distribution server or from a focal or manager target. **Pull mode** Change control operations on a pull mode target are controlled by the target's user. **Manager** A target configured in manager mode can perform change control operations on local targets and on remote targets. The remote administrator option must be installed on managers. Only targets whose type is server or single can be configured in manager mode. More than one target can be defined as a manager in a network. **Focal** A target configured in focal mode is a focal point for targets that define it as such. This means that the defining target routes all change control operation reports (both local and remote) to it. A focal target also acts as a manager. Only targets whose type is server or single be configured in focal mode.

Table 12 (Page 3 of 7). Target Definition Parameters

Parameter	Description

Target address	The address you assign to a target must be unique in its domain, and can be up to 8 alphanumeric characters long. For remote communication, the address of each target must be unique across the entire network. A complete address is composed of two parts, one of which is the target address you define here. The terminology used for the two parts of the address is different depending on the platform it runs on:
	
	• For TME 10 Software Distribution, Version 3.1.5 for NetWare targets the terminology is the same as that used here. A complete target address is expressed as:
	
	`<server name>.<target address>`
	
	If a target is a TME 10 Software Distribution server, both its `<server name>` and its `<target address>` must be the same.
	
	In SNA environments, these terms are also referred to as:
	
	`<routing group name>.<routing element name>` ► `(RGN.REN)`
	
	• For NetView DM for MVS and NetView DM/2 targets, the complete name is composed of:
	
	`<Network ID>.<LU name>`
	
	Thus the `<target address>` entered in this field must correspond to a target's `LU name`.
	
	In most organizations, target names are allocated from a central authority (at the host processor) because this is the name to which change control instructions are sent. In a large network, it is often impossible to make this field meaningful. You may need to resort to the use of digits to produce unique names. If you are adding a remote target, its name must already be defined at the remote site.
	
	The address of a local target forms part of the global file name of files that are cataloged automatically for a target.

Defining Targets

Table 12 (Page 4 of 7). Target Definition Parameters	
Parameter	**Description**
Target type	A target must be one of the following *types*: **Client** Targets connected to a TME 10 Software Distribution server which have a TME 10 Software Distribution Client program installed. Clients can be either local or remote targets. Those in the same CC domain as their TME 10 Software Distribution server are referred to as *local* targets. Clients that belong to a different TME 10 Software Distribution domain are referred to as *remote* targets. Remote targets must be configured at all TME 10 Software Distribution servers they are to exchange files or change control requests with. Change control operations can be performed on remote targets only if the remote administration product option is installed on your system. Clients can be defined in push mode or pull mode. Clients can also be configured, or registered automatically, the first time they connect to a server. See "Automatic Client Registration" on page 75. **Server** Targets running TME 10 Software Distribution, Version 3.1.5 for NetWare and which have the server option installed. TME 10 Software Distribution servers can perform change control and distribution operations on TME 10 Software Distribution clients in their software distribution domain. If they have the remote administrator product option installed, they can perform operations on remote targets. Server targets can be configured in push, pull, manager or focal mode.

Table 12 (Page 5 of 7). Target Definition Parameters	
Parameter	**Description**
Target type (cont.)	**Single** Targets running TME 10 Software Distribution, Version 3.1.5 for NetWare configured as a base system. Single-node targets can be used as preparation sites for software or as focal points to receive reports of change control operations. They can be configured in pull, push, manager or focal mode. Single-node targets can be accessed over TCP/IP and SNA/DS (APPC) networks. Change control operations can be performed on them if the remote administration option is installed on your system. Use this type also to define a NetView DM for MVS target. **User Interface only (UI only) target** Targets that can be used to run the TME 10 Software Distribution, Version 3.1.5 for NetWare user interfaces. This type of target is useful when you have an environment in which more than one TME 10 Software Distribution server exists. It allows an administrator (a user belonging to the FNDADMN user group) to access all TME 10 Software Distribution servers from the same target either to perform administrative tasks or to schedule distributions to targets. A workstation configured in this manner is used to initiate change control on *other* targets, or to request distributions to and from the TME 10 Software Distribution server. User interface only targets cannot receive change control instructions from the same TME 10 Software Distribution server for which they are defined. You cannot define change control modes for UI only targets.

Defining Targets

Table 12 (Page 6 of 7). Target Definition Parameters	
Parameter	**Description**
Target OS	The type of operating system installed on the target. It can be one of the following: AIX DOS HP_UX MAC NCR NETWARE OS/2 SCO SINIX SOLARIS SUNOS WINDOWS (for Windows 3.11) WIN95 (for Windows 95) WIN98 (for Windows 98) WINDOWS_NT WIN2K (for Windows 2000)
Access key	The key that allows users to access the target. A user can access a target only if he or she has been assigned the same access key as the one assigned to the target. Target access keys are defined by the system administrator.
LAN address	The target's burned-in LAN address. This parameter must be defined if the Validate LAN function is set to on. When it is on, if the target attempts to communicate with a TME 10 Software Distribution server, a check is performed to verify whether the LAN address stored in the target's database matches its actual address. The Validate LAN function can be set at either a TME 10 Software Distribution server or a target workstation. To change the setting from a target, the LAN address must already be defined in the database of the target. If you are adding a UI target only, a target's LAN address is automatically captured at the target itself, and stored at the TME 10 Software Distribution server. Leave this field blank, unless you need to change the automatically captured address.
Server name	For a client target, the name of the TME 10 Software Distribution server to which the target is linked.

Table 12 (Page 7 of 7). Target Definition Parameters	
Parameter	**Description**
Domain address	This parameter is required for remote targets. The ID can be up to 8 characters long. The only valid characters are uppercase alphabetics and numerics. The value you define depends on the type of target you are defining:
	TME 10 Software Distribution, Version 3.1.5 for NetWare Server or Single Node Specify the target address specified for the target.
	Client Specify the server name of the TME 10 Software Distribution server to which the client is connected.
	Non TME 10 Software Distribution, Version 3.1.5 for NetWare target If the target you are defining is *not* a TME 10 Software Distribution, Version 3.1.5 for NetWare target, specify, for NetView DM/2 and NetView DM for MVS nodes, the Network ID of the remote network to which this target belongs. This value corresponds to the routing group name (RGN) part of the SNA/DS address of the target. Ask the administrator at the host processor what the value is.
Password	The password used to access the target. It can have from 6 to 8 characters.

Automatic Client Registration

System administrators do not have to configure all client targets in a network individually at a server. They can be configured automatically, or autoregistered, the first time a client target connects to a server. For autoregistration to take place, the AUTOMATIC TARGET REGISTRATION keyword in a server's base configuration file must be set to YES (see Table 11 on page 58), and the TARGET ADDRESS and TARGET MODE keywords must be specified in the client base configuration file (see the *Installation and Configuration* manual for the TME 10 Software Distribution Clients).

When a client is automatically configured, its address and mode are inserted in the server database. Any other parameters for the client target must be specified manually using the graphical interface or the command line interface.

Automatic configuration is performed at all remote servers connected in a linear hierarchy to the first server that registers the target, as long as AUTOMATIC TARGET REGISTRATION is set to YES in each server's database. However, automatic target registration information is not routed from TME 10 Software Distribution, Version 3.1.5 for NetWare servers to NetView DM/2 servers or NetView DM for MVS focal points.

Chapter 13. Editing SNA/DS Configuration Files

This chapter describes how to configure configuration files for an SNA/DS network that uses either APPC or TCP/IP connections. You need to edit this configuration information to define or update SNA/DS connections to remote nodes.

Editing Connection Configuration Files

The configuration information for SNA/DS connections is held in three different text files, which can be edited using a text editor.

The files that can be edited are:

SNA/DS configuration file
> This file contains the system parameters for controlling TME 10 Software Distribution, Version 3.1.5 for NetWare's use of the SNA/DS network implemented across both APPC and TCP/IP connections.

SNA/DS connection configuration files
> This file contains the details of an APPC or a TCP/IP connection to an adjacent node.

Routing table
> This file instructs the server which APPC or TCP/IP connection should be used when distributions are sent to remote targets.

If you edit one of these files while TME 10 Software Distribution, Version 3.1.5 for NetWare is running, you must use the **rld** command to reload configuration changes. See the *Command Reference* manual for more information about this command.

SNA/DS Configuration File

The SNA/DS configuration file, SYS:SOFTDIST\DB\SNADSCFG, contains system parameters for controlling the use that TME 10 Software Distribution, Version 3.1.5 for NetWare makes of the SNA/DS network. You only need to edit the SNA/DS configuration file when performing system tuning, and access is usually restricted to the administrator.

The file is stored with a fixed text format. Each line starts with one of the keywords described in Table 13 on page 78. Enter each keyword in uppercase and end it with a colon.

Each keyword can be used only once. The order of the keywords is not important, and blank and comment lines can be included. Comment lines begin with a number sign (#).

SNA/DS Configuration Files

Table 13. SNA/DS Configuration File Parameters	
Keyword	**Description**
ORIGIN HOP COUNT	The default hop count to be used for distributions originated by TME 10 Software Distribution, Version 3.1.5 for NetWare when the hop count is omitted or is specified as 0 in the routing table. (See "Editing the Routing Table" on page 82.) An appropriate value for this field is 5.
MAX CRMU	The maximum number of Completion Report Message Units (CRMU) that TME 10 Software Distribution, Version 3.1.5 for NetWare sends in one go when it detects that Message Unit ID (MU_ID) registries are out of synchronization.
	You do not normally need to change the value of this field. It is used for performance tuning. If the value is low then resynchronization of registries takes longer. If the value is high, then system resources are consumed by the resynchronization and are not available for normal processing.
	Because resynchronization should be rare, and it is unlikely that a connection would have many MU_IDs outstanding at any time, 5 is a reasonable value.
TRANSMISSION HOLD TIME	The time for which a connection should be held by TME 10 Software Distribution, Version 3.1.5 for NetWare after a severe transitory error or an error requiring operator intervention has been detected.
	The value you enter should be in seconds. An appropriate value is 1000 seconds (16 minutes).
ALLOCATION FAILURE RETRY TIME	The number of seconds that TME 10 Software Distribution, Version 3.1.5 for NetWare is to wait before attempting to reestablish a conversation on this connection after a previous conversation has been unsuccessful. This prevents thrashing when a connection is unavailable.
	The value entered should be a decimal number. A reasonable value is 300 seconds (five minutes).

Figure 11 on page 79 is an example of the SNA/DS configuration file.

```
# SNA/DS CONFIGURATION FILE
#

# This file should be stored as SYS:SOFTDIST\DB\SNADSCFG

ORIGIN HOP COUNT:                    10
MAX CRMU:                            5
TRANSMISSION HOLD TIME:              3600
ALLOCATION FAILURE RETRY TIME:       1000
```

Figure 11. Example of an SNA/DS Configuration File

SNA/DS Connection Configuration Files

SNA/DS connection configuration files define the details of APPC or TCP/IP connections to adjacent nodes. Each file is given the name of the connection it defines. Up to 800 connection configuration files can be defined, while up to 100 connections can be active simultaneously.

The files are stored in the directory SYS:SOFTDIST\DB\SNADSCON. Two sample files are provided for SNA/DS connections:

- connsna, for APPC connections
- conntcp, for TCP/IP connections

Access is usually restricted to the administrator.

Each file is stored with a fixed text format. Each line starts with one of the keywords described in Table 14. Enter each keyword in uppercase and end it with a colon.

Each keyword can be used only once. The order of the keywords is not important, and blank and comment lines can be included. Comment lines begin with a number sign (#).

Table 14 (Page 1 of 3). SNA/DS Connection Configuration File Parameters	
Keyword	**Description**
PROTOCOL	Specify either:
	APPC The APPC protocol is used. This is the default. Use this value to specify the APPN protocol as well.
	TCP/IP The TCP/IP protocol is used.

SNA/DS Connection Configuration File

Table 14 (Page 2 of 3). SNA/DS Connection Configuration File Parameters	
Keyword	**Description**
SEND TP SYMBOLIC DESTINATION	The name of the NetWare for SAA Side Information Profile that is used when TME 10 Software Distribution, Version 3.1.5 for NetWare starts a conversation to receive on this connection. That is, the profile to use when starting a conversation with the Send TP at the remote node. The name of the profile is assigned when you configure SNA profiles. The entry can be up to eight characters long. This keyword is valid only if the PROTOCOL specified is APPC.
RECEIVE TP SYMBOLIC DESTINATION	The name of the NetWare for SAA Side Information Profile that is to be used when TME 10 Software Distribution, Version 3.1.5 for NetWare starts a conversation to Send on this connection. That is, the profile to use when starting a conversation with the Receive TP at the remote node. The name of the profile is assigned when you configure SNA profiles. The entry can be up to eight characters long. This keyword is valid only if the PROTOCOL specified is APPC.
REMOTE SERVER NAME	The name specified for the remote target when it was defined with the graphical interface add target operation or the **addtg** command. It is the name of the target inserted in the product database.
TCP/IP TIME-OUT	The number of seconds that TME 10 Software Distribution, Version 3.1.5 for NetWare waits for a message on a TCP/IP connection before deciding there is a communication error and thus terminates the distribution. This keyword is valid only if the PROTOCOL specified is TCP/IP. The value entered should be a decimal number. A reasonable value is 300 (five minutes).
NEXT DSU	The RGN and REN of the SNA/DS node at the other end of this connection. You must find out this information from the system administrator at the other node. If the PROTOCOL specified is TCP/IP, this field must specify the target address and the domain address of the remote server. The RGN and REN must be entered as consecutive strings separated by a period.

Table 14 (Page 3 of 3). SNA/DS Connection Configuration File Parameters	
Keyword	**Description**
TRANSMISSION TIME-OUT	The number of seconds that TME 10 Software Distribution, Version 3.1.5 for NetWare is to wait before retrying the transmission of an MU_ID that failed or was interrupted. This prevents thrashing when a transitory error occurs.
	The value entered should be a decimal number. A reasonable value is 60 seconds.
RETRY LIMIT	The number of times that TME 10 Software Distribution, Version 3.1.5 for NetWare is to retry the transmission of a distribution (file or change management command) before reporting an error.
	The value entered should be a decimal number. A reasonable value is 3.
SEND MU_ID TIME-OUT	The number of seconds that TME 10 Software Distribution, Version 3.1.5 for NetWare is to wait before retrying the transmission of a distribution. This value prevents thrashing if the remote node has detected a transitory error.
	The value entered should be a decimal number. A reasonable value is 60.
RECEIVE MU_ID TIME-OUT	The number of seconds that TME 10 Software Distribution, Version 3.1.5 for NetWare is to wait before retrying the receipt of a distribution. This value prevents thrashing if a transitory error has been detected.
	The value entered should be a decimal number. A reasonable value is 120.

Figure 12 on page 82 is an example of an SNA/DS connection configuration file for the APPC protocol. This sample file, called CONNSNA, is installed during product installation.

Editing the Routing Table

```
# SNA/DS CONNECTION CONFIGURATION FILE FOR CONNECTION connsna
#
# This connection is used to handle transmissions between
# TME 10 Software Distribution servers.
#
# This file should be stored as SYS:SOFTDIST\DB\SNADSCON\CONNSNA

PROTOCOL:                       APPC
TYPE:                           SNA
SEND TP SYMBOLIC DESTINATION:   NVDMSIDS
RECEIVE TP SYMBOLIC DESTINATION: NVDMSIDR
NEXT DSU:                       NTWRK1.LU0001
TRANSMISSION TIME-OUT:          60
RETRY LIMIT:                    3
SEND MU_ID TIME-OUT:            60
RECEIVE MU_ID TIME-OUT:         120
```

Figure 12. Example of an SNA/DS Connection Configuration File for APPC

Editing the Routing Table

This section describes how to define the SNA/DS connections in the routing table.

The routing table is an editable text file that tells the TME 10 Software Distribution, Version 3.1.5 for NetWare server which APPC or TCP/IP connection to use when sending a distribution to a remote target. Set up this table to reference the connections that you have configured for your system. A routing table can contain up to 1600 entries.

You do not need to configure a routing table if you do not have remote communication installed. You only need to edit it when you add a new remote connection, or when you want to tune a complex network by careful matching of routes and connections.

A sample routing table is set up for you when you install the communication option. The file is SYS:SOFTDIST\DB\ROUTETAB. You need to change this table to define *routes* in it.

The routing table contains the definition of the network ID for the server and for each of the clients in a network. It also defines a number of routes. Each route has the following data associated with it:

- Protocol type: APPC, TCP/IP, or BOTH
- SNA/DS address of the targets reached by this route
- The name of the connection to use
- The SNA/DS hop count to use on distributions sent on this route

The following parameters can also be included in a routing table for APPC routes:

- Service parameter thresholds specifying:
  - The minimum distribution priority allowed on the route
  - The maximum size distribution allowed on this route
  - The SNA/DS security provided by this route
  - The SNA/DS protection provided by this route

Planning a Simple Routing Table

In a simple configuration, your server is attached to just one remote node. Only one connection is defined and this takes all distributions to and from the server.

You need only configure a single route. The SNA/DS address should be given as *.* to allow any SNA/DS name to be routed. If included, set the connection service parameters to show that any value is supported on the connection.

Planning a Complex Routing Table

Plan a complex routing table with care. Remember that a distribution is sent on the first route in the table that meets the requirements of the distribution. You should, therefore, put specific SNA/DS addresses before generic ones, and restricted connections before all-purpose ones.

You may find it helpful to draw a diagram of your connections to adjacent nodes before you start. In your diagram, you can put the SNA/DS addresses of the remote targets reached through each node, and the services offered by each connection.

The diagram helps you ensure that distributions are routed to the correct destinations, and that no distribution is unexpectedly rejected because there is no connection capable of carrying it.

If you have a busy system, you can reserve some connections for handling small, high-priority distributions. This prevents them from being held up until active, large distributions complete. You can do this by setting the priority and capacity service parameters on the reserved connections.

Determining Destination Addresses

Routes in your routing table must identify the destination target of the link being defined. A target is identified by two values:

- Its domain address (the same as its server name)
- Its target address

These two values are separated by a period (.) and are expressed in this format in routes in the routing table:

```
<domain address>.<target address>
```

The `domain address` is the same as the target address of the server.

In SNA terminology, these values correspond to:

Editing the Routing Table

```
<routing group name>.<routing element name>
```

which is commonly expressed as:

```
<RGN>.<REN>
```

The two values are referred to using different terms on the various platforms that can be included in a TME 10 Software Distribution, Version 3.1.5 for NetWare network, as shown in Table 15.

Table 15. Target Identification Terms for SNA/DS		
Type of Target	**Domain address**	**Target address**
NetView DM for MVS	Network ID *	LU name *
TME 10 Software Distribution Server	domain address	target address
Note: * In a NetView DM for MVS-controlled network, the network ID is the same as the network ID defined for the NetView DM for MVS system it is part of. The LU name uniquely identifies the node within that network. You can find out what this is by contacting the administrator at that site. You set the local network ID just once. This value is picked up for the RGN of all local nodes.		

To define a target using the command line interface, see the *Command Reference* manual.

Defining Routes

Before defining the routes in a routing table, the type of network you are defining must be specified. Specify one of the following values for the NETWORK PROTOCOL keyword at the beginning of the routing table:

APPC   APPC routes are being defined. Use APPC to specify APPN connections as well.

TCP/IP   TCP/IP routes are being defined. This is the default value, even if this keyword is not included in the routing table.

BOTH   Both APPC and TCP/IP routes are being defined in the routing table.

Each route is defined by exactly one line in the routing table. Lines in a routing table can be any length. Blank lines are permitted between routes in the routing table. Comment lines begin with a number sign (#). Enter the information in Table 16 on page 85, in the order shown, to define a route.

Table 16 (Page 1 of 3). Routing Table Parameters	
Parameter	**Description**
Destination Address	The destination SNA/DS nodes that this route serves, as an SNA RGN.REN address. TME 10 Software Distribution, Version 3.1.5 for NetWare searches the table for an entry matching the destination of each distribution that it sends. If no match is found, a distribution report is generated and returned to the originator of the distribution.
	Enter the address in the form:
	`<domain address>.<target address>`
	Each value can be up to eight characters long. The characters must be either uppercase letters, numbers, or the special characters @, #, and $. For example `NETWK1.LU0001`.
	You can use the asterisk (*) and question mark (?) as wildcard characters.
	See "Determining Destination Addresses" on page 83 for additional information.
Minimum Distribution Priority	The minimum distribution priority that this route supports. This parameter is optional, and can only be used for APPC routes.
	When TME 10 Software Distribution, Version 3.1.5 for NetWare has matched an SNA/DS address, it checks the priority available. If the distribution does not have high enough priority to use this route, TME 10 Software Distribution, Version 3.1.5 for NetWare continues to search for another one.
	The priority values are:
	FAST Allows only distributions with priority FAST on this route.
	CONTROL Allows only distributions with priority FAST or CONTROL on this route.
	DATA16 Allows only distributions with priority FAST, CONTROL, or DATA16 on this route.
	DATA15 Allows any distribution with priority DATA15 or higher on this route.
	DATA14 ... DATA1 Allow any distribution with priority DATAn or higher on this route, where n is any number in the range 1 through 14.
	ANY Allows any priority distribution on this route.

Editing the Routing Table

Table 16 (Page 2 of 3). Routing Table Parameters	
Parameter	**Description**

Distribution Protection	The distribution protection that this route provides. The protection parameter specifies whether the distribution must be stored on nonvolatile storage while a DSU has responsibility for it. If a distribution requires more protection than a route can provide, the route is not used. This parameter is optional, and can only be used for APPC routes.
	
	The protection values are:
	
	LEVEL2
	    Level-2 protection is provided on this route, which indicates that the distribution is safe-stored in nonvolatile storage.
	
	ANY
	    Any requested level of protection is supported on this route.

Maximum Size Distribution	The maximum size distribution that this route supports. This is the capacity of the route. If a distribution is larger than this size, the route is not used. This parameter is optional, and can only be used for APPC routes.
	
	The capacity values are:
	
	0DATA
	    No distribution carrying data is allowed on this connection. Only reports are sent.
	
	1MEGABYTE
	    Only distributions with less than 1MB of data are sent on this connection.
	
	4MEGABYTES
	    Only distributions with less than 4MB of data are sent on this connection.
	
	16MEGABYTES
	    All distributions can use this connection.
	
	ANY
	    All distributions can use this connection regardless of the amount of data being carried.

Table 16 (Page 3 of 3). Routing Table Parameters	
Parameter	**Description**
Distribution Security	The distribution security that this route provides. The security parameter specifies that the distribution is to be safeguarded from unauthorized access while it is being sent through the DS network. If a distribution requests higher security than a route can provide, the route is not used. This parameter is optional, and can only be used for APPC routes.
	The security values are:
	LEVEL2 Level-2 security is provided on this route, which indicates that DS should route the distribution on sessions that are designated secure.
	ANY Any requested level of security is supported on this route.
Connection Name	The connection name for this route. This name relates to the SNA/DS connection file that you create under the `SYS:SOFTDIST\DB\SNADSCON` directory. For consistency this name can be the host name of the system you are connecting to.
Hop Count	This parameter defines the hop count for all distributions sent out using this route. It indicates the maximum number of SNA/DS nodes that the distribution can legitimately pass through before reaching its destination. The hop count prevents distributions from looping between SNA/DS nodes in the network with contradictory routing tables.
	Enter the hop count as a decimal digit. Set the value to one if the next node on this route is an end node. If you are unsure of the topology of your network, set the field to 5. Hop count can be omitted from a routing table. If it is not defined, the value defaults to the one defined for Origin Hop Count in the SNA/DS configuration file (see "SNA/DS Configuration File" on page 77).

Sample routing tables follow. They are supplied with TME 10 Software Distribution, Version 3.1.5 for NetWare in the `SYS:SOFTDIST\DB\ROUTETAB` file. The comment line containing the column headings for the configuration information is included to facilitate reading. Figure 13 on page 88 is a sample routing table for APPC routes.

Editing the Routing Table

```
# SNA/DS ROUTING TABLE
# This table provides SNA/DS routing information for a
# TME 10 Software Distribution for NetWare SNA network.
# This file should be stored as SYS:SOFTDIST\DB\ROUTETAB

NETWORK PROTOCOL:   APPC
#
# Destination  Priority Protection   Capacity  Security  Connection
# Address
#

SRVSNA1.*        DATA16    ANY         1MEGABYTE ANY       CONNSNA1
SRVSNA2.*        ANY       ANY         ANY       ANY       CONNSNA2
*.*              ANY       ANY         ANY       ANY       CONNSNA3
```

Figure 13. Example of an SNA/DS Routing Table for APPC routes

Figure 14 is an example of an SNA/DS routing table for a TCP/IP connection.

```
# SNA/DS ROUTING TABLE
# This table provides SNA/DS routing information for
# a TME 10 Software Distribution for NetWare TCP/IP network.
# This file should be stored as SYS:SOFTDIST\DB\ROUTETAB

NETWORK PROTOCOL:   TCP/IP

#
# Destination       Connection
# address
#

SRVTCP1.*           CONNTCP1
SRVTCP2.*           CONNTCP2
*.*                 CONNTCP3
```

Figure 14. Example of an SNA/DS Routing Table for TCP/IP routes

Figure 15 on page 89 is an example of an SNA/DS routing table for both APPC and TCP/IP connection protocols.

```
# SNA/DS ROUTING TABLE
# This table provides SNA/DS routing information for
# a TME 10 Software Distribution for NetWare combination TCP/IP and APPC network.
# This file should be stored as SYS:SOFTDIST\DB\ROUTETAB

NETWORK PROTOCOL:   BOTH

#
# SNA/DS          Priority Protection  Capacity  Security  Connection
# Destination
# address
#

SRVSNA1.*         DATA16   ANY         1MEGABYTE ANY       CONNSNA1
SRVSNA2.*         ANY      ANY         ANY       ANY       CONNSNA2
*.*               ANY      ANY         ANY       ANY       CONNSNA3
NETWK1.HOST       ANY      ANY         ANY       ANY       CONNSNA4

SRVTCP1.*                                                  CONNTCP1
SRVTCP2.*                                                  CONNTCP2
*.*                                                        CONNTCP3
```

Figure 15. Example of an SNA/DS Routing Table for Both APPC and TCP/IP protocols

Configuration Line Commands

You can list, load, and update TME 10 Software Distribution, Version 3.1.5 for NetWare configuration parameters using the commands that are described in detail in the *Command Reference* manual.

Chapter 14. Configuring STS Remote Connection Files

This chapter describes how to configure the connection files required to define an STS network using either TCP/IP or IPX connections. You need to edit this configuration information when you define or update STS connections to remote nodes.

Editing STS Connection Configuration Files

The configuration information for STS connections is kept in three text files, which can be edited using a text editor.

The files that can be edited are:

STS configuration file

This file contains the system parameters for controlling TME 10 Software Distribution, Version 3.1.5 for NetWare's use of the STS network implemented across both TCP/IP and IPX connections.

STS connection configuration files

This file contains the details of a TCP/IP or IPX connection to an adjacent node.

Routing table

This file instructs the server which TCP/IP or IPX connection should be used use when distributions are sent to remote targets.

If you edit one of these files while TME 10 Software Distribution, Version 3.1.5 for NetWare is running, you must use the **rld** command to reload configuration changes. See the *Command Reference* manual for more information about this command.

STS Configuration File

The STS configuration file, SYS:SOFTDIST\DB\SNADSCFG, contains a parameter for controlling the use that TME 10 Software Distribution, Version 3.1.5 for NetWare makes of the STS network, ORIGIN HOP COUNT.

There can be only one configuration file at a server. Your network may include both STS and SNA/DS connections. An SNA/DS connection file can contain other keywords in addition to ORIGIN HOP COUNT (see "SNA/DS Configuration File" on page 77). If you have a mixed network, specify all the keywords in a single file.

You only need to edit this file when performing system tuning, and access is usually restricted to the administrator.

The file is stored with a fixed text format. Enter the keyword once, in uppercase characters, and end it with a colon. Blank and comment lines can be included. Comment lines begin with a number sign (#).

STS Connection Configuration File

Table 17. STS Configuration File Parameters	
Keyword	**Description**
ORIGIN HOP COUNT	The default hop count to be used for distributions originated by TME 10 Software Distribution, Version 3.1.5 for NetWare when the hop count is omitted or is specified as zero in the routing table. (See "Editing the Routing Table" on page 93.) An appropriate value for this field is 5.

Figure 16 is an example of the STS configuration file.

```
# STS CONFIGURATION FILE
#

# This file should be stored as SYS:SOFTDIST\DB\SNADSCFG

ORIGIN HOP COUNT:                  10
```

Figure 16. Example of an STS Configuration File

STS Connection Configuration File

STS connection configuration files define the details of TCP/IP connections to adjacent nodes. Each file is given the name of the connection it defines. Up to 800 connection configuration files can be defined, while up to 100 connections can be active simultaneously.

The files are stored in the directory SYS:SOFTDIST\DB\SNADSCON. Two sample files are provided for STS connections.

- connstst, for TCP/IP connections
- connstsi, for IPX connections

Access is usually restricted to the administrator.

Each file is stored with a fixed text format. Each line starts with one of the keywords described in Table 18. Enter each keyword in uppercase and end it with a colon.

Each keyword can be used only once. The order of the keywords is not important, and blank and comment lines can be included. Comment lines begin with a number sign (#).

Table 18 (Page 1 of 2). STS Connection Configuration File Parameters	
Keyword	**Description**
PROTOCOL	Specify **TCP/IP** or **IPX**.

Table 18 (Page 2 of 2). STS Connection Configuration File Parameters	
Keyword	**Description**
TYPE	Specify **STS**.
REMOTE SERVER NAME	The name specified for the remote server when it was defined with the graphical interface add target operation or the **addtg** command. It is the name of the target inserted in the product database.

Figure 17 is an example of an STS connection configuration file. This sample file, called CONNSTST, is installed during product installation.

```
# SNA/DS CONNECTION CONFIGURATION FILE FOR CONNECTION connstst
#
# This connection is used to handle transmissions between
# TME 10 Software Distribution for NetWare servers using STS across TCP/IP.
#
# This file should be stored as SYS:SOFTDIST\DB\SNADSCON\CONNSTST

PROTOCOL:                     TCP/IP
TYPE:                         STS
REMOTE SERVER NAME:           sts_server
```

Figure 17. Example of an STS Connection Configuration File for TCP/IP

Editing the Routing Table

This section describes how to define the connections in the routing table.

The routing table is an editable text file that tells the TME 10 Software Distribution, Version 3.1.5 for NetWare server which TCP/IP or IPX connection to use when sending a distribution to a remote target. Set up this table to reference the connections that you have configured for your system. A routing table can contain up to 1600 entries.

You do not need to configure a routing table if you do not have remote communication installed. You only need to edit it when you add a new remote connection, or when you want to tune a complex network by careful matching of routes and connections.

A sample routing table is set up for you when you install the communication option. The file is SYS:SOFTDIST\DB\ROUTETAB. You need to change this table to define *routes* in it.

The routing table contains the definition of the network ID for the server and for each of the clients in a network. It also defines a number of routes. Each route has the following data associated with it:

Editing the Routing Table

- Protocol type: BOTH
- Addresses of the targets reached by this route
- The name of the connection to use
- The hop count to use on distributions sent on this route

Planning a Simple Routing Table

In a simple configuration, your server is attached to just one remote node. Only one connection is defined and this takes all distributions to and from the server.

You need only configure a single route. The destination address should be given as `*.*` to allow any distribution to be routed. If included, set the connection service parameters to show that any value is supported on the connection.

Planning a Complex Routing Table

Plan a complex routing table with care. Remember that a distribution is sent on the first route in the table that meets the requirements of the distribution. You should, therefore, put specific destination addresses before generic ones, and restricted connections before all-purpose ones.

You may find it helpful to draw a diagram of your connections to adjacent TME 10 Software Distribution nodes before you start. In your diagram, you can put the destination addresses of the remote targets reached through each node, and the services offered by each connection.

The diagram helps you ensure that distributions are routed to the correct destinations, and that no distribution is unexpectedly rejected because there is no connection capable of carrying it.

If you have a busy system, you can reserve some connections for handling small, high-priority distributions. This prevents them from being held up until active, large distributions complete. You can do this by setting the priority and capacity service parameters on the reserved connections.

Determining Destination Addresses

Routes in your routing table must identify the destination target of the link being defined. A target is identified by two values:

- Its domain address
- Its target address

These two values are separated by a period (.) and are expressed in this format in routes in the routing table:

```
<domain address>.<target address>
```

To define a target using the command line interface, see the *Command Reference* manual.

Defining Routes

Before defining the routes in a routing table, the type of network you are defining must be specified. Specify BOTH for the NETWORK PROTOCOL keyword at the beginning of the routing table.

Each route is defined by exactly one line in the routing table. Lines in a routing table can be any length. Blank lines are permitted between routes in the routing table. Comment lines begin with a number sign (#).

Enter the information shown in Table 19 to define a route.

Table 19 (Page 1 of 2). Entries in a Routing Table	
Parameter	**Description**
Destination Address	The destination nodes that this route serves. TME 10 Software Distribution, Version 3.1.5 for NetWare searches the table for an entry matching the destination of each distribution that it sends. If no match is found, a distribution report is generated and returned to the originator of the distribution.
	Enter the address in the form:
	`<domain address>.<target address>`
	Each value can be up to 8 characters long. The characters must be either uppercase letters, numbers, or the special characters @, #, and $. For example `NETWK1.LU0001`.
	You can use the asterisk (*) and question mark (?) as wildcard characters.
	See "Determining Destination Addresses" on page 94 for additional information.
Connection Name	The connection name for this route. This name relates to the STS connection configuration file that you create under the `SYS:SOFTDIST\DB\SNADSCON` directory (see "Editing STS Connection Configuration Files" on page 91). For consistency this name can be the host name of the system you are connecting to.

Editing the Routing Table

Table 19 (Page 2 of 2). Entries in a Routing Table	
Parameter	**Description**
Hop Count	This parameter defines the hop count for all distributions sent out using this route. It indicates the maximum number of nodes that the distribution can legitimately pass through before reaching its destination. The hop count prevents distributions from looping between nodes in the network with contradictory routing tables.
	Enter the hop count as a decimal digit. Set the value to one if the next node on this route is an end node. If you are unsure of the topology of your network, set the field to 5. Hop count can be omitted from a routing table. If it is not defined, the value defaults to the one defined for Origin Hop Count in the SNA/DS configuration file (see "STS Configuration File" on page 91).

An example of a STS routing table for TCP/IP routes is shown in Figure 18.

```
# STS ROUTING TABLE
# This table provides STS routing information for
# TCP/IP routes.
# This file should be stored as SYS:SOFTDIST\DB\ROUTETAB

NETWORK PROTOCOL:   BOTH

#
# Destination      Connection      Hop
# Address                          Count
#

SRVTCP1.*          CONNTCP1        10
SRVTCP2.*          CONNTCP2        10
*.*                CONNTCP3        10

```

Figure 18. Example of an STS Routing Table for TCP/IP routes

Defining STS Targets

Target name and address information is specified by way of various parameters, which have been described in the *Command Reference* manual. This section is a brief summary of this information in relation to target definition for STS communication. For each target you define:

- **Server name and target address**

  You provide this information when you define a target using the graphical interface or the **addtg** line command. The combination of the two (`<server name>`.`<target address>`) uniquely identifies the target in a network.

- **Protocol type and Side Information Profile name**

  Additional target identification information is needed for STS connections. The target's protocol type must be TCP/IP or IPX.

Configuration Line Commands

You can list, load, and update TME 10 Software Distribution, Version 3.1.5 for NetWare configuration parameters using these commands that are described in detail in the *Command Reference* manual.

Chapter 15. Configuring NetWare for SAA 2.0 for SNA/DS Connections

This chapter describes how to configure NetWare for SAA 2.0 for SNA/DS connections. If you have NetWare for SAA 1.3B, do not use this chapter; use Appendix A, "Configuring NetWare for SAA 1.3B for SNA/DS Connections" on page 131 instead.

You must configure NetWare for SAA if you want to set up an APPC connection between your TME 10 Software Distribution for NetWare server and another TME 10 Software Distribution server.

First you must supply information about your TME 10 Software Distribution for NetWare node, the partner node, and the connection between them. Perform the following steps from the NetWare for SAA configuration utility:

1 Enter the SNA network ID of your TME 10 Software Distribution for NetWare server, as shown in Figure 19.

```
NetWare Comm Services Config  V2.0          Friday  6 September 1996  10.36
             User: SUPERVISOR    Server: ALEX312



              Configure NetWare for SAA

        Configure SNA Network ID
        Configure Data Link
        Configure for Host C   Configure SNA Network ID
        Configure for Peer C
        Configure for AS/400   SNA network ID: ITIBMOPC
        Display Startup/Conf
```
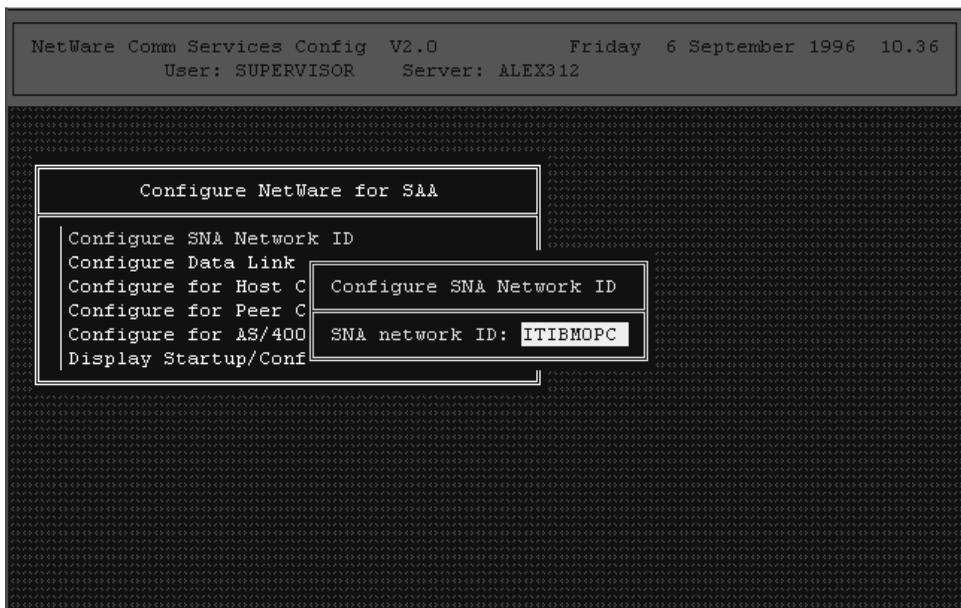
Figure 19. Configuring SNA network ID

2 Select the data link adapter to be used for SNA communications. The NetWare for SAA displays the details about the selected adapter, as shown in Figure 20 on page 100.

Configuring NetWare for SAA 2.0

```
NetWare Comm Services Config  V2.0          Friday  6 September 1996  11.54
            User: SUPERVISOR    Server: ALEX312


┌──────────────────────────────────────────────────────────────────┐
│                   Data Link Adapter Definitions                    │
├──────────────────────────────────────────────────────────────────┤
│                     Configure 802.2 Adapter                        │
│                                                                    │
│   Logical adapter name:                           LOCALIPX         │
│   Logical adapter number:                         0                │
│   Adapter service status:                         In service       │
│   Number of local service access points:          2               │
│   Terminate peer link if no active APPC sessions: No               │
│                                                                    │
└──────────────────────────────────────────────────────────────────┘
```
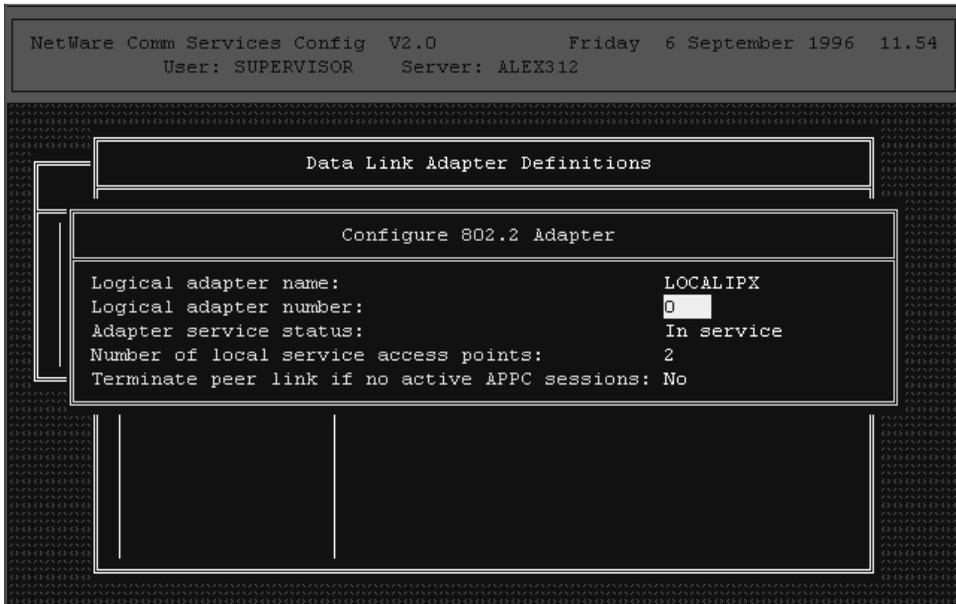
Figure 20. Specifying a Data Link Adapter

3 Select the default peer PU profile to be used for SNA communications. In the
Peripheral node control point name field, fill in the physical unit name of the
NetWare server, as shown in Figure 21.

```
NetWare Comm Services Config  V2.0          Friday  6 September 1996  10.47
            User: SUPERVISOR    Server: ALEX312


  ┌──────────────────────────────┐
  │    Select Peer PU Profile    │
  ├──────────────────────────────┤
  │  (NWSAA) DEFAULT             │
  │                              │
  │  ┌──────────────────────────────────────────────────┐
  │  │          Configure Default Peer PU Profile        │
  │  │                                                   │
  │  │  Default Peer PU profile name:             NWSAA  │
  │  │  Peripheral node control point name:       ALEX312P
  │  │  Node ID (block ID/PU ID):                 017  00498   hex
  │  │  Default local/remote SAP for independent LUs: 04   hex
  │  │                                                   │
  │  └──────────────────────────────────────────────────┘
```
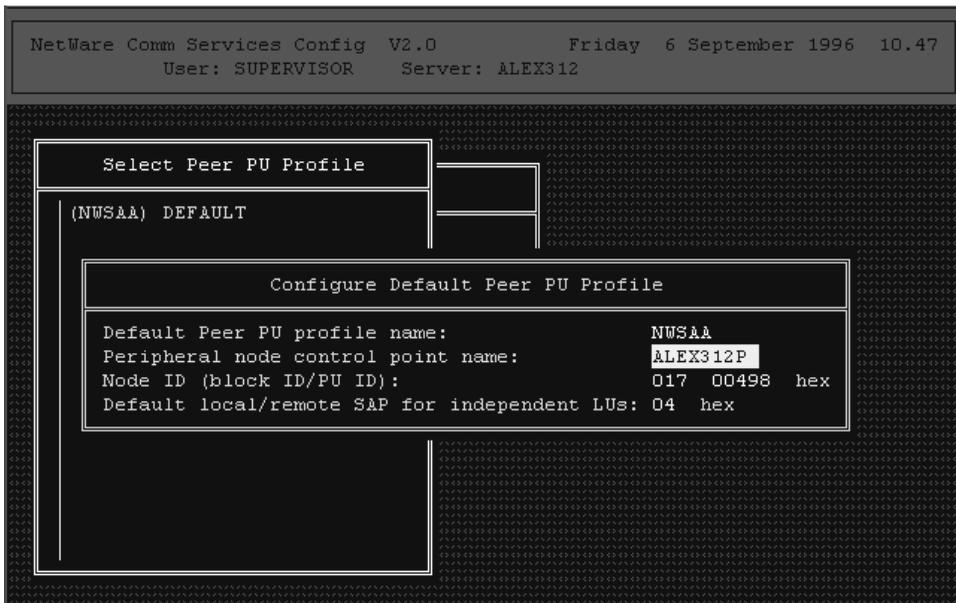
Figure 21. Entering the Physical Unit name

4 Enter the local LU name of the NetWare server, as shown in Figure 22 on page 101.


```
NetWare Comm Services Config  V2.0          Friday  6 September 1996  11.59
          User: SUPERVISOR     Server: ALEX312


       C   NOTE
           conf              Configure Local LU
  Configu  TPs
  Configu          Local LU name:            ALEX312
  Configu
           Conf
     Co              Default LU:              No
           Con
    Conf   Con    Partner LU names:         <See list>
    Conf   Con    Local LU startup status:  Enabled
           Con    Comments (optional):
           Con
           Con
```
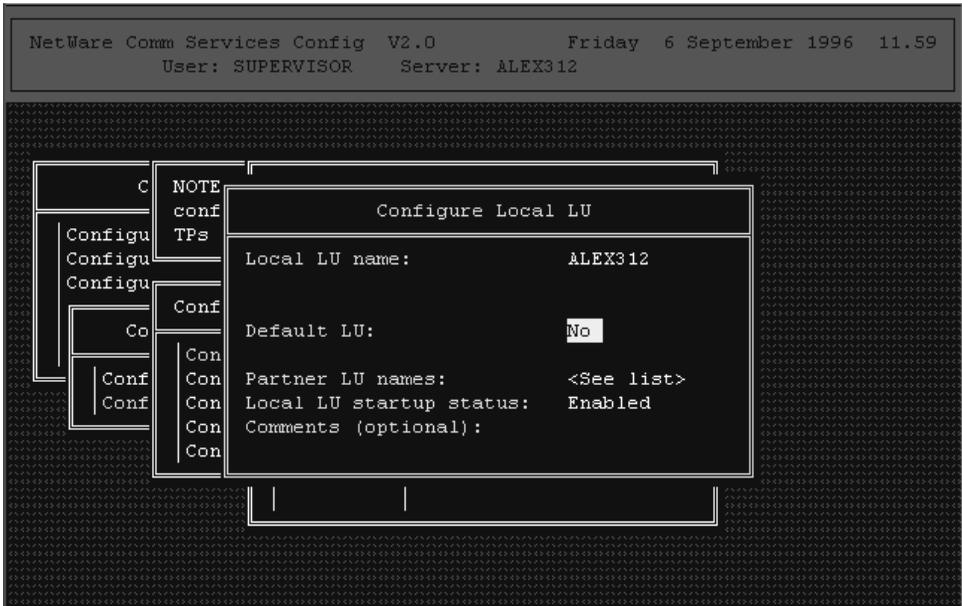
Figure 22. Entering the Local Logical Unit name

5 Select each partner LU for which you want to configure SNA communications, as shown in Figure 23 on page 102.

Configuring NetWare for SAA 2.0

```
NetWare Comm Services Config  V2.0           Friday  6 September 1996  10.56
              User: SUPERVISOR    Server: ALEX312

                          Configure Partner LU

          Partner LU name:                    LTO241AO

          SNA network ID:                      ITIBMOPC

          Immediate link activation:          No
          Conversation security support:      No

          Mode names:                         <See list>
          Logical adapter name:               LOCALIPX




          802.2 remote node address:          0800  5AF53327   hex
          802.2 remote service access point:  04  hex
          802.2 local service access point:   04  hex
```

Figure 23. Selecting a partner LU

6 For each partner LU, create a mode named LU62, specifying exactly the values shown in Figure 24.

```
NetWare Comm Services Config  V2.0           Friday  6 September 1996  11.03
              User: SUPERVISOR    Server: ALEX312




         C   N
             c                  Configure Mode
  Configu    T
  Configu        Mode name:                    LU62
  Configu
             C   Number of sessions:           1
      Co         Minimum contention winners:   1
                 Number of autoactivated sessions:  O
     Conf
     Conf        Maximum RU size:              256
                 Receive pacing count:         2
```
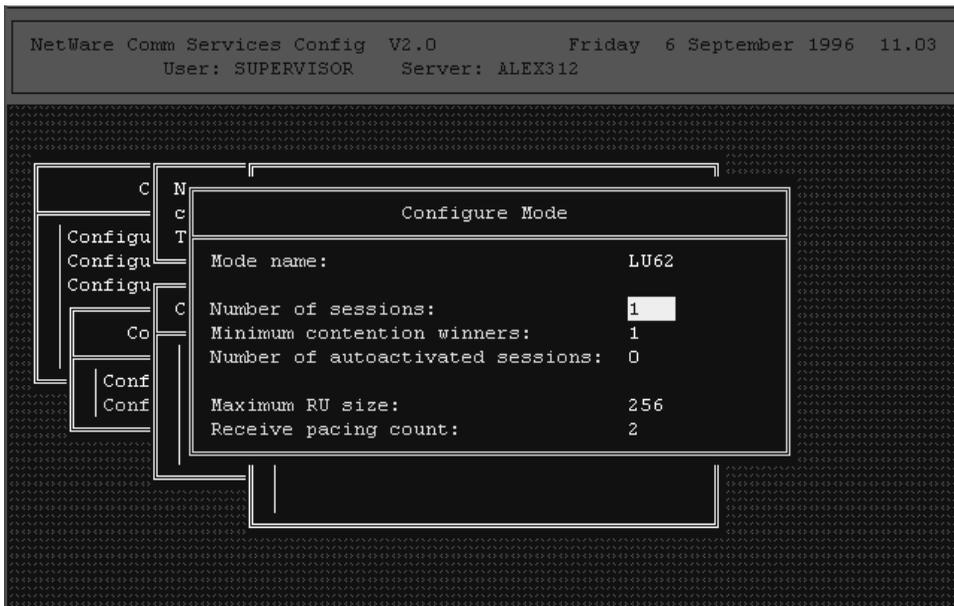
Figure 24. Configuring Modes

7 For each partner LU, specify the transaction programs that manage the SNA connection. Specify exactly the values shown in Figure 25. 21007 is the transaction program for send, and 21008 is the transaction program for receive.
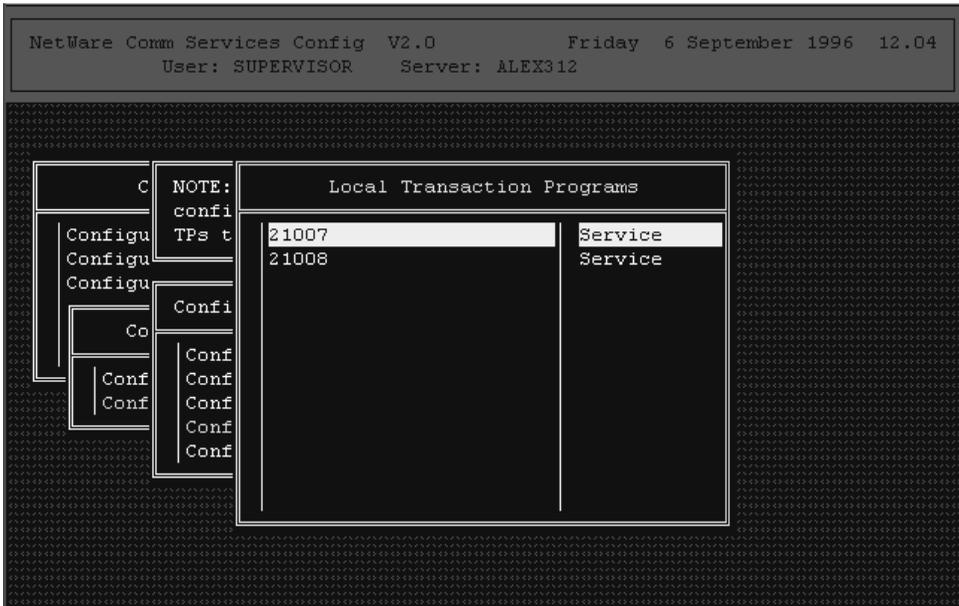
Figure 25. Specifying Transaction Programs

8 For each partner LU, configure each transaction program, specifying exactly the values shown in Figure 26 on page 104.

Configuring NetWare for SAA 2.0

```
NetWare Comm Services Config  V2.0              Friday  6 September 1996  11.09
             User: SUPERVISOR    Server: ALEX312


         C  NOTE:            Local Transaction Programs
            confi
Configu  TPs t  | 21007                         | Service
Conf
Conf               Configure Local Transaction Program

          Local TP name:              21007
          Sync level:                 None
          Conversation type:          Basic
          Conversation security:      No
```
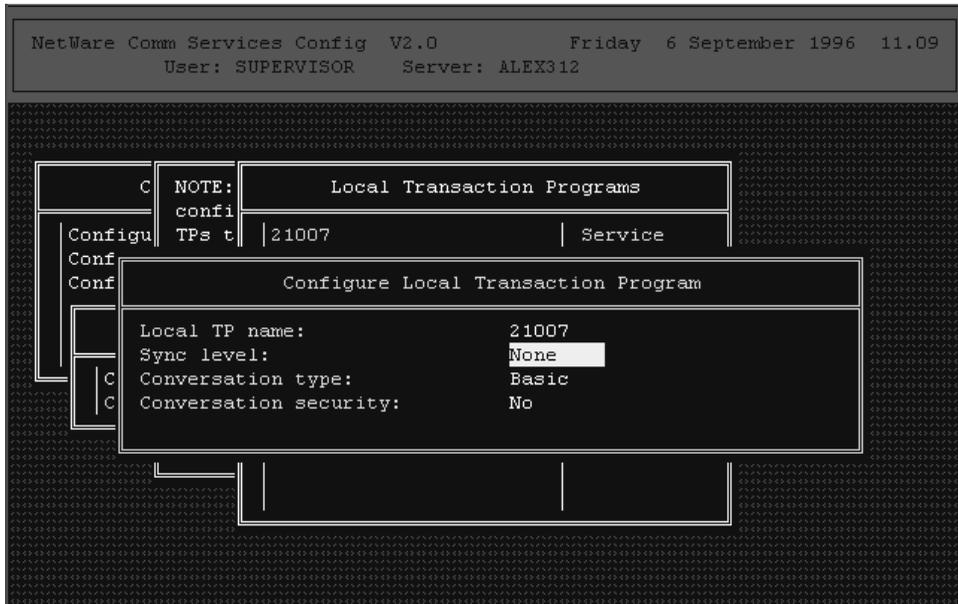
Figure 26. Specifying Transaction Programs

Now use the NetWare for SAA API Configuration Utility to configure the applications that manage sending and receiving over the SNA connection. Perform the following steps:

1 Create two CPI-C side information records, one for send and one for receive, as shown in . Note that because of a NetWare for SAA restriction, CPI-C record names must be 8 characters long.

Figure 27. Creating CPI-C Side Information records

2 Configure the two CPI-C side information records to associate them with the local transaction programs, as shown in Figure 28.
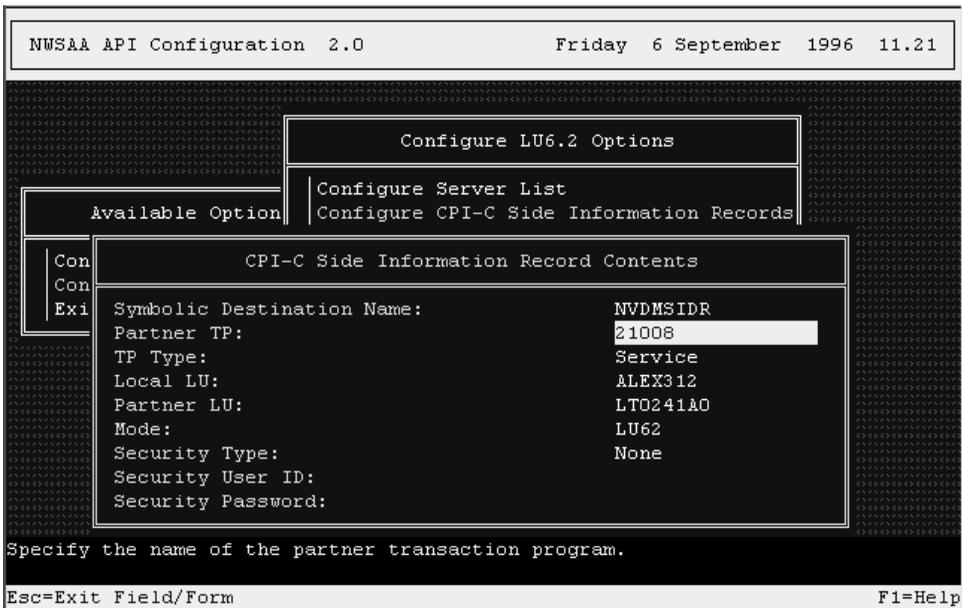
Figure 28. Configuring CPI-C Side Information records

Chapter 15. Configuring NetWare for SAA 2.0 for SNA/DS Connections **105**

3 Create attach manager records for the two transaction programs, as shown in Figure 29 and Figure 30 on page 107. **Program Path and Filename** refers to the path to the fndts and fndtr NLMs (in the examples, SYS:SOFTDIST\BIN\FNDTS.NLM and SYS:SOFTDIST\BIN\FNDTR.NLM).

```
NWSAA API Configuration  2.0                 Friday  6 September  1996  11.25



                            Configure LU6.2 Options

                     Configure Server List
        Available Option Configure CPI-C Side Information Records
                     Configure Attach Manager Records
     Co
     Co              Attach Manager Records
     Ex
        2100            Attach Manager Record Contents
        2100
             TP Name:                      21007
             TP Type:                      Service
             Local LU:                     ALEX312
             Program Path and Filename:    IBMNVDM\BIN\FNDTS.NLM
             Program Operation:            Attach Manager Started
             Program Parameters:

Specify the path for the executable file for the local application program
containing the TP.
Esc=Exit Field/Form                                                  F1=Help
```

Figure 29. Attach Manager record for Transaction Program 21007 (SEND)

```
┌────────────────────────────────────────────────────────────────────────┐
│ NWSAA API Configuration  2.0              Friday  6 September  1996  12.15 │
├────────────────────────────────────────────────────────────────────────┤
│                                                                          │
│                   ┌─────────────────────────────────────────┐           │
│                   │        Configure LU6.2 Options           │           │
│                   ├─────────────────────────────────────────┤           │
│                   │ Configure Server List                    │           │
│        Available Option│ Configure CPI-C Side Information Records│      │
│                   │ Configure Attach Manager Records         │           │
│   ┌───┐           └─────────────────────────────────────────┘           │
│   │Co │                                                                  │
│   │Co ┌──────────────────────────────────────────────────────┐          │
│   │Ex │              Attach Manager Records                   │          │
│   └───┤  ┌─────────────────────────────────────────────────┐ │          │
│      │2100│         Attach Manager Record Contents          │ │         │
│      │2100├─────────────────────────────────────────────────┤ │         │
│      │    │  TP Name:                    21008              │ │         │
│      │    │  TP Type:                    Service            │ │         │
│      │    │  Local LU:                   ALEX312            │ │         │
│      │    │  Program Path and Filename:  IBMNVDM\BIN\FNDTR.NLM│ │        │
│      │    │  Program Operation:          Attach Manager Started│ │       │
│      │    │  Program Parameters:                            │ │         │
│      │    └─────────────────────────────────────────────────┘ │         │
├──────┴──────────────────────────────────────────────────────────────────┤
│ Specify the path for the executable file for the local application program│
│ containing the TP.                                                       │
│ Esc=Exit Field/Form                                             F1=Help  │
└────────────────────────────────────────────────────────────────────────┘
```

Figure 30. Attach Manager record for Transaction Program 21008 (RECEIVE)

Chapter 16. Configuring Communication with TME 10 Software Distribution Nodes

This chapter describes the configuration procedures you must perform to enable communication between TME 10 Software Distribution for NetWare and:

- NetView DM for MVS
- TME 10 Software Distribution for AIX

Defining Targets for Communication with MVS

To define a NetView DM for MVS system as a focal point, enter the following command:

```
addtg <target name> -s <target address> ▶
-b server -m focal -n <domain address>
```

For example, enter:

```
addtg CTNDM154 -s CTNDM154 -n ITIBM0PC -m focal -b server
```

To define a TME 10 Software Distribution, Version 3.1.5 for NetWare target at MVS, on the GIX **Define Node** panel enter the following information. Note that the <domain address> and the <target address> to be inserted respectively in the **Rgn** and **Ren** fields are the same value.

```
 1 Node class . A0         Required
 2 Status . . . 2          1 = Production   2 = Parallel   3 = Test
 3 Logical unit LT0539A0   Required (Logical unit name)
 4 Logon mode . LU62____   Logon mode name
 5 Linetype . . 1          1 = Leased     2 = Switched
 6 Rgn. . . . . <domain address>   Network identification
 7 Ren. . . . . <target address>   CP Logical unit name
 8 Notes  . . . 2          Enter 1 if you want additional node info
 9 Profile. . . 2          Enter 1 if you want to change node profile
10 Server name. <target address>  Server name
11 Timzoffs . . +00        Time Zone offset. Any value from -12 to  12
```

Figure 31. Defining a TME 10 Software Distribution, Version 3.1.5 for NetWare node at MVS

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Configuring at the NetView DM for MVS Site

This section describes the configuration procedures you must perform to enable communication between a TME 10 Software Distribution server and NetView DM for MVS.

Configuring NCP and VTAM

To define a TME 10 Software Distribution node to VTAM, you need to work with your NetView DM for MVS system administrator to agree on naming conventions. You need to:

- Define the TME 10 Software Distribution physical and logical units (see "Physical and Logical Unit Definitions").

- Define the parameters in a logon mode table for the sessions between the NetView DM for MVS system and TME 10 Software Distribution (see "Logon Mode Table Definition" on page 118).

Examples are shown in the following section, but they do not provide an exhaustive definition of how to configure VTAM and NCP. Consult your *VTAM Resource Definition Reference* where necessary.

Physical and Logical Unit Definitions

Each TME 10 Software Distribution that is connected *directly* to NetView DM for MVS (that is, not through an intermediate node) requires an independent LU to be defined to VTAM and also to NCP if it is being used. A physical unit is also required for any intermediate node that provides a connection to a TME 10 Software Distribution node.

The following sections provide examples of configuring direct connections. They are for the following configurations:

- Connection to a 3745 attached to the LAN ("Connection through a 3745 Gateway")

- Connection through a token-ring gateway ("Connection through a Token-Ring Gateway" on page 112)

- Direct connection using an SDLC link ("Direct Connection Using an SDLC Link" on page 115)

In addition, an example of a logon mode table is shown. You can use this table for any of the three sample configurations.

Connection through a 3745 Gateway

This section gives the NCP and VTAM definitions necessary for TME 10 Software Distribution to communicate with NetView DM for MVS through a 3745 gateway. See Figure 32 on page 111.
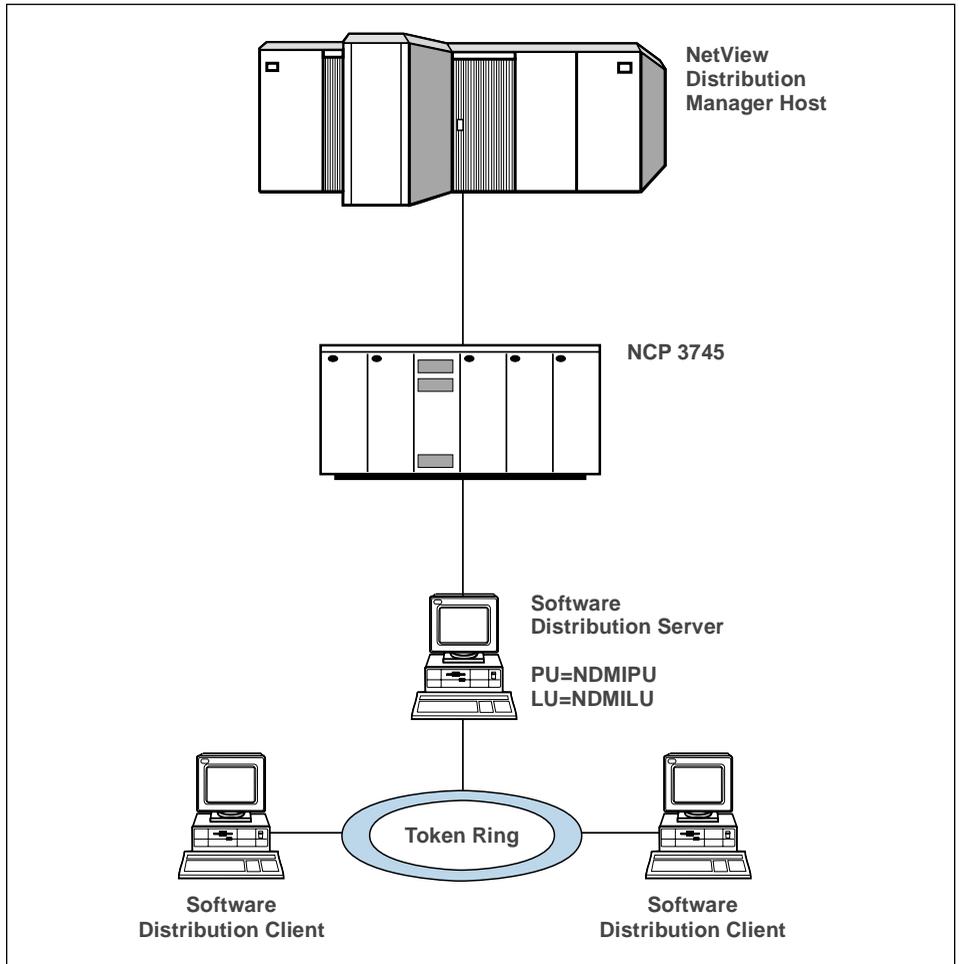
Figure 32. TME 10 Software Distribution and NetView DM for MVS using a direct link and a 3745

NCP Definition for Token-Ring Connection: The statements in Figure 33 show the NCP macros used to define the connectivity to the token ring and the PU/LU pairs required to support devices on a switched line. (TME 10 Software Distributions on a LAN token ring are supported as devices on a switched line.)

```
TO27TRPG GROUP ECLTYPE=PHYSICAL
TO27TRL1 LINE  ADDRESS=(1092,FULL),LOCADD=400037271092,PORTADD=1
               RCVBUFC=4095,MAXTSL=1108,TRSPEED=16,ADAPTER=TIC2
TO27TRP1 PU    ADDR=01,PUDR=NO,ANS=CONT
LUTIC2   LU    LOCADDR=0,ISTATUS=INACTIVE
TO27TRG1 GROUP ECLTYPE=LOGICAL,AUTOGEN=24,PHYPORT=1,CALL=INOUT
```

Figure 33. NCP macros for Token-Ring connectivity

VTAM Switched Major Node Definitions: The statements in Figure 34 show the VTAM macros used to define the switched major node containing the PU and LU statements for the TME 10 Software Distribution node.

Note that LOCADDR=0 indicates an independent LU.

```
DIALNMD6 VBUILD TYPE=SWNET,MAXGRP=2,MAXNO=2

NDM6PU    PU ADDR=C1,IDBLK=071,IDNUM=00013,PUTYPE=2,ISTATUS=ACTIVE,
             DLOGMOD=NVDMNORM,USSTAB=TPOUSS,MAXOUT=7,MAXDATA=265,    *
             PACING=0,VPACING=0,ANS=CONT,MODETAB=NDMLU62P

NDM6LU    LU LOCADDR=0,MODETAB=NDMLU62P,DLOGMOD=NVDMNORM,
             ISTATUS=ACTIVE
```

Figure 34. VTAM macros for TME 10 Software Distribution connectivity

TME 10 Software Distribution Definitions: Table 20 shows the correspondence between VTAM and TME 10 Software Distribution parameters.

Table 20. VTAM and TME 10 Software Distribution Parameters, 3745 Connection	
VTAM Parameter	**TME 10 Software Distribution Parameter**
NETID=NETWK1	Network name
IDNUM=00013	Node ID
DLOGMOD=NVDMNORM	Mode name
PU=NDM6PU	PU name
LU=NDM6LU	LU name for TME 10 Software Distribution
LOCADDR=0	Indicates that this is an independent LU
LOCADD=400037271092 (NCP parameter)	The address that is specified in the NetWare for SAA link definition

Connection through a Token-Ring Gateway

This section gives the 3174 and NCP/VTAM definitions necessary for TME 10 Software Distribution to communicate with NetView DM for MVS through a token-ring gateway.
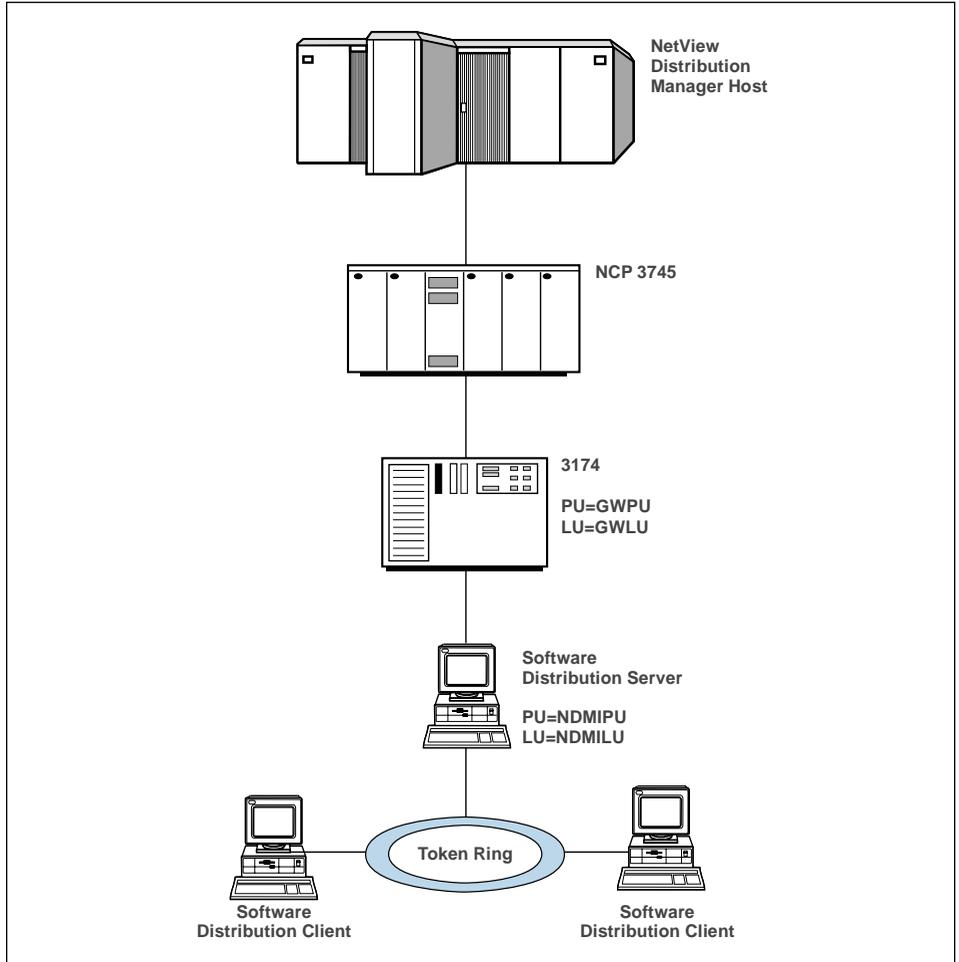
Figure 35. TME 10 Software Distribution and NetView DM for MVS using a Token-Ring gateway

The gateway can be any proprietary software or it can be a 3174. Instructions for configuring the gateway are not given here; refer to the documentation provided with the gateway.

NCP/VTAM Definitions: Figure 36 on page 114 shows sample NCP/VTAM definitions. They refer to the network shown in Figure 35.

Configuring at MVS

```
GSDLC    GROUP CLOCKNG=EXT,
               DIAL=NO,
               LNCTL=SDLC,
               REPLYTO=0.5,
               RETRIES=(19,4,5),
               TYPE=NCP

L002     LINE  ADDRESS=002,
               DUPLEX=FULL,
               ETRATIO=25,
               SPEED=9600,
               ISTATUS=ACTIVE,
               RETRIES=(7,2,2)

GWPU     PU    ADDR=C0,
               ISTATUS=ACTIVE,
               PACING=(1),
               PUDR=YES,
               PUTYPE=2,
               DISCNT=(NO)

GWLU     LU    LOCADDR=1,
               ISTATUS=ACTIVE,
               MODETAB=TPOMODE,
               DLOGMOD=SD82

NDM6PU   PU    ADDR=C1,
               MAXDATA=265,
               MAXOUT=7,
               PASSLIM=8,
               PUTYPE=2,
               SSCPFM=USSSCS,
               XID=YES

NDM6LU   LU    LOCADDR=0,
               ISTATUS=ACTIVE,
               MODETAB=NDMLU62P,
               DLOGMOD=NVDMNORM,
               RESSCB=2,
               PACING=1
```

Figure 36. VTAM and NCP macros for connectivity through a gateway

The definition in Figure 36 contains the following:

- A PU for the gateway (GWPU)

- An LU for 3270 use at the gateway (GWLU)

- A PU for the TME 10 Software Distribution node using the *same line* as that used to reach the gateway (NDM6PU)

- An independent LU for the TME 10 Software Distribution node (NDM6LU)

  Note that this LU is defined under the PU for the TME 10 Software Distribution node. The LU has LOCADDR=0 to indicate an independent LU.

TME 10 Software Distribution Definitions: Table 21 shows the correspondence between VTAM and TME 10 Software Distribution parameters.

Table 21. VTAM and TME 10 Software Distribution Parameters, Token-Ring Gateway Connection

VTAM Parameter	TME 10 Software Distribution Parameter
NETID=NETWK1	Network name
DLOGMOD=NVDMNORM	Mode name
PU=NDM6PU	PU name
LU=NDM6LU	LU name for TME 10 Software Distribution
ADDR=C1	Local station address

Direct Connection Using an SDLC Link

This section gives examples of the NCP and VTAM definitions necessary for a TME 10 Software Distribution node to communicate with NetView DM for MVS over a direct SDLC link. See Figure 37 on page 116.

Configuring at MVS
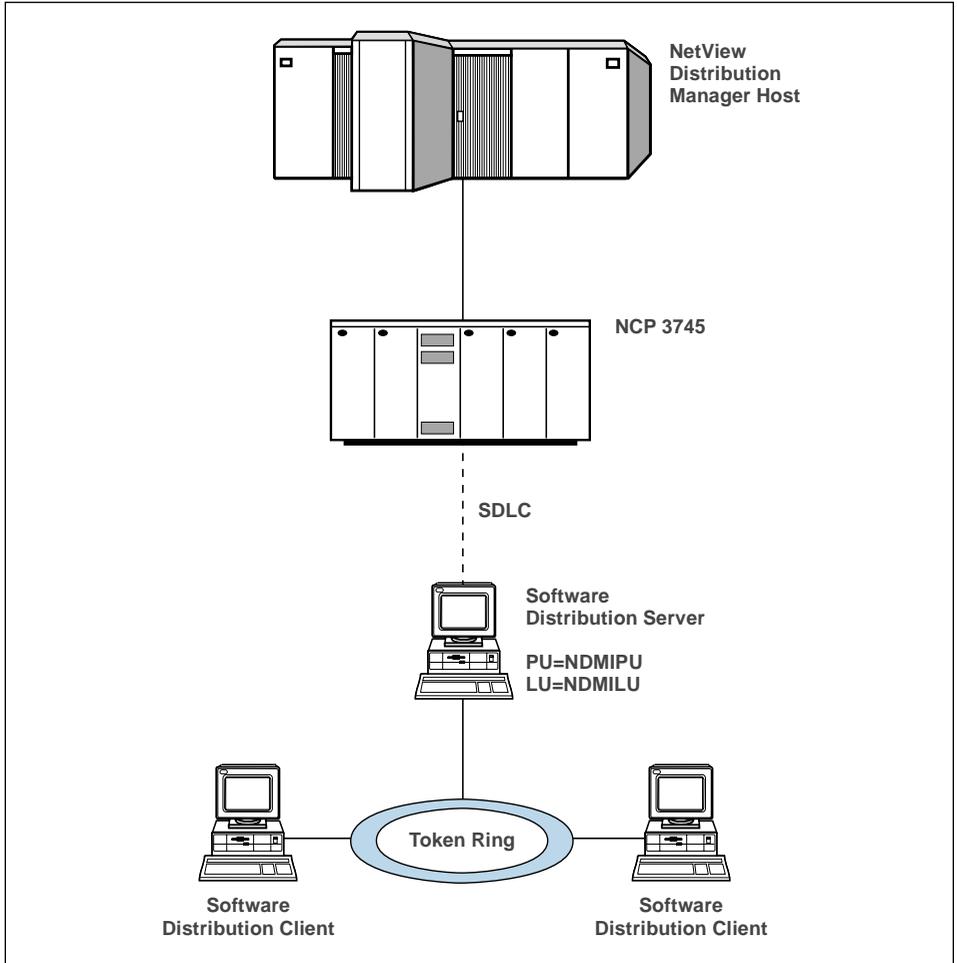
Figure 37. SDLC connection to NetView DM for MVS

NCP/VTAM Definition: Figure 38 on page 117 shows sample NCP/VTAM definitions. They refer to the network shown in Figure 37.

```
GSDLC      GROUP CLOCKNG=EXT,
                 DIAL=NO,
                 LNCTL=SDLC,
                 REPLYTO=0.5,
                 RETRIES=(19,4,5),
                 TYPE=NCP

L002       LINE  ADDRESS=002,
                 DUPLEX=FULL,
                 ETRATIO=25,
                 SPEED=9600,
                 ISTATUS=ACTIVE,
                 RETRIES=(7,2,2)

NDM6PU     PU    ADDR=C1,
                 MAXDATA=265,
                 MAXOUT=7,
                 PASSLIM=8,
                 PUTYPE=2,
                 SSCPFM=USSSCS,
                 XID=YES

NDM6LU     LU    LOCADDR=0,
                 ISTATUS=ACTIVE,
                 MODETAB=NDMLU62P,
                 DLOGMOD=NVDMNORM,
                 RESSCB=2,
                 PACING=1
```

Figure 38. VTAM and NCP macros for connectivity using an SDLC link

The definition in Figure 38 contains the following:

1. A direct attachment on line L002 to the PU for the TME 10 Software Distribution node (NDM6PU)

2. An independent LU (LOCADDR=0) for access to the TME 10 Software Distribution node defined directly under the PU (NDM6LU).

TME 10 Software Distribution Definitions: Table 22 on page 118 shows the correspondence between VTAM and TME 10 Software Distribution.

Table 22. VTAM and TME 10 Software Distribution Parameters, SDLC Connection	
VTAM Parameter	**TME 10 Software Distribution Parameter**
NETID=NETWK1	Network name
DLOGMOD=NVDMNORM	Mode name
PU=NDM6PU	PU name
LU=NDM6LU	LU name for TME 10 Software Distribution
ADDR=C1	Local station address

Logon Mode Table Definition

The logon mode table is used to define the parameters for sessions between
TME 10 Software Distribution and NetView DM for MVS. This table defines the logon
mode NDMLU62P that is referred to in all the previous examples.

```
MODETAB

NDMLU62P MODEENT LOGMODE=NVDMNORM,
              FMPROF=X'13',
              TSPROF=X'07',
              PRIPROT=X'B0',
              SECPROT=X'B0:',
              COMPROT=X'50A1',
              ENCR=B'0000',
              RUSIZES=X'8585',
              PSNDPAC=X'03',
              SRCVPAC=X'03',
              SSNDPAC='00',
              PSERVIC=X'060200000000000000002400',
              TYPE=X'0',
              COS=COSNAME
          MODEEND
```

Figure 39. Logon mode table

The parameters in Table 23 are specific for defining the LU session between
TME 10 Software Distribution and NetView DM for MVS.

Table 23 (Page 1 of 5). Parameters for Defining the LU Session	
Parameter	**Description**
LOGMODE	Specifies the entry name that is used to point to the set of session parameters in this logon mode table.
	You can use any entry name with up to eight characters; however, this must match the mode name specified within the configuration for TME 10 Software Distribution.

Table 23 (Page 2 of 5). Parameters for Defining the LU Session	
Parameter	**Description**
FMPROF	Specifies the function management profile for this entry. Set FMPROF to X'13', which indicates that Function Management Profile 19 (X'13') rules are to be used for these LU 6.2 sessions. See *Systems Network Architecture Formats*.
TSPROF	Specifies the transmission services profile for this entry. Set TSPROF to X'07', which indicates that Transmission Services Profile 7 (X'07') rules are to be used for these LU 6.2 sessions. See *Systems Network Architecture Formats*.
PRIPROT	Specifies the primary LU protocols for this entry. Set PRIPROT to X'B0', which indicates the following protocols are to be used: • Multiple RU chaining • Immediate request mode • Definite or exception response.
SECPROT	Specifies the secondary LU protocols for this entry. Set SECPROT to X'B0'.
COMPROT	Specifies the common LU protocols for this entry. Set COMPROT to X'50A1', which indicates that the following protocols are to be used: • Segmenting • FMH allowed • Brackets used • CEB used • No alternate code set • BIND RSP not held • HDX-FF • Symmetric recovery • SLU=winner • HDX-FF reset is SEND for PLU and RCV for SLU
ENCR	Specifies the type of cryptography to be used with the VTAM data encryption facility. Set ENCR to B'0000', that is, no cryptography because VTAM does not support encryption for LU 6.2 sessions.

Table 23 (Page 3 of 5). Parameters for Defining the LU Session	
Parameter	**Description**
RUSIZES	Specifies the maximum length of data (request units or RU) in bytes that can be sent by the primary LU and the secondary LU when they are in session with each other.
	RUSIZES is represented by four hexadecimal digits. The two leftmost digits apply to the secondary LU and the two rightmost digits apply to the primary LU. The format is the same for both sets of digits: in each set, the first digit is the mantissa (m) and the second digit is the exponent (n) in the formula $m \times 2^n$. The mantissa must be in the range X'8'–X'F'. The exponent must be in the range X'0'–X'F'.
	This formula is then used to calculate the maximum RU sizes that can be sent by the primary or secondary LU. For example, RUSIZES=X'858C' specifies that the secondary LU can send an RU of maximum length 8×2^5 (or 256) bytes and the primary LU can send an RU of maximum length 8×2^C (or 32768) bytes.
	TME 10 Software Distribution supports all RU sizes. However, you should note the following guidelines when setting up the logon mode table and when configuring NetWare for SAA:
	• Small RUs make poor use of your data transfer mechanism. Transfer times, especially for large files, are considerably increased by using small RUs. The smallest RU size that you should consider is 256 bytes.
	• Large RUs can cause saturation at the receiver if the data cannot be processed as fast as it is received.
	• Some SNA connections, especially slow ones like public telecommunication lines, are better suited to small RUs (for example 256 or 512 bytes).
	• TME 10 Software Distribution supports any legal RU size between 256 and 3840 bytes. Any BIND proposing a size smaller than 256 is rejected by TME 10 Software Distribution; any BIND proposing a size greater than that configured is negotiated downward.

Table 23 (Page 4 of 5). Parameters for Defining the LU Session	
Parameter	**Description**
	Therefore, RUSIZES is best set to X'F8F8' (4 KB) maximum and X'8585' (256 bytes) minimum. For a TME 10 Software Distribution node connected directly through a token ring to a channel-attached NCP, an RU size of 3840 is expected to be optimal. For other attachments, link speeds and connectivity must be considered when you are selecting the optimal value.
	NetView DM for MVS does not check the RUSIZES value for NetView DM for MVS-to-TME 10 Software Distribution sessions. In the sample logmode definition, RUSIZES is set to X'8585' (256 bytes) for NetView DM for MVS sessions. These values should be consistent with those defined to the TME 10 Software Distribution node.
PSNDPAC	Specifies the primary send pacing count. This value is not checked by TME 10 Software Distribution. If PSNDPAC is omitted, PSNDPAC=X'00' is the default.
SRCVPAC	Specifies the secondary receive pacing count. If SRCVPAC is omitted, SRCVPAC=X'00' is the default.
	SRCVPAC must be appropriate to the RU size selected for the primary LU, and is determined by the formula:
	`(2n - 1) × primary send RU size <= 4KB`
	where n is the SRCVPAC value.
	For example, SRCVPAC=X'01' if the two rightmost digits of RUSIZES are X'F7'. If the RUSIZES chosen is X'8585', SRCVPAC can be as high as X'08'.
	The value of SRCVPAC greatly influences throughput. Higher values of this parameter ensure better throughput. Set SRCVPAC as high as the calculation allows.
	Note that SRCVPAC can be negotiated downward but never upward.
SSNDPAC	Specifies the secondary send pacing count. TME 10 Software Distribution has no dependencies on this value. It is used as specified. SSNDPAC=X'00' is the default.

Configuring at MVS

Table 23 (Page 5 of 5). Parameters for Defining the LU Session	
Parameter	**Description**
PSERVIC	Specifies the presentation services profile for this entry. Set PSERVIC to X'060200000000000000002400' which indicates that the following will be used: • LU 6.2 • No attach security • Sync level=confirm • PLU reinitiates • Parallel sessions are not supported.
TYPE	Specifies the type of BIND command for this entry. Set TYPE to X'0', which means that the secondary LU can support a negotiable BIND.
COS	Specifies the name of an entry in a class of service table to be used for sessions established with this logon mode. Because it is a *batch* mode, you should use an entry that specifies low-priority virtual routes so as not to interfere with interactive traffic.

Configuring NetView DM for MVS

NetView DM for MVS requires two specific customization steps to manage TME 10 Software Distribution nodes.

1 Define node types with change management entry point (CMEP) functional capabilities for TME 10 Software Distribution servers.

You do not have to define the TME 10 Software Distribution clients. They define themselves automatically when TME 10 Software Distribution is installed.

2 When NetView DM for MVS has been configured to manage this type of node, prepare the specific network definition for both directly and indirectly connected nodes.

If a node type with CMEP functional capabilities has not been defined, then you must perform a new run of the installation macros.

Prepare the following for the NetView DM for MVS stage 1 installation job:

• NDMNODE
• NDMTCP
• NDMCP
• A transmission profile

Prepare a macro defining the characteristics for a TME 10 Software Distribution server.

In NetView DM for MVS, specify a node type for TME 10 Software Distribution servers and declare it to have change management entry point (CMEP) functional capabilities.

In the example in Figure 40 on page 123, the node type for TME 10 Software
Distribution servers has been assigned the name **NDM6**.

Now prepare the following macros:

1 An NDMNODE macro to define a node type with CMEP functional capabilities for
   TME 10 Software Distribution nodes (see Figure 40 on page 123).

```
NDMNODE TYPE=NDM6,
      LOGM=NVDMNORM,FUNC=CMEP,
      XMFUNC=(SEND, RETR, DELE),
      RESTYPE=(0060,0070,0080,0100,0120,0220,0230,0240,0250)
```

Figure 40. Sample NDMNODE macro for TME 10 Software Distribution Server

The variables defined are shown in Table 24.

Table 24 (Page 1 of 2). NDMNODE Variables	
Parameter	**Description**
LOGM	Set this value to the name of a logon mode table that defines the session parameters for communication between TME 10 Software Distribution and NetView DM for MVS. (Refer to the example in Figure 39 on page 118.)
FUNC	The functional capability must be defined as CMEP.
	A CMEP node can manage changes to itself and has limited ability to manage changes to other nodes.
XMFUNC	This can be set to (SEND, RETR, DELE) for a TME 10 Software Distribution node.
	This parameter defines the transmission-function authorization parameters. That is, it defines those functions that the TME 10 Software Distribution nodes are allowed to initiate against NetView DM for MVS. TME 10 Software Distribution nodes support sending, retrieving, and deleting files but cannot initiate change control commands.
RESTYPE	This parameter gives the data object classifications that the TME 10 Software Distribution node is authorized to work with. TME 10 Software Distribution can work with all of the defined resource types, so you should list them all unless you have some reason to limit the types of files that you want a particular node to have permission to transfer.
	This parameter must be present if the XMFUNC parameter is specified. Refer to the *NetView DM for MVS Installation and Customization Guide* for possible values.

Table 24 (Page 2 of 2). NDMNODE Variables	
Parameter	**Description**
SFUNC	This parameter lists the functions that may be issued to the TME 10 Software Distribution node. The default is the full set (SEND, RETR, DELE, REMO, ACTI, INIT, ACCE, INST, UNIN). This parameter need not be specified because TME 10 Software Distribution supports all of the functions. To limit the functions that can be issued by NetView DM for MVS to a particular node, you must use this parameter and specify only those functions that are allowed.

2 An NDMTCP macro specifically for the TME 10 Software Distribution application. A sample macro highlighting the lines that are significant for TME 10 Software Distribution is shown in Figure 41.

```
NDMTCP APPLID=(RAKADT03,*),
       IAPPLID=(RAKADI03,*),
       IPLUNAM=NONE,    (LU NAME OF DEFAULT IOF PRINTER)
       OPCTL=NETV,      (SELECTED MESSAGES ARE ROUTED TO NV)
       ROUTCD1=2,
       ROUTCD2=2,
       DSCD1=6,
       DSCD2=6,
       RESWAIT=300,     (SECONDS NDM WAITS FOR LU62 RESPONSE)
       STALINE=1,       (DEFAULT IS NO)
       AUTOSTR=NO,      (NO IS THE DEFAULT)
       AUTOEND=NO,      (NO IS THE DEFAULT)
       RETRY=3,         (RETRY COUNT FOR INTERRUPTED SESSION)
       RETINT=30,       (TIME WAITED BY TCP BEFORE A RETRY)
       APPC=YES,        (YES IF NDM IS TO HAVE LU6.2 SESSION)
       MAXTASK=(4,1),   (CONCURRENT SESSION TOTAL,SWITCHED SESS)
       SWDLY=5,         (SECS. WAITED BEFORE VTAM SESSION RETRY)
       SWRTRY=3,        (NUMBER OF VTAM SESSION RETRIES)
       DDPREQ=YES,      (FORCED TO YES IF APPC=YES)
       RESYNCH=4,       (4098K BYTE BLOCKS BETWEEN CHECKPOINTS)
       MSGINFO=2,       (ALL MSGS GO TO SYSPRINT/IOF/CONSOLE)
       HOPCNT=5,        (NO. OF NODES AN LU6.2 MSG. CAN HOP)
       AUTEXIT=NDMEXIT, (USER-EXIT TO POINT TO RACF FOR IOF)
       NDCCAPI=NO,      (DO NOT HAVE API FEATURE INSTALLED)
       QMSURPT=NO,      (DEFAULT.  YES IF U HAVE USER APPLS)
       SUFFIX=18
```

Figure 41. Sample NDMTCP macro for TME 10 Software Distribution

The significant parameters are described in Table 25 on page 125.

Table 25. NDMTCP Parameters

Parameter	Description
RESWAIT	Defines the number of seconds NetView DM for MVS waits for a response from a TME 10 Software Distribution node.
APPC	This must be set to YES to indicate that APPC is in use.
HOPCNT	A distribution is passed from node to node across the SNA network. Each time it is passed is called a *hop*.
	The hop count is the maximum number of hops that can be included in a single routing chain from NetView DM for MVS. The distribution must reach its destination within this number of hops.
	This parameter is provided to prevent messages looping forever in large networks with conflicting routing instructions at different nodes. In simple networks, assign this parameter a small number.

3 An NDMCP macro to define connection profiles that group LU 6.2 logical units that have the same attributes and connection capabilities.

If your TME 10 Software Distribution workstation is connected by a line that allows the workstation to establish a session (for example, a leased line):

    a Define a connection profile with the polling parameter set to NO.

    b Assign the LU name of the TME 10 Software Distribution workstation to that connection profile.

In this way, TME 10 Software Distribution will not poll for a reply for a host-initiated request. An example is shown in Figure 42.

```
NDMCP  CPNAME=CP02,
       POLLING=NO
```

Figure 42. Example of an NDMCP macro

4 A transmission profile that groups nodes to connect them to the central site using the same type of line. Grouping nodes in this way optimizes line usage. For example, if a multipoint line is used to connect eight nodes, they could be grouped by a transmission profile that specifies that no more than three concurrent transmissions can take place against them, ensuring better load balancing across different lines.

Each transmission profile can have its own retry specifications.

Configuring at the TME 10 Software Distribution for AIX Site

An example of the NDMTP customization macro that is used to define a transmission profile is shown in Figure 43.

```
NDMTP  TPNAME=TPNDM2,TPTYPE=L,MINGR=27,MAXN=50
```

Figure 43. Example of an NDMTP macro

where:

- TPNAME is the name of the transmission profile

- TPTYPE specifies the connection type of the nodes (in this example, a leased line)

- MINGR specifies the number of transmission tasks that the TCP can grant to the transmission profile

- MAXN specifies the maximum number of transmission tasks that can be active at the same time

Configuring at the TME 10 Software Distribution for AIX Site

To enable communication between a TME 10 Software Distribution for NetWare server and TME 10 Software Distribution for AIX, follow these steps at the TME 10 Software Distribution for AIX site:

1 Edit the STS routing table to identify the TCP/IP connection between TME 10 Software Distribution for AIX and your TME 10 Software Distribution server, as shown in Figure 44.

```
# STS ROUTING TABLE
# This table provides STS routing information for
# TCP/IP routes.
# This file should be stored as /usr/lpp/netviewdm/db/routetab

NETWORK PROTOCOL:   TCP/IP

#
# Destination     Connection     Hop
# Address                        Count
#

NWSRV1.NWSV1      NWSRVR         10
```

Figure 44. Example of an STS Routing Table for TCP/IP routes on AIX

Be sure NETWORK PROTOCOL is TCP/IP.

The format of the destination address in the STS routing table is *domain address.target address*. To get the domain address and target address, on the TME 10 Software Distribution server, enter the command:

```
lstg -l
```

In this example, domain address is NWSRV1 and target address is NWSV1.

The connection name is any name you choose (in this example, NWSRVR).

2 Create an STS connection configuration file. The name of the file must be the connection name you specified in the STS routing table (in this example, NWSRVR). A sample STS connection configuration file is shown in Figure 45.

```
# SNA/DS CONNECTION CONFIGURATION FILE FOR CONNECTION NWSRVR
#
# This connection is used to handle transmissions between
# TME 10 Software Distribution for AIX and TME 10 Software Distribution for NetWare using
# STS across TCP/IP.
#
# This file should be stored as /usr/lpp/netviewdm/db/snadscon/nwsrvr

PROTOCOL:                       TCP/IP
TYPE:                           STS
REMOTE SERVER NAME:             NWSRVR
```

Figure 45. Example of an STS Connection Configuration File on AIX

Set REMOTE SERVER NAME to the workstation name of the TME 10 Software Distribution server.

3 Now add the TME 10 Software Distribution server as a target. Enter the command:

```
addtg <workstation name> -b server -y NETWARE -s <target address> ►
-tp tcp: <hostname>
```

4 Enter the command:

```
ndm rld
```

Part 3. Appendixes

This part contains information to which you may need to refer from time to time while using TME 10 Software Distribution. The appendixes are:

Appendix A. Configuring NetWare for SAA 1.3B for SNA/DS Connections

This appendix describes how to configure NetWare for SAA 1.3B for SNA/DS connections. If you have NetWare for SAA 2.0, do not use this appendix; use Chapter 15, "Configuring NetWare for SAA 2.0 for SNA/DS Connections" on page 99 instead. This appendix includes information about configuring:

- NetWare for SAA 1.3B LU 6.2 support
- Remote communication
- A TME 10 Software Distribution for NetWare TME 10 Software Distribution server for SNA

Information is also provided on using NetWare for SAA trace and log facilities and how to start NetWare for SAA automatically when you start NetWare.

Configuring NetWare for SAA 1.3B LU 6.2 Support

You must configure NetWare for SAA LU 6.2 support to enable remote communication for TME 10 Software Distribution for NetWare. In configuring NetWare for SAA to use with TME 10 Software Distribution for NetWare, it is assumed that the user-defined conversion table TABLEG.DAT provided is properly stored in the NetWare directory SYSTEM.

The user-defined conversion table is used by TME 10 Software Distribution for NetWare because NetWare for SAA 1.3 does not support SNA transaction program names. When defined by TME 10 Software Distribution for NetWare, the table cannot be used with any other user-defined conversion table on the workstation running TME 10 Software Distribution for NetWare. This includes tables that may be required by LU 6.2.

Configuring Remote Communication

Perform the following steps to configure remote communication for your TME 10 Software Distribution system:

- Determine the network ID of the SNA network to which your TME 10 Software Distribution for NetWare server is attached and the name of the LU that provides access to your server. Use these to set the SNA/DS addresses of your TME 10 Software Distribution clients and server.

- Configure the SNA connections that your server uses to send and receive distributions. These connections must be defined to TME 10 Software Distribution and to NetWare for SAA, which provides the underlying support.

- Construct the SNA/DS routing table that TME 10 Software Distribution uses to route distributions to remote targets.

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- Customize the SNA/DS communication, providing data that influences how TME 10 Software Distribution sends and receives SNA/DS distributions on all SNA connections.

- Configure the remote NetView DM for MVS nodes to accept communication from TME 10 Software Distribution.

Configuring a TME 10 Software Distribution for NetWare Server for SNA

When you configure TME 10 Software Distribution for NetWare for communication over SNA/DS, the main task is the configuration of the TME 10 Software Distribution for NetWare server. As part of this task, the following sections describe:

- Entering network connection information
- Configuring node type 2.1 connections
- Defining side information for conversation

Entering Network Connection Information

This section describes some changes you must make in the file AUTOEXEC.NCF to support connections based on NetWare for SAA. For more information about AUTOEXEC.NCF, refer to the *NetWare Version 3.11 Installation Guide* and the *Novell NetWare for SAA Version 1.3 Administration Guide*.

Editing AUTOEXEC.NCF

In the file AUTOEXEC.NCF, you need to insert statements that instruct NetWare to load the drivers for the adapters that NetWare for SAA needs to communicate with a remote node. The modifications depend on whether you have a token ring or SDLC connection.

Modifying Token Ring Connections

For token ring connections, you need to insert a load token statement for each token ring adapter you use to connect to a remote node. The load token statement may vary, depending on the card you install. For example, use the following load token statement for an IBM 16/4 card:

```
load token port=xxx int=xx node=xxxxxxxx name=xxxxxxxx
```

where:

port   Is the token ring host adapter port address (three digits). The port setting is A20 for a primary adapter or A24 for a secondary adapter.

int   Is a token ring host adapter interrupt (two digits). Refer to the manufacturer's documentation for more information on the interrupt setting.

node   Is the last 8 digits of the locally administered address for the token ring adapter of the server.

name   Is the logical board name (16 characters). The name must match the logical adapter name you configure in the NetWare Communication Services configuration utility (CSCON).

Modifying SDLC Connections

NetWare for SAA includes the following drivers for SDLC adapters:

```
MPASDLC.LAN
R2SDLC.LAN
R3SDLC.LAN
```

Use one of the following statements in the file AUTOEXEC.NCF to load the appropriate
adapter driver for your SDLC adapter:

```
load mpasdlc name=xxxxxxxx
```

```
load r2sdlc int=xx port=xxx name=xxxxxxxx
```

```
load r3sdlc int=xx port=xxx mem=xx name=xxxxxxxx
```

where:

int   Is the adapter interrupt setting.

port   Is the adapter port address. The port setting is 220 for a primary adapter and
            620 for a secondary adapter.

mem   Is the memory address of the adapter.

name   Is the logical board name (8 characters). The name must match the logical
            adapter name you configure in CSCON.

Setting Packet Receive Buffers

Use the command SET to specify the maximum number of packet receive buffers for
communication services. For example, use the following to set 2000 packet receive
buffers:

```
set maximum packet receive buffers = 2000
```

Implementing Node Type 2.1 Connections

The following sections describe how to configure NetWare for SAA to implement a node
type 2.1 connection by:

1 Creating and configuring an SAA service profile for node type 2.1 using the
CSCON utility.

2 Configuring host connection settings.

3 Configuring token ring or SDLC connections.

It is assumed you have configured the Communication Executive for the server you are
working on and that it is running.

For more information on the CSCON utility and the Communication Executive and its
configuration, refer to the *NetWare for SAA Version 1.3 Administration Guide*.

Creating an SAA Service Profile

You create an SAA service profile as follows:

1 Start the CSCON utility. You must have supervisor rights to use CSCON to configure the Communication Executive.

2 Select the server with the Communication Executive you want to configure. CSCON prompts you for a user name.

3 Enter your user name and password.

4 Select **Configure Communication Services** from the Available Topics menu.

5 Select **NetWare for SAA** from the Configure Communication Services menu.

6 Select **Insert** to create a new SAA service profile. A New Service Profile window is displayed.

7 Enter the new profile name.

8 Press ENTER in the **Node Type** field to display a list of supported node types.

9 Press ENTER to select Node Type 2.1.

10 Select the profile to copy, if desired.

11 Press ESC to close the New Service Profile window. CSCON prompts you to create the new service profile as specified.

12 Select **Yes** to create the profile and return to Select Service Profile menu.

Configuring Host Connection Settings

Host connection settings are the basic parameters for the type of connection you want to use to enable TME 10 Software Distribution for NetWare to communicate with other remote nodes.

You specify the host connection settings as follows:

1 Access the Select Service Profile menu.

2 Highlight the Node Type 2.1 service profile you want to configure.

3 Press ENTER to display the Configure SAA Service Profile menu.

4 Select **Configure Host Connection**. CSCON displays the Host Connection Configuration window.

5 Enter the SNA network ID. This identifies the network the TME 10 Software Distribution for NetWare node is attached to.

The system administrator can provide the ID. If you are connected to a NetView DM/MVS system, the ID is identical to the NETID parameter in the VTAM start statement.

6 Enter the peripheral node control point name. This is also the local control point name.

The system administrator can provide the name. If you are connecting to a NetView DM/MVS system, this name is identical to `SSCPNAME` in the VTAM start statement. If you do not specify a control point name, use the default `CPNAME`.

7 Enter the number of independent sessions supported. This is the maximum number of independent LU 6.2 sessions supported by the profile.

Note that you cannot specify more than the number of sessions allocated from the remote node. A value of `1` is used for an attachment to a NetView DM/MVS system and indicates that only one session may be active at a time.

8 Select the host attachment, specifying that the connection is through token ring or SDLC. The CSCON utility displays a configuration window for the type of host attachment you select.

9 Configure the host attachment as described in "Configuring Token Ring Connections" or "Configuring SDLC Connections" on page 136.

Configuring Token Ring Connections

When you specify a token ring connection type, the CSCON utility displays the SNA Token Ring Configuration window. Use the window as follows:

1 Specify a token ring service access point (SAP). The two-digit number matches the source and destination SAPs.

2 Select the token ring adapter type for the connection. Press ENTER to display the options **Primary** and **Alternate**. Select **Primary** if the token ring adapter type switch is set to primary; otherwise, select **Alternate**.

3 Specify the block ID, a three-digit hexadecimal number that matches the `IDBLK` value in the host definition.

4 Specify the `PUID` for the token ring connection. The five-digit hexadecimal number matches the `IDNUM` in the host definition.

5 Specify a logical adapter name.

The name of the logical adapter must be the same as that specified when driver for the token ring adapter card was loaded.

6 Press ESC to return to the Host Connection Configuration.

7 Press ENTER to save the changes and return to the Configure SAA Service Profile menu.

After you configure a connection, you can specify a profile description that provides information on the purpose and location of the profile. See the *NetWare for SAA Version 1.3 Administration Guide* for more information.

Configuring SDLC Connections

When you choose an SDLC connection, the CSCON utility displays the SNA SDLC Configuration window. Use this window to configure an SDLC attachment as follows:

1 Specify the SDLC control unit address, a two-digit hexadecimal number corresponding to the ADDR field in the NCP customization file on the host.

2 Specify an SDLC adapter type. Press ENTER to display the options **Primary** and **Alternate**. Select the option that corresponds to the adapter type setting you specify when installing the adapter and driver.

3 Specify the SDLC encoding option for the interface board. Press ENTER to display the options **NRZ** and **NRZI**.

Note that the VTAM/NCP parameter is NRZI=Yes or NRZI=No, where NRZI=No means use NRZ.

4 Specify the connection type. Press ENTER to display the options **Non-Switched** and **Switched**.

5 Select the **Hold Request To Send (RTS) Continuously** option. SDLC uses the RTS signal to prepare a modem to transmit data.

If you specify **Yes**, the SDLC driver holds the RTS signal high constantly, providing faster communication line turnaround between the server and a remote host. The effect of this setting depends upon the type of line you are using. Specify **No** if you use a multidrop or dial-up line.

6 Specify the block ID. This is a three-digit hexadecimal SDLC block ID number that corresponds to the IDBLK setting in SYS1.VTAMLST.

7 Specify the PUID for the SDLC connection. This five-digit hexadecimal number matches the IDNUM value in SYS1.VTAMLST.

8 Specify the PU 2.1 link station role. Press ENTER to display the options **Negotiable** and **Secondary**. Select **Negotiable**.

9 Specify a logical adapter name.

The name of the logical adapter must be the same as that specified when the driver for the SDLC adapter card was loaded.

10 Press ESC to return to the Host Connection Configuration window.

11 Press ENTER to save the changes and return to the Configure SAA Service Profile menu.

After you configure a connection, you can specify a profile description that provides information on the purpose and location of the profile.

You can also automate the configuration process during startup by inserting the following statement in the AUTOEXEC.NCF file after the start processing for NetWare for SAA:

    CSLOAD <profile_name>

See the *NetWare for SAA Version 1.3 Administration Guide* for more information.

Defining Side Information for Conversation

TME 10 Software Distribution for NetWare communicates through SNA LU 6.2 sessions using the NetWare for SAA Common Programming Interface for Communication (CPI-C). To use NetWare for SAA, you must first create and configure a side information file. The file contains information required for communication between TME 10 Software Distribution for NetWare and NetWare for SAA through SNA LU 6.2 sessions.

Each logical unit (LU) handling CPI-C transactions requires a side information record that is configured in the side information file for each NetWare LU 6.2 session. This record provides initialization information specific to each session, such as the local and partner LU names, the local and partner program names, and the session mode name.

A side information record also identifies the connection on which communication is to be established, the mode to use, and which remote transaction program (TP) to start.

Before starting TME 10 Software Distribution for NetWare, you must configure two side information records for each remote node you want TME 10 Software Distribution for NetWare to connect to; one record starts the remote Send TP and the other starts the remote Receive TP. You must also load a side information file on the NetWare server.

Use the utility SIUTIL on the NetWare server to create and edit the CPI-C side information file and side information records. Refer to the *NetWare for SAA Version 1.3 Administration Guide* for more information about the SIUTIL utility.

Defining Side Information Files

Create a side information file as follows:

1 Select **Create New Side Information File** from the SIUTIL.EXE Program Main Menu and press ENTER. You are prompted for a side information file name.

2 Specify the name of the file you want to create. Use the extension .CPI in the file name. The file is created and stored in the SYSTEM\NWSAA\CPIC subdirectory.

3 The Side Information Record Command Menu is displayed.

Defining Side Information Records

You must define two side information records for each connection you configure for TME 10 Software Distribution for NetWare. The record names must match the names in the fields Send TP Symbolic Destination and Receive TP Symbolic Destination in the connection file you define in the TME 10 Software Distribution for NetWare

subdirectory `DB\SNADSCON`. For example, `NVDMSIDR` to start the remote Receive TP and `NVDMSIDS` to start the remote Send TP.

To add a side information record:

1 Select **Add A Side Information Record** from the command menu and press ENTER.

2 The Local LU Configuration Data window is displayed. Complete the fields.

Defining Local LU Configuration Data

On the Local LU Configuration Data window, complete the following:

Side Information Record Name
Enter the record name.

LU Name
Enter the name (8 characters or less) of the local LU.

PU Name
Enter the name (8 characters or less) that defines the PU network name.

Detach PU Type
Specify the manner in which LUs attached by the workstation detach from NetWare for SAA LU 6.2, using the following values:

0 To immediately detach all LUs attached by a workstation if the workstation requests immediate detachment.

1 To detach all LUs attached by a workstation if the workstation requests detachment only in the absence of outstanding conversations.

A setting of `1` is recommended.

Security Type
Set to `0`.

User Id
Leave this field blank.

Password
Leave this field blank.

LU Local Address
The logical session number for the local LU. This value must be in the range `0` to the number of host sessions assigned to your workstation.

LU Session Limit
Specify the maximum number of conversations that can exist simultaneously between a local LU and a remote LU. If you are connected to a NetView DM/MVS system, this field must be set to `1`.

Network Name
Enter the name of your network. This name is the same across the entire network. It must also be known at the remote node.

If the remote node is a NetView DM/MVS system, this field must contain the same value as the `NETID` parameter in the VTAM start statement.

Scroll down and complete the fields for the Partner LU Configuration Data window as described in "Defining Partner LU Configuration Data."

Defining Partner LU Configuration Data

In the Partner LU Configuration Data window, complete the following:

LU Name

Enter the name of the remote LU that identifies the partner LU. The name must be the same as that used at the remote site to refer to the remote LU. You should ask the remote site administrator for the name of the LU.

Data Link Control Name

Enter the data link control identification needed to communicate with the remote LU. Values are ITRN, SDLC, QLLC, and CUSTOM. Refer to *NetWare for SAA Version 1.3 Administration Guide* for more information.

The Network Adapter Number

Determines if the token ring network adapter in your server through which you access the remote LU is primary or alternate. This parameter should be set to `0`.

Network Adapter Address

Enter the remote LU adapter address. If the data link control name is `ITRN`, set this parameter as follows:

- When the remote LU is located in a workstation supported by another server, set the parameter to the locally administered six-byte token ring address of the remote LU server.

- When the remote LU is located in a host accessed by the NetWare for SAA server, set the parameter to the locally administered six-byte address of the connected 3174 or 37x5.

LU Session Limit

Enter the maximum number of concurrently active sessions you will allow between a local LU and a remote LU. Specify `1` for an attachment to a NetView DM/MVS remote LU.

Max Logical Record Size

Enter the recommended value of `500`.

Character Set

Set to `2`.

Local Program Name

Set as follows:

- If you define the side information record to refer to the remote TP Receive, specify `!007`

- If the side information record refers to the remote TP Send, specify `!008`.

Remote Program Name
Set as follows:

- If you define the side information record to refer to the remote TP Receive, specify !008.

- If the side information record refers to the remote TP Send, specify !007.

Scroll down and complete the fields in the Mode Configuration Data window as described in "Defining Mode Configuration Data."

Defining Mode Configuration Data

On the Mode Configuration Data window, complete the following:

Mode Name
Enter the name that identifies the mode name associated with the network properties of a session between the local and remote LUs.

Max Negotiable session limit
Specify the maximum number of sessions for local LU and the remote LU using this mode. You must specify a decimal value. Set this field to 1 unless you have a specific reason to do otherwise.

Automatic Activate Session Limit
Specify the number of local LU contention-winner sessions that NetWare LU 6.2 automatically activates during the CPI-C application subsystem process. Set this field to 1 unless you have a specific reason to do otherwise.

Min Contention Winners Source
Specify the number of connections reserved for conversation initiated by your TME 10 Software Distribution for NetWare server.

Table 26 shows the value to specify for the source you are defining.

Table 26. Values to Specify for Minimum Contention Winners Source			
TP you are defining	**NetView DM for MVS source**	**TME 10 Software Distribution for AIX source**	**TME 10 Software Distribution for NetWare source**
Remote send	0	0	0
Remote receive	1	0	1

Min Contention Winners Target
Specify the number of connections reserved for conversation initiated by the remote node.

Table 27 on page 141 shows the value to specify for the target you are defining.

Table 27. Values to Specify for Minimum Contention Winners Target			
TP you are defining	**NetView DM for MVS target**	**TME 10 Software Distribution for AIX target**	**TME 10 Software Distribution for NetWare target**
Remote send	1	0	1
Remote receive	0	0	0

Pacing Size

> Specify the maximum number of SNA messages the local LU can receive without sending a pacing response (acknowledgement). A low value limits throughput. A high value may result in data being received faster than it can be processed.
>
> A trial value of 2 is recommended. If throughput is a problem in a particular session, change the value for the result required.

Max RU Size

> Specify the maximum request unit (RU) sizes exchanged between TME 10 Software Distribution for NetWare and the remote node. Use integers 16-4096. For efficiency, a minimum setting of 256 is recommended.

Min RU Size

> Specify the minimum request unit (RU) sizes exchanged between TME 10 Software Distribution for NetWare and the remote node. Use integers 16-4096. For efficiency, a minimum setting of 256 is recommended.

CNOS Flags

> Specify a combination of four field settings for the APPC CNOS Flag parameter. Set this field to 12 unless you have a specific reason to do otherwise. For more information refer to the *NetWare for SAA Version 1.3 Administration Guide*.

CNOS Termination Set

> Specify a combination of three field settings for the APPC CNOS Flag parameter. Use integers 0-7. Set this field to 4 unless you have a specific reason to do otherwise. For more information refer to the *NetWare for SAA Version 1.3 Administration Guide.*

SAA Service Profile Name

> Specify the name of one of the service profiles you have configured.

To automate the process of defining side information during startup:

1. Create a file with an .NCF extension in the SYSTEM directory, containing the following command:

   ```
   LOAD CPIC_SAA SYS:SYSTEM\NWSAA\CPIC\IBMCPIC.CPI
   ```

2. Insert the name of the .NCF file you just created in the AUTOEXEC.NCF file, just after the command that starts TME 10 Software Distribution.

Appendix B. Replacing the Quiesce Check

This appendix describes how you can replace the quiesce check on any target.

What the Quiesce Check Does

Some change control operations check that the computer is not in use before the operations actually begin. This check is called the *quiesce check*, and, by default, checks that no users are logged on to the system. The results of the check are then returned to TME 10 Software Distribution. However, there may be occasions where the default quiesce check is not appropriate. For example, if users usually do not log off at the end of a work day, then the quiesce check always fails. A check that no processing power was being used is a more appropriate check.

Also, checking that no users are logged on does not prove that no processes are running that might interfere with the change control operation. For example, you may be attempting to uninstall a word processor on a computer while a background task (started by a user who is now logged off) is performing a batch of mail merges.

TME 10 Software Distribution enables you to address these kinds of scenarios by allowing the quiesce check to be replaced by a more appropriate check. Different targets on a network can each have different quiesce checks. This appendix describes how to replace the default TME 10 Software Distribution quiesce check with a check more suitable to the needs of your environment.

Implementing Quiesce Checks

The quiesce check on a target is performed by a batch file. This batch file is named `quiesced` and is stored in the directory:

`SYS:SOFTDIST\BIN\FNDQUIES.NCF`

To replace the quiesce check, all you need to do is replace the script. The new script should:

- Not include any parameters
- Return 0 if the target is quiesced
- Return 2 if the target is not quiesced.

Appendix C. Writing Change Control Scripts

This appendix provides guidelines to help you write a change control script. It describes the parameters for scripts and how you can use them.

You can call change control scripts before and after most change control operations. The names of the scripts are contained within the change file. If no name is specified, no script is executed.

In addition to being named in the change file, scripts must be included as files to be installed unless they already exist on the target. The specification must refer to the complete path name where the script will be installed at the target.

Each script has a different set of parameters. These parameters, detailed in the next section of this appendix, are passed to it by the change control driver when it is executed.

For NetWare targets, if you want TME 10 Software Distribution for NetWare to manage the return codes from an executable file (NLM program), when you write the program you can call the *fnd_rc* function, passing as its parameter the desired return code. If you do not use this function, a return code of 0 is assumed.

Remember to insert the fnd_rc function in the import list when you link your program.

If you use C language to code the NLM, use the following prototype:

```
int fnd_rc(int rc);
```

For NetWare targets, you can start batch (NCF) files as pre- or post-scripts, but you cannot check the status (there are no return codes). If no extension is specified, the file is assumed to be an NLM file. For NCF files, specify the path where the file is located. If no path is specified, then the SYS:SYSTEM directory is checked.

Creating Pre-Install and Post-Install Scripts

Use the following parameters for the pre-install and post-install scripts:

Install to Active Area

Whether the change file is being installed to the active or service area. Valid entries are:

YES The installation is to the active area.

NO The installation is to the service area.

Service Subdirectory

Name of the service subdirectory. This is NUL if the installation is to the active area.

Removable

Whether the installation is removable. Valid entries are:

YES The installation is removable.

NO The installation is not removable.

DESIRED Try to make the installation removable. If it cannot be done, do not fail the installation.

Backup Subdirectory

Name of the backup subdirectory. This entry is NUL if the installation is not removable.

Creating Pre-Remove and Post-Remove Scripts

Use the following parameters for the pre-remove and post-remove scripts:

Request type

The type of request that gave rise to this event. Possible values are REMOVE, or INSTALL if the current removal is taking place because an install request failed to complete.

Action

The action to be taken by the remove may take one of these three values:

DELETE_SERVICE The installation should be deleted from the service subdirectory

RESTORE_SERVICE The removal should be performed in the service area

RESTORE_ACTIVE The removal should be performed in the active area.

Backup Subdirectory

The name of the backup subdirectory.

Service Subdirectory

The name of the service subdirectory. This is NUL if the action was RESTORE_ACTIVE.

Creating Pre-Accept and Post-Accept Scripts

Use the following parameters for the pre-accept and post-accept scripts:

Request type

This specifies the type of request that caused this event. Possible values are ACCEPT, or INSTALL if the current accept is taking place because of an install request with automatic acceptance specified.

Backup Subdirectory

The name of the backup subdirectory.

Service Subdirectory

The name of the service subdirectory. This is NUL if there is no service subdirectory.

Creating Pre-Uninstall and Post-Uninstall Scripts

Use the following parameters for the pre-uninstall and post-uninstall scripts:

Action

The action to be taken by the accept may take one of four values:

DELETE_SERVICE	The installation should be deleted from the service subdirectory
RESTORE_SERVICE	The uninstall operation should be performed in the service area
RESTORE_ACTIVE	The uninstall operation should be performed in the active area
DELSERV_RESTACT	The change file should be deleted from the service area and the change file should then be uninstalled from the active area.

Backup Subdirectory

The name of the backup subdirectory. This is NUL if the change file was not removable.

Service Subdirectory

The name of the service subdirectory. This is NUL if the action is RESTORE_ACTIVE.

Creating Pre-Activate Scripts

Use the following parameters for the pre-activate script:

Request type

This specifies the type of request that is being activated. Possible values are INSTALL, REMOVE, and UNINSTALL.

Service Subdirectory

The name of the service subdirectory.

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Communicating Your Comments to IBM

TME® 10 Software Distribution
for NetWare
Quick Beginnings
Version 3.1.5

Publication No. SH19-4341-02

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TME® 10 Software Distribution
for NetWare
Quick Beginnings
Version 3.1.5

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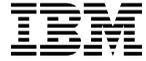
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