



Preside Multiservice Data Manager

Configuration Management for DPN

User Guide

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User Guide

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About this document

This guide describes the activities that you can perform when using the DPN Devices configuration toolset submenu.

The following topics are discussed in this section:

- “Who should read this document and why” (page 21)
- “What you need to know” (page 21)
- “How this document is organized” (page 22)
- “Text conventions” (page 24)
- “Related documents” (page 25)

Who should read this document and why

This guide is intended for personnel who define and configure service data to meet customer requirements. It can also be used by those who install, engineer, and monitor the DPN networks, namely:

- provisioning operators
- network engineers
- network operators
- network administrators.

What you need to know

Before using the configuration for DPN Devices toolset, it is assumed that you know how to log on to the Preside Multiservice Data Manager (MDM) and how to work with the Preside MDM user interface. You must have had some exposure to both computers and network concepts. Basic computer

literacy is required to operate the applications. You must know how to use a keyboard and a mouse, what a menu is, and how to start applications from a menu using a mouse.

241-6001-802 *Preside MDM User Interface Primer* is designed to acquaint you with the user interface and it provides necessary information to get you started.

To use the command line applications described in this document, some knowledge with Sun workstations, the UNIX operating system, namely the editing facility *vi* to be able to modify files, and X.25 network communications would be helpful.

How this document is organized

This guide consists of an introductory chapter and a chapter for each tool in the DPN Devices configuration toolset.

241-6001-012 *Preside MDM Configuration Management for DPN User Guide* contains the following sections:

- “DPN Devices configuration tools” (page 27) lists all the tools available in the DPN Devices Configuration toolset.
- “Uploading and downloading MCFs” (page 39) describes the MCF uploading and downloading terminology.
- “Opening the Configuration - DPN Devices toolset” (page 47) details how you can activate and use the tools within the DPN Devices configuration toolset.
- “Component Provisioning” (page 61) explains how Component Provisioning allows you to define, edit, and display service data for the DPN-100 network.
- “Global Data Manager” (page 127) explains how the Global Data Manager tool manages service data that is common across more than one module. It will help locate, duplicate, and distribute global provisioning data to simplify synchronizing data on multiple modules.
- “Service Data Backup” (page 161) explains how the Service Data Backup tool is used to back up service data files for the DPN-100 module(s).

- “Service Data Restore” (page 169) explains how the Service Data Restore tool is used to retrieve backed up MCF sets from the Backup disk for a DPN-100 module.
- “Software Distribution” (page 179) explains how the Software Distribution tool provides a software distribution service from a Preside Multiservice Data Manager (MDM) workstation.
- “Software Substitution” (page 193) explains how to use the Software Substitution tool to upgrade to images on the DPN-100 modules.
- “Service Data Conversion” (page 207) explains how to use the Service Data Conversion tool to migrate your service data to a new level of software.
- “Envelope Editor” (page 221) explains how the Envelope Editor is used to edit and create service data envelopes or Service Data Area (SDA) headers.
- “Network Activation” (page 235) explains how to use the Network Activation tool to automate the activation process.
- “MCF Directory Merge” (page 277) explains how you can use the DPN Master Configuration File (MCF) Directory Merge application to merge a selected number of MCF directories.
- “MCF management” (page 281) details the commands that are available to help networks with MCF management.
- “Using HP OpenView NNM desktop” (page 305) describes how you can access DPN Devices configuration tools from the OV Desktop application.
- “Service data format” (page 311) has a conceptual model of how service data is presented by Component Provisioning.
- “Component Provisioning paste keys” (page 315) lists the services that are supported when pasting PVC or direct call components when you select the *Change Keys* option in Component Provisioning.

Text conventions

This document uses the following text conventions:

- `nonproportional spaced plain type`

Nonproportional spaced plain type represents system generated text or text that appears on your screen.

- **`nonproportional spaced bold type`**

Nonproportional spaced bold type represents words that you should type or that you should select on the screen.

- *italics*

Statements that appear in italics in a procedure explain the results of a particular step and appear immediately following the step.

Words that appear in italics in text are for naming.

- `[optional_parameter]`

Words in square brackets represent optional parameters. The command can be entered with or without the words in the square brackets.

- `<general_term>`

Words in angle brackets represent variables which are to be replaced with specific values.

- `UPPERCASE,lowercase`

In Preside Multiservice Data Manager (MDM), uppercase and lowercase letters that appear in UNIX commands and parameters must be matched exactly. The system matches upper and lowercase characters differently.

- `|`

This symbol separates items from which you may select one; for example, ON|OFF indicates that you may specify ON or OFF. If you do not make a choice, a default ON is assumed.

- ...

Three dots in a command indicate that the parameter may be repeated more than once in succession.

The term absolute pathname refers to the full specification of a path starting from the root directory. Absolute pathnames always begin with the slash (/) symbol. A relative pathname takes the current directory as its starting point, and starts with any alphanumeric character (other than /).

Mouse buttons

Clicking the *select* (left) mouse button selects action buttons and radio buttons in windows and dialogs when you place the cursor over those buttons. Clicking *select* also places your cursor where you want it to be when you want to perform activities in a window or start entering text in a field.

Clicking the *modify* (middle) mouse button modifies selections. For example, by clicking *modify* you can lengthen or shorten the amount of text selected for a copy or cut operation as discussed later.

Holding down the *menu* (right) mouse button brings up a menu of commands. When you move the pointer to a specific place on the screen (such as the icon), press and hold down the *menu* button. Move your mouse, and therefore your screen pointer, until the command you want to execute is highlighted. Then, release the *menu* button. The command that you highlighted is executed when you release the *menu* button.

Related documents

See the following documents for related information:

- 241-1001-303 *DPN-100 Operator Commands and Responses*
- 241-2001-340 *DPN-100 Envelope Definitions*
- 241-6001-011 *Preside MDM Fault Management User Guide*
- 241-6001-022 *Preside MDM Network Reporting System User Guide*
- 241-6001-304 *Preside MDM Configuration Management for DPN Administrator Guide*
- 241-6001-501 *Preside MDM Proxy Alarms Reference Guide*

Chapter 1

DPN Devices configuration tools

Configuration for DPN Devices consists of a set of applications used to define and maintain service and operating parameters for DPN-100 modules, namely access modules (AM), resource modules (RM), and access concentrators (AC). See the figure “DPN Devices - configuration applications” (page 29).

DPN Devices configuration provides the following capabilities:

- The ability to examine and edit service data residing on DPN-100 modules.
- Command line applications that allow you to combine Master Configuration File (MCF) directories on a DPN-100 module.
- The ability to view, change, delete, and add provisioning data for almost all DPN services, such as ITI, X.25, SNA, and UTP.
- Applications that allow service data to be backed up to a Backup disk or an Preside Multiservice Data Manager (MDM) server, and restored from the selected Backup source.

Applications for DPN Devices configuration provide a readable presentation of DPN service data and a simplified logical representation of the parameters.

The DPN Devices configuration system consists of a set of graphical user-interface (GUI) applications along with command line applications. All the GUI applications have the capability to copy text from the *Messages* areas and paste it into another location.

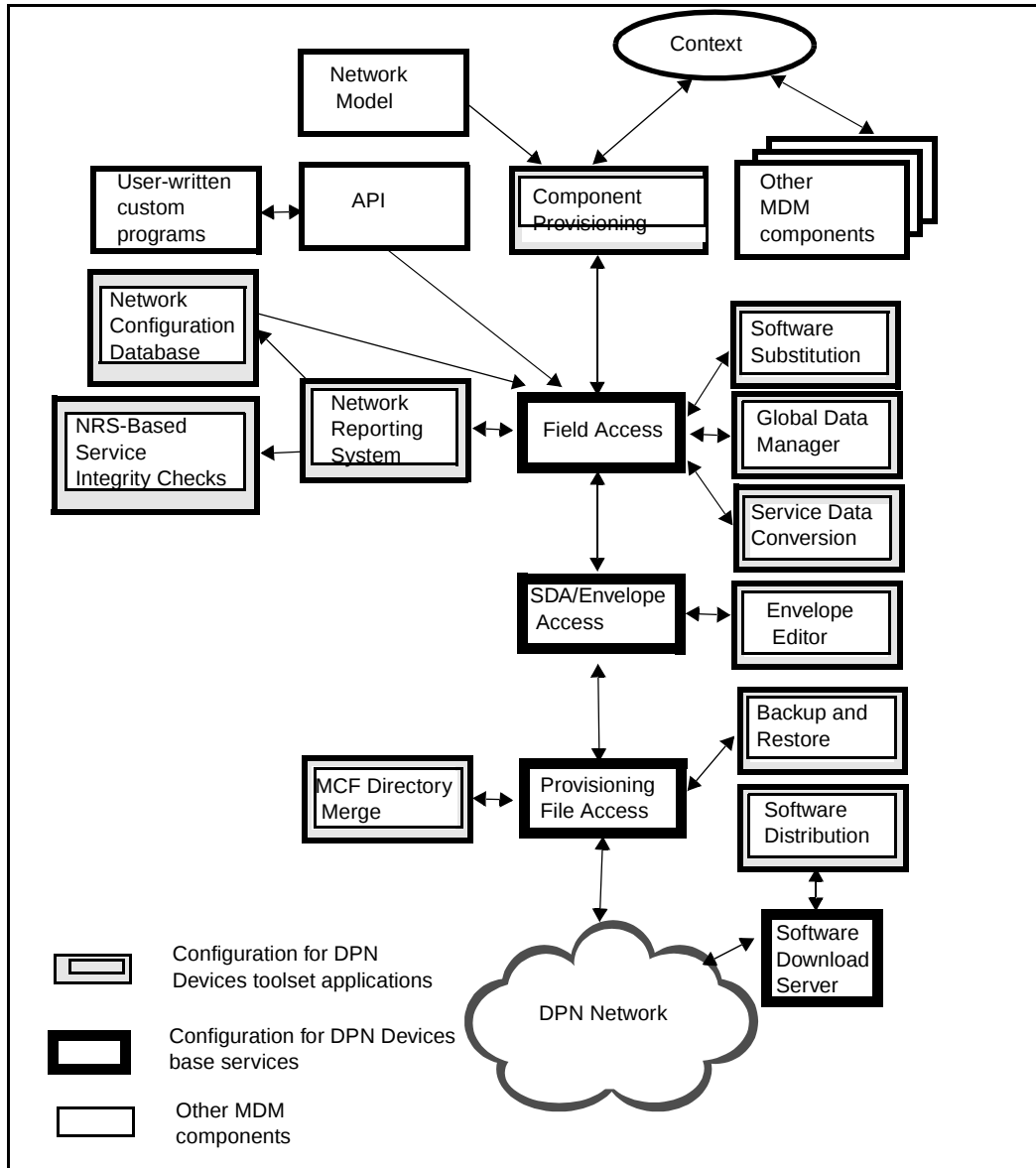
See the following sections for information on the Configuration toolset submenus for DPN devices:

- “Component Provisioning” (page 30)
- “Global Data Manager” (page 30)
- Administration
 - “Service Data Backup” (page 31)
 - “Service Data Restore” (page 32)
 - “Software Distribution” (page 32)
 - “Software Substitution” (page 32)
 - “Service Data Conversion” (page 32)
 - “Envelope Editor” (page 33)
 - “Network Activation Tool” (page 33)
- Network Reporting System
 - 241-6001-022 *Preside MDM Network Reporting System User Guide*
- Inventory Reports. See 241-6001-808 *Preside MDM Device Inventory Tools User Guide*.

See the following sections for information on the tools which can only be accessed with a command line in the UNIX shell:

- “MCF Directory Merge” (page 35)
- “MCF management” (page 35)

Figure 1
DPN Devices - configuration applications



Component Provisioning

The Component Provisioning tool can define, edit, and display service data for DPN-100 modules. Component Provisioning allows you to do the following:

- access and navigate through the service data hierarchy
- edit or view service data
- verify the sanity of edited service data
- download the edited service data to the module or NMS disk
- manage several service data views, including the committed and activated
- generate service data reports
- access templating
- create propagation log files

See “Component Provisioning” (page 61) for more details.

Global Data Manager

The Global Data Manager (GDM) tool provides a mechanism whereby certain global service data components can be duplicated from one master configuration file (MCF) to one or more MCF(s) in the network. It allows you to provision an arbitrarily designated master MCF as a source of service data envelopes to be copied to one or more target MCF(s).

The GDM tool can also be used to update the preferred path service data in resource modules (RMs) with the routing data obtained from a transaction file that is created with the Network Traffic Engineering (NTE) tool, or with third party software.

This tool can be used either by means of the graphical user interface or by a command line in a UNIX shell. If you choose to use the command line interface, necessary information is entered as command parameters or it can be kept in a command file. You can also save messages by enabling *Log file* in the graphical user interface.

See “Global Data Manager” (page 127) for more details.

Administration

The Administration submenu provides the following items:

- “Service Data Backup” (page 31)
- “Service Data Restore” (page 32)
- “Software Distribution” (page 32)
- “Software Substitution” (page 32)
- “Service Data Conversion” (page 32)
- “Envelope Editor” (page 33)
- “Network Activation Tool” (page 33)

Service Data Backup

The Service Data Backup tool is an application that provides facilities to create backups for the master configuration files (MCF) on a Backup disk, on a Preside Multiservice Data Manager (MDM) server, or on DPN-100 modules. In the last case, it also triggers the dumping process that transfers backup MCFs from the DPN-100 module to the backup system. The *Dump Start* command overrides the dump schedule at the DPN-100 module.

The Service Data Backup tool allows you to perform the following functions:

- authentication
- connect to the DPN module
- retrieve a list of MCF sets
- select MCF sets for creating backups
- create MCF backups
- activate and terminate MCF dumping process

See “Service Data Backup” (page 161) for more details.

Service Data Restore

The Service Data Restore tool is an application that provides facilities to retrieve backup master configuration files (MCF) from the Backup source and restore the MCFs to a specific DPN module. It also allows you to clean up MCFs stored on a Backup site.

See “Service Data Restore” (page 169) for more details.

Software Distribution

The Software Distribution tool instructs the DPN-100 module to copy images from a Remote Download Site (RDS) back to the DPN-100 module disk. It also allows you to download DPN software images from the Software Distribution Site (SDS) to the DPN-100 modules. This tool is accessible by means of the graphical user interface or a command line interface from a UNIX shell. If you choose to use the command line interface, necessary information is entered as command parameters or it can be kept in a command file. You can also save run time messages in a log file.

See “Software Distribution” (page 179) for more details.

Software Substitution

Software Substitution is an application used to upgrade images from an older release to a newer release on DPN-100 modules. This tool can be used either by means of the graphical user interface or by a command line in a UNIX shell.

See “Software Substitution” (page 193) for more details on images upgrades.

Service Data Conversion

The Service Data Conversion tool allows you to convert service data from one generic to another, one MCF at a time. The new service data can then be used with the new switch software. This tool allows a service data conversion for each new main release.

See “Service Data Conversion” (page 207) for more details.

Envelope Editor

The Envelope Editor application provides a tool that edits and creates service data envelopes or Service Data Area (SDA) headers. The Envelope Editor displays service data in ASCII hex or binary format. In the Envelope Editor, you can perform a number of operations on service data. These operations are:

- retrieve service data for viewing or editing
- add new service data envelopes or SDA headers
- delete service data envelopes or SDAs

See “Envelope Editor” (page 221) for more details.

Network Activation Tool

The Network Activation Tool (NAT) simplifies and automates the activation process for multiple modules in a network. The activation and commit operations can be performed interactively or in batch mode.

See “Network Activation” (page 235) for more details.

Network Reporting System

The Network Reporting System contains the following items:

- “Service Integrity Audit” (page 33)
- “Configuration Reports” (page 34)
- “Configuration Differences” (page 34)

Service Integrity Audit

The Service Integrity Audit item opens the DPN Service Integrity Audit tool. This tool is used to populate the NRS database for DPN and/or Passport modules, and to do the following optional tasks:

- execute the NRS-based Service Integrity checks (NSICs)
- populate the Network Configuration Database (NCD)

See 241-6001-022 *Preside MDM Network Reporting System User Guide* for more details.

Configuration Reports

The Configuration Reports item opens the Configuration Report dialog which lets you produce simple configuration hierarchy reports.

See 241-6001-022 *Preside MDM Network Reporting System User Guide* for more details

Configuration Differences

The Configuration Differences item opens the Configuration Differences dialog which lets you select two sets of configuration data and produce a report on the differences between the two configurations.

See 241-6001-022 *Preside MDM Network Reporting System User Guide* for more details.

Inventory Reports

The Inventory Reports item opens the Inventory Reports tool. This tool lets you report on the hardware and software configuration of selected devices in your network.

See 241-6001-808 *Preside MDM Device Inventory Tools User Guide* for more details.

Command line applications

Configuration for DPN Devices includes the following tools which you can access from a command line:

- “MCF Directory Merge” (page 35)
- “MCF management” (page 35)

MCF Directory Merge

MCF Directory Merge is a UNIX command line application used to merge a selected number of MCF directory files into a new MCF directory file. After the on-switch *tidy* command is executed, the MCF directory merge application allows you to keep three or more bundles on a DPN-100 module. A bundle is an MCF directory and its associated files.

For more information on the *tidy* command, see 241-1001-303 *DPN-100 Operator Commands and Responses*. See “MCF Directory Merge” (page 277) for more details on MCF Directory Merge.

MCF management

MCF management is a set of UNIX utilities used to help manage MCFs on PMs and NMS disks.

See “MCF management” (page 281) for more details.

Provisioning specific services

This document does not cover the provisioning of specific services. See the table “Provisioning document references” (page 35) for references to specific provisioning documents.

Table 1
Provisioning document references

Service	Reference
3270DSP TPAD/HPAD	241-1001-189 <i>DPN-100 3270DSP (TPAD/HPAD) User Guide and Specification</i>
Access_To_Call_Redirection	241-1001-115 <i>DPN-100 Call Redirection System User Guide</i>
Access_To_NUI_Validation	241-1001-112 <i>DPN-100 Off-Network NUI Validation System User Guide</i>
AM/RM modules	241-1001-109 <i>DPN-100 AM and RM Provisioning User Guide</i>
API Service	241-1001-192 <i>DPN-100 API Service User Guide and Specification</i>
Broadcast Server	241-1001-013 <i>DPN-100 Broadcast System User Guide</i>
(Sheet 1 of 3)	

Table 1 (continued)
Provisioning document references

Service	Reference
Call_Redirection_List	241-1001-115 <i>DPN-100 Call Redirection System User Guide</i>
Call Redirection Server, Access to Call Redirection	241-1001-115 <i>DPN-100 Call Redirection System User Guide</i>
Call Services Resource Module (CSRM)	241-7401-110 <i>Passport 7400, DPN-100 Interworking Guide</i>
CASP	241-1001-170 <i>DPN-100 Q.931 and Demand-Established B-Channel User Guide</i>
Cluster Remote Display Unit service (CRDU)	241-1001-014 <i>DPN-100 CRDU TPAD Service User Guide</i>
CUG Mapping	241-1001-181 <i>DPN-100 X.75 Service Specification</i>
Dial-up Network Links	241-1001-015 <i>DPN-100 Network Link and Trunk User Guide</i>
DEB	241-1001-170 <i>DPN-100 Q.931 and Demand-Established B-Channel User Guide2</i>
DORS Provisioning on SNA	241-1001-315 <i>DPN-100 SNA Dial-out Service User Guide</i>
DORS Provisioning on X.32	241-1001-314 <i>DPN-100 X.32 Service User Guide</i>
DPN-100/1	241-1001-171 <i>DPN-100 DPN-100/1 User Guide2</i>
Frame Relay	241-1001-120 <i>DPN-100 Frame Relay Service User Guide and Specification</i>
Gateway Access Service (GAS)	241-1001-165 <i>DPN-100 Gateway Access Service User Guide</i>
HDLC Transparent Data Service	241-1001-158 <i>DPN-100 HDLC Transparent Data Service User Guide</i>
Hunt Group Server	241-1001-117 <i>DPN-100 AM/RM Hunt Group Server User Guide</i>
ITI_Network_Components	241-1001-018 <i>DPN-100 Asynchronous Service Provisioning User Guide</i>
ITI, Point of Sale, ITI Videotex	241-1001-018 <i>DPN-100 Asynchronous Service Provisioning User Guide</i>
LAPB Network Link	241-1001-197, <i>RM Network Link Specification</i>
(Sheet 2 of 3)	

Table 1 (continued)
Provisioning document references

Service	Reference
LAPD X.25	241-1001-194 <i>DPN-100 LAPD/X.25 User Guide and Specification</i>
Local_Trans_Table	241-1001-317 <i>DPN-100 X.25 Gateway User Guide</i>
NCS	241-2001-102 <i>DPN-100 Network Control System User Guide</i>
NDI Server, GMS, Access to NUI	241-1001-112 <i>DPN-100 Off-Network NUI Validation System User Guide</i>
PE_Hunt_Group_Server	241-1001-117 <i>DPN-100 AM/RM Hunt Group Server User Guide</i>
PE_NDI_Server	241-1001-112 <i>DPN-100 Off-Network NUI Validation System User Guide</i>
PE-Universal_Server	241-1001-018 <i>DPN-100 Asynchronous Service Provisioning User Guide</i>
Remote_Trans_Table	241-1001-317 <i>DPN-100 X.25 Gateway User Guide</i>
SABRE TPAD	241-1001-017 <i>SABRE TPAD Service User Guide</i>
SNA Services	241-1001-125 <i>DPN-100 SNA Multihost and LU Multiplexing User Guide</i>
Source Call Router, Destination Call Router	241-1001-111 <i>DPN-100 Routing & Call Establishment General Description</i>
SWIFT BSC TPAD	241-1001-016 <i>SWIFT BSC TPAD Service User Guide</i>
Token-Ring SNA PAD	241-1001-163 <i>DPN-100 Token-Ring SNA PAD Service User Guide</i>
X.224 System	241-1001-118 <i>DPN-100 X.224 System User Guide and Specification</i>
X.25	241-1001-184 <i>DPN-100 LAPB/X.25 Specification</i>
X.25 Gateway	241-1001-317 <i>DPN-100 X.25 Gateway User Guide</i>
X.32	241-1001-314 <i>DPN-100 X.32 Service User Guide</i>
X.75 Gateway	241-1001-181 <i>DPN-100 X.75 Service Specification</i>
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Chapter 2

Uploading and downloading MCFs

Service data created by DPN Devices configuration is stored on disks attached to either a Preside Multiservice Data Manager (MDM) workstation or a DPN-100 module. When a provisioning session is started, the service data must be retrieved from the disk before it can be changed. This operation is called *uploading*. When a provisioning session is completed, the service data is placed back on the disk. This operation is called *downloading*.

Many DPN Device configuration applications involve uploading and downloading service data from DPN-100 modules. Some important fundamentals involved with the upload and download operations are described in the following sections.

Master configuration files

An MCF is a hierarchical set of MC (master configuration) files containing binary service data used by DPN switches. At the top of the hierarchy is the root MCF. Usually, the entire MCF is referred to by the name of the root MCF. A root MCF is specified as follows:

MC.<bundle>.<namsid>.0

where:

bundle

are 1 to 8 alphanumeric or underscore characters

namsid

is a numeric value between 256 to 49151

Example

MC.93061603.9999.0

Each MC file, including the root MCF, contains references to other MC files and/or service data; this forms the hierarchy. This paradigm allows multiple MCFs to share subordinate MC files.

NAMS ID

The NAMS ID is an integer between 256 and 49151 which uniquely identifies a packet module in the network. Configuration for DPN Devices treats the NAMS ID as an optional field when uploading and downloading MCFs.

Note: When uploading an MCF from an NMS disk the NAMS ID is mandatory.

When uploading MCFs, if the NAMS ID is not specified, the NAMS ID of the COMMITTED MCF on the module is used.

When downloading MCFs, if the NAMS ID is not specified, the NAMS ID of the uploaded MCF is used.

Location

MCFs are typically stored on the local disk of the packet module (PM) to which they apply. They may also be stored on the disks of other PMs or an NMS disk.

When uploading or downloading MCFs to an NMS disk, the actual directory used is the one specified in the */opt/MagellanNMS/cfg/PFA.cfg* configuration file. The directory is locally accessible from the Preside Multiservice Data Manager (MDM) host on which the PFA server is running.

Authentication

During upload and download the Preside Multiservice Data Manager (MDM) issues an NCS command to the module containing the DNA of the MDM host. The module then places a call to the Preside MDM. This activity can be done automatically by the application if the module is reachable via NCS and the authentication information is supplied by the user for validation.

Authentication is required to associate the DPN Device configuration session with an OA in the network. The Destination, User ID and Password must be specified before authentication occurs.

All DPN Devices configuration tools use the Connection Manager for authentication. See “Connection Manager authentication” (page 48) for more information.

Manual access mode

DPN Devices configuration has the capability to access a module manually. Manual access mode is used when the call from the module to the Preside Multiservice Data Manager (MDM) needs to be placed manually. For example, this would be necessary if a module was unreachable by NCS.

How to establish a manual call

- 1 In the Preside MDM window, select Configuration -> DPN Devices -> Component Provisioning.

The Command Console Connection Manager dialog opens.

- 2 Select the *Manual Access Mode* check box.
- 3 Click *Authenticate* or hit the return key.

The Command Console Connection Manager dialog is closed.

- 4 Enter the component id in the *Component* area field.
- 5 Click *Expand* or press enter.
- 6 Issue the CALL command either from the local operator console for the module or via the NCS command console. The command syntax is as follows:

```
con pagent call x <x121 address> pagent <lock id>
```

The time in which this command must be entered is specified in the *PFA.cfg* file, the default is 30 seconds.

Note: The userdata field must be PAGENT in order for the call to be established, otherwise the call request will be cleared with a code of C1.

NCS routing

When uploading or downloading MCFs to a module, the specific NCS routing information for locating that module can be specified. This is required if there is a CFNS OA in the NCS hierarchy. This explicit routing information

is used to navigate through the NCS hierarchy from the OA in which the configuration session is logged to the module. For example, the path to <pm_mnemonic> in TOR5 can be specified as:

```
'TOR1-TOR2-TOR5-<pm_mnemonic>'
```

When a backup OA is created it is usually given the same name as the primary OA, except *-B* is added to the end. For example, *OANAME -B* is the backup for *OANAME*. DPN-100 NCS supports path routing to the module when the backup OA becomes the primary OA. Configuration for DPN Devices allows the use of this implicit path routing to access a module. However, Configuration for DPN Devices does not support explicit naming of a path route that includes a backup OA name with the form <*OANAME*> *-B*.

MCF naming

There are five different naming conventions for identifying MCFs when uploading and downloading from the modules.

Active

Active mode allows you to upload the active MCF on a given module.

Note: Active mode does not apply when downloading or to MCFs stored on a NMS disk.

Committed

Committed mode allows you to upload the committed MCF on a given module.

Note: Committed mode does not apply to downloading or to MCFs stored on a NMS disk.

User specified

The most flexible mode, user specified, allows you to explicitly specify the bundle and NAMS ID which comprise the MCF. This mode can be used to name any MCF. For example:

```
MC.MYBUNDLE.9999.0
```

When uploading MCFs in user specified mode, you supply the upload bundle (and optionally NAMS ID). If the specific MCF exists, it is uploaded.

When downloading MCFs in user specified mode, you supply the download bundle (and optionally NAMS ID). If the specific MCF does not exist, it is downloaded. If the specific MCF already exists, the download will fail.

Keyed

Keyed mode interprets the bundle field as a key concatenated with an index. A keyed MCF is specified as follows:

MC.<key><index>.<namsid>.0

where:

key

are 1 to 6 alphanumeric or underscore characters

index

is a numeric value between 00 to 99

namsid

is a numeric value between 256 to 49151

Example

MC.MYKEY44.9999.0

When uploading MCFs in keyed mode, you supply the upload key (and optionally NAMS ID). The latest MCF (the one with the greatest index) is retrieved based on the MCFs matching the pattern as follows:

MC.<key>*.<namsid>.0

Note: If no MCFs exist with that key, the upload fails.

When downloading, the same logic is applied and the next in the sequence is created. The user specifies a download key (and optionally NAMS ID) and Configuration for DPN Devices determines which MCF is to be downloaded.

For example, given the key *MYKEY*, if the following MCFs exist at the specified location,

```
MC.92010110.9999.0
MC.92010120.9999.0
MC.MYKEY19.9999.0
MC.MYKEY20.9999.0
MC.0001019.9999.0
```

MCF *MC.MYKEY20.9999.0* would be the latest.

Dated

Dated mode is similar to keyed mode except the key is a date in the form: *yymmdd* where *yy* represents the year, *mm* the month, and *dd* the day. A dated MCF is specified as follows:

```
MC.<yymmdd><index>.<namsid>.0
```

Example

```
MC.93061612.9999.0
```

When uploading MCFs in dated mode, you supply the upload date (and optionally NAMS ID) and the latest MCF is retrieved based on the MCFs matching the pattern as follows:

```
MC.*.<namsid>.0
```

The bundle portion is processed and those MCFs having an 8-digit bundle where the first 6 digits are a valid date are considered. The MCF with the greatest date not exceeding the upload date is selected.

Note: If no MCFs exist with the upload date, the upload does not necessarily fail; the next latest MCF is chosen.

When downloading, the same logic is applied and the next in the sequence is created. You specify a download date and the system determines which MCF is to be downloaded.

This allows the provisioning system to determine, given a date what the *latest* MCF is relative to that date.

For example, given the date 970101, if the following MCFs exist at the specified location,

```
MC.92010100.9999.0
MC.92010110.9999.0
MC.92010120.9999.0
MC.99010120.9999.0
MC.0001019.9999.0
```

MCF *MC.92010120.9999.0* would be the latest.

Dated algorithm

To account for the year 2000 and beyond, Configuration for DPN Devices interprets 000101 as later than 991231. The base year has been chosen as 1980. This means 800101 precedes 900101 which precedes 000101 which precedes 790101. In other words:

```
if (yy < 80)
    year = 2000 + yy
else
    year = 1900 + yy
```

This means:

```
80 => 1980
90 => 1990
99 => 1999
00 => 2000
10 => 2010
79 => 2079
```

Activation date

In Preside Multiservice Data Manager (MDM), an edition-issue has an activation date associated with it. The activation date is in the following format in the SDA header: *yyyymmddhhmmssss* where *yyyy* is the year, *mm* is the month, *dd* is the day, *hh* is the hour, *mm* is the minute and *ssss* is the seconds.

When a download takes place this activation date is stored in each SDA created (in the SDA header). Although no support exists on-switch to activate service data based on this date, some customers use it to manage their service data and to run network service integrity checks based on this activation date.

When uploading MCFs the activation date may or may not be displayed.

When downloading MCFs in dated mode, the activation date will be set to the download date. Otherwise, the activation date may be specified. If the date is not specified, the activation date of the uploaded MCF is propagated to the downloaded MCF.

Download type

There are two different download types: incremental and complete. Incremental download means only the MC files containing modified components are created. Complete download means all MC files are created.

Chapter 3

Opening Configuration tools

This chapter tells how to open the tools in the DPN Devices configuration toolset either from the command line interface, or from the Preside Multiservice Data Manager (*MDM*) window. It also describes how to use the common features of the tools' graphical user interfaces (GUIs).

Command line interface

See the following sections for information on the applications that you can open from a UNIX command line:

- “Global Data Manager” (page 127)
- “Software Distribution” (page 179)
- “MCF Directory Merge” (page 277)
- “MCF management” (page 281)
- “Service Data Conversion” (page 207)
- “Software Substitution” (page 193)

See “Accessing UNIX” (page 53) for steps on how to get a UNIX shell.

Opening the Configuration - DPN Devices toolset

The Preside MDM window displays all the toolsets available to you.

How to open a tool

- 1 Open Preside Multiservice Data Manager.

The Preside MDM window opens.

Note: The *Toolsets* icon displays the Preside Multiservice Data Manager (MDM) release you are running.

- 2 In the Preside MDM window, select Configuration -> DPN Devices

The DPN Devices toolset submenu opens.

- 3 Select the tool that you want to use.

The tool's main window appears. If you have not yet connected to a device and authenticated, the Command Console Connection Management window opens. See "Using the Connection Manager" (page 51) for more information.

Connection Manager authentication

The Connection Manager (CM) is a server process residing on the Preside Multiservice Data Manager (MDM) workstation used to manage all the network connections originated for your logon session. The CM dialog is displayed when any of the user interface tools are accessed.

Manual access mode allows the user to invoke a provisioning agent on the packet module manually using the *console call* operator command. See 241-1001-303 *DPN-100 Operator Commands and Responses - Volume 1*.

Manual access mode is only available in the Component Provisioning, Envelope Editor and Service Data Conversion tools.

If *Manual Access Mode* is not selected, the application will automatically set up a connection to the packet module after the destination, user id and password are provided.

Connection Management dialogs

The three dialogs described in the following sections are associated with connection management:

- "Command Console Connection dialog" (page 49)
- "Data Viewer Connection dialog" (page 50)
- "Authentication dialog" (page 50)

Command Console Connection dialog

The Command Console Connection dialog allows you to Connect or Disconnect a network destination. It provides the following options:

- *Server Host* this field displays the DPN and Passport server host names. All network communications are performed through these hosts.
- *Destination List* lists all of the network destinations which are available from the current server hosts. The destination is either a destination mnemonic name for the DPN network or a GROUP name for the Passport network. Select a destination to set the destination field and populate the User Id list. Double click on the Destination list to select the destination and perform the default action (you must first supply a user id and password). The state is "CONNECTED" if any active connections exist to the destination. The state is "AUTHENTICATED" if any authentication data is available for the destination.
- *Destination Buttons* allows you to hide/show the DPN or Passport destinations.
- *User Id List* lists all previously authenticated user ids associated with the selected destination. It allows you to re-use authentication data. Select a user id to set the User Id and Password fields. Double click on the user id to set the User Id and Password fields and perform the default action.
- *Destination* you can manually enter the destination into this field or select one from the *Destination* list.
- *User Id* you can manually enter the User Id into this field or select one from the *User Id* list.
- *Password* you can manually enter the Password into this field or select one along with a User Id from the *User Id* list.
- *Message* displays messages related to the current request.
- *Connect* connects to the selected destination.
- *Disconnect* disconnects from the selected destination.
- *Close* closes the dialog without performing any action.

Data Viewer Connection dialog

The Data Viewer Connection dialog allows you to *Connect* to a Passport group. It provides the following options:

- *Server Host* displays the Passport server host name. All network communications are performed through this host.
- *Destination List* lists all of the Passport groups which are available from the current server host. Select a destination to set the destination field and populate the User Id list. Double click on the Destination list to connect to it (you must first supply a user id and password). The state is "CONNECTED" if any active connections exist to the destination. The state is "AUTHENTICATED" if any authentication data is available for the destination.
- *User Id List* lists all previously authenticated user ids associated with the selected destination. It allows you to re-use authentication data. Select a user id to set the User Id and Password fields. Double click on the user id to set the User Id and Password fields and connect.
- *Destination* you can manually enter the destination into this field or select one from the Destination list.
- *User Id* you can manually enter the User Id into this field or select one from the User Id List.
- *Password* you can manually enter the Password into this field or select one along with a User Id from the User Id list.
- *Message* displays messages related to the current connection request.
- *Connect* connects to the selected destination.
- *Cancel* closes the dialog without performing a Connection request.

Authentication dialog

The Authentication Dialog allows you to log on to a network destination, with your User ID and Password. This dialog provides the following information:

- *Server Host* displays the server host name. All network communications are performed through this host.
- *Destination List* lists all the network destinations which are available from the current server host. The destination is either a destination mnemonic name for the DPN network or a GROUP name for the

Passport network. Select a destination to set the destination field and populate the User Id list. Double click on the Destination list to set the destination and perform the authentication (you must first supply a user id and password). The destination state is "AUTHENTICATED" if authentication data is available for the destination.

- *User Id List* lists all previously authenticated user ids associated with the selected destination. It allows you to re-use authentication data. Select a user id to set the User Id and Password fields. Double click on the user id to set the User Id and Password fields and perform the authentication action.
- *Destination* allows you to manually enter the destination into this field or select one from the *Destination* list.
- *User Id* allows you to manually enter the User Id into this field or select one from the *User Id* List.
- *Password* allows you to manually enter the Password into this field or select one along with a User Id from the *User Id* list.
- *CM Manual Mode* allows you to toggle the Manual Mode operation selection during Authentication of some DPN Devices configuration tools.
- *Message* displays messages related to the current authentication request.
- *Authenticate* performs the authentication. The dialog closes upon successful completion. Otherwise, an error message is displayed in the *Message* area. You can choose to alter parameters and try again or to cancel the request.
- *Cancel* closes the dialog without performing an authentication request.

Using the Connection Manager

- 1 From the DPN Devices toolset submenu, choose the tool you wish to run.
The Command Console Connection Management dialog opens

The screenshot shows a window titled "Command Console Connection Management". At the top, it says "Server access via 47.135.50.100". Below this is a table with two columns: "Destination" and "State". The table contains two rows: "BOCN1" and "CORENCS", both with dashed lines in the "State" column. Below the table are three input fields labeled "Destination:", "User Id:", and "Password:", each with a dropdown arrow. To the right of these is a larger "User Id" input field. Below the input fields is a "Messages:" section with a text area containing the text: "Initializing, please wait... Please enter or select a destination." At the bottom are three buttons: "Authenticate", "Cancel", and "Help".

Destination	State
BOCN1	-----
CORENCS	-----

Destination : User Id

User Id :

Password :

Messages:

Initializing, please wait...
Please enter or select a destination.

- 2 Enter the Destination manually or select one from the Destination List.
The selected destination is displayed in the Destination area.
- 3 Enter the User Id and Password.
- 4 Click on the Manual Access Mode box if manual access mode is required.
For information on manual access mode, see "Manual access mode" (page 41).
- 5 Click *Authenticate* or hit the Return key.

If the authentication fails, an error message is displayed. Otherwise, the Command Console Connection Management dialog is closed and the main window of the tool is displayed.

If *Cancel* is selected, a warning message is displayed asking if you want to continue with the session. If *Yes* is selected, the CM dialog is displayed again and the authentication information can be entered. If *No* is selected, the application session will be terminated.

Re-authentication

Re-authentication allows you to access PMs controlled by different OAs without having to restart the tool. It also allows you to switch between manual and automatic access mode. Re-authentication is available in the following tools:

- Component Provisioning
- Envelope Editor
- Service Data Backup
- Service Data Restore
- Global Data Manager
- Software Distribution
- Service Data Conversion

How to re-authenticate from within a tool

- 1 From the *Security...* menu in the title bar of the tool window, choose *Authenticate*.

The Command Console Connection Management dialog is displayed.

- 2 Follow the steps in “Using the Connection Manager” (page 51).

How to close a tool

The tool is closed by selecting Exit from the title bar menu.

- 1 From the *File* menu in the title bar choose *Exit*.

The tool's main window closes.

Accessing UNIX

The following procedure is common for all command line interface applications.

How to access UNIX

- 1 In the Preside MDM window, select System -> Utilities -> UNIX Access

A window outline appears. The outline represents the outline of the UNIX window.

- 2 Drag the pointer to where you want the window to appear, then click select.

The tool's main window appears.

See 241-6001-802 *Preside MDM User Interface Primer* for more information about the Preside Multiservice Data Manager (MDM) workstation interface.

Common GUI functions

The Preside Multiservice Data Manager (MDM) tools have dialogs with pull-down menus with common or similar functions. These include:

- “File menu” (page 54)
- “Options menu” (page 54)
- “Security menu” (page 55)
- “Help menu” (page 55)
- “Working dialog” (page 57)
- “Error dialog” (page 57)
- “Help on Keys” (page 58)
- “Confirmation dialog” (page 57)
- “Message area” (page 58)

File menu

The Options menu contains the following commands:

- *Log to File...* allows you to specify a log file.
- *Stop logging* stops recording output from the tool in the log file.
- *Exit* closes the Preside Multiservice Data Manager (MDM) tool.

Options menu

Run Command File pops up the *Command File* dialog, allowing you to enter a command file, and then performs the operation based on the information in the command file.

Command File dialog

This dialog lets you enter the name of the command file that you wish to use. You can enter the file name directly into the *Command file* data entry field, or you can use the *Directories* and *Files* lists to find the desired command file.

The dialog initially appears with *\$HOME/MagellanNMS* entered. To change directories, either select a directory from the *Directories* list and then select the *Change Directory* button, or double click the directory in the list. You can navigate the directory tree by successively moving through directories in the list.

Once you are in the correct directory, the command file can be chosen either by selecting the command file in the *Files* list and then selecting the *Run Command File* button, or by double clicking the command file in the list. The Command File dialog provides the following items:

- Command File field allows you to enter the required information in order to run an Preside Multiservice Data Manager (MDM) tool's command file
- *Run Command File* button uses the command file in the data entry field to control the tool's operation.
- *Change Directory* button moves from the current directory to the directory selected in the *Directories* list.
- *Cancel* button ignores any changes made in this dialog since it was popped up and returns to the tool's main window.

Security menu

Authenticate... opens the Connection Manager window. See also "Connection Management dialogs" (page 48).

Help menu

This tool supports context-sensitive help in the main window. Pressing the *Context Help* button changes the mouse cursor into a question mark (?). Drag the cursor to the component for which you want help and press the *Select* mouse button.

All pop-up dialogs also have a Help button.

Log file

A log file contains processing and error messages that are produced by the application you are running. Logging can be enabled by means of the graphical user interface (GUI), command line, and command file.

If you want to use a log file through the GUI, you must enable the *Log to File* option from the *File* menu in the title bar. The application also provides the option of writing to a log file by means of the *-log* option in the command line or the command file. If this is chosen, output is directed to the log file as well as to stdout/stderr. The same messages appear in both.

By default, the applications send error messages to stderr, and other messages to stdout. This allows you to redirect output as necessary.

If two or more applications are running concurrently, the log file may be locked by the application. The applications will wait until the log file is unlocked. For more information about log files specific to a tool, refer to the individual tool chapters.

Logging is supported by the following applications:

- Global Data Manager
- Software Distribution
- Master Configuration File Merge
- Service Data Conversion
- Software Substitution

Log File dialog

This dialog lets you enter the name of the log file you wish to use. The file name can be entered directly into the *Log file* data entry field, or the *Directories* and *Files* lists can be used to find the desired log file.

The dialog initially appears with *\$HOME/MagellanNMS* entered. To change directories, either select a directory from the *Directories* list and then select the *Change Directory* button, or double click the directory in the list. You can navigate a directory tree by successively moving through directories in the list.

Once you are in the correct directory, the log file can be chosen either by selecting the log file in the *Files* list and then selecting the *Log to File* button, or by double clicking the log file in the list. The Log File dialog provides the following commands:

- *Log to File* uses the log file in the data entry field to record the messages generated by the tool.
- *Change Directory* moves from the current directory to the directory selected in the *Directories* list.
- *Cancel* ignores any changes made in this dialog since it was opened and returns you to the tool's main window.

Processing dialog

This dialog appears when the tool begins replacing service data. The dialog closes when the replacement process is completed. To stop the replacement process before it completes, select the *Stop* button in the dialog.

Note that if processing is stopped while a download is in progress, the download will be completed before the tool terminates.

Working dialog

This dialog appears when the tool begins performing its function. The dialog window closes when the operation is completed. To stop the operation before it is completed, select the *Stop button* in the dialog.

Error dialog

This dialog appears when a serious error has occurred.

In the case of a communication error, the Preside Multiservice Data Manager (MDM) tool cannot establish contact with the *Connection Manager*. Restart the tool and if the problem persists report it to the System Administrator.

Confirmation dialog

The tool cannot communicate with the network until authentication is successful. Select the *Authenticate* button to retry authentication.

If the *OK* button is selected, the tool will remain active but all functions used during the normal interaction with the network will be disabled.

Message area

All errors, warnings, and status messages generated by the Preside Multiservice Data Manager (MDM) tool in the course of its operations appear in this area. The text field is scrollable so you can read previous messages using the scroll bar.

Verbose

The *Verbose* button either expands or collapses the amount of data that is displayed. Select this button when the expanded display of the tool's actions is required. Deselect this button when detailed display of the tool's actions is not required.

Log Error dialog

You must specify a valid UNIX file name as the log file.

Command Error dialog

You need to specify an existing UNIX file name as the command file.

Transaction Error dialog

You need to specify an existing UNIX file name as the Routing Data Transaction file.

Help on Keys

The keyboard can be used instead of the mouse to perform the default action in a dialog, select a menu item, or execute a command by using an accelerator.

Performing the default action

Dialogs have a default action button, which can be distinguished from other buttons in the dialog by the highlight box around it. The default action is performed when the *Return* key is pressed while keyboard focus is in the dialog.

Menu items

Mnemonics are single characters that uniquely identify a particular menu item. Mnemonics can be used to perform any function on the menu bar. The single character that selects a given menu item is shown by an underscore under that letter in the name of the menu item.

Mnemonics can be used by pressing the *F10* key, entering the mnemonic for the menu, and then entering the mnemonic for the entry you want to use; or by pressing the meta key with the mnemonic for the menu you want to access, followed by the mnemonic for the specific menu item.

For example, to use the *Authenticate* (mnemonic A) item in the *Security* (mnemonic S) menu, use either of the following key sequences:

- F10 S A
- META+S A

Command accelerators

The Preside Multiservice Data Manager (MDM) tool provides the following accelerators:

- *Ctrl+E* exits from the tool.
- *Shift+Help* changes the cursor into a question-mark-shaped pointer. Specific context-sensitive help for a window object may be accessed by placing the cursor over the object and pressing *Select*.

Other GUI functions

Consult the individual tool descriptions for details on functions that are specific to particular tools.

Chapter 4

Component Provisioning

The Component Provisioning tool is used to modify, view, or verify service data that resides in a DPN network.

The Component Provisioning tool allows you to perform the following tasks:.

- Check data entry semantics
See “Type of service data checked” (page 63)
- Verify the sanity of service data at the module level
See “Module-level semantic checks” (page 64)
- Edit or view service data
See “Modified Components area” (page 75)
- Verify the sanity of service data
See “Verifying service data” (page 85)
- Access and navigate through the service data hierarchy
See “Viewing service data” (page 86)
- Manage several service data views, including the committed and activated view
See “Viewing service data” (page 86)

- Manipulate service data components
See “Manipulating service data components” (page 86)
- Download edited service data
See “Downloading service data” (page 90)
- Generate service data reports
See “Generating reports for service data” (page 95)
- Create and manipulate service data templates
See “Templates” (page 98)
- Set user preferences
See “User preferences” (page 114)
- Perform module integrity checks
See “Module integrity checks” (page 121)
- Duplicate service data changes in a module
See “Using the Propagate command” (page 121)
- Broadcast service data status to other applications
See “Working with Context” (page 125)

Note: An MCF must be converted to the latest service data level before trying to modify the MCF using Component Provisioning. If the MCF is not at the latest level, an error message is generated. See “Service Data Conversion” (page 207) for more information on how to convert service data.

Semantic Checks

Module-wide service data semantic checks are performed at different levels and at various times during a Component Provisioning session to ensure service data validity and integrity. Semantic checks are executed as soon as possible to provide timely feedback.

Semantic errors can be indicated by messages or background colors.

Note: When defining any PM mnemonic, do not use a hyphen (-) in the name. Such mnemonics would be copied incorrectly to other modules, causing the provisioning to fail. Underscores (_) however, are acceptable

Type of service data checked

Semantic checks are performed on the following service data:

Field range

Each service data field is validated for a valid range and data type. For certain types of data representations in the user interface, the range validation is automatic, for example, check boxes and buttons. For data entry fields the range is validated with each key stroke and an X icon is displayed to the left of a field to indicate when an error has been detected.

Intra-envelope semantics

Service data checks that involve data fields within the same service data envelope (that is, the same screen) are performed when *Verify* or *Verify and Save* are selected. Errors and warnings are displayed immediately in the *Messages* area of the dialog. All errors must be corrected before it is possible to close the edit dialog. See “Verifying service data” (page 85).

Mandatory component limits

Mandatory subcomponents are automatically presented in a serial manner when a component is added. While cutting or deleting a mandatory component is allowed, a download will not be successful unless the component is present. The limit on the maximum number of components is enforced during the add operation of the component. To find out more about mandatory components, see the component hierarchy section in the service specific documents. For a list of service specific documents, see “Provisioning specific services” (page 35).

Inter-component semantics

Checking is not always performed immediately because of lengthy response times due to a complex semantic or when dependent fields from other edit forms have not been entered yet. In these cases, data semantic checks involving data fields from various envelopes are not performed until the service data is downloaded. All errors and warnings are displayed in the *Download Message* dialog during a download. Text can be copied from the *Messages* area and pasted into another location. See “Module integrity checks” (page 121).

Network-wide semantic checks

In addition to the module-wide data entry semantics provided by DPN Devices configuration network-wide level of check can also be performed by NRS-Based Service Integrity Checker (NSIC). For more information on NSIC, see 241-6001-022 *Preside MDM Network Reporting System User Guide*.

Module-level semantic checks

Module-level semantic checks can be run on components before downloading the changes. This can be a lengthy process if there are several levels of service data under the selected component, for example, if the selected component is the packet module (PM). See “How to perform a Module-level semantic check” (page 64).

Semantic Check Message dialog

A semantic-check message dialog displays messages generated during the semantic check of service data. The error message can be copied and pasted to another window. Click *OK* to dismiss the dialog.

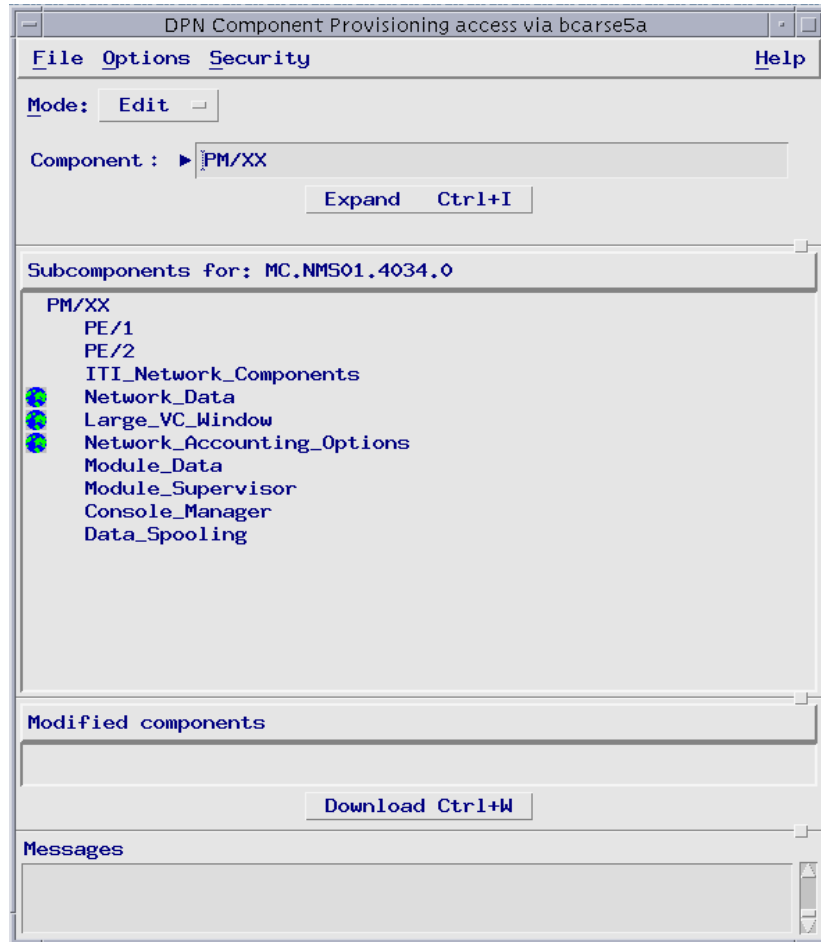
How to perform a Module-level semantic check

- 1 Upload the packet module and make any necessary changes.
- 2 Select the subcomponent in the Subcomponent area.
- 3 Press the mouse menu button in the Subcomponent area and choose *Check Semantic*.

Errors and warnings are displayed in the Semantic Check Message dialog.

- 4 Click *OK* to close the dialog.

Figure 2
Component Provisioning main window



Component Provisioning main window

The Component Provisioning main window contains the following functional areas, which are shown in the figure “Component Provisioning main window” (page 65):

- “Menu Bar” (page 66)
- “Component area” (page 67)

- “Subcomponents area” (page 71)
- “Modified Components area” (page 75)
- “Messages area” (page 76)

Menu Bar

The menu bar is located at the top of the provisioning tool window. Within the menu bar are *File*, *Options*, *Security* and *Help* pull-down menu buttons.

- The *File* menu provides actions to clear module data, stop module logging, download service data and exit the tool. See “File menu” (page 66).
- The *Options* menu is located next to the File menu. The menu contains the following options: Change Upload Preferences, Change Download Preferences, Change Template Preferences, and Save Preferences. See “Options menu” (page 67).
- The *Security* menu is located next to the Options menu. The Security menu contains the *Authenticate* command. See “Security menu” (page 55).

File menu

The *File* menu provides access to commands used to clear all module data, stop module logging, download module data, and exit the tool:

- *Clear All Module Data* discards all current working data for the current view. Any changes not downloaded will be lost. However if any changes have been made, a *confirmation dialog* will appear before the actual command is performed.
- *Stop Module Logging* stops the propagation logging of provisioning actions into a file. The logging is started if *Propagation Logging* is selected in the *Upload Preferences dialog*.
- *Download* downloads all service data to the location specified in the *Download Preferences dialog*. Module data will be cleared from the tool after a successful download.
- *Exit* exits the Component Provisioning session.

Options menu

The *Options* menu provides access to commands used to manipulate user option preferences. The commands available are:

- *Change Upload Preferences...* displays a dialog which allows the manipulation of user preferences related to the uploading of MCFs. For example you can specify that the active MCF from the default PM should always be uploaded, regardless of the PM entered. See “Upload preferences” (page 115).
- *Change Download Preferences...* displays a dialog which allows the manipulation of user preferences related to the downloading of MCFs. For example you can specify that prior to downloading an MCF, you should be presented with a confirmation dialog. See “Download preferences” (page 118).
- *Change Template Preferences...* displays a dialog which allows the manipulation of user preferences for the loading and deletion of templates. For example, you can specify that prior to deleting a template, you should be presented with a confirmation dialog. See “Template preferences” (page 99).
- *Change Custom Form Preferences...* displays a dialog that allows you to customize the user preferences for custom form selection. For example, you can specify workstation custom forms, user custom forms, or both. See “Custom form preferences” (page 113).
- *Save Preferences* saves the current user preferences to the file `/<x>/MagellanNMS/ProvisioningUser.cfg`, where `<x>` is the user's home directory.

Security menu

See “Security menu” (page 55) for details.

Help menu

See “Help menu” (page 55) for details.

Component area

The Component area, located just below the menu bar, displays a *Mode* option button, a *Component* data entry field and an *Expand* push-button. The *Mode* menu button selects whether you can change (*Edit*) or display (*View*)

the components. Use the *Component* data entry field to specify the component you wish to work with. Components are identified by the component name followed by a "/" and the component value. Several hierarchical components may be specified at one time. The *Expand* button expands the component you have entered by listing all subcomponents in the Subcomponent area.

Mode option button

The *Mode* option button in the main window allows you to change the mode of a provisioning session to one of the following:

- *Edit* allows changes to the service data and downloading the modified view. When the *Edit* mode is selected, all modification commands are enabled. The modification commands are: *Edit*, *Add*, *Cut*, *Delete*, and *Paste*.
- *View* only allows you to view the service data, copy desired components, create templates, and generate service data reports. No service data modifications or downloads can be performed in this mode.

Note: If an attempt is made to change the *Mode* during a provisioning session, a dialog will be displayed asking the user to confirm the mode change. If *Yes* is selected, the uploaded provisioning data will be cleared regardless of any possible changes made to the current view.

Component data entry field

This field specifies the component with which you wish to work. The components are identified by a component name followed by a '/' followed by a component value. Several hierarchical components may be specified at one time. For example, PM/abcd PE/1 PI/1 PO/1 would identify port 1 on PI 1 for a module with a mnemonic of 'abcd'.

To display the component data entry pop-up menu, position the mouse pointer in the component data entry field and press the right mouse button. The following commands are available:

- *Edit...* creates an Edit area for the currently selected component. More than one Edit area can exist simultaneously.
- *View...* creates an edit area for viewing service data. All editing commands that are common to the Edit area are disabled when the view command is invoked.

- *Cut Component* removes the selected service data component and places it in a cut/copy area. This only operates on components below the PM level.
- *Copy Component* copies this component and all levels of subcomponents below it into a copy area.
- *Paste Component* adds the last copied or cut components below the currently selected component, if appropriate. See also “Paste Component” (page 69).
- *Delete Component* deletes a component, such as PEs, PIs, POs and envelopes from the service data when selected.
- *Add...* adds a component to the service data instance hierarchy. You can add a component that is a subcomponent of the selected component.
- *Add without Forms...* is not applicable for DPN.
- *Create module* creates a new view of the specified module. Edit forms for all mandatory subcomponents are displayed.
- *Expand all* displays all levels of subcomponents below the selected component.
- *Put context* generates a component name and sets a Network Model context for another application based on the current component name.
- *Get context* sets the current component name based on the current DPN Network Model context.
- *Cut, Copy, Paste, Delete, Select All, Deselect All* are standard commands that enable you to manipulate the contents of data entry fields.

Paste Component

The *Paste component* cascading menu is used to paste the last cut or copied component below the current component in the service data hierarchy. The component can be pasted as is (when doing a move) or with different keys (when copying an existing component).

Change keys changes the key values. As the pasting operation proceeds, all components that have key values have a dialog displayed for them. The key value can be changed at this time. Examples of key values are the cug index for a CUG or the port number for a port (PO).

Use existing keys uses the existing key values, therefore, no prompts for key values appear. If duplications are encountered the paste operation aborts.

Create module

The Create module command creates essential components, known as mandatory components that are necessary for each module.

How to create a module

- 1 Enter the name of the new module in the Component area.
- 2 Press the mouse menu button in the Component area and choose Create module....

Dialogs appear sequentially, prompting you for mandatory information for the new module. This new information is displayed in the Modified components area.

- 3 To display the subcomponents of the module, select the module and choose *Expand* from the *Subcomponents* menu.

Expand button

The *Expand* button takes the specified component in the Component area and displays all its subcomponents in the Subcomponents area.

Specifying a component

The Component area of the Component Provisioning tool is used to specify an existing DPN-100 module component and optionally subcomponents.

How to specify a component in the component area

- 1 Click select in the *Component* area.
- 2 Enter the component name.

When specifying a component the proper prefixes and syntax must be used. PM/<module_name> identifies the packet module, PE/<#> identifies the PE number, PI/<#> identifies the PI number and PO/<#> identifies the port number.

- 3 Press *Return* or click *Expand*.

When *Return* or *Expand* is selected, the system attempts to upload the bundle. If *Return* is selected, the module will not appear expanded in the *Subcomponents* area. If the upload fails, an error message is displayed in the *Messages* area.

Note: Once the operation is selected, a dialog may appear requesting either *Bundle*, *NAMS ID*, or *Location* for a particular view of service data, or any combination of the options depending on the upload user preferences selected.

- 4 Enter the Bundle, Namsid, and Location.
- 5 Click OK.

The tool establishes a call to the selected DPN-100 module and accesses service data for the selected component.

Question dialog

This dialog presents a question, which may contain several lines of scrollable text. The text can be copied and pasted to another window. The *Yes* button answers the question in the affirmative and action will be taken in the context of the question. The *No* button answers in the negative.

Error dialog

This error dialog presents error messages to the user. Each message may contain several lines of text which can be scrolled. The text can be copied and pasted to another window. The *OK* key acknowledges the error dialog.

Subcomponents area

The *Subcomponents* area, located just below the *Component* area, consists of a multiple-line display. You can use this area to view and manipulate the subcomponents of the component listed in the *Component* area. This area graphically displays the structure of service data. It can be a valuable aid in locating unfamiliar service data.

Components with attribute/key values that must be available or unique throughout the entire network (i.e., network-wide data) have a small icon to their left.

Initially, the components displayed in the *Subcomponents* area all have the standard background color. When you check for semantic errors, the background color changes for each component with an *ErrorState* of “error” or “warning”. “Error” means that major errors are present and the service data cannot be activated. “Warning” means that a configuration problem exists. With a warning, you can still activate the service data but it may cause problems with the switch.

See also “Using the Subcomponents menu” (page 72).

Using the Subcomponents menu

To display the subcomponent pop-up menu, position the mouse pointer on the desired subcomponent data and press the right mouse button. The following commands are available:

- *Edit...* creates an *Edit* area for the currently selected component. More than one *Edit* area can exist simultaneously.
- *View...* creates an edit area for viewing service data. All editing commands that are common to the *Edit* area are disabled when the *View* command is invoked.
- *Cut Component* removes the selected service data component and places it in a cut/copy area. This only operates on service data components below the PM level.
- *Copy Component* for the selected component, copies all levels of subcomponents and the service data for these subcomponents into a copy area.
- *Paste Component* adds the last copied or cut components below the currently selected component, if appropriate. See also “Paste Component” (page 69).
- *Delete Component* deletes a component, such as PEs, PIs, POs and envelopes, from the service data when selected.
- *Add...* adds a component to the service data instance hierarchy. You can add a component that is a subcomponent of the selected component.
- *Add without forms...* is not applicable for DPN.
- *Expand* displays one level of subcomponent below the selected component.
- *Expand all* displays all levels of subcomponents existing below the selected component.
- *Compress* removes displayed subcomponents of the selected component from the Subcomponents area. Note: Components are not deleted, just hidden from view.

- *Put context* generates a component name and sets a DPN Network Model context for another application based on the current component name.
- *Report...* invokes the *Service Data Reporting* function on the selected component and visible subcomponents.
- *Templates* provides a means to save and reuse portions of service data. The commands in the *Templates* cascade menu are as follows:
 - *Create...* copies the service data into a user specified file for use at a later time.
 - *Delete Component* erases the specified service data template file. The templates for deletion appear within the cascade menu.
 - *Use – with forms* sequentially displays all editing forms for all components contained in the template. The usable templates appear within the cascade menu.
 - *Use – without forms* adds the service data, but does not display forms. The usable templates appear within the cascade menu.

See also “Templates” (page 98).

- *Custom Forms* allows you to create, change, and delete custom forms. The commands in the *Custom Forms* cascade menu are as follows:
 - *Create* opens the Form Editor with the default form for the specified component. You can save the custom form as a workstation custom form that is accessible to all users of a workstation; or, you can save the custom form as a user custom form that is accessible to an individual user.
 - *Change* edits an existing workstation or user custom form for a specified component. There are two commands in the *Change* cascade menu: *Workstation Custom Form* edits an existing workstation custom form; *User Custom Form* edits an existing user custom form.
 - *Delete* deletes an existing workstation or user custom form for the specified component. There are two commands in the *Delete* cascade menu: *Workstation Custom Form* deletes an existing

workstation custom form; *User Custom Form* deletes an existing user custom form.

See also “Custom Forms” (page 103).

Note: A component’s custom form can be modified by only one user at a time. When one user makes modifications to a components’s custom form, the *Custom Forms* command for that component is disabled to other users.

- *Check Semantic* checks for semantic errors under the selected component. Any semantic errors or warning will be displayed in the *Semantic Check Message dialog*. In addition to producing error and warning messages, the semantic check can change the background color. The background color of components with an *ErrorState* of “error” (or their closest displayed parent) changes to *errorColor*, which is set to the standard Preside Multiservice Data Manager (MDM) color for errors. The background color of components with an *ErrorState* of “warning” (or their closest displayed parent) changes to *warningColor*, which is set to the standard MDM color for warnings.
- *Copy list* copies the text of the subcomponents list into a buffer. You can now paste the list into a file.

Expanding component levels

You can use *Expand* and *Expand All* to expand components into their respective subcomponents.

Expanding from the Component area

From the Component area, you can expand a component into its subcomponents by using the *Expand* button, or by using the *Expand All* option from the component menu. When *Expand all* is selected, the same process occurs as with *Expand*, but all levels of components are displayed in the subcomponents area.

Note 1: It is not recommended that the *Expand all* option be used on larger AM/RM modules, at the module level, as the memory and time required to complete this action may be excessive.

Note 2: With both the *Expand* button and *Expand all*, any display currently in the subcomponents area is replaced

Expanding from the Subcomponents area

The Expand and Expand all menu options can expand a component within the Subcomponents area.

On an *Expand* or *Expand all* operation, the component and its children have their background colors change to show which subcomponents have an ErrorState of “error” or “warning”.

- 1 Select the component within the Subcomponents area that you want to expand.
- 2 Press the mouse menu button in the Subcomponents area and choose Expand or Expand all.

Note: Fully expanding on higher level components extracts large amounts of data from the module and therefore will take longer to process.

Compressing subcomponents levels

The Compress command in the Subcomponents menu is used to hide the display of subcomponents of the selected component.

On a *Compress* operation, the closest parent of a subcomponent with an ErrorState of “error” or “warning” has its background color change to show the existence of a subcomponent error or warning.

- 1 Select the component you want to compress.
- 2 Press the mouse menu button the Subcomponents area and choose *Compress*.

All subcomponents listed under the selected components are removed from the list.

Modified Components area

The *Modified components* area, located below the Subcomponents area, consists of a multiple line display field, a pop-up menu and a *Download* button. You can use the Modified components area to view new or modified components before you download these components.

The Modified Components area has a pop-up menu with the following options are available:

- *Edit...* creates an *Edit* area for the currently selected component. More than one *Edit* area can exist simultaneously.
- *View...* creates an edit area for viewing service data. All editing commands that are common to the Edit area are disabled when the View command is invoked.
- *Copy list* copies the text of the Modified components list into a buffer. You can now paste the list into a file.
- *Discard* removes the selected item(s) from the list of changes which will be downloaded. Any changes made to the discarded subcomponents during the current provisioning session will be lost.
- *Put context* generates a component name and sets a context for another application based on the current component name.

Download button

The *Download* button downloads all modified components. This download button invokes the same download action as the one under the *File* menu.

Messages area

The *Messages* area, located at the bottom the window, is used to display informative messages on the current status of the application. The following options are available:

- *Copy* copies selected text to a buffer.
- *Select all* selects all of the text in the message area.
- *Deselect* deselects the selected text in the message area.

Editing service data

The *edit* option allows you to alter service data information. Edit areas vary depending on the component you are editing. Several edit windows can be opened simultaneously for different components. The *Edit* command is found in the *Component*, *Subcomponents*, and *Modified components* areas.

Figure 3
Edit area dialog

The screenshot shows a window titled "Editing dialog" with a menu bar containing "File", "Edit", "Options", and "Help". Below the menu bar, the text "Editing component: PM/R34 PE/2 PI/2 P0/1 Token_Ring IFRG Direct_Call" and "MCF: MC,NMS01.4034.0 (Default form)" is displayed. The main area contains several configuration parameters, each with a text label and a value field with a dropdown arrow:

Remote DNA :	X76547654765445	Receive throughput : class	9600
Send throughput : class	9600	Receive packet size :	512
Send packet size :	512	CUG index :	0
Reverse charging :	Normal	Priority :	Normal
Routing default :	Throughput	Reliability default :	High

Below the configuration area is a section titled "Messages" with a large empty scrollable area. At the bottom of the dialog are three buttons: "Verify and Save", "Verify", and "Cancel".

Edit/View dialog

The Component Provisioning Edit/View dialog is used to edit, view, or verify service data for DPN components. The Edit/View dialog provides a scrollable data area which contains service parameters that relate to a component. This Edit/View scrollable dialog is also known as a form. If you need, you can concurrently display Edit/View dialogs for multiple components.

The display of Edit/View dialogs can be customized. For information on customizing the Edit/View forms used during component provisioning, see “Custom Forms” (page 103).

The Edit/View dialog contains a menu bar, component title, service data entry area, messages area, and action buttons. See the figure “Edit area dialog” (page 77).

See also...

- “Menu bar” (page 78)
- “Component title” (page 78)
- “Service data entry area” (page 79)
- “Messages area” (page 79)
- “Action buttons” (page 80)
- “Using the Edit/View dialog” (page 80)

Menu bar

The menu bar contains the options *File*, *Edit*, and *Options*. Most of the commands under these options are enabled only when you are working with custom forms. The two options that may be enabled in the Edit/View dialog are:

- *Show hidden*, under *Options*, which displays hidden fields in a lighter-than-normal color.
- *Revert to saved default values*, under *Edit*, which changes the values of all fields in the dialog, including hidden fields, back to the saved defaults. *Revert to saved default values* is enabled only when you are using a custom form in the Edit/View dialog.

For information on all the menu bar options, see “Form Editor window” (page 105).

Component title

The component title displays the full path name of the component being edited or viewed, as well as the MCF bundle file name.

Service data entry area

The service data entry area, located just below the component title, allows you to edit the service data, or, attribute values, for the selected component. Each attribute is represented by one of the following:

- *Data entry field*, which allows you to enter a specific value. You can display the valid values of a data entry field by pressing the menu button while the pointer is on the left arrow symbol beside the data entry field.
- *Radio button box*, which allows you to turn an option on or off.
- *Check button box*, which allows you to select as many options as you need.
- *Data entry list*, which allows you to alter groups of attributes that have dependencies on one another. A service data entry area with a data entry list contains the additional buttons:
 - *Find* finds an entry in the list with the attribute value or values that you specify.
 - *Add* adds a new entry to the list. All values in the new entry need to be valid. If the list is sorted, the new entry is added in the correct location.
 - *Add before* adds a new entry to the list before the currently selected list entry. If the list is sorted or of a fixed size, this button is not enabled. All values in the new entry need to be valid.
 - *Replace* replaces the currently selected list entry with a new entry. All values in the new entry need to be valid.

For help on fields or the component, from the Help menu, select *Help On Service Data Description*. Then, select the specific field or the background. For help on all fields, see 241-2001-340 *DPN-100 Envelope Definitions*.

Messages area

The messages area, located below the service data entry area, displays warning and error messages for the Edit/View dialog.

Action buttons

The action buttons, located at the bottom of the Edit/View dialog, are used to *Verify and Save*, *Verify*, or *Cancel* the service data entries. The buttons are:

- *Verify and Save* verifies the data first then, if correct, saves and closes the Edit/View dialog.
- *Verify* only checks the correctness of the entered data without saving them, and leaves the Edit/View dialog open.
- *Cancel* closes the Edit/View dialog without changing the service data, which reverts to the last update. For the View mode, only the *Cancel* button is enabled.

Using the Edit/View dialog

You can edit service data by following this procedure.

How to edit service data

- 1 Enter the component name and follow the steps in "How to specify a component in the component area" (page 70).
- 2 Select the component you want to edit.
- 3 Press the mouse menu button and choose Edit....

Depending on the component, one of the many possible Edit areas is displayed.

- 4 Edit the information as required.

This is done by selecting buttons and check boxes and adding data in data entry fields and lists. If there is any information about which you are not clear, see "Help menu" (page 55).

- 5 Click Verify to ensure that the changes made to the service data are correct.

In this case the Edit window is not closed and the modified component is placed in the Modified components area.

- 6 Click Verify and Save in the edit area when you complete making changes to the service data.

Changes are verified and the Edit window is closed. The component is placed in the Modified components area of the Component Provisioning window. The changes can now be downloaded to the network component.

- 7 To close the edit window without saving changes, click Cancel.

The edit window is closed with no changes made.

Data entry List

Data entry lists within an edit form allow you to make changes to groups of repeating fields. These lists provide an easy way to handle groups of fields and fields with dependencies on each other by grouping lists, data entry fields and action buttons in one area.

The lists may have a different number of columns depending on the data type. When a data entry list has more than one column, it means that the fields in each column are related and one field cannot be added without adding data to the other fields. Each group of fields in the list has its own column, title and data entry field directly below the list column.

Get List dialog

Each data entry list title contains the Get list information command. This command is important because it will display the information that is particular to that list. This dialog will display the following information.

- How many items are currently in the list.
- How many items are currently selected in the list.
- The maximum number of items allowed in the list.
- If the list is a sorted list, and if so how it is being sorted.
- If the list is a fixed size list.

List Item Menu Commands

The commands that can be performed on the List are grouped in different areas as follows:

- All the commands that operate only on the list portion are in the list title menu.
- All the commands that need a list item to be selected are in the list item menu.
- All the commands that don't need a list item to be selected are represented as buttons at the bottom of the List.

Commands are:

- *Add Before* Adds a new list item before the currently selected item in the list. All of the data entry fields must be filled in with valid values, and the list must not be sorted or of fixed size before this *Add Before* command will become enabled.
- *Copy to entry area* takes the selected command and places its values in the data entry fields below the list. It will not affect the current list item in any way. The data entry field values can then be modified and added/replaced back into the list.
- *Delete* Deletes a list item. The list must not be of fixed size for this menu command to be enabled. All the currently selected items in the list will be deleted. The only way to undo this action is to CANCEL the current edit form and re-edit the same component. Note: You will lose any previous changes made to the edit form if you select CANCEL.
- *Replace* Inserts a new list item in the position of the top most currently selected item and deletes all currently selected items. All of the data entry fields must be filled in with valid values before this command will become enabled.
- *Select all* selects all list items.
- *Deselect all* deselects all currently selected list items.

List Add button

All of the data entry fields must be filled in with valid values before this Add button will become enabled. Then if the Add button is selected, the data from the data entry fields will be added to the list as a new list item.

If the list is a sorted list the new list item will be put in the proper location according to the sort criteria; otherwise the list item will appear at the bottom of the list. After the list item has been added, the data entry fields are erased.

List Find button

The *Find* button is enabled as soon as any one of the data entry fields has a valid value. When the button is selected, all the data entry fields with valid values are used as search criteria and the first list item, from the search start point, matching the values is selected and scrolled into view.

The search start point is the first item in the list, if nothing is selected; otherwise, the search start point is the first selected item in the list.

Hence all list items matching the current search criteria can be found by repeatedly pressing this *Find* button.

Figure 4
Data entry list - example

The screenshot shows a software window titled "Editing dialog" with a menu bar (File, Edit, Options, Help). The main area displays "Editing component: PM/R34 PE/2 PI/2 P0/1 Token_Ring IFRG IP_Filters" and "MCF: MC,NMS01.4034.0 (Default form)". Below this is a section titled "Router Address and Subnet Mask:" containing a table with two columns: "Router address" and "IP Subnet Mask". The table lists five entries, with the first one highlighted. Below the table are two input fields with arrows, containing "10.12.1.1" and "10.12.3.4". At the bottom of this section are buttons for "Find" (Ctrl+F), "Add" (Ctrl+A), "Add before" (Ctrl+B), "Replace" (Ctrl+R), and "Verify and Save". A "Messages" pane is at the bottom, and "Verify" and "Cancel" buttons are at the very bottom.

Router address	IP Subnet Mask
10.12.1.1	10.12.3.4
10.12.1.2	10.12.3.4
10.12.1.3	10.12.3.4
10.12.1.4	10.12.3.4
10.12.1.5	10.12.3.4

10.12.1.1 10.12.3.4

Find Ctrl+F Add Ctrl+A Add before Ctrl+B Replace Ctrl+R

Verify and Save Verify Cancel

The example illustrated in the figure “Data entry list - example” (page 83) represents just one of many possible lists.

An error icon (X) is displayed beside the data entry fields whenever an invalid value is entered. However, this does not prevent you from closing the edit form as the data entry fields are just used for entering service data and are not actually service data themselves. You will lose any changes made to the currently displayed edit form if you select *Cancel*.

How to add data

The *Add* command adds data to the list in the correct position. If there is sorting associated with the list, the new list item is inserted into the list according to the specified sort. Otherwise, the new list item is placed at the bottom of the list.

- 1 Enter the new data in the data entry area.

The add operation will only be possible when the data is valid, as indicated by the enabling or disabling of the *Add* button.

If there is no sorting associated with the list the *Add before* button will be enabled. Otherwise the new entry will be added to the list according to the specified sort.

If there is any information about which you are not clear, see “Help menu” (page 55).

- 2 Click *Add*.

If the data is not valid, an “X” will appear beside it.

- 3 Click *Verify and Save* to close the dialog.

How to replace data

Data can be replaced in the list by entering new data in the data entry area as follows.

- 1 Select the data you want to replace.

The information in the list will be copied into the data entry fields below.

If there is any information about which you are not clear, see “Help menu” (page 55).

- 2 Enter the new data in the data entry area.

- 3 Click *Replace*.

The new data will appear in the list.

- 4 Click *Verify and Save* to close the dialog.

How to find data

Existing data can be found by typing the value in one or more of the fields in the data entry area. If there are no matches, no selecting occurs. Each find must match the data in the data entry area exactly. If the list has multiple columns, only one of the columns must contain valid data to perform a search.

- 1 Enter the data to find in the data entry field.
- 2 Click *Find*.

The Find command starts searching from the currently selected item, or from the top of the list if there is no selected item. The items that are matched are scrolled into view in the list area and are automatically selected.

How to delete data

Fields that have been deleted cannot be undone except by cancelling from the edit form.

- 1 Select one or more items from the list to delete.
- 2 Press the mouse menu button and select *Delete*.

The data is removed from the list.

Verifying service data

Service data must be verified before the changes can be downloaded.

How to verify the service data

- 1 Enter the component name and follow the steps in “How to specify a component in the component area” (page 70).
- 2 Select the component you want to verify the service data.
- 3 Press mouse menu button and select Edit....

The Edit dialog opens showing the service data for the selected component.

- 4 Click *Verify* or *Verify and Save* to return to the main window.

The sanity of the service data is verified. If the data is incorrect, an error is displayed in the Messages area of the Edit dialog. All errors must be corrected before the changes can be saved.

Viewing service data

The **View** command can be selected from the *Component*, *Subcomponents*, and *Modified components* areas. When **View** is selected the edit area is displayed. This window is displayed in read-only mode and changes are not permitted.

How to use the View command

- 1 Enter the component name and follow the steps in “How to specify a component in the component area” (page 70).
- 2 Select the component you want to view.
- 3 Press the mouse menu button and select **View...**

The Edit/View area is displayed with the **Verify** and **Verify and Save** buttons deactivated.

- 4 Click *Cancel* to close the dialog.

Manipulating service data components

Components in the provisioning tool are distinct entities and can be added, deleted, cut, copied, and pasted. The difference between cutting and deleting is that when a component is cut the text is removed from its original location but remains in the copy buffer so that it can be pasted later. When a component is deleted it is not placed in a buffer and therefore cannot be retrieved.

Add windows

An add window allows the creation of new subcomponents. One of the components displayed may be selected. Depending on the component selected, one or more windows will subsequently be displayed. These will be either **KEY** windows or **EDIT** windows, depending on the type of component being added.

The action buttons at the bottom of an *Add* window are:

- **OK** Select this button after the desired component has been selected from the list. One or more dialogs are displayed to allow entry of the necessary service parameters for the component.
- *Cancel* exits the current window without adding the component.

Adding a component

A component can be added from either the *Component* or *Subcomponents* area.

How to add a new component

- 1 Select the component to which the subcomponents will be added.
- 2 Press the mouse menu button in the *Component* or *Subcomponents* area and choose Add...

The Add dialog is displayed containing all of the subcomponents which can be added. Some of the items may be grayed out indicating that they are already present. The mandatory components are automatically added to the selected component.

- 3 Select the appropriate button and click OK.

During the add operation, you may be presented with a series of key and edit dialogs. You must supply the appropriate information for these dialogs to complete the add operation.

Deleting a component

A component can be deleted from the Subcomponents or Component area.

- 1 Enter the component name and follow the steps in “How to specify a component in the component area” (page 70).
- 2 Select the component you want to delete.
- 3 Press the mouse menu button in the Component or Subcomponents area and choose Delete Component.

The deleted component and all of its subcomponents are removed from the display. The modified component appears in the Modified components area ready to be downloaded.

Cutting a component

The Cut Component command is used to remove (in fact, delete service data) the selected component and all of its subcomponents. The component and subcomponents that are cut are placed in the paste buffer.

- 1 Enter the component name and follow the steps in “How to specify a component in the component area” (page 70).
- 2 Select the component you want to cut.

- 3 Press the mouse menu button in the Component or Subcomponents area and choose Cut Component.

The component and subcomponent that are cut are removed from the Subcomponents area if they were visible. The parent of the cut component is displayed in the Modified components area.

Copying a component

The Copy Component command is used to place the selected component and all of its subcomponents in the paste buffer.

- 1 Enter the component name and follow the steps in “How to specify a component in the component area” (page 70).
- 2 Select the component you want to copy.
- 3 Press the mouse menu button in the Component or Subcomponents area and choose Copy Component.

Note: There are no changes to the existing component.

Pasting a component

The Paste Component command is used to add the component in the paste buffer to the selected component. The Paste Component command has a pull-down menu that provides the following options:

- Use Existing Keys - The component and its subcomponents as they exist in the paste area are added. This is normally used for moving a component from one location to another. For example, PE, PI, or PO, to another.
- Change Keys - Prompts for the keys of all components and subcomponents. This is normally used for creating new components similar to existing components but with different keys.

There is only one paste buffer for each user. When a component is cut or copied, the entire paste buffer is over-written with the new component. The paste buffer is shared between the Component Provisioning tool instances and thus the cut/copy/paste component operations are supported between Component Provisioning tool instances for the same user. The Paste Component operation, prior to pasting, checks if the component being pasted

is valid in the hierarchy. If the component is not valid, then the operation is terminated with an error message. For example, a port cannot be pasted under a PE, or an ITI DC cannot be pasted to an X.25 service.

Component Provisioning will prompt for key fields when pasting direct call or permanent virtual circuit (PVC) components if the Change Keys option has been selected. Services that are not supported by Component Provisioning are not prompted for during a paste operation. See “Component Provisioning paste keys” (page 315) for a list of services and key fields that are prompted for during a paste operation.

The component from the paste buffer can be repeatedly pasted because the content of the paste buffer is not altered with the paste component operation.

How to use the Paste component command

- 1 Enter the component name and follow the steps in “How to specify a component in the component area” (page 70).
- 2 Select the component you want to paste under.
- 3 Press the mouse menu button in the Component or Subcomponents area and choose Existing Keys or Change Keys from the Paste Component pull-down menu.

Use Existing Keys from the menu to paste the component with the same keys as in the paste area, or use Change Keys from the menu to paste a component with user selected keys. If you have chosen the Change keys option, you will be prompted for keys for all components in the paste area in a series of separate dialogs.

- 4 Enter the appropriate key and click OK.

The component and subcomponents pasted are displayed in both the Subcomponents and Modified component area.

Discarding modified components

The Discard command from the *Modified components* area menu is used to discard changes that were made to a component that is now listed in the *Modified components* area. The discard operation is hierarchical.

How to use the Discard command

- 1 From the Modified components area, select the component you want to discard.

- 2 Press the mouse menu button in the Modified components area and choose Discard.

The component is removed from the list of components in the Modified components area. All changes that were made to the component during the current session are lost. The component remains as it was when the session was started.

Downloading service data

After you have edited a subcomponent using the edit area, the change is placed in the *Modified components* area. Changes do not affect the module until they are downloaded.

Note 1: Downloading the changes to the individual subcomponent of a module is not permitted.

Note 2: If a download fails because the VC between the Preside Multiservice Data Manager (MDM) workstation and the module is broken, you will be informed of the situation. You then have two choices: download the updated service data to an alternate location, NMS disk or another module; or attempt the download again after the problem with the module VC is fixed. In this situation, the system establishes the VC and downloads the updated service data.

Download button

Download all service data to the location specified in the *Download Preferences* dialog. Module data will be cleared from the tool after a successful download. The download button invokes the same download action as the command under the *File* menu.

Download Message dialog

This dialog displays messages generated during the downloading of service data. The messages may be errors, warnings, or informational messages. Errors must be corrected before a download will succeed. If there are no errors, the service data is downloaded and any warnings or informational messages are returned once the download is complete. Click the appropriate button to dismiss the dialog:

- *Select all* selects all of the text in the message area.
- *Deselect* deselects the selected text in the message area.

- *Copy* copies selected text to a cut buffer.

User Specified dialog

This dialog is presented when uploading or downloading an MCF. You specify the name of the MCF and this information is then used to search for or create an MCF. The format of an MCF is *MC.<bundle>.<namsid>.0*.

Some combination of the following fields or buttons will be present on the dialog:

- *Bundle* indicates the bundle of the MCF.
- *Namsid* indicates the namsid of the MCF.
- *Location* indicates the NCS mnemonic of the PM to access. This may include NCS routing information. For example, to upload from NY1-AM10 you may need to enter NY1-AM10, SUP NY1-AM10, or TOR5 MON1 NY1-AM10. (Note that dashes ('-') are changed to spaces (' ') before calling NCS.)
- *OK* proceeds with the operation.
- *Cancel* cancels the operation.

How to download changed service data

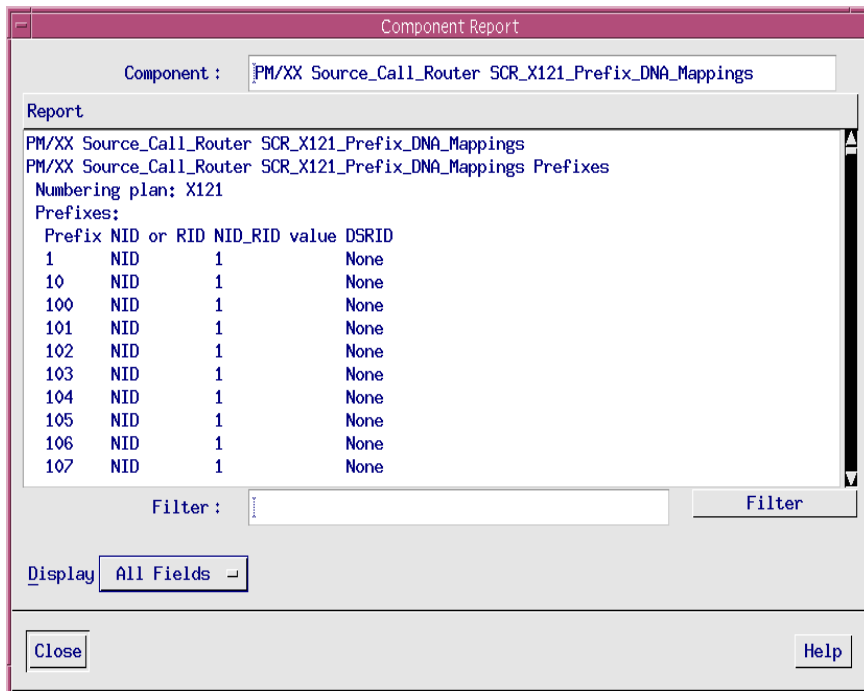
To download changes to a specific DPN-100 module, perform the following steps:

- 1 From the *File* menu choose *Download* or click *Download* on the main window.

The changes located in the Modified components area are downloaded to the DPN-100 module.

Note: There are two download types, incremental and complete. If a complete download fails, re-attempting with an incremental download is not possible.

Figure 5
Service data reporting dialog



Service Data Reports

The *Report* command allows you to quickly select specific service data that is displayed in the Reporting dialog and to send it to a printer or disk. The feature also has filtering capabilities to extract particular subsets of service data. A knowledge of UNIX regular expressions is required to use this capability. See “Generating reports for service data” (page 95) for the procedure.

The Service Data Reporting dialog is illustrated in the figure “Service data reporting dialog” (page 92). The dialog consists of a *title*, *service data list*, *Filter* text field and *Filter button*, and a *Display* button. These items are as follows:

- *Title* displays the title of the report. This field is initially set to the first component of the report. It can be changed to any text label, and will appear at the top of each page on a printout and the top of the file of a saved file.
- *Service data list* displays the actual components and its fields. The list has a menu. The commands in the menu operate on the text in the list. There must be text in the list for the majority of the commands to be active. Some of the commands work only on selected text (for example, *Delete*) and will be disabled if there are no selected lines of text.
- *Filter text field* accepts text which will be interpreted according to the regular expression syntax of the UNIX editor *ed*. A blank screen as the result of a filter operation means that there were no matches. At this point perform an undo and try a different filter.
- *Filter button* applies the text in the adjoining field as a filter to the service data in the list.

For example, typing "DNA" in the filter data entry field then clicking the *Filter* button. If the display is *All fields*, every component with the string "DNA" as part of the component name, or part of any of its field, is displayed. All other components are removed from the list. If the display is *Components*, every component with the string "DNA" as part of the component name, and only those fields that had DNA as a part of the field, label, or value, is displayed.

- *Display option* allows two types of display: *Components* and *All fields*.
 - *Components*: no fields are displayed, unless a filter is applied. Switching to *Components* from *All fields* will always remove all the fields. Performing an *Undo* will also remove any fields placed on the screen by a filter.

Note: This display hides the fields, it does not remove the field data.

- *All fields*: fields for every component are displayed, except for fields that have been permanently removed by a *Delete*.

- *Close* closes the Reporting dialog; settings made are retained for the next call, as long as the Component Provisioning tool is open.
- *Print* command under the *list* menu will print the indicated service data to a local printer. The options are:
 - *All* prints all the data that is currently in the service data area according to the printer options set by the *Print options* dialog.
 - *Selected* prints only the selected lines of data from the service data area according to the printer options set by the *Print options* dialog.

The *print* command can be changed using the *Print options...* command on the main *list* menu. “Print options” (page 94)

- *Save* command under the *list* menu will save the indicated service data in a file on disk as named in the *Save options* dialog. The choices are:
 - *All* saves all of the data that is currently in the service data area to a file specified in the *save file* dialog.
 - *Selected* saves only the selected lines of data from the service data area to a file specified in the *save file* dialog.

The save file name can be changed using the *Save options...* command on the main *list* menu. “Save options” (page 95)

Component reports commands are either visible in the *report* dialog or under the *service data list* popup menu.

Print options

This dialog allows the *print* command options to be altered. See “How to change the report print options” (page 97). Only the UNIX print commands *pr* and *lpr* may be entered in the data entry field. These may have any options the command permits. The *lpr* command must always be present. If the *pr* command is present, it must come before the *lpr* command and be separated by a unix pipe (“|”) character.

Choose *Cancel* to close the *Print options* dialog without changing the original command, or *OK* to save the text of the print command. This text will be used the next time service data is printed.

Save options

Any file name, with leading directory specification, may be entered in the *Save options* data entry field.

Choose *Cancel* to close *Save options* without saving the original text, or *OK* to save the new file name. The new file name will be used the next time a service datum is saved.

Report Error messages

One of the following functions may display an error message:

- *Filtering* The software is filtering text that has been entered does not conform to the syntax rules of the UNIX *ed* editor. Type a new filter.
- *Saving* The file that is specified could not be opened due to lack of permission, or the file was opened and there was not sufficient disk space to write all the data to disk. Verify that the file name is correct, or create more disk space by removing unessential files.
- *Printing* There was insufficient disk space in */tmp* to write the print file. Either reduce the amount of data for printing or clean up the */tmp* directory.

OK error dialog

Acknowledgement of the error message. The dialog is closed.

Generating reports for service data

The following procedures demonstrate the various uses of the service data *Reporting* feature

How to generate a service data report

- 1 Enter the component name and follow the steps in "How to specify a component in the component area" (page 70).
- 2 Expand the top level components into the subcomponents area as desired.
- 3 Select the component in the Subcomponents area. Press the mouse menu button on a component or subcomponent in the Subcomponents area and select Report...

The component that was chosen along with any of its subcomponents that were displayed in the subcomponents area display in the service data area of the reporting dialog.

Note: The top level component is specified once in the title and once at the top line of the report. All components that follow are subcomponents of this top level component, and as such do not display the top level component as the leading portion of their component name.

How to display service data

- 1 To display all the service data associated with a component, select the All Fields button.

All the fields for each component will appear indented below the component name.

- 2 Select the Components button to display only the component level.

Only the component names will be displayed in the list.

How to filter a service data report

The result of filtering service data depends on keywords entered and the button selected in the *Display* area. If the Display is set to Components, only the components and individual fields that contain the keyword are displayed and the display will revert to all fields. If the Display is set to All Fields the components and all their fields are displayed if the component contains the keyword or if one of the component fields contains the keyword.

- 1 Generate a service data report.
- 2 Enter keyword(s) in the Filter area and click Filter.

All service data components containing that keyword will be selected and displayed in the service data display area.

How to remove text from a report

- 1 Select one or more components and lines of service data fields from the service data display area.
- 2 Press menu and choose Delete.

All the selected text is removed from the service data area.

Note: If a component is deleted, all of its related fields are also removed from the report display.

How to save a service data report

- 1 Generate a service data report. See “How to generate a service data report” (page 95) for more information.
- 2 Select the component you want to save.
- 3 Press the mouse menu button in the service data area and choose *Save selected* or *Save all* from the Save pull-down menu.

Save selected will save only selected lines of service data and *Save all* will save all the service data.

Note: The service data will be saved in the default SDReports file in your home directory unless specified otherwise by the Save options... command.

How to change the report file name

- 1 Press the mouse menu button in the service data area and choose Save options....

The Save Report dialog is displayed.

- 2 Enter the directory and file name.
- 3 Click OK.

How to print a service data report

- 1 Generate a service data report. See “How to generate a service data report” (page 95) for more information.
- 2 Select the component you want to print.
- 3 Press the mouse menu button in the service data area and choose Print or Print all from the Print pull-down menu.

Print all will print all the information in the service data area and *Print selected* will print only selected lines of service data.

Note: The printed data will go to the default printer unless it is changed in the Print options...

How to change the report print options

- 1 Press the mouse menu button in the service data area and choose Print Options...

The print options dialog appears.

- 2 Enter the print options.

The `pr` and `lpr` UNIX commands may be entered here. Refer to the UNIX manpages for a description of these options.

- 3 Click OK.

Templates

A template contains a snapshot of service data that is saved in a file with a user-specified name. When a template is used, a copy of that data is added to the current service data. The data in a template can be as small as an individual NCUG_Index or as large as all the service data for an entire PE.

The Templates command found in the Subcomponents menu, provides a pull-down menu that allows you to use, create, and delete service data templates.

Note: The Service Data Conversion tool does not convert templates to the latest software level when a conversion is done. See 241-6001-304 *Preside MDM Configuration Management for DPN Administrator Guide* for more information on converting templates.

Create Template dialog

The *Create Template* dialog is displayed when creating a service data template. The template is created for the component on which the *Create* operation was invoked. By default, the template name will be the name of that component, but it can be changed by entering a different name in the *Template name* data entry field.

Clicking *OK* creates the service data template, store it on disk in the directory specified in *Template Preferences dialog* and make it available for use.

Clicking *Cancel* terminates the Create operation and does not create a template.

Note: The template name may not be blank, and may not contain underscores (_) nor forward slashes (/). The name must be unique with respect to other service data template names.

Template preferences

Template preferences can be modified using the Change Template Preferences option in the *Options* menu. The following options are available:

- setting the directory in which the service data templates are accessed
- disabling the Confirm template deletion dialog.

Pressing *Apply* will set the preferences for the current provisioning session and reload templates from the *Template directory*. Error messages are written to the *Messages* area of the dialog. Pressing *Close* will close the dialog.

Template directory

The name of the directory to which service data templates will be saved and from which they will be accessed.

Confirm Template deletion

If this box is checked, then a confirmation dialog will appear when the *Templates - Delete* command is used. Otherwise, the template is immediately deleted without any confirmation.

Cancel button

Ignores any changes made on this dialog and closes the dialog.

OK button

Sets the templating preferences and closes the dialog. These preferences are now in place for the duration of the provisioning session.

In addition, the templates will be reloaded from the workstation 'Template directory'. A message indicating how many templates were loaded will appear in the Provisioning User Interface message area after the preferences dialog has been closed.

Creating templates

Templates are created from existing service data. This is done by uploading a master configuration file (MCF), and selecting Create from the *Templates* pull-down menu. A maximum of 80 templates can be created for any one component type, for example, PE, PI, port, and NCUG_Index. Once a template is created, it is referenced from the component immediately above from where it was created. For example, a template created for an ITI line is available from the templating menu on the port component (which is the

component immediately above the ITI). Therefore, although an ITI template is created from the ITI templating menu, it is used and deleted from the port templating menu.

How to create templates

- 1 Select the component in the Subcomponents area from which you want to create a template.
- 2 Press the mouse menu button in the Subcomponents areas and choose *Create* from the Templates pull-down menu.

The Service Data Template Creation dialog is displayed and prompts you for a unique location and name.

- 3 Enter the template name.

If no name is specified the system will use the component as the default, for example, ITI.

- 4 Click OK.

The name of the new template that you have just created appears in the Messages area. To verify whether this new template has been created, press the mouse menu button on the parent component and choose Use-with forms from the Templates pull-down menu. You will see the new template.

Deleting templates

Templates that have been previously created and are no longer required can be deleted.

- 1 Press the mouse menu button in the Subcomponents area and choose *Delete Component* from the Templates pull-down menu.
- 2 Click Delete.

Note: You have the option of not having the confirmation dialog appear when you use the Delete command. This feature can be accessed from the Options menu, by selecting *Change Template Preferences...* and clicking Confirm template deletion and turning the checkbox off.

The Delete service data template dialog appears and prompts you for a unique location and name.

- 3 Click OK.

Using templates

Using a template creates service data which is an exact image of the data in the template.

- 1 Select the location of the new service data in the Subcomponents area.
- 2 Choose *Use - with forms* from the *Templates* pull-down menu if you want each editing dialog for the new service data displayed and available for editing.
- 3 Choose *Use-without forms* from the *Templates* pull-down menu to be prompted to enter the new value for any key fields. A separate dialog appears for each key.

Note: The *Use - with forms* option is functionally equivalent to choosing *Use - without forms* and, after the operation completes, individually editing each new component.

Template management

Template files consist of data extracted from an MCF. The data, and the form it is in, may need to change with a new software release even when explicit MCF conversion is not required by the new software release. To ensure that templates work properly with a new software release they need to be regenerated, using the *regentemplates* command (see 241-6001-304 *Preside MDM Configuration Management for DPN Administrator Guide* for details).

Template management recommendations

Nortel Networks recommends that a small set of MCFs (the fewer the better) be maintained on NMS disk for the purpose of maintaining service data for templates. Service data in these MCFs should come from working on-switch service data by cutting and pasting to ensure that service data obtained from templates works properly the first time it is put into service. To start a new template MCF, upload an existing MCF from a Packet Module (or NMS disk) using the Provisioning UI (or the API), and then download it to NMS disk giving it a different name (for example, use a special namsid) that will make it recognizable as a template MCF.

In order to be able to regenerate a template file there must be an MCF containing the service data that is in the template and this MCF must be kept until the template is recreated from another MCF (as a result of MCF conversion or MCF consolidation). A consequence of this is that templates

need to be created from service data that has not been modified since it was uploaded. If changes have been made then the service data must be downloaded first, followed by an upload of the new MCF, and then the templates can be created.

It is not necessary to keep track of the MCFs and component ids that were used to generate a template manually. The MCF and component id are recorded within the template file. To extract this information select a Unix window, go into the template directory and enter the following Unix command:

```
egrep '^MCF=|^Comp_Id=' *
```

This produces a list of template file names and the MCF and the component id used to generate each template file. There are two lines of information per template file. For example:

```
PE_5.sdt08:MCF=MC.95111100.4034.0
PE_5.sdt08:Comp_Id=PM R34 PE 5
PI_5.sdt08:MCF=MC.95111100.4034.0
PI_5.sdt08:Comp_Id=PM R34 PE 5 PI 5
PO_1.sdt08:MCF=MC.95111100.4034.0
PO_1.sdt08:Comp_Id=PM R34 PE 5 PI 5 PO 1
```

To help keep the number of MCFs required for template maintenance to a minimum it is suggested that:

- 1 Creation of new templates should be “batched”

When new templates need to be created make all the service data changes first, download them, upload the new MCF and then generate the templates.

If service data changes are made and downloaded separately for each new template then the number of MCFs that need to be kept for template maintenance is increased unnecessarily.

- 2 MCFs for templates should be consolidated from time to time

As MCFs are updated with new service data for new templates the older templates continue to refer to the older MCFs even though their service data remains unchanged in the new MCFs. To reduce the number of MCFs, recreate the older templates using newer MCFs (see

241-6001-304 *Preside MDM Configuration Management for DPN Administrator Guide* for details) and then use the `deletemcf` command to delete the MCFs that are no longer referenced.

When new software is installed all templates need to be regenerated so this is a good time for a consolidation. Consolidation can be done at other times as needed.

For additional information on managing templates see in 241-6001-304 *Preside MDM Configuration Management for DPN Administrator Guide*.

Alternative template management using MCF backups

If the template management recommendation described in the previous section cannot be implemented, then an alternative procedure is available when both the following are true:

- templates are being generated from MCFs downloaded to a packet Module
- downloaded MCFs are backed up to NMS disk

See 241-6001-304 *Preside MDM Configuration Management for DPN Administrator Guide* for details.

Custom Forms

Provisioning is made easier and more accurate by using custom forms. You can create a custom form for any subcomponent that can be edited or viewed. The custom form enables you to simplify the display of the Edit/View form for a subcomponent. In addition, you can use the custom form to set default values for a subcomponent's fields. To create a custom form for a subcomponent, use the Form Editor.

Once created, a custom form replaces the default form in all operations where Edit/View forms are used. These operations include the following:

- editing
- viewing
- adding
- templating

Using the Form Editor, you can customize the Edit/View form in the following ways:

- hiding the display of fields
- changing the display order and grouping of fields
- assigning your own default values to fields

Hiding the display of fields

You can hide from view the fields that you do not frequently access, greatly simplifying the custom form. The option *Show hidden* allows you to redisplay any hidden fields. For more information on how the Form Editor handles hidden fields, see “Options menu” (page 108).

Changing the display order and grouping of fields

You can rearrange fields within a custom form. Also, you can define new groups, reorder fields within their group, and move fields into other groups.

Assigning your own default values to fields

Default values are assigned by setting the values of the fields. When you save a custom form, the field values are saved as default values. These default values are applied when a custom form is used for any subsequent adding operation.

Form Editor

You create a custom form for a subcomponent by using the Form Editor. When opened, the Form Editor displays an Editing Dialog. When you modify this Editing Dialog and save the changes, you create a custom form. You can save your custom form in one of two ways:

- as a workstation custom form that is accessible to all users of a workstation, or
- as a user custom form that is accessible to one specific user

The following rules apply to any subsequent custom forms, templating, editing, viewing and adding operations:

- A custom form takes precedence over a default form.
- A user custom form takes precedence over a workstation custom form.

- If a custom form is used within a templating operation, it gets any relevant service data values for that subcomponent from the template.

You can override this order by establishing custom form preferences. See “Custom form preferences” (page 113).

See also...

- “Form Editor window” (page 105)
- “Starting the Form Editor” (page 109)
- “Modifying an existing custom form” (page 110)
- “Deleting a custom form” (page 110)
- “Moving fields within a custom form” (page 111)
- “Custom form preferences” (page 113)

Form Editor window

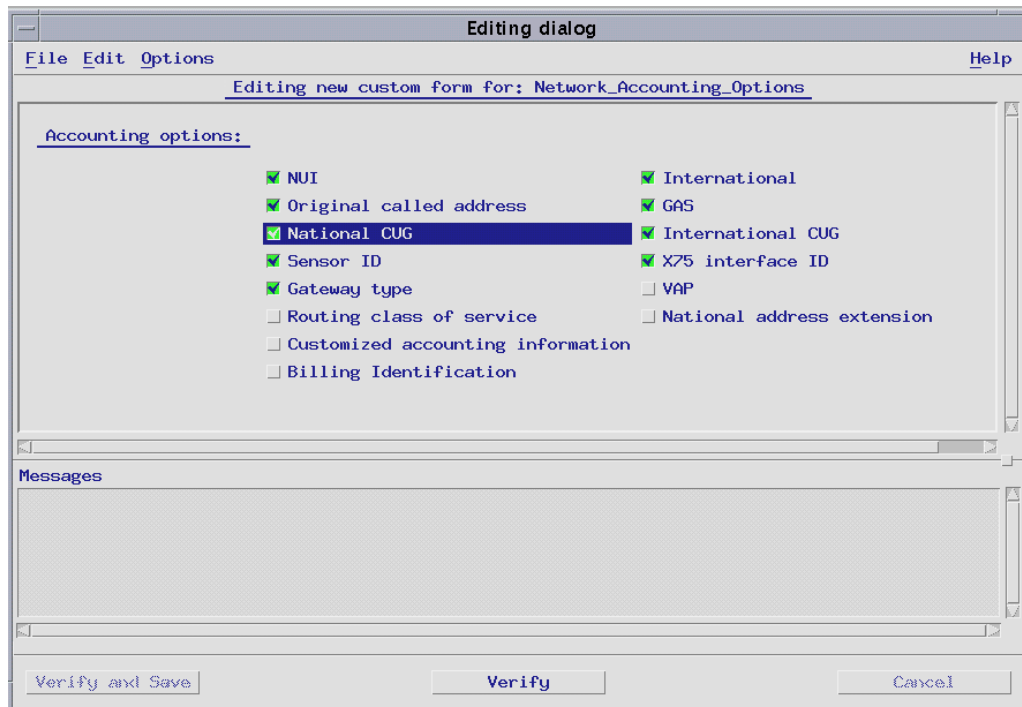
The Form Editor opens and displays an Editing Dialog. The content of this dialog depends on the selected subcomponents.

See also...

- “File menu” (page 106)
- “Edit menu” (page 107)
- “Options menu” (page 108)
- “Service data entry area” (page 108)
- “Messages area” (page 109)
- “Action buttons” (page 109)

For an illustration of the Editing Dialog, see the illustration “The Editing dialog of the Form Editor” (page 106).

Figure 6
The Editing dialog of the Form Editor



File menu

The Form Editor File menu provides commands that allow you to save custom form definitions or close the Form Editor. The *File* menu contains the following commands:

- *Save as workstation custom form* saves the custom form and permits access to this form by any user of the workstation. When saved in this way, a workstation custom form is used in place of the component default form. Workstation custom forms are stored in the directory `/opt/MagellanNMS/cfg/cfd/fdf/`.

- *Save as user custom form* saves the user custom form and only permits access to the form by a specific user. When saved in this way, a user custom form is used in place of a workstation custom form or the component default form. User custom forms are stored in directory *\$HOME/MagellanNMS/cdf/fdf/*.
- *Close* closes the Form Editor.

Edit menu

The Form Editor Edit menu provides commands to display, hide, and group fields. In addition, you can modify and rename groups of fields, and set fields to their default values.

Most of the Form Editor Edit menu items work on the selected fields and groups in the Edit/View form. The selection can be a single field or multiple fields. To select a single field, position the pointer over the field label or frame and click *select*. To add fields to a selection, position the pointer over another field label or frame and, while holding down the Shift key, click *select*. To toggle a field in or out of a selection, click *select* over the field label or frame while holding down the Control key.

Unlike the menu items that work on fields and groups, *Revert to saved default values* operates on the entire form.

The *Edit* menu contains the following:

- *Hide* hides the selected fields. The Form Editor uses one of two modes for hidden fields: *Hide hidden* or *Show hidden*. If the Form Editor is in *Hide hidden* mode, the selected fields are not displayed on the form. If the Form Editor is in *Show hidden* mode, the selected fields are displayed in a lighter-than-normal color. For information on how to change the mode, see “Options menu” (page 108).
- *Unhide* displays the selected field regardless of the hidden mode setting.
- *Group...* groups selected fields. You can specify a group name for the new grouping.
- *Delete group* deletes the selected group. Only an empty group can be deleted. For information on how to empty a group see “Moving fields within a custom form” (page 111).
- *Change group name...* changes the name of the selected group.

- *Revert to saved default values* changes the values of all the fields in the form, including hidden fields, back to their last saved defaults.

Options menu

The Options menu lets you determine how the Form Editor handles hidden fields. The Options menu contains the following:

- *Show hidden* mode displays hidden fields in a lighter-than-normal color. Hidden fields are not disabled. You can interact with the hidden fields in the normal manner, for example, you can change values in hidden fields.
- *Hide hidden* mode removes the display of hidden fields so that they do not appear on the form.

Service data entry area

The service data entry area, located just below the component title, allows you to edit the service data, or, attribute values, for the selected component. Each attribute is represented by one of the following:

- *Data entry field*, which allows you to enter a specific value. You can display the valid values of a data entry field by pressing the menu button while the pointer is on the left arrow symbol beside the data entry field.
- *Radio button box*, which allows you to turn an option on or off.
- *Check button box*, which allows you to select as many options as you need.
- *Data entry list*, which allows you to alter groups of attributes that have dependencies on one another. A service data entry area with a data entry list contains the additional buttons:
 - *Find* finds an entry in the list with the attribute value or values that you specify.
 - *Add* adds a new entry to the list. All values in the new entry need to be valid. If the list is sorted, the new entry is added in the correct location.
 - *Add before* adds a new entry to the list before the currently selected list entry. If the list is sorted or of a fixed size, this button is not enabled. All values in the new entry need to be valid.

- *Replace* replaces the currently selected list entry with a new entry. All values in the new entry need to be valid.

For help on fields or the component, from the Help menu, select *Help On Service Data Description*. Then, select the specific field or the background. For help on all fields, see 241-2001-340 *DPN-100 Envelope Definitions*.

Messages area

The messages area, located below the service data entry area, displays warning and error messages for the Form Editor window.

Action buttons

The action buttons, located at the bottom of the Form Editor window, are the same as the action buttons on the Edit/View dialog. On the Form Editor window, the *Verify and Save* and *Cancel* buttons are not enabled. The remaining action button, *Verify*, checks the correctness of the entered data and leaves the Form Editor window open.

Starting the Form Editor

To create a custom form for a subcomponent, use the Form Editor.

Creating a custom form with the Form Editor

- 1 From the Component Provisioning main window, specify the desired component and subcomponent.
- 2 With the mouse pointer in the subcomponent area, press *the mouse menu button* to display the Subcomponent menu.
- 3 From the Subcomponent menu, select *Custom Forms*.
A cascading menu is displayed.
- 4 From the cascading menu, select *Create*.
The Form Editor opens an Editing Dialog for the specified subcomponent. The fields displayed in this dialog vary according to the selected subcomponent.
- 5 Make appropriate changes to the Editing Dialog.
- 6 To save your custom form, from the File menu select either *Save as workstation custom form* or *Save as user custom form*.

Modifying an existing custom form

To make changes to an existing custom form, use the following procedure.

- 1 From the Component Provisioning main window, specify the desired component and subcomponent.
- 2 With the mouse pointer in the subcomponent area, press *the mouse menu button* to display the Subcomponent menu.
- 3 From the Subcomponent menu, select *Custom Forms*.
A cascading menu is displayed.
- 4 From the cascading menu, select *Change*.
A second cascading menu is displayed.
- 5 From the second cascading menu, select either the *Workstation* or *User Custom Form*.
The Form Editor opens an Editing Dialog for the specified subcomponent displaying the existing custom form. Make your modifications.
- 6 To save your modifications, from the File menu, select the appropriate save command.

Deleting a custom form

To delete an existing custom form, use the following procedure.

- 1 From the Component Provisioning main window, specify the desired component and subcomponent.
- 2 With the mouse pointer in the subcomponent area, press the mouse menu button to display the Subcomponent menu.
- 3 From the Subcomponent menu, select *Custom Forms*.
A cascading menu is displayed.
- 4 From the cascading menu, select *Delete*.
A second cascading menu is displayed.
- 5 From the second cascading menu, select either the *Workstation* or *User Custom Form*.
A Question Dialog that asks for verification to delete the custom form is displayed.
- 6 To delete the custom form, click the OK button.

Moving fields within a custom form

There are several types of fields within the Edit/View dialog. There are text data selector fields, radio button fields, and two types of check button fields. One type of check button field, shown alongside the label *Allowed packet size*, provides a range of values from which you can choose. A second type of check button field, shown under *Call options allowed*, turns settings on or off. The Form Editor handles these on/off check button fields differently from all other field types.

You can move fields and groups of fields within a custom form to rearrange the display of the form according to your needs. There are, however, two restrictions. You can move a field or group only within a single form, not

among different forms. Also, you cannot move a field into a different group type. For example, you cannot group on/off check button fields with other fields.

Before a group can be deleted, it must be empty. Move fields out of a group to create an empty group. When a group becomes empty, a frame is displayed below the group name, outlining the drop location. This permits fields to be moved back into the group, if necessary, at a later time.

Figure 7
Form Editor Field Types

The screenshot shows a window titled "Editing dialog" with a menu bar containing "File", "Edit", "Options", and "Help". The main title bar reads "Editing new custom form for: DNA_CUG".

The main content area is divided into several sections:

- ITI specific parameters:**
 - Port type :** Two radio buttons, "Terminal" (selected) and "Host".
 - Default profile :** A dropdown menu showing "1" and a right-pointing arrow.
- Default packet sizes:**
 - Send :** A numeric input field showing "128" and a right-pointing arrow.
 - Receive :** A numeric input field showing "128" and a right-pointing arrow.
 - Allowed packet size :** A group of checkboxes: "16", "32", "64", "128" (checked), "256" (checked), and "512" (checked).
- Call options allowed:**
 - Out calls only** (unchecked)
 - In calls only** (unchecked)
 - In reverse charged priority** (checked)
 - In reverse charged normal** (checked)

Below the main content area is a "Messages" section with a large empty text area.

At the bottom of the window are three buttons: "Verify and Save", "Verify", and "Cancel".

Moving fields within a form

- 1 Move the pointer over the label or frame of the field to be moved.
- 2 Press and hold down both the Shift key and the *modify* mouse button.
- 3 While holding down the Shift key and the *modify* mouse button, drag the pointer between the two fields of the desired destination.

As you move the pointer across the form, the pointer changes to indicate either a valid or invalid drop location. A valid location is indicated by a page containing an arrow. An invalid location is indicated by a page containing a circle with a line through it.

- 4 At a valid destination, release the middle mouse button and then the Shift key.

Moving groups within a form

- 1 Move the pointer over the group name to be moved.
- 2 Press and hold down both the Shift key and the *modify* mouse button.
- 3 While holding down the Shift key and the *modify* mouse button, drag the pointer to a valid destination.

As you move the pointer across the form, the pointer changes to indicate either a valid or invalid drop location. A valid location is indicated by a page containing an arrow. An invalid location is indicated by a page containing a circle with a line through it.

- 4 At a valid destination, release the middle mouse button and then the Shift key.

Custom form preferences

Two types of custom forms are available: workstation custom forms and user custom forms. Workstation custom forms are accessible to all users of a workstation; user custom forms are accessible to one specific user. You can modify custom form preferences from the Options menu by selecting *Change Custom Form Preferences*. The resulting Custom Form Preferences dialog lists two options: workstation custom forms and user custom forms. Specify your preferences by selecting or de-selecting these options. Four choices are available:

- both options de-selected
When both workstation custom forms and user custom forms are de-selected, only default forms are used for component provisioning.

- workstation custom forms selected
Workstation custom forms are used in place of default forms.
- user custom forms selected
User custom forms are used in place of default forms.
- both options selected
Both types of custom forms are available, however, user custom forms take precedence over workstation custom forms.

To save your custom form preferences to a file, from the Options menu, select *Save Preferences*.

User preferences

User preferences are loaded from the `ProvisioningUser.cfg` file in your home directory when a Component Provisioning session is started. The user profile saves your preferences from one provisioning session to the next. This file is optional, and if it does not exist the system defaults are used.

Preferences can be modified and saved to disk by choosing *Save Preferences* from the *Options* menu. When it is saved, the previous version is renamed to *ProvisioningUser.cfg.old*.

Note: Some options in the preference dialogs may be protected and you may not be able to modify them. This will occur if your system administrator has restricted the options available to you.

See also...

- “Upload preferences” (page 115)
- “Download preferences” (page 118)

Upload preferences

The upload preferences can be modified by choosing *Change Upload Preferences* from the *Options* menu. These preferences allow you to do specify such things as:

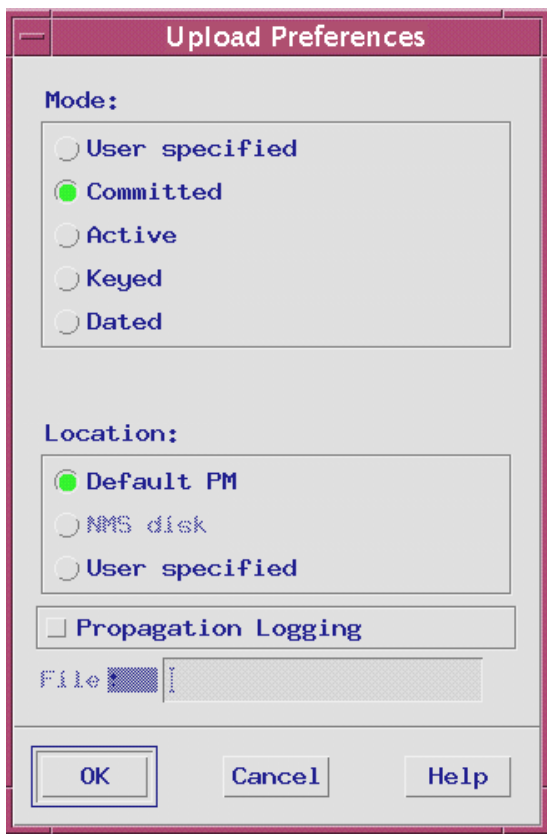
- how you would prefer MCFs to be uploaded by the Component Provisioning tool

MCFs are uploaded when the name of a PM, which is not currently updated, is entered in the Component field.

- if you want propagation log files to be created

See the figure “Upload Preferences dialog” (page 116).

Figure 8
Upload Preferences dialog



Mode indicates the method used to locate the name of an MCF to be uploaded each time an upload takes place. You may select one of the following:

- *User specified* enables you to specify the name of the MCF to be downloaded. You are prompted for the bundle and namsid of the MCF. The MCF matching *MC.<bundle>.<namsid>.0* is created.
- *Keyed* enables you to specify a key in the *Key* field, which is used to search for MCFs.

Note: The *Key* field is not visible until you select *Keyed* mode.

- *Dated* enables you to specify a date in the *Date* field, which is used to search for MCFs.

Note: The *Date* field is not visible until you select *Dated* mode. You can enter *today* or a valid date in the format *yymmdd* in the *Date* field. Entering *today* substitutes the current date at upload time so that you always get the latest service data file. See “Dated algorithm” (page 45) for more information on *Date* format.

Key is only visible when the Keyed radio button has been selected for Mode. When Mode is Keyed, the value supplied for key is used to search for the MCFs with a pattern matching: MC.<key>nn.<namsid>.0, where nn is between 00 - 99. The MCF with the highest index is uploaded. Date is only visible when the Dated radio button has been selected for Mode.

Location indicates the method used to find the location of an MCF. You may select one of the following:

- *Default Destination* downloads the MCF to the location from which it was uploaded. This may be either NMS_Disk or a PM.
- *NMS Disk* writes the MCF to the UNIX directory indicated in the *pfaserv.cfg* file.
- *User specified* prompts for the PM to be accessed.

Propagation Logging creates a log file of all the changes made to MCFs during a session. Logging can be turned on only when an upload is done, but can be turned off any time using the Stop module logging option from the File menu.

File data entry field only appears when logging has been selected. This field allows you to direct the logging output to a specific file, or if left blank, Component Provisioning will create a default file: MC.<identifier>.prop in your home directory. The log files should be stored in a secure directory that is not writable to other users. This is because DPN service data, including plaintext passwords, are stored in these files. By default, your home directory is writable by other members of your group. If the Create module option has been selected from the Component area menu, the default file name will be MC.CREATED.0000.0.prop. These files can then be used to apply the same changes to multiple bundles. This is useful when doing a software migration,

where service data changes to many MCFs is required. See “Using the Propagate command” (page 121) for information on how to propagate changes to many MCFs.

Download preferences

The download preferences can be modified by choosing *Change Download Preferences* from the *Options* menu. These preferences allow you to specify how you would prefer MCFs to be downloaded by the Component Provisioning tool. MCFs are downloaded when *Download* is selected from the *File* menu. Once you have set your preferences they are valid for the duration of the provisioning session.

See the figure “Download Preferences dialog” (page 119).

Figure 9
Download Preferences dialog

Download Preferences

Mode:

☐ User specified

☒ Keyed

☐ Dated

Location:

☒ Default destination

☐ NMS disk

☐ User specified

Key :

Type:

☒ Incremental

☐ Complete

Check:

☒ Incremental MCF

☐ Complete MCF

☐ Minimal MCF

Download Options:

☒ Activatable

☐ Confirm download

☐ Change activation date

Activation date :

OK **Cancel** **Help**

Items in the dialog are as follows:

- *Mode* indicates the method used to name the new MCF that is created each time a download takes place.
- *Location* indicates the method used to determine the destination for the new MCF.

- *Key* is visible only if you select the *Keyed* radio button.
- *Date* is visible only if you select the *Dated* radio button. You can enter *today* or a valid date in the format *yymmdd* in the *Date* field. Entering *today* substitutes the current date at download time so that you always download a new file with the key set to the current date. See “Dated algorithm” (page 45) for more information on *Date* format.
- *Type* indicates the type of download you prefer. *Incremental* will download only the envelopes that have been modified and *complete* will download all the envelopes.
- *Check* allows you to perform a complete, incremental, or minimal MCF service check at download. *Incremental MCF* will only check the MCFs that have been modified and/or expanded. *Complete MCF* will check all of the MCFs in the bundle regardless of whether it has been modified or not. *Minimal MCF* will only check the MCFs that have been added or modified. These MCFs may not be activatable on the PM.
- *Activatable* indicates whether or not the MCF, once downloaded, can be activated on a PM. Before the download operation begins, a dialog appears prompting you to confirm the download parameters. You can either proceed with the selected parameters, or choose to cancel the download and use the *Change Download Preferences* selection from the *Options* menu to change the download options.
- *Confirm Download* displays a dialog when a download is performed. This dialog displays any errors or warnings
- *Change Activation Date* allows you to change the current MCF activation date when it is downloaded. This field appears dimmed out if *Dated* download mode has been selected. You can enter *today* or a valid date in the format *yymmdd* in the *Activation date* field. Entering *today* substitutes the current date. See “Dated algorithm” (page 45) for more information on *Activation date* format.

Module integrity checks

Module integrity checks are required to maintain the sanity, physical integrity, and consistency of service data on the switch. These checks provide the following benefits:

- ability to perform an optional complete module integrity check at download time
- ensure that the service data, which other tools may use, contains no service data check errors

Component Provisioning allows you to perform a complete module integrity check at service data download time to ensure the integrity of the MCFs. This feature does not introduce any new service data checks, only existing semantic checks are performed when Complete MCF service check is selected. See the figure “Download Preferences dialog” (page 119).

Service data checks can be either incremental or complete. *Incremental* checks can be done when the data is changed. They will be executed by selecting *Verify* or *Verify and Save* from the editing window. *Complete* checks can only be done with a download, when all the related data is available. All the service data functions are automatically called to ensure that the service data is correct. Error and warning messages from the service data checks are displayed in the *Download* messages dialog. Any service data errors detected must be corrected before the download can proceed.

The time for a complete service data check on an entire module will vary according to the size of the module. The following message is displayed in the Messages area of the *Confirm Download* dialog:

Download and Complete Service Check results in a long running process. The duration will be proportional to the size of the module.

Using the Propagate command

The propagate command is a UNIX command line application used for making identical service data changes for several bundles in the same module.

Using the propagate command is a two step process: first the propagation log file must be created from a Component Provisioning session and second the propagate command is used from the UNIX command line.

The propagation log file created in the Component Provisioning session must contain only one upload and download session. If the log file contains more than one, the propagate command will issue a message and fail.

When using the propagate command you are prompted for an NCS password only if NCS access was involved during the creation of the log file. In this case the destination and capability id are obtained from the propagation log file. The propagate command sends all its responses to stdout. It issues error messages or incorrect invocation of the command, missing or illegal responses to prompts, failure to provide a valid NCS password and provision of an unsuitable propagation log file.

When the propagate command has completed, you may exit or provide an upload and download mode to propagate more changes. If you continue from this point, the log file with the same NCS access information will be re-used.

The propagate command syntax is as follows:

```
/opt/MagellanNMS/bin/propagate [-h]
```

How to create a propagation log file

- 1 In the Preside MDM window, select Configuration -> DPN Devices -> Component Provisioning.

- 2 From the Options menu choose Change Upload Preferences... .

- 3 Select Propagation Logging.

- 4 Supply an filename for the propagation log file.

If no filename is specified, the system will create a default with a format of: MC.<identifier>.prop.

- 5 Upload the bundle.

- 6 Perform the service data changes.

- 7 Download the changed service data as a new bundle.

The resulting propagation log file is ready to use with the propagate command.

How to use the propagate command

- 1 Open a UNIX xterm.
- 2 Invoke the propagate command, enter:
/opt/MagellanNMS/bin/propagate
- 3 Enter the propagation log file name.
- 4 Specify the upload and download mode.

The command assumes that the mode for uploading and downloading are the same. The default mode is the upload mode used during the creation of the propagation log file or dated if the upload mode was ACTIVE or COMMITTED.

- 5 Specify the Source upload key and Target download key.

The upload and download information is displayed on the screen. Any error messages and notes resulting from the propagate are displayed on the screen.

- 6 Respond to the prompt that appears after downloading: either exit or provide an upload and download mode (or accept the default) and repeat step 4.

Example 1

The following is an example of a successful keyed upload and download.

```
/opt/MagellanNMS/bin/propagate  
Propagation log file = /usr/operator/MC.1234.1234.0.prop  
Upload and download mode [(u)ser specified/(k)eyed/  
(d)ated, default: (k)] = return  
Source upload key= R07  
Target download key [default: R07)] = R08  
  
Upload location: DISK  
Upload namsid: 7501  
Download location: DISK  
Download mode: COMPLETE  
Download namsid: 7501
```

NOTE: MCF MC.R0712.4034.0 uploaded

NOTE: MCF MC.R0800.4034.0 downloaded.

Exit [(x)] or
Upload and download mode [(u)ser specified/(k)eyed/
(d)ated: default (k)] = **x**

Example 2

The following is an example of a dated upload and download that results in an error message being produced. See “Dated algorithm” (page 45) for information on the date format.

/opt/MagellanNMS/bin/propagate

Propagation log file = **/usr/operator/MC.1234.1234.0.prop**

Upload and download [(u)ser specified/(k)eyed/(d)ated:
default, (k)] = **d**

Source upload date = **930129**

Target download date [default: (930129)] = **930129**

Upload location: DISK

Upload namsid: 7501

Download location: DISK

Download mode: COMPLETE

Download namsid: 7501

NOTE: MCF MC.9201290.4034.0 uploaded.

_invoke_ID: 29

WARNING: CONMAND_SDA 0 ICON_SDA 1: At least one
“\NCUG_Index” is required when “Preferred CUG” is
“National: in the \”DNA_CUG” component.

NOTE: MCF MC.92032911.4034.0 downloaded.

Exit [x] or

Upload and download mode [(u)ser specified/(k)eyed/
(d)ated; default: (d)] = **x**

Working with Context

Context allows different applications to communicate the status position of service data. For example, if a given application is working on a specific PE, it can broadcast the information for that PE using the Put context command. Other applications can then retrieve the information by using the Get context command.

Putting context

The Put context command is used to place a component name in the context buffer for another application. The Put context command is available in the *Component*, *Subcomponents*, and *Modified components* area menus. If you select a component from either one of these area menus, use the Put context command from the area in which the component is selected. For more information on *Context*, see 241-6001-011 *Preside MDM Fault Management User Guide*.

How to use the *Put context* command

- 1 Select the component you want to context.
- 2 Press the mouse menu button on a component and choose Put context.

The component name is placed in the Context buffer where it can be retrieved by another application.

Getting context

The Get context command from the *Component* area menu is used to retrieve a component from the context buffer. This command is used when another application has placed a component in the context buffer. For example, when using the Surveillance tools you might notice that there is a problem with one of the components. If you suspect that the problem is a service data problem, you can place the component in the context buffer using the Put context command in the Surveillance tool. You can then open the Component Provisioning tool and retrieve that component using the Get context command.

How to use the *Get context* command

- 1 Place the pointer in the component area.
- 2 Press the mouse menu button and choose Get context.

The component is added to the Component area.

Chapter 5

Global Data Manager

The DPN Global Data Manager tool can be used to duplicate global service data components, or to update routing data in the MCF of one or more resource modules.

Note: An MCF must be converted to the latest service data level before trying to use Global Data Manager. If the MCF is not at the latest level, an error message will be generated. See “Service Data Conversion” (page 207) for instructions to convert service data.

Global Data Manager concepts and procedures

The GDM tool uses the following concepts to perform its tasks:

- Duplication of global data service components
See “Duplicating global service data components” (page 128)
- Partial or complete downloads
See “Complete or incremental downloads” (page 128)
- Using keywords
See “Acceptable keywords for global data components” (page 130)

The GDM tool can be used to perform the following tasks:

- Global data mode-- using the GUI
See “Replacing selected global data components using the GUI” (page 141)
- Global data mode--using the Command line
See “Replacing selected global data components using the command line interface” (page 145)
- Running a log file from the GUI
See “Log file” (page 144)
- Using a command file to apply the transaction file to multiple RMs
See “Preferred service path data command file format” (page 157)

Duplicating global service data components

The Global Data Manager lets you to duplicate global service data components that are common to more than one packet module in a network from one master configuration file (MCF) into one or more MCFs in the network. The tool uploads a target MCF, replaces selected global data components in that MCF with service data from a global data MCF, and then downloads the newly updated target MCF.

Complete or incremental downloads

When the Global Data Manager downloads a new version of a target MCF, it performs a *complete* download if one or all of the following conditions exists:

- the download location differs from the upload location
- the download NAMS ID differs from the upload NAMS ID
- the complete download option is chosen

Global Data Manager displays a warning message when a *complete* download is performed.

If none of the above conditions exist, Global Data Manager performs an *incremental* download (just the differences between the MCFs).

Acceptable keywords for global data components

Global Data Manager understands keywords which map to a list of associated names. When a keyword is selected for update by Global Data Manager, the system processes the information with the list of category names. See table “Global Data Manager keyword mappings” (page 130) for a list of the keywords and category names.

Table 2
Global Data Manager keyword mappings

Keyword	Category name	Category type
Network_Env	Network_Env	1
Large_VC_Window_Env	Large_VC_Window_Env	1
Accounting_Env	Accounting_Env	1
ACR_RID_Redirection	RID_Redirection	1
ACR_Direct_Call_List	Acrd_Direct_Call_List	1
Access_To_NUI_Validation	Anui_Direct_Call_List	1
Source_Call_Router	SCR_Adjacent_NIDS	1
	SCR_RPOA_Mnemonics	2
	SCR_TNIC_NID_Group	1
	SCR_RPOA_NID_Group	1
	SCR_National_NID_Group	1
	SCR_X121	2
	SCR_E164	2
	SCR_Dial_Out_Routing_DNAs	1
Gateway_Call_Router	Gateway_Common_Data	1
	Gateway_Source_Call_Router	1
	GSCR_Primary_Routes	1
	GSCR_Secondary_Routes	1
	GSCR_Calling_Called_Prefixes	1
	GSCR_NID_Mnemonic	1
	SCR_ANID_To_SNRID_Mappings	1
	GSCR_Loadsharing	1
	Gateway_Destination_Call_Router	1
RID_Routing	System_Attributes	1
ITI_Ntwk_Prof_Env	ITI_Ntwk_Prof_Env	1
(Sheet 1 of 2)		

Table 2 (continued)
Global Data Manager keyword mappings

Keyword	Category name	Category type
ITI_Videotex	ITI_Videotex_Menu	
Call_Redirection_Server	REDMAN_SDA	1
	DnicRedirectionEnv	1
NDI_GMS_List	GMS_FILE	1
NCS_Time_Of_Day_Accounting	NCS_TODA	1
(Sheet 2 of 2)		

When *Call_Redirection_Server* is selected, both *REDMAN_SDA* and the *DnicRedirectionEnv* are processed. Processing occurs as described below.

Type 1 Component:

- 1 Find FIRST match in source MCF.
- 2 If found in source MCF, find all matches in target MCF.
- 3 In target MCF, delete and re-add each as copy of component from source MCF.

Type 2 Component:

- 1 Find FIRST match in source MCF. Get all matching siblings.
- 2 If found in source MCF, find FIRST match in target MCF.
- 3 In target MCF, delete all matching siblings and re-add siblings set as copy from source MCF.

Opening the Global Data Manager

From the Preside MDM window, select ->*Configuration* -> *DPN Devices* -> *Global Data Manager*.

The DPN *Global Data Manager* window opens.

Figure 10
Global Data Manager main window

The screenshot shows the 'DPN Global Data Manager' window. It has a title bar with standard window controls. Below the title bar is a menu bar with 'File', 'Options', 'Security', and 'Help'. The main area is divided into several sections:

- Application type:** Two radio buttons, 'Global data' (selected) and 'Routing data'.
- Target module:** A label 'PM :' followed by a text input field.
- Set Source Parameters:** A button.
- Target MCF upload parameters:**
 - Upload mode:** Five radio buttons: 'User specified' (selected), 'Keyed', 'Dated', 'Committed', and 'Active'.
 - Bundle :** A label followed by a text input field.
 - NAMS ID :** A label followed by a text input field.
 - Upload source:** Two radio buttons: 'NMS Disk' and 'PM' (selected), followed by a text input field.
- Target MCF download parameters:**
 - Download mode:** Three radio buttons: 'User specified' (selected), 'Keyed', and 'Dated'.
 - Bundle :** A label followed by a text input field.
 - NAMS ID :** A label followed by a text input field.
 - Download type:** Two radio buttons: 'Incremental' (selected) and 'Complete'.
 - Download target:** Three radio buttons: 'Default destination' (selected), 'NMS Disk', and 'PM'.
- Run:** A button.
- Messages:** A large text area at the bottom for displaying messages.

The DPN Global Data Manager main window contains the following items:

- File menu
See “File menu” (page 54)
- Options menu
See “Options menu” (page 134)
- Security menu
See “Security menu” (page 55)
- Help menu
See “Help menu” (page 55)
- Application type
See “Application type area” (page 134)
- Target module
See “Target module data field” (page 134)
- Set Source Parameter button
See “Set Source Parameters button” (page 134).
- Target MCF upload parameters
See Chapter 5 Target MCF upload parameters area
- Target MCF download parameters
See “Target MCF download parameters area” (page 137)
- Selection list of GD components
See “Selected Global Data Components window” (page 138)
- Run button
See “Run button” (page 138)

- Messages area

See “Messages area” (page 138)

Options menu

The Options menu contains the following commands:

- *Run Command File* allows you to enter the required information in order to run a restore command file.
- *Check Ownership* is no longer used.
- *Ignore Ownership* is no longer used.

Application type area

Enter the application mode (type) in this area. You may select one of the two following application modes.

- *Global data* replaces global data in one MCF with global data from another MCF.
- *Routing data* substitutes routing data in one MCF with routing data information obtained from the routing data transaction file.

Target module data field

Enter the target module in this area. The target module is the module to which the upload target MCF applies. It could be different from the module where the MCF is actually located. If the target module and the upload source are the same module, this field can be left blank.

If you plan to use NCD on the downloaded MCF, and the MCF location and the target module differ, specify the target module here.

Set Source Parameters button

This button opens the *Select Global Data* dialog if the *Global Data* application type is selected. It opens the *Select Transaction File* dialog if the application type is *Routing Data*.

Target MCF upload parameters area

Enter the *upload mode* and *upload source* information in this area. The parameters are used for uploading the target MCF, which is the MCF whose global data is to be updated with the global data from the global data MCF.

Upload mode

Upload mode indicates the search mode that the tool uses to find the name of the target MCF to be uploaded. The *NAMS ID* field is mandatory if uploading from the NMS_DISK. You may select one of five modes.

- *User specified* allows you to specify the name of an MCF used to search for the MCF to be uploaded. Each time an upload takes place, you must specify the *bundle* (also the *NAMS ID* if uploading from the NMS_DISK) of the desired MCF. The search string used is:
MC.<bundle>.<namsid>.0
See also “Bundle data entry field” (page 136) and “NAMS ID data entry field” (page 136).
- *Keyed* allows you to specify the key used to search for the MCF to be uploaded. You must specify a key each time an upload takes place. See also “Key data entry field” (page 136).
- *Dated* allows you to specify the date used to search for the MCF to be uploaded. You must specify a date each time an upload takes place. See also “Date data entry field” (page 136).
- *Committed* uploads the committed MCF on the PM.
- *Active* uploads the active MCF on the PM.

Upload source

Upload source indicates the method used to find the location of the target MCF. You may select one of two modes:

- *NMS disk* searches for the target MCF in the workstation directory indicated by the PFA.cfg file.
- *PM* searches for the target MCF on the PM named in the data entry field.

Key data entry field

This field appears only if the *Keyed* button has been selected. You must specify a key each time an upload or download takes place. The search string used is: *MC.<key>nn.<namsid>.0*, where *nn* ranges from 00-99. The MCF with the highest index (*nn*) is uploaded and a download searches for the highest key and creates a new key.

Date data entry field

Enter the date if the *Dated* button has been chosen. If the *Dated* button has not been chosen, this field will not be visible. The date format is *yymmdd*. For example, 16 June, 1992 is expressed as 920616. Only valid dates are accepted. See “Dated algorithm” (page 45) for more information on the date format.

A dated MCF has the format: *MC.<yymmdd>nn.<namsid>.0*, where *nn* ranges from 00-99. When uploading, using dated mode is the same as keyed mode if an exact match exists for that date. However, when an exact match does not exist, the most recent dated MCF, relative to that date, is uploaded; that is, the dated MCF with the latest date earlier than the given date. When downloading, using dated mode is the same as keyed mode except the activation date in the MCF is set to the given date.

Bundle data entry field

This field appears only if the *User Specified* button is selected. The bundle is used to upload or download an MCF which has the format: *MC.<bundle>.<namsid>.0*. Bundles can be made up of letters, digits, and underscores. They cannot begin with an underscore, and they must be no more than eight characters long.

NAMS ID data entry field

Enter the NAMS ID contained in the MCF name in this field. The NAMS ID must be a number between 256 and 49151 inclusive.

PM data entry field

Enter the PM mnemonic in this field (including NCS routing information).

Target MCF download parameters area

This input field is used to specify the download mode and target for the newly synchronized MCF. If the download NAMS ID is not specified, the NAMS ID of the uploaded MCF will be used. If the download target is set to the *Default* destination, the MCF is downloaded to the location from which it is uploaded.

Download mode

Download mode indicates the mode that the tool uses to name the newly updated target MCF. The download NAMS ID, when not specified, is assumed to be the same as the NAMS ID of the uploaded MCF. You may select either:

- *User specified* allows you to specify the name of the MCF to be downloaded. Each time a download takes place, you must specify the bundle of the new target MCF. The following MCF is created: *MC.<bundle>.<namsid>.0*
- *Keyed* allows you to specify the key to be used to name the new MCF to be downloaded. You must specify a key each time a download takes place. The following MCF is found: *MC.<key>nn.<namsid>.0*, where *nn* ranges from 00-99 and has the highest index (*nn*). A new target MCF with the next index in the sequence is created. The download fails if *MC.<key>99.<namsid>.0* exists.
- *Dated* specifies the date used to search for the MCF to be downloaded. You must specify a date each time a download takes place. A dated MCF has the format: *MC.<yymmdd>nn.<namsid>.0*, where *nn* ranges from 00 to 99. The MCF with the highest index (*nn*) is found, and the next MCF in the sequence is created. The download fails if *MC.<yymmdd>99.<namsid>.0* exists. See “Dated algorithm” (page 45) for more information on the date format.

Download type

Download type indicates whether downloads should be incremental or complete.

- *Incremental* creates only the MCFs that have been modified.
- *Complete* creates all MCFs supported by DPN. These MCFs will be named, based on what you have specified for *Download Mode*.

Download target

Download target indicates the mode that the tool uses to determine the destination for the new MCF. You may select one of three modes:

- *Default destination* downloads the MCF to the target location from which it was uploaded. This location could be either the NMS disk or a PM.
- *NMS disk* downloads the MCF to the workstation directory indicated by the *PFA.cfg* file.
- *PM* downloads the MCF to the PM. A data entry field will be displayed in which the mnemonic of the PM may be entered.

Selected Global Data Components window

This window displays the set of available global data components.

When the process is started, the components you have selected in this list are copied from the global data MCF to the target MCF. The target MCF's old global data components are replaced.

Run button

Click this button to start the replacement process.

Messages area

This area is used to display informative messages on the current status of the application. The following commands are available:

- *Select all* selects all of the text in the message area.
- *Deselect* deselects the selected text in the message area.
- *Copy* copies selected text to a cut buffer.

Component Information dialog

This dialog displays the FA category names associated with the global data component selected from the anchor window components list. These FA categories show which components are actually copied from the global data MCF to the download target MCF. Only expert users are likely to understand FA category names.

Command File

This dialog allows you to enter the name of the command file you wish to use. The file name can be entered directly into the *Command file* data entry field, or the *Directories* and *Files* lists can be used to find the desired command file.

The dialog initially opens with the current directory entered. To change directories, either select a directory from the *Directories* list and then select the *Change directory* button, or double click the directory in the list. You can navigate a directory tree by successively moving through directories in the list.

Once you are in the correct directory, the command file can be chosen either by selecting the command file in the *Files* list and then selecting the *Run Command File* button, or double clicking the command file in the list.

- *Run Command File* uses the command file in the data entry field to control the service data replacement process.
- *Change directory* moves from the current directory to the directory selected in the *Directories* list.
- *Cancel* ignores any changes made in this dialog since it was popped up and returns to the main window.

Global Data dialog

This dialog allows you to specify the Global Data parameters.

Global data MCF upload parameters

Enter the *upload mode* and *source* information in this area. The parameters will be used for uploading the global data MCF, which is the MCF that contains the global data needed to update the target MCF.

Upload mode

Upload mode indicates the search mode that the tool uses to find the name of the global data MCF to be uploaded. You may select one of four modes.

- *User specified* allows you to specify that the name of an MCF will be used to search for the MCF to be uploaded. Each time an upload takes place, you must specify the *bundle* and *NAMS ID* of the desired MCF. The search string used is:

- *MC.<bundle>.<namsid>.0*
- *Keyed* allows you to specify that a key will be used to search for the MCF to be uploaded. You must specify a key each time an upload takes place. The search string used is:
 - *MC.<key>nn.<namsid>.0*, where *nn* ranges from 00 to 99. The MCF with the highest index (*nn*) is uploaded.
- *Dated* allows you to specify that a date will be used to search for the MCF to be uploaded. You must specify a date each time an upload takes place. A dated MCF has the format:
 - *MC.<yymmdd>nn.<namsid>.0*, where *nn* ranges from 00 to 99. See “Dated algorithm” (page 45) for information on the date format.
- Using date mode is the same as keyed mode if an exact match exists for the date. However, when an exact match does not exist, the most recent MCF, relative to the date, is uploaded; that is, the dated MCF with the later date earlier than the given date.
- *Committed* uploads the committed MCF on the PM.
- *Active* uploads the active MCF on the PM.

Upload source

Upload source indicates the method used to find the location of the global data MCF. You may select one of two modes:

- *PM* searches for the global data MCF on the PM named in the data entry field.
- *NMS disk* searches for the global data MCF in the workstation directory indicated by the *PFA.cfg* file.

Selected Global Data Components

This is the set of available global data components.

When the process is started, the components you have selected in this list are copied from the global data MCF to the target MCF. The target MCF’s old global data components are replaced.

A pop-up menu can be opened for each global data component in the list.

- *Component Information* opens the *Component Information dialog* for each component.
- *Select All* selects all the components in the list.
- *Deselect All* deselects all the components in the list.

Transaction File dialog

This dialog allows you to enter the name of the Routing data transaction file you wish to use. The file name can be entered directly into the *Routing data transaction file* data entry field, or the *Directories* and *Files* lists can be used to find the desired Routing data transaction file.

The dialog initially opens with the current directory displayed. To change directories, either select a directory from the *Directories* list and then select the *Change directory* button, or double click the directory in the list. You can navigate a directory tree by successively moving through directories in the list.

Once you are in the correct directory, the Routing data transaction file can be chosen either by selecting the transaction file in the *Files* list and then selecting the *Use Transaction File* button, or double clicking the log file in the list. The following commands are available

- *Use Transaction File* uses the Routing data transaction file in the data entry field for the service data replacement process when the *Run* button on the main window is selected.
- *Change directory* moves from the current directory to the directory selected in the *Directories* list.
- *Cancel* ignores any changes made in this dialog since it was popped up and returns to the main window.

Replacing selected global data components using the GUI

Global data components can be replaced using the graphical user interface (GUI) of the Global Data Manager tool. The GUI can be used with or without a command file. For more information on command files, see “Global data components command file” (page 150).

Replacing selected global data components without a command file

- 1 In the DPN Global Data Manager window, in the *Application type* section select *Global data*.
- 2 As an option, you can enter a PM in the *Target module* area.
This PM indicates the module the MCFs apply to. If this option is specified, the *Upload source* in the *Target MCF upload parameter* section is optional.
- 3 Click *Set Source Parameters*.

The Global Data dialog is displayed.

The screenshot shows the 'DPN Global Data Manager -- Global Data' dialog box. It has a title bar with the text 'DPN Global Data Manager -- Global Data'. The main area is divided into several sections. The first section is 'Global Data MCF upload parameters', which contains 'Upload mode:' with radio buttons for 'User specified' (selected), 'Keyed', 'Dated', 'Committed', and 'Active'. Below this are 'Bundle:' and 'NAMS ID:' text boxes. The next section is 'Upload source:' with radio buttons for 'NMS Disk' and 'PM' (selected), followed by a text box. The third section is 'Selected Global Data Components', which contains a list box with the following items: Network_Env, Large_VC_Window_Env, Accounting_Env, ACR_RID_Redirection, ACR_Direct_Call_List, Access_To_NUI_Validation, Source_Call_Router, Gateway_Call_Router, RID_Routing, ITI_Ntwk_Prof_Env, ITI_Videotex, Call_Redirection_Server, and NDI_GMS_List. The fourth section is 'Messages', which is an empty text area. At the bottom are three buttons: 'OK', 'Cancel', and 'Help'.

DPN Global Data Manager -- Global Data

Global Data MCF upload parameters

Upload mode: ☒ User specified ☐ Keyed ☐ Dated ☐ Committed ☐ Active

Bundle : NAMS ID :

Upload source: ☐ NMS Disk ☒ PM :

Selected Global Data Components

Network_Env
Large_VC_Window_Env
Accounting_Env
ACR_RID_Redirection
ACR_Direct_Call_List
Access_To_NUI_Validation
Source_Call_Router
Gateway_Call_Router
RID_Routing
ITI_Ntwk_Prof_Env
ITI_Videotex
Call_Redirection_Server
NDI_GMS_List

Messages

OK Cancel Help

- 4 In the *Global Data MCF Upload parameters* section select an upload mode and an upload source.
- 5 Select the components you wish to replace.
- 6 Click *OK*.

The main window is displayed.

- 7 In the *Target MCF upload parameters* area select an upload mode and upload source.

If a PM has been specified in the *Target module* area, the *Upload source* is optional.

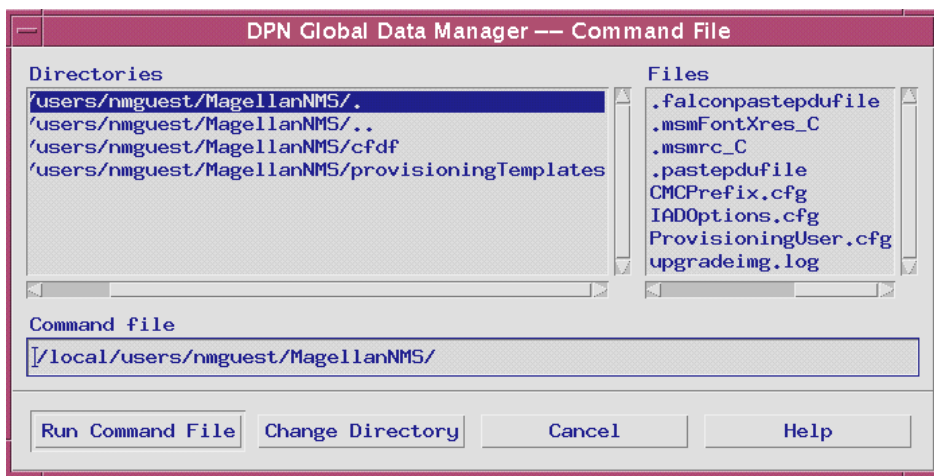
- 8 In the *Target MCF download parameters* area select a download mode, download type and a download target.
- 9 Click *Run*.

Authentication is performed. If for any reason the authentication process fails, an error message appears in the message area. You can modify the authentication parameters by selecting *Authenticate...* from the *Security* menu.

Replacing selected global data components using a command file

- 1 Using a UNIX editor such as *vi*, create a command file as described in "Global data components command file" (page 150).
- 2 On the GDM main window, in *Application type* section select *Global data*.
- 3 From the *Options* menu choose *Run Command File...*

The DPN Global Data Manager - Command file dialog is displayed.



- 4 Select the directory and enter the name of the command file.
- 5 Click *Run Command File*.

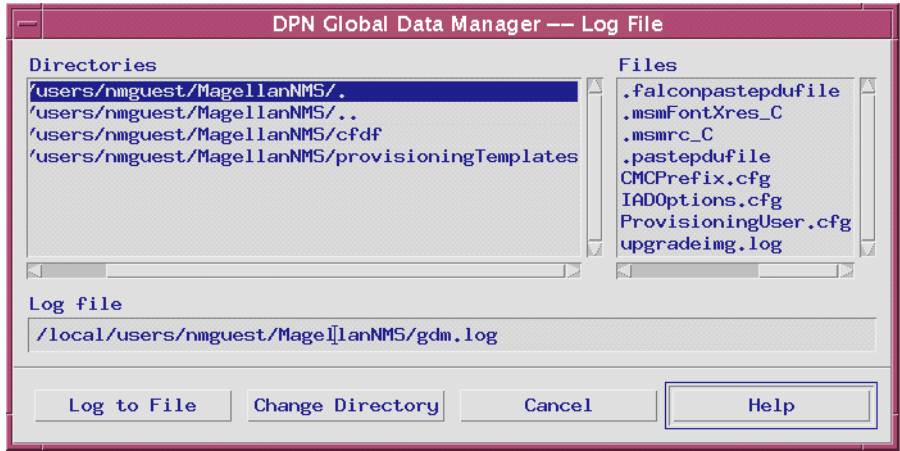
Log file

A log file contains processing and error messages generated by the application. Logging can be enabled by means of the graphical user interface or command line.

Running a log file from the GUI

- 1 From the *File* menu choose *Log to File...*

The Log File dialog is displayed.



- 2 Select the directory and enter the log file name.
The Log file data entry field is displayed with the default log file name.
- 3 Click *Log to File*.

How to stop logging

- 1 From the *File* menu choose *Stop Logging*.

The menu item will toggle to Log to File... .

Replacing selected global data components using the command line interface

Global data components can be replaced using the command line interface of the GDM tool. The command line can be used with or without a command file.

Enter the following command syntax as one continuous command.

Command line syntax without a command file

```
/opt/MagellanNMS/bin/gdm [<target_module>]
-gduploadmode <upload_mode> [<upload_bundle_date_key>
[<upload_NAMS ID>]]
-gduploadlocation <location_mode> [<pm_mnemonic>]
```

```
[-component <component_name>...]  
-uploadmode <upload_mode> [<upload_bundle_date_key>  
 [<upload_NAMS ID>]]  
[-uploadlocation <location_mode> [<pm_mnemonic>]]  
-downloadmode <download_mode>  
 [<download_bundle_date_key> [<download_NAMS ID>]]  
-downloadlocation <location_mode> [<pm_mnemonic>]]  
[-ncs <destination_mnemonic> <capability_id>  
<password>] [-manual] [-overrideownership]  
[-log [<logfilename>]] [-downloadcomplete]
```

Command line syntax with a command file

```
/opt/MagellanNMS/bin/gdm -f <commandfilename>  
-ncs <destination_mnemonic> <capability_id> <password>  
[-log [<logfilename>]]
```

Note: Input is not case sensitive, except for <commandfilename> and <logfilename>.

where:

<target_module>

The module name which the target MCF applies to. Defaults to the upload location.

```
- gduploadmode <upload_mode> [<upload_bundle_date_key>  
 [<upload_NAMSID>]]
```

Specifies the MCF to be uploaded that contains the global data components that are to replace components in other MCFs.

<upload_mode> Indicates the mode to be used for uploading the MCF. Valid: COMMITTED, ACTIVE, USER_SPECIFIED, KEYED, or DATED. Note that upload_location NMS_DISK is not valid in combination with upload_mode COMMITTED or ACTIVE.

<upload_bundle_date_key> Indicates the bundle/key for the upload.

If upload_mode = USER SPECIFIED, this is treated as a bundle.

If upload_mode = KEYED, this is treated as a key.

If upload_mode = COMMITTED or ACTIVE, the bundle_date_key cannot be present.

If `upload_mode = DATED`, this is treated as a date key.

Valid: If a date, only valid dates in the format `yyymmdd`. See “Dated algorithm” (page 45) for more information on the date format. If a key, 1-6 (bundle 1-8) characters (letters, numbers and underscores).

`<upload_NAMSID>` Indicates the NAMS ID for the upload.

Valid: Numeric 256-49151.

`-gduploadlocation <location_mode> [<pm_mnemonic>]`

Specifies the location of the MCF to be uploaded.

`<location_mode>` Indicates the type of location that contains the MCF.

Valid: `USER_SPECIFIED` or `NMS_DISK`.

`<pm_mnemonic>` Provides a means of identifying the PM from which the MCF is to be uploaded. It may include routing information, for example, `SUP TOR5-R99`.

`-component <component_name>`

Optional parameter that specifies the name of a global data component to be replaced. If this parameter is not specified, all supported global data components are replaced.

`<component_name>` The following global data components are supported: `Network_Env`, `Large_VC_Window_Env`, `Accounting_Env`, `Access_To_Call_Redirection`, `Access_To_NUI_Validation`, `Source_Call_Router`, `Gateway_Call_Router`, `RID_Routing`, `ITI_Ntwk_Prof_Env`, `ITI_Videotex`, `Call_Redirection_Server`, `NDI_GMS_List`

`-uploadmode <upload_mode> [<upload_bundle_date_key> [<upload_NAMSID>]]`

Specifies the MCF to be uploaded that contains the global data components to be replaced.

`<upload_mode>` Indicates the mode to be used for uploading an MCF. Valid: `COMMITTED`, `ACTIVE`, `USER_SPECIFIED`, `KEYED`, or `DATED`. Note that `upload_location NMS_DISK` is not valid in combination with `upload_mode COMMITTED` or `ACTIVE`.

`<upload_bundle_date_key>` Indicates the bundle/key for the upload. If `upload_mode = USER SPECIFIED`, this is treated as a bundle.

If upload_mode = KEYED, this is treated as a key.

If upload_mode = COMMITTED or ACTIVE, this cannot be present.

If upload_mode = DATED, this is treated as a date key.

Valid: If a date, only valid dates in the format *yymmdd*. See “Dated algorithm” (page 45) for more information on the date format. If a key, 1-6 (bundle 1-8) characters (letters, numbers and underscores).

<upload_NAMSID> Indicates the NAMS ID for the upload.

Valid: Numeric 256-49151.

-uploadlocation <location_mode> [<pm_mnemonic>]

Specifies the location of the MCF that contains components to be replaced.

<location_mode> Indicates the location of the MCF to be uploaded. Mandatory in routing data transaction file mode. Optional in global data mode. For upload, default is target_module. For download default is upload location. Valid: USER_SPECIFIED or NMS_DISK. Note that location_mode NMS_DISK is not valid in combination with upload_mode COMMITTED or ACTIVE.

<pm_mnemonic> Provides a means of identifying the PM. It may include routing information, for example, SUP TOR5-R99.

-downloadmode <download_mode> [<download_bundle_date_key> [<download_NAMSID>]]

Specifies the MCF into which replacement components are to be downloaded.

<download_mode> Indicates the mode to be used for downloading the MCF. Valid: USER_SPECIFIED or KEYED.

<download_bundle_date_key> Indicates the bundle/key for the download.

If upload_mode = USER SPECIFIED, this is treated as a bundle.

If upload_mode = KEYED, this is treated as a key.

If upload_mode = COMMITTED or ACTIVE, this cannot be present.

If upload_mode = DATED, this is treated as a date key.

Valid: If a date, only valid dates in the format *yymmdd*. See “Dated algorithm” (page 45) for more information on the date format. If a key, 1-6 (bundle 1-8) characters (letters, numbers and underscores).

<download_NAMS_ID> Indicates the NAMS ID for the download. If the NAMS ID is not specified, the NAMS ID of the uploaded MCF is used. For example, if MC.MYBUNDLE.9999.0 is uploaded, and the download_NAMS ID is not specified, NAMS ID 9999 is used for the download. Valid: Numeric 256-49151

-downloadlocation [<location_mode> [<pm_mnemonic>]]

Specifies the location of the MCF into which the replacement components are to be downloaded.

<location_mode> Indicates the location of the MCF to download that contains the replacement components. Valid: USER_SPECIFIED or NMS_DISK. Note that upload_location NMS_DISK is not valid in combination with upload_mode COMMITTED or ACTIVE.

<pm_mnemonic> Provides a means of identifying the PM. It may include routing information, for example, SUP TOR5-R99.

-nsc <destination_mnemonic> <capability_id> <password>

Mandatory option to use network control system (NCS) authentication.

<destination_mnemonic> NCS mnemonic of the operations agent (OA) interface.

<capabilities> NCS capability id

<password> NCS capability password

-manual

Indicates manual NCS access mode. Authentication with NCS is bypassed if this option is specified.

-overrideownership

No longer used.

-log [**<logfile**name>

Option to specify that messages are to be logged to a file.

<logfilename> Absolute or relative path name for the file to which the messages are to be added. If the log file already exists, any additional message information will be appended to the file. Default filename is *gdm.log*. The log file name is case sensitive.

-f **<commandfile**name>

Specifies the name of a command file that contains instructions for replacing global data components.

<commandfilename> The absolute path name for the file that contains the commands. The command file name is case sensitive.

Global data components command file

A command file can be used to replace selected data components. Using a UNIX editor such as vi, create a command file.

The following command line parameters are ignored if the command file (-f) option is specified: *<target_module>*, *-gduploadmode*, *-gduploadlocation*, *-uploadmode*, *-uploadlocation*, *-downloadmode*, *-downloadlocation*

Command file format

A command file accepts three formats of records. These records may be in any order in the file. Each command file record is entered on one line in the command file.

- Global Data MCF record:

```
-gduploadmode <upload_mode> [<upload_bundle_date_key>  
[<upload_NAMS ID>]] -gduploadlocation <location_mode>  
[<pm_mnemonic>]
```

If this record type is specified more than once, the last specification is used.

- Target MCF record:

```
[<target_module>] -uploadmode <upload_mode>
[<upload_bundle_date_key> [<upload_NAMS ID>]]
[-uploadlocation <location_mode> [pm_mnemonic]]
-downloadmode <download_mode>
[<download_bundle_date_key> [<download_NAMS ID>]]
[-downloadlocation <location_mode> [<pm_mnemonic>]]
```

- Miscellaneous parameters:

```
[-component <component_name>..] [-log [<logfilename>]]
```

If more than one <component_name> is specified, each <component_name> is added to the list of components to be processed. If <logfilename> is specified more than once, only the last <logfilename> specified is used.

Example 1

In the following example, the command file turns logging on and puts all logs in a file called *cmd.log*. It then uploads the master user data with key GLOBAL and NAMS ID 4034 (that is, MC.GLOBALxx.4034.0) from the NMS_DISK (n). It then states that the target to be updated has key KA and NAMS ID 4034 (that is, MC.KAxx.4034.0) and is from the NMS_DISK. Once the target is updated it downloads with key KA, using the same NAMS ID and location, that is, MC.KAxx.4034.0 to NMS_DISK.

```
##### Start of command file #####
#log to cmd.log
-log cmd.log

# use master with key=GLOBAL NAMS ID=4034 from NMS_DISK
-gduploadmode k global 4034 -gduploadlocation n

# update R34 with key=KIRK NAMS ID=4034 from NMS_DISK
# download with key=KA NAMS ID=4034 to NMS_DISK
r34 -uploadmode k kirk 4034 -uploadlocation n
-downloadmode k kirk
##### End of command file #####
```

Example 2

In the following example, the command file turns logging on so that all logs will go to the default log *gdm.log*. It indicates the only global component it wishes to upload is the *network_env* component. It will get the data it needs from the MCF with key Global and the default NAMSID. The MCF is residing on PM R34. Then MCFs with key KA and default NAMSID are targeted on PMs R30 through R37. In each case the MCF is found, the *network_env* data updated and the MCF downloaded to the respective PM. As a last step the MCF with bundle 91WK44, default NAMS ID is uploaded from PM R34, the *network_env* data updated, and then updated MCF is downloaded with bundle 91WK44XX, default NAMS ID, to the NMS disk.

```
##### Start of command file #####
# log to default file
-log

# only update network_env
-component network_env

# use master with key=GLOBAL NAMS ID=default from PM
R34

-gduploadmode k global -gduploadlocation user_spec r34

# update target with key=KIRK NAMS ID=default from PM
# download with key=KIRK NAMS ID=default to same PM

r30 -uploadmode k kirk -downloadmode k kirk
r31 -uploadmode k kirk -downloadmode k kirk
r32 -uploadmode k kirk -downloadmode k kirk
r33 -uploadmode k kirk -downloadmode k kirk
r34 -uploadmode k kirk -downloadmode k kirk
r35 -uploadmode k kirk -downloadmode k kirk
r36 -uploadmode k kirk -downloadmode k kirk
r37 -uploadmode k kirk -downloadmode k kirk

# update R34 with bundle=91WK44 NAMS ID=default from
PM R34
# download with bundle=91WK44XX NAMS ID=default to
NMS_DISK
```

```
r34 -uploadmode user_specified 91WK44  
-downloadmode u 91WK44XX -downloadlocation n  
##### End of command file #####
```

Example 3

In the following example, MC.BUNDLE1.9999.0 from PM CENTRAL is used as the master global data MCF. The command uploads MC.BUNDLE2.1234.0 from TOR1, updates it and downloads it as MC.MYKEYnn.1234.0 (where nn is next latest index) to TOR1. It attempts to update all supported components.

```
/opt/MagellanNMS/bin/gdm tor1 -ncs myoa mycapid  
mypasswd -gduploadmode u bundle1 9999  
-gduploadlocation u CENTRAL -uploadmode u bundle2 1234  
-downloadmode k mykey
```

Example 4

The following example, MC.BUNDLE1.9999.0 from PM CENTRAL is used as the master global data MCF. This command uploads MC.MYKEYnn.1234.0 (where nn is latest index) from TOR1, updates it and downloads it as MC.MYKEYnn.1234.0 (where nn is next latest index) to NMS_DISK. It attempts to update only the NETWORK_ENV component.

```
/opt/MagellanNMS/bin/gdm tor1 -ncs myoa mycapid  
mypasswd -gduploadmode u bundle1 9999  
-gduploadlocation u CENTRAL -uploadmode k mykey 1234  
-component NETWORK_ENV -downloadmode k mykey  
-downloadlocation n
```

Updating preferred service path data using the command line interface

Preferred service path data in an RM with routing data from a transaction file can be updated by means of the command line interface of the GDM tool.

You can use the GDM tool with or without a command file. A command file is useful when you wish to apply the transaction file to more than one RM at a time. If you do not use a command file, you must enter a separate command for each RM whose service data you wish to update.

For more information on command files see “Preferred service path data command file format” (page 157).

Enter the following command syntax as one continuous command.

Command line format without a command file

```
/opt/MagellanNMS/bin/gdm
-uploadmode <upload_mode> [<upload_bundle_date_key>
[<upload_NAMS ID>]]
-uploadlocation <location_mode> [<pm_mnemonic>]
-downloadmode <download_mode>
[<download_bundle_date_key> [<download_NAMS ID>]]
[-downloadlocation <location_mode>[<pm_mnemonic>]]
-ncs <destination_mnemonic> <capability_id> <password>
[-log [<logfilename>]] [-overrideownership]
[-downloadcomplete]
```

Command line format with a command file

```
/opt/MagellanNMS/bin/gdm
-ncs <destination_mnemonic><capability_id><password>
[-log [<logfilename>]]
[-overrideownership] [-downloadcomplete]
```

Note: Input is not case sensitive, except for *<commandfilename>* and *<logfilename>*.

where:

```
-uploadmode <upload_mode> [<upload_bundle_date_key>
[<upload_NAMS ID>]]
```

Specifies the MCF to be uploaded that contains the routing data to be updated.

<upload_mode> Indicates the mode to be used for uploading an MCF. Valid: COMMITTED, ACTIVE, USER_SPECIFIED, KEYED, or DATED. Note that upload_location NMS_DISK is not valid in combination with upload_mode COMMITTED or ACTIVE.

<upload_bundle_date_key> Indicates the bundle/key for the upload. If upload_mode = USER SPECIFIED, this is treated as a bundle.

If upload_mode = KEYED, this is treated as a key.

If upload_mode = COMMITTED or ACTIVE, this cannot be present.

If `upload_mode = DATED`, this is treated as a date key.

Valid: If a date, only valid dates in the format *yyymmdd*. See “Dated algorithm” (page 45) for more information on the date format. If a key, 1-6 (bundle 1-8) characters (letters, numbers and underscores).

`<upload_NAMS ID>` Indicates the NAMS ID for the upload.

Valid: Numeric 256-49151.

`-uploadlocation <location_mode> [<pm_mnemonic>]`

Specifies the location of the MCF that contains components to be replaced.

`<location_mode>` Indicates the location of the MCF.

Valid: `USER_SPECIFIED` or `NMS_DISK`. Note that `upload_location NMS_DISK` is not valid in combination with `upload_mode COMMITTED` or `ACTIVE`.

`<pm_mnemonic>` Provides a means of identifying the PM. It may include routing information, for example, `SUP TOR5-R99`.

`-downloadmode <download_mode> [<download_bundle_date_key> [<download_NAMS ID>]]`

Specifies the MCF into which replacement components are to be downloaded.

`<download_mode>` Indicates the mode to be used for downloading the MCF. Valid: `USER_SPECIFIED` or `KEYED`

`<download_bundle_date_key>` Indicates the bundle/key for the download.

If `upload_mode = USER SPECIFIED`, this is treated as a bundle.

If `upload_mode = KEYED`, this is treated as a key.

If `upload_mode = COMMITTED` or `ACTIVE`, this cannot be present.

If `upload_mode = DATED`, this is treated as a date key.

Valid: If a date, only valid dates in the format *yyymmdd*. See “Dated algorithm” (page 45) for more information on the date format. If a key, 1-6 (bundle 1-8) characters (letters, numbers and underscores).

`<download_NAMS ID>` Indicates the NAMS ID for the download. If the NAMS ID is not specified, the NAMS ID of the uploaded MCF is used.

For example, if MC.MYBUNDLE.9999.0 is uploaded, and the download_NAMS ID is not specified, NAMS ID 9999 is used for the download. Valid: Numeric 256-49151

`[-downloadlocation [<location_mode> [<pm_mnemonic>]]`

Specifies the location of the MCF into which the replacement components are to be downloaded. If not specified, the same download location is used as the upload location.

`<location_mode>` Indicates the location of the MCF to download that contains the replacement components. Valid: USER_SPECIFIED or NMS_DISK. Note that upload_location NMS_DISK is invalid in combination with upload_mode COMMITTED or ACTIVE.

`<pm_mnemonic>` Provides a means of identifying the PM. It may include routing information, for example, SUP TOR5-R99.

`-ncs <destination_mnemonic> <capability_id> <password>`

Mandatory option to use network control system (NCS) authentication.

`<destination_mnemonic>` NCS mnemonic of the operations agent (OA) interface.

`<capability_id>` NCS capability id

`<password>` NCS capability password

`[-overrideownership]`

No longer used.

`[-log [<logfilename>]`

Specifies that you wish a file to be created and messages from the GDM tool added to that file.

`<logfilename>` Absolute path name for the file to which the messages are to be added. The log file name is case sensitive.

`[-downloadcomplete]`

Optional, specifies that a complete download is to take place.

Preferred service path data command file format

A command file can be used to apply the transaction file to more than one RM at a time. If you do not use a command file, you must repeat the procedure once for each RM whose preferred path service data you wish to update. The command file is created with a UNIX editor, for example, *vi*. A command file can be used from the GUI or command line interface.

Command file format

The command file used for updating preferred service path data accepts records in the following formats. Each command file format is entered on one line in the command file.

- Routing data transaction file record:

```
-routingtransactionfile  
[<routing_data_transaction_file>]
```

- Target MCF record

```
-uploadmode <upload_mode> [upload_bundle_date_key  
[upload_NAMS ID]]  
[-uploadlocation <location_mode> [pm_mnemonic]]  
-downloadmode <downloadmode>  
[<download_bundle_date_key>]  
[download_NAMS ID]]  
[-downloadlocation <location_mode> [pm_mnemonic]]  
[-downloadcomplete}
```

- Miscellaneous parameters

```
[- log [<logfilename>]  
[-routingtransactionfile  
<routing_data_transaction_file>]
```

Note: If the *-log* option or the *-routingtransactionfile* option is specified in both the command file and the command line, the file specified in the command file will be used. That is, the command line is ignored.

Example 1

This command file turns on logging and adds all logs to the *cmd.log* file. It uses routing data information from the routing data transaction file *<routing_data_transaction_file>*. The routing data in the transaction file

is to be applied against the MCF which has the key called *kirk*, a NAMS ID of 4034, and is from NMS_DISK. Once the MCF is updated, it is downloaded with key *kirk* with the same NAMS ID and location.

```
##### Start of command file #####
# log to cmd.log
-log cmd.log

# routing data transaction file is in the user
# specified file named <routing_data_transaction_file>
-routingtransactionfile
<routing_data_transaction_file>

# upload and download with key = kirk, NAMS ID = 4034
from NMS_DISK
-uploadmode k kirk 4034 -uploadlocation n -
downloadmode k kirk

##### End of command file #####
```

Example 2

This command file turns on logging and adds all logs to the default cmd.log file. It uses routing data information from the routing data transaction file. The routing data in the transaction file is to be applied against the MCFs with the key called *kirk*, the default NAMS ID, and residing in PMs R30 through R37. In each case, the resulting MCF is downloaded to the PM from which the original MCF was uploaded.

The last step in the command file uploads the MCF with bundle 91WK44 and the default NAMS ID from PM R34 then downloads it with bundle 91WK44XX, and the default NAMS ID, to the NMS disk after the MCF is updated with the routing information.

```
##### Start of command file #####
# log to default file
- log

# transaction file is in the user specified file named
# <routing_data_transaction_file>

-routingtransactionfile
<routing_data_transaction_file>
```

```
# update target with key=kirk NAMS ID=default to same
PM
-uploadmode k kirk -uploadlocation u r30 -downloadmode
k kirk
-uploadmode k kirk -uploadlocation u r31 -downloadmode
k kirk
-uploadmode k kirk -uploadlocation u r32 -downloadmode
k kirk
-uploadmode k kirk -uploadlocation u r33 -downloadmode
k kirk
-uploadmode k kirk -uploadlocation u r34 -downloadmode
k kirk
-uploadmode k kirk -uploadlocation u r35 -downloadmode
k kirk
-uploadmode k kirk -uploadlocation u r36 -downloadmode
k kirk
-uploadmode k kirk -uploadlocation u r37 -downloadmode
k kirk

# update target with bundle = 91WK44 NAMS ID = default
from PM R34
# download with bundle = 91WK44 NAMS ID=default to
NMS_DISK
-uploadmode user_specified 91WK44 -uploadlocation u
r34
-downloadmode u 91WK44 -downloadlocation n

##### End of command file #####
```

Chapter 6

Service Data Backup

The Service Data Backup tool is used to create backups for master configuration files (MCFs), either on an NMS or other backup disk, or on DPN modules. Backups are only created for a complete set of MCFs (those specified in the MCF directory file); the Backup tool will not create a backup for a single MCF. These backups can be created either automatically or manually.

Automatic or Manual backups

The Service Data Backup tool may be configured to perform a backup either automatically, whenever an MCF is downloaded, or manually, as the user sees fit. To determine whether manual or automatic backup is set, configure the `AUTO_BACKUP` parameter in the *PFA.cfg* file. See 241-6001-304 *Preside MDM Configuration Management for DPN Administrator Guide* for more information.

The Backup Directory is a PFAS configuration parameter. This directory is used when auto-backup is set in the PFAS configuration file. This directory can be the same as the *NMS disk* directory.

Backup MCFs take the form: `B_<MCF name>`.

Backup to disk

The `B_MCFs` are sent to disk by PFAS directly, that is, without going through the DPN network. It is possible to have as many backup sites as workstations running PFAS or as few as a single backup site, by mounting the backup directory on each workstation running PFAS. The Backup disk can be local or nfs mounted.

The Service Data Backup tool's GUI

The Service Data Backup tool's graphical user interface allows you to perform the following functions:

- authentication
See “Using the Connection Manager” (page 51)
- start up the Service Data Backup tool
See “Using the Service Data Backup tool” (page 166)
- connect to the DPN module
See “Connecting to modules” (page 167)
- retrieve a list of MCF directory files
See “Retrieving a list of MCFs” (page 167)
- create MCF backups
See “Creating MCF backups” (page 167)
- connect to a different module during the session
See “Connecting to a different module” (page 167)
- reconnect to a module
See “Reconnecting to a module” (page 168)

Data Backup GUI commands and fields

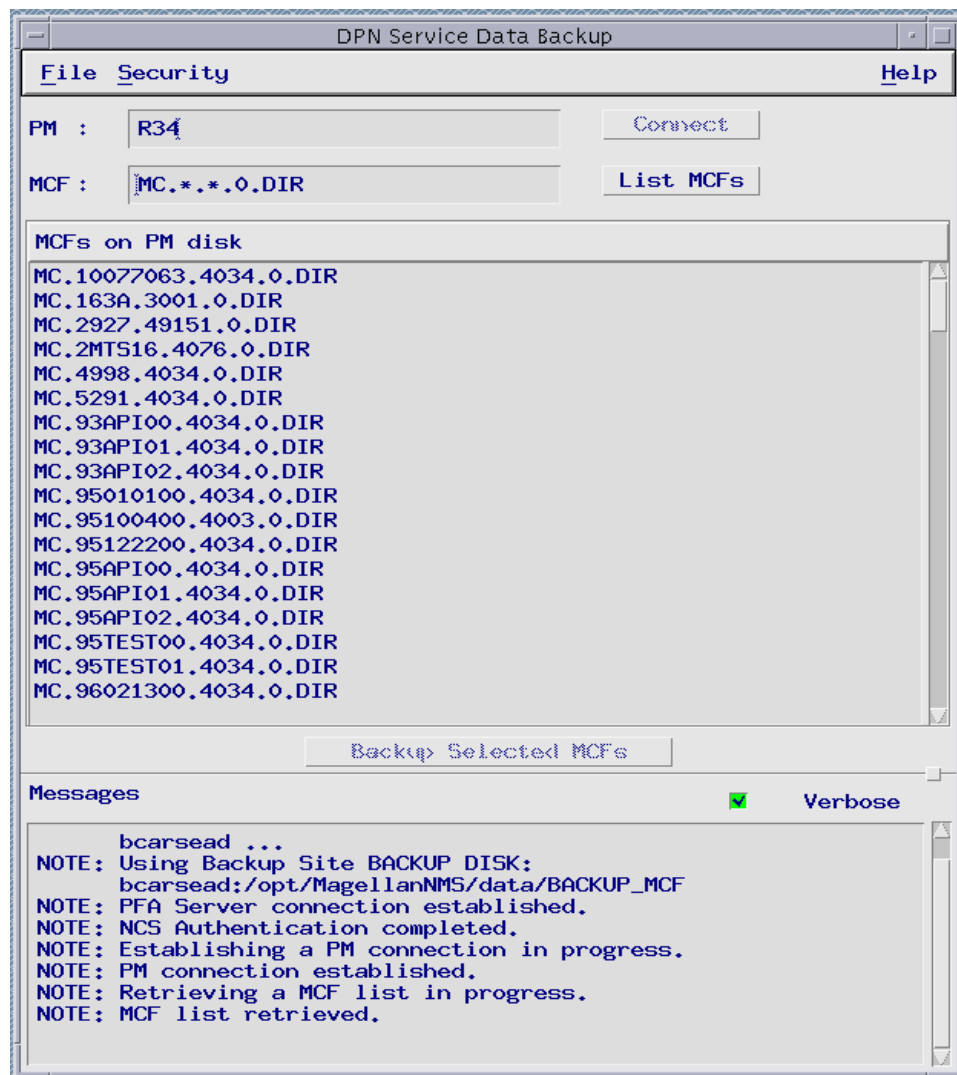
The Data Backup graphical user interface contains the following items:

- a menu bar that contains:
 - a File menu
See “File menu” (page 173).
 - a Security menu
See “Security menu” (page 173).

- a Help menu
See “Help menu” (page 55).
- a SOURCE area that contains:
 - a PM name field
See “PM name field” (page 173).
 - an MCF field
See “MCF name field” (page 165).
 - a Connect button
See “Connect PM button” (page 173).
 - a List MCFs button
See “List MCFs button” (page 165).
- an MCFs list area that contains a scroll area and a Backup Selected MCFs button
See “List MCFs area” (page 165) and “Backup Selected MCFs” (page 165).
- a Messages area that contains a Verbose button.
See “Message area” (page 58) and “Verbose” (page 58).

See the figure “Service Data Backup tool” (page 164).

Figure 11
Service Data Backup tool



MCF name field

Enter the name of the master configuration file (MCF) here. You can enter the *MCF name* in either upper or lower case, since translation to upper case is automatic.

The format for an *MCF name* is

B_MC.<bundle_name>.<NamsId>.DIR

For example, if the bundle name is *BUNDLE01* the tool will look for the bundle

B_MC.BUNDLE01.<NamsId>.DIR

The default is

B_MC.*.DIR

List MCFs button

Click *List MCFs* to retrieve a list of backup MCFs on the backup system.

This button is enabled when a valid PM name is entered in the *PM* field.

List MCFs area

This scrolling area lists specified MCF sets on the DPN-100 module. From this area, the mouse buttons can be used to select or deselect list items.

Backup Selected MCFs

Click the *Backup Selected MCFs* button to retrieve the directory for the selected MCF, and send a backup creation request for each MCF in this directory. If the backup already exists on the DPN-100 module, the tool continues to the next MCF. See “Creating MCF backups” (page 167) for the related procedure.

This button is enabled once a set of MCFs has been listed.

Re-authentication dialog

This dialog asks you to confirm that you want to close the PM connection by performing an authentication.

Authentication will reset the MCF field to its default value (MC.*.DIR) and the MCF list will be reset to an empty list.

Authentication Failed dialog

The Service Data Backup tool cannot communicate with NCS. Clicking the *OK* button will attempt to authenticate. If this doesn't solve the problem, restart the tool. If the problem persists, report it to the System Administrator.

Confirm PM Change dialog

This dialog opens when the value in the *PM* field has changed. You are asked to confirm that you want to close the actual PM connection to open a new one.

The *MCF* list will be reset to an empty list.

Open Session Failed dialog

This dialog opens when a PM connection attempt failed. Verify the value of the *PM* field. Verify if you need re-authentication (not the same network destination).

Confirm MCF Change dialog

This dialog opens when the value of the *MCF* field has changed and a list already exists. You are asked to confirm that you want to change the MCF field. Changing the MCF field has the effect of discarding the list and building a new one from the new value of the MCF field.

Reset MCF List dialog

This dialog opens when the *List MCFs* button is pressed while a list already exists. You are asked to confirm that you want to discard the list and build a new one.

Using the Service Data Backup tool

- 1 From the Preside MDM window, select Configuration -> DPN Devices -> Administration -> Service Data Backup.

The tool (see the figure "Service Data Backup tool" (page 164)) and the Authentication window are displayed.

- 2 In the Authentication window, fill in the *Destination*, *User Id*, and *Password* fields and click *Authenticate*.

The user can now proceed as usual to perform the backup operation.

Retrieving a list of MCFs

The List MCFs command is used to display a group of MCF directory files that are candidates for backup, on a particular packet module (PM).

- 1 Enter the PM mnemonic and click *Connect* or press *Return* to connect to the module.

The *List MCFs* button is enabled when a connection is established with the PM displayed in the *PM* data entry field.

- 2 Enter the MCF directory pattern in the *MCF* data entry field if you wish to retrieve a list based on a particular search criterion other than the supplied default (MC*.DIR).

The specified pattern must begin with MC. and end with.DIR. A wildcard character * can be specified in the pattern, for example MC.AB*.DIR.

- 3 Click List MCFs.

A list of MCF directory files is displayed in the MCFs on PM disk field.

If you wish to retrieve a new list of MCF directory files, repeat steps 2 and 3. A dialog appears asking you to confirm the *List MCFs* operation.

Creating MCF backups

The MCF backup process creates a backup for each selected MCF on the module. The Backup Selected MCFs command is used to create an exact copy of the MCF on the module by prefixing B_ to the MCF name.

- 1 Select one or more MCF(s) from the *MCFs on PM disk* list.

The selected MCFs are displayed in reverse video.

- 2 Click Backup Selected MCFs.

A backup is created for each MCF directory selected.

Connecting to modules

This section explains how to connect or reconnect to a module.

Connecting to a different module

After performing operations on the connected module, you can connect to a different module on the same or different OA during the current session.

How to connect to a different module on the same OA

- 1 Change the PM mnemonic in the PM data entry field and click *Connect* or press Return.

A dialog is displayed asking you to confirm the operation.
- 2 Click OK.
- 3 Follow the steps in “Retrieving a list of MCFs” (page 167).

How to connect to a module on a different OA

If the module resides on a different OA domain, authentication must be repeated.

- 1 Choose *Authenticate...* from the *Security* menu.

A dialog is displayed asking you to confirm the operation.
- 2 Click OK.

The Connection Manager dialog is displayed.
- 3 Enter the necessary information and click *Authenticate*.

If the authentication is successful, the Connection Manager dialog is closed.
- 4 Follow the steps in “Retrieving a list of MCFs” (page 167).

Reconnecting to a module

When the X.25 connection to a module is disconnected, you can reconnect to the module at any time during the current session.

The Reconnect PM menu item will become enabled indicating that the connection is down and action must be taken to continue.

- 1 Choose Reconnect PM from the *Security* menu to re-establish the connection to a module.

Chapter 7

Service Data Restore

The Service Data Restore tool is an application that retrieves backup master configuration file (MCF) directory files from the Backup disk and restores the MCFs to the specified packet module (PM). The Service Data Restore tool lets you perform the following functions:

- authentication
See “Using the Connection Manager” (page 51).
- start up the Service Data Restore tool
See “Using the Service Data Restore tool” (page 175).
- retrieve a list of MCF directory files from the Backup disk
See “Retrieving a list of MCFs from a Backup site” (page 175).
- restore selected MCF directory files
See “Restoring MCFs to a module” (page 176) or “Restoring MCFs to a different module” (page 176).
- keep selected MCF directory files
See “Deleting backup MCFs from a Backup site” (page 176).
- reconnect to a module
See “Reconnecting to a module” (page 177).

Opening the DPN Service Data Restore tool

From the Preside MDM window, select Configuration -> DPN Devices -> Administration -> *Service Data Restore*.

The *DPN Service Data Restore* tool and the Authentication window open.

The Restore tool's GUI

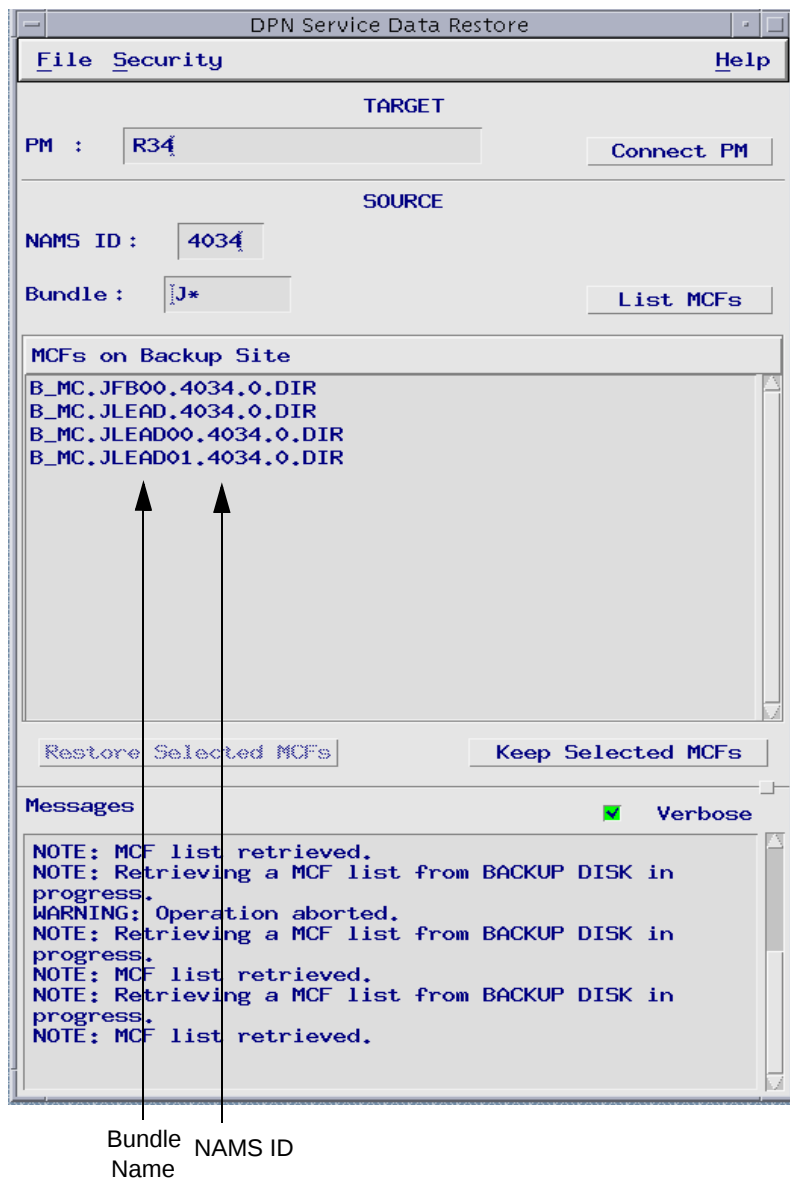
The DPN Service Data Restore tool's graphical user interface (GUI) contains the following items:

- a Menu bar that contains:
 - a File menu
See “File menu” (page 173).
 - a Security menu
See “Security menu” (page 173).
 - a Help menu
See “Help menu” (page 55).
- a TARGET area that contains:
 - a PM name field
See “PM name field” (page 173).
 - a Connect button
See “Connect PM button” (page 173).
- a SOURCE area that contains:
 - a NAMSID field
See “NAMS ID field” (page 173).
 - a Bundle name field
See “Bundle name field” (page 173).

- a List MCFs button
See “List MCFs button” (page 174)
- an MCFs on backup site area that contains:
 - a scroll area
See “List MCFs area” (page 174).
 - a Restore Selected MCFs button
See “Restore Selected MCFs button” (page 175).
 - a Keep Selected MCFs button
See “Keep Selected MCFs button” (page 175).
- a Messages area that contains a Verbose button
See “Message area” (page 58) and “Verbose” (page 58).

See the figure “Service Data Restore tool” (page 172).

Figure 12
Service Data Restore tool



File menu

Exit terminates the Service Data Restore tool.

Security menu

The Security menu contains the following commands:

- *Authenticate* opens the Integrated Connection Manager window.
- *Reconnect PM* manually re-establishes a connection to the DPN-100 module. It is enabled if a Virtual Circuit error is detected while you are performing normal operations.

Target area

Specify the backup target in this area.

PM name field

Enter the name of the target DPN-100 module here. You can enter the target PM name in either upper or lower case, since translation to upper case is automatic.

Connect PM button

This button establishes a connection to the PM. Hitting *Return* while the keyboard focus is in the *PM field* will also establish a connection to the PM.

Source area

Specify the backup source in this area.

NAMS ID field

Enter the NAMS-ID of the PM that dumps the backup MCFs to the Backup site. The *NAMS-ID* must be a numeric string.

Bundle name field

Enter the full bundle name here. You can enter it in either upper or lower case, since translation to upper case is automatic.

The format for a full bundle name is

B_MC.<bundle_name>.<NamsId>.DIR

For example, if the bundle name is *BUNDLE01*
the tool will look for the bundle

`B_MC.BUNDLE01.<NamsId>.DIR`

The default is

`B_MC.*.DIR`

List MCFs button

Click *List MCFs* to retrieve a list of backup MCFs on the backup system.

This button is enabled when a valid NAMS-ID is entered in the *NAMS-ID* field. Hitting *Return* will also retrieve a list of backup MCFs on the backup system.

MCFs on Backup Site area

This area displays the list of MCFs on the selected Backup site, including bundle name and NAMS ID.

List MCFs area

This scrolling area lists the specified MCF sets on the Backup disk. By placing the pointer in the *list* area, you can select or deselect any list items with the mouse buttons.

For selection or deselection of any list items, place the pointer in the list area:

Click and drag the left button	does a multiple select
Control-left button	adds one item to the selection
Shift-left button	completes the selection up to the clicked item
Right button	displays a menu where you can select or deselect all the items in the list.

Restore Selected MCFs button

Click *Restore Selected MCFs* to restore the selected MCF sets to the TARGET-PM.

Keep Selected MCFs button

Click *Keep Selected MCFs* to clean up the storage for MCF backups associated with a specific NAMS ID.

Note: Activating the *Keep Selected MCFs* button causes all the MCFs associated with a NAMS ID and MCFs that do not belong to the selected MCF sets to be deleted.

This button is enabled once a list of MCFs is retrieved.

Using the Service Data Restore tool

- 1 From the *Preside MDM window*, select *Configuration -> DPN Devices -> Administration -> Service Data Restore*.

The tool and the Authentication window appear.

- 2 In the *Authentication* window, fill in the *Destination*, *User Id*, and *Password* fields and click *Authenticate*.

The user can now proceed as usual to perform the restore operation.

Retrieving a list of MCFs from a Backup site

The List MCFs command is used to list the backup files that have been saved to Backup from the specified PM.

- 1 Enter the NAMS ID of the PM from which the backup MCFs were spooled and press Return.
- 2 Enter the Bundle directory pattern in the Bundle data entry field if you wish to retrieve a list based on a particular search criterion other than the supplied default (B_MC*.DIR).

The specified pattern must begin with B_MC. and end with.DIR. A wildcard character * can be specified in the pattern, such as B_MC.AB*.DIR.

- 3 Click List MCFs.

The list of MCFs from the Backup site appears in the MCFs on Backup Site field.

If you wish to retrieve a new list of MCF directory files, repeat steps 2 and 3. A dialog appears asking you to confirm the List MCF operation.

Restoring MCFs to a module

The Restore Selected MCFs command is used to copy backup MCF directory files from the Backup site to the specified PM.

- 1 Enter the PM mnemonic and click *Connect PM* or press Return.
- 2 Select one or more MCF directory files from the list.

The selected MCFs are displayed in reverse video.

- 3 Click Restore Selected MCFs to retrieve all MCFs belonging to the selected MCF directory files.

If a selected MCF already exists on the DPN-100 module, a warning message is displayed and the tool continues with the remaining MCFs.

Restoring MCFs to a different module

After performing a restore operation to the connected module, you can restore MCFs to a different module. This can be done by connecting to a different module on the same or on a different OA without closing the current session.

- 1 Change the PM mnemonic in the PM data entry field and click *Connect PM* or press Return.
A dialog appears asking you to confirm the operation.
- 2 Click OK.

Deleting backup MCFs from a Backup site

The *Keep Selected MCFs* command is used to tidy backup MCFs on the Backup site associated with a specific NAMS ID.

- 1 Repeat steps 1-3 in the procedure "Retrieving a list of MCFs from a Backup site" (page 175).
- 2 Select the MCFs you want to keep. All unselected MCFs will be deleted.
If no MCFs are selected, they will all be deleted.
- 3 Click Keep Selected MCFs to delete the unselected MCFs.

A dialog appears asking you to confirm the deletion of all unselected MCFs, including the MCFs which are not listed.

- 4 Click OK.

The deletion process starts. All errors and status responses are displayed in the Messages area.

MCFs on the Backup disk can also be managed using the UNIX command line commands *bddeletemcf* and *dbtidymcf* (see “MCF management” (page 281) for details).

Reconnecting to a module

When the X.25 connection to the module is disconnected, you can reconnect to the module at any time during the current session.

The Reconnect PM menu item will become enabled indicating that the connection is down and action must be taken to continue.

- 1 Choose *Reconnect PM* from the *Security* menu in the DPN Service Data Restore window to re-establish a connection to the module.

Chapter 8

Software Distribution

The Software Distribution tool lets you copy or download software images from a remote download site (RDS) or a software download site (SDS) to a target packet module (PM).

The tool is accessible by means of the graphical user interface or a command line interface from a UNIX shell. If you use the command line interface, necessary information is entered as command parameters or it can be kept in a command file. You can also save messages in a file by enabling logging.

See also...

- “Software Distribution main window” (page 179)
- “Copying images” (page 183)
- “Downloading images” (page 183)
- “Using the graphical user interface” (page 183)
- “Command line” (page 185)

Software Distribution main window

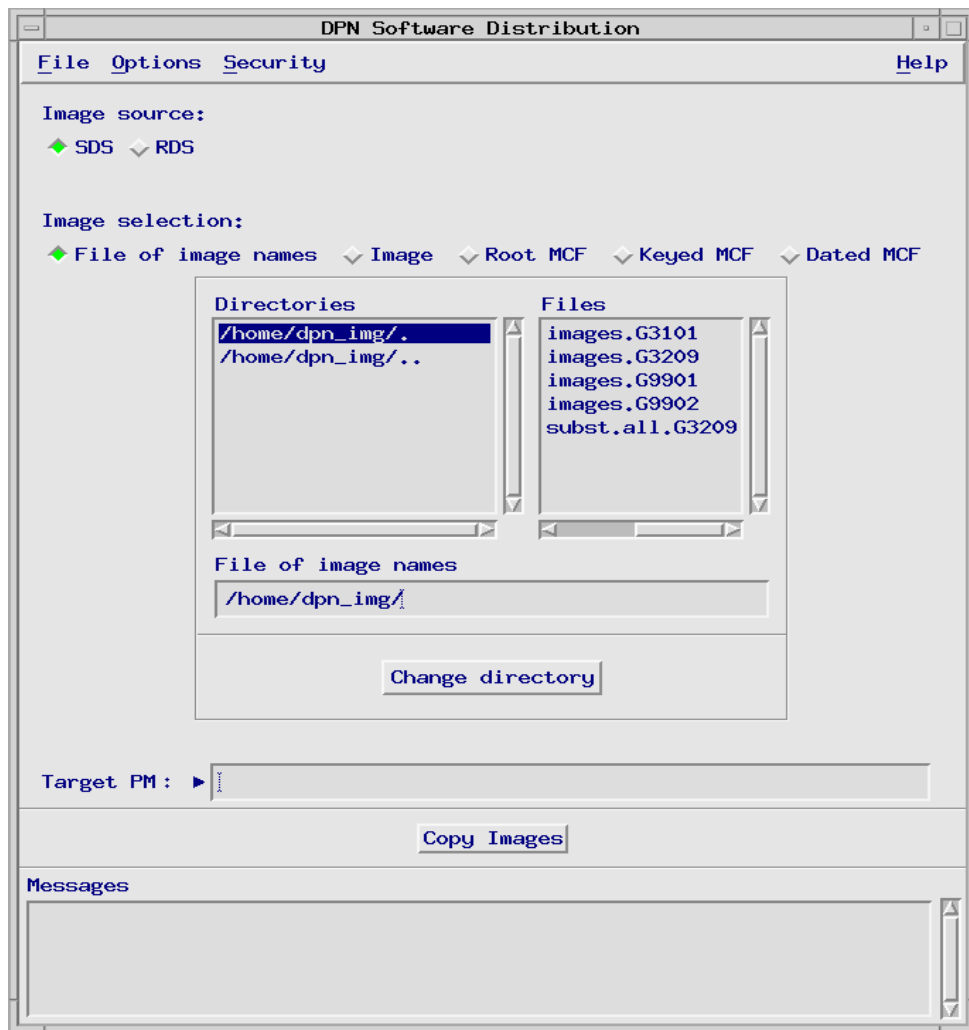
See the following sections for information on the parts of the Software Distribution main window:

- “Menu bar” (page 181)
- “Image source area” (page 181)”
- “Image selection area” (page 181)
- “Target PM field” (page 182)

- “Copy Images button” (page 182)
- “Message area” (page 58)

See the figure “Software Distribution tool” (page 180).

Figure 13
Software Distribution tool



Menu bar

The menu bar is located at the top of the Software Distribution main window. See the following sections for information on the menu bar entries:

- “File menu” (page 54)
- “Options menu” (page 54)
- “Security menu” (page 55)
- “Help menu” (page 55)

Image source area

Images can be distributed from either the remote download site (RDS) or the software download site (SDS). Select the appropriate button.

Image selection area

The image selection area is used to identify one or more images for distribution from the SDS or RDS to the target PM. The button choices for image selection are:

- *File of image names* downloads all images named in the text file to the target PM. The file format is one image per line.
- *Image* downloads the single image named in the data entry field. Image names have the form: *<image name>.<extension>*.

For example, *PELFF2.PIMG9035*.

- *Root MCF* downloads all images referenced in the named Root MCF to the target PM. Root-MCF names have the following format: *MC.<bundle>.<NAMS ID>.0*.

For example, *MC.2830.4034.0*.

- *Keyed MCF* downloads all images referenced in the latest MCF with the specified key. Keys can be made up of letters, digits, and underscores. They cannot begin with an underscore, and they must be no more than six characters long.

For example, if you specify *DPNNMS* as a key, the Root-MCF that matches the following criteria is located by the tool:

MC.DPNNMS<nn>.<NAMS ID of the target PM>.0, where *nn* ranges from 00-99 and is the highest index of the key *DPNNMS* that exists on the target PM.

- *Dated MCF* downloads all images referenced in the latest MCF with the specified date key. Valid dates have the format *yymmdd*. See “Dated algorithm” (page 45) for more information on the date format.

For example, if you specify *991231* as a key, the Root-MCF that matches the following criteria is located by the tool:

MC.991231<nn>.<NAMS ID of the target PM>.0, where *nn* ranges from 00-99 and is the highest index of the date *991231* that exists on the target PM.

Target PM field

Type the mnemonic of the PM to which the images are to be copied. You can also type NCS routing information as part of the PM mnemonic.

To download selected images on the SDS to the RDS for future distribution, type the PM mnemonic of the RDS in this field.

Copy Images button

To begin the copying of images from the SDS or RDS to the target PM, click *Copy Images*.

Copying images

Images can be copied from the RDS to a PM in the network by specifying a specific image, a file of images, or by specifying the MCF that contains the information for the images it requires. If many images need to be copied, they can be specified in a command file and run from the GUI or from the command line.

Downloading images

Images can be downloaded from the SDS to an RDS module using the GUI or command line. If a command file is used it must contain the `-src` option to specify where the source images reside. The software download server must be running on the SDS before images can be downloaded.

See 241-6001-304 *Preside MDM Configuration Management for DPN Administrator Guide* for information on how to populate the SDS.

Using the graphical user interface

You can use the following procedures to copy or download images in the network depending on the *Image source* selected. When copying images the *Image source* must be RDS and when downloading images the *Image source* must be SDS.

Copying or downloading a file of image names

The download server must be running on the SDS workstation. To use a file of images in the `/opt/MagellanNMS/cfg/dpn_img` directory, the Software Distribution tool must be running on the SDS workstation or a workstation that mounts the SDS disk.

Using the RDS as the target PM is an easy way to move all the new images required for a release into the network. Access to `/opt/MagellanNMS/cfg/dpn_img/images.<generic>` is provided in the tar file for this purpose.

- 1 Select the *Image source*.
- 2 In the *Image selection* area select the *File of image names* button.

The file selection box opens. The default directory displayed is usually `/opt/MagellanNMS/cfg/dpn_img`.

- 3 From the selection box, select the image file.

- 4 Enter the PM mnemonic in the *Target PM* field.
- 5 Click *Copy Images*.

The Messages window displays any errors, warnings, or status messages, and indicates when the file transfer process is complete.

Copying or downloading a specific image

- 1 Select the appropriate *Image source* button
- 2 In the *Image selection* area, select the *Image* button.

The Image data entry field opens.

- 3 In the data entry field, enter the Image name.
- 4 In the *Target PM* field, enter the PM mnemonic.
- 5 Click *Copy Images*.

The Messages window displays any errors, warnings, or status messages, and indicates when the file transfer process is complete.

Copying or downloading images required for an MCF

Each MCF requires certain images. If you want to copy or download the images required to complete the service data for an MCF, perform the following:

- 1 Select the appropriate *Image source* button.
- 2 Select one of the Root MCF, Keyed MCF or Dated *MCF* buttons.
- 3 In the data entry field, enter the appropriate information.
- 4 In the *Target PM* field, enter the PM mnemonic.
- 5 Click *Copy Images*.

Authentication may take place at this time. A check is made of all the images referred to in the MCF. Any images referred to in the MCF that are not on the PM disk are copied from the RDS to the target PM.

Copying or downloading images using a command file

You can use a command file to copy download images. See “Command file dialog” (page 188) for the format of the command file.

- 1 From the *Options* menu select *Run Command File...*

The Run Command File dialog opens.

- 2 Enter the name of the command file.
- 3 Click Run Command File.

The Messages window displays any errors, warnings, or status messages, and indicates when the file transfer process is complete.

Note: There are no further steps necessary in the main window.

Command line

You can invoke the Software Distribution tool from a UNIX command line with or without a command file. The following is the format of the command and a description of the different parameters and options. To display online help for this command use the `-h` option.

Enter the following command syntax as one continuous command.

Command line format with a command file

```
/opt/MagellanNMS/bin/getimg -ncs <dest_mnemonic>  
    <capability_id> <password> -f <cmdfilename>  
    [-log [<logfilename>]]
```

Command line format without a command file

```
/opt/MagellanNMS/bin/getimg [-src rds|sds]  
    -ncs <dest_mnemonic> <capability_id> <password>  
    -tm <pm_name> <mcf>|<key>|<date> ...  
    -ti <pm_name> <images> ...  
    [-tif <pm_name> <imglist_filename>...]  
    [-log [<logfilename>]]
```

where:

`-src rds|sds`

Specifies where the source images reside. If this option is not specified, as a default, the images are copied from the RDS.

`rds` Copies images from the RDS to the target PM.

`sds` Downloads images from the SDS to the target PM.

-ncs <dest_mnemonic> <capability_id> <password>

Specifies the NCS security flag. The following parameters are used to log in to the target module:

<dest_mnemonic> Destination mnemonic of the NCS OA.

<capability_id> NCS capability id.

<password> Password for the NCS capability id.

-log [<logfilename>]

Specifies that messages are to be written to the log file.

<logfilename> The name of the log file. Default file name is `getimg.log`.

-f <cmdfilename>

Specifies that a command file is to be used.

<cmdfilename> The name of the command file.

-tm <pm_name> <mcf>|<key>|<date>...

Specifies the target PM-MCF flag. Use this option to copy or download all the images required to activate an MCF. The MCF can be identified by the root_MCF name, key or date.

<pm_name> Mnemonic of the target DPN-100 module.

mcf | key | date. If this field begins with MC., it is treated as an MCF name, and the tool attempts to upload the MCF. If it is a valid date in the format *yymmdd*, it is treated as a date key and a dated upload is attempted. Otherwise, it is treated as a key. If it is a valid key, a keyed upload is attempted. See “Dated algorithm” (page 45) for more information on the date format.

-ti <pm_name> <image>...

Specifies the target PM-image flag. Use this option to copy or download specific images.

<pm_name> Mnemonic of the target DPN-100 module.

<image> The load image name or NPM macro name.

-tif <pm_name> <imglist_filename>...

Use this option to copy or download specific images that are specified in a file.

<pm_name> Mnemonic of the target DPN-100 module.

<imglist_filename> The name of the control file that contains the image names. There is one image name specified per line and the filename format is *images.<generic>*. For example, PELFB1.PIMGRH45.

The following control files are sent as part of the AM/RM release:

images.<generic>, *npm.macros.nm.<generic>* and *npm.macros.rm.<generic>*. These files are in the proper format to be used as the *<imglist_filename>*, and all files specified in the control file are either copied or downloaded.

The following example shows how an MCF is used to detect and copy missing images. In this example, a check is made for all the images required in the MCF MC.2588.4034.0, and any images in that MCF that are not on the R34 disk will be copied from the RDS. Errors, warnings, and any informational messages are displayed and saved in a log file called *getimg.log* (default).

```
/opt/MagellanNMS/bin/getimg -ncs lab0 iws mypsw  
-tm R34 MC.2588.4034.0 -log
```

The following example shows how to copy a specific image. This example copies L2LOADER.PIMGRJ15 from the RDS to R34 disk. Errors, warnings, and any informational messages are displayed and saved in a log file called *mylog*.

```
/opt/MagellanNMS/bin/getimg -ncs lab0 iws mypsw  
-ti R34 L2LOADER.PIMGRJ15 -log mylog
```

The following example shows how to download two specific images from the SDS to a module. This example downloads L2LOADER.PIMGRJ15 and PELFF2.PIMGRJ15 from the SDS to R34 disk.

```
/opt/MagellanNMS/bin/getimg -src sds -ncs lab0 iws  
mypsw -ti R34 L2LOADER.PIMGRJ15 PELFF2.PIMGRJ15
```

See also...

- “Command file dialog” (page 188)
- “Commands” (page 188)
- “NPM macros” (page 189)
- “Log file format” (page 189)

Command file dialog

A command file is used to specify the required target parameters. You can run the command file from the graphical user interface (GUI) or from the command line. If you use the GUI, select Run Command File... from the Options menu and enter the name of the command file.

The dialog initially appears with *\$HOME/MagellanNMS* as the default value. To change directories, either select a directory from the *Directories* list and then select the *Change Directory* button, or just double click the directory in the list. You can be easily navigate a directory tree by successively moving through directories in the list.

Once you are in the correct directory, the command file can be chosen either by selecting the command file in the Files list and then selecting the *Run Command File* button, or by double clicking the command file in the list.

Commands

The following commands are accessible from the Files menu:

- *Run Command File* uses the command file in the data entry field to control the software distribution operation.

- *Change Directory* moves from the current directory to the directory selected in the Directories list.
- *Cancel* ignores any changes made in this dialog since it was popped up and return to the DPN Software Distribution main window.

The command file uses the keywords `-src`, `-tm` and `-tif`, which match those supported on the command line interface. However, `-ncs`, `-f` and `-log` options cannot be specified in the command file. The following is the command file format:

```
-src rds | sds
-tm <pm_name> <mcf>|<key>|<date>...
-ti <pm_name> <images>...
-tif <pm_name> <imglist_filename>...
```

See “Command line” (page 185) for parameter descriptions.

The following is an example of a command file named *LOAD03* and the command that is used to execute it.

```
# get missing images for R34 based on MCF
MC.2588.4034.0
-tm R34 MC.2588.4034.0
# get image for R70
-ti R70 L2LOADER.PIMGRJ15
```

The command would be:

```
getimg -f LOAD03 -ncs lab0 iwsa abab
```

NPM macros

With every AM/RM release there are two NPM macro control files that are sent: *npm.macros.nm.<generic>* and *npm.macros.rm.<generic>*.

If an NPM macro is specified in an MCF or is used as the *<image>* parameter with the `-ti` option, Software Distribution copies or downloads all the NPM files specified in the control file to the target PM.

Log file format

You can access the log file from the UNIX command line or from the *Options* menu on the graphical user interface.

The Log file dialog provides for a number of keyboard shortcuts. See “Help on Keys” (page 58).

If you want to create a log file that contains processing and error information, you can specify the `-log` option on the command line. You can name this file by providing a log filename. If no name is given, the default filename `getimg.log` is used. If the log file already exists, any additional message information will be appended to the file.

The following command generates a log file called `getimg.log` (default).

```
/opt/MagellanNMS/bin/getimg -ncs lab0 iwsa <password>  
-tm R34 FACT -ti R34 RM0FF386.PIMGRJ15 -log
```

The log output is as follows:

```
16:34:29 DPN Software Distribution - Command line:  
/opt/MagellanNMS/bin/getimg -ncs corencs iwsa ####  
-f getimgcommandfile -log upgradeimg.log by uibasher  
16:34:30 NOTE: RDS is selected as a source. File(s)  
will be copied from the RDS to the target PM.  
14:34:30 NOTE: Establishing a connection to PM Software  
Download (pfa swdld) Server at localhost.  
16:34:30 NOTE: PM Software Download (pfa swdld) Server  
connection established.  
16:34:31 NOTE: Start to process for PM: A20  
16:34:33 NOTE: Retrieve a list of image files on PM  
disk.  
16:34:41 NOTE: Operation completed.  
16:34:41 NOTE: Request PM to copy file PELFF2.PIMGRH45  
from RDS.  
16:35:44 NOTE: Operation completed.  
16:35:44 NOTE: Request PM to copy file SNAMUL.PIMGRH45  
from RDS.  
16:36:51 NOTE: Operation completed.  
16:36:51 NOTE: Request PM to copy file PELFG1.PIMGRH45  
from RDS.  
16:37:48 NOTE: Operation completed.  
16:37:48 NOTE: Request PM to copy file RAUTP.PIMGRH45  
from RDS.  
16:39:55 NOTE: Operation completed.
```

16:39:55 NOTE: Request PM to copy file
AMOFF386.PIMGRH45 from RDS.
16:42:33 NOTE: Operation completed.
16:42:33 NOTE: Request PM to copy file
L2LOADER.PIMGRH00 from RDS.
16:42:38 NOTE: Operation completed.
16:42:38 NOTE: Request PM to copy file
L3LOADER.PIMGRH40 from RDS.
16:42:42 NOTE: Operation completed.
16:42:42 NOTE: Close the existing PM session.
16:42:42 NOTE: Software Distribution completed.

Chapter 9

Software Substitution

The DPN Software Substitution tool allows you to update the loader file fields within an MCF with new image names and then copy those new images to the PMs that require them. Downloads from the Software Substitution tool are always *complete*; *incremental* downloads are never performed.

Note 1: The images must be located on the RDS. If they are not, use the software distribution command *getimg* to download the images. See “Software Distribution” (page 179) for how to use this tool.

Note 2: An MCF must be converted to the latest service data version before using Software Substitution; otherwise, an error message is generated. See “Service Data Conversion” (page 207) for how to convert service data.

Software Substitution tool

This tool allows you to use the following procedures and concepts:

- Using the software substitution graphical user interface (GUI)
See “Using the software substitution GUI” (page 197)
- Downloading NPM macros
See “NPM macros” (page 198)
- Using the software substitution command line
See “Command syntax” (page 204)

- Module names file
See “Module names file” (page 199)
- Module Names File dialog
See “Module Names File dialog” (page 196)
- Loader mapping file
See “Loader mapping file” (page 200)
- Using the loader mapping file GUI
See “Using the loader mapping file GUI” (page 203)
- Customizing the loader mapping file
See “Customizing the loader mapping file” (page 201)

Software Substitution GUI

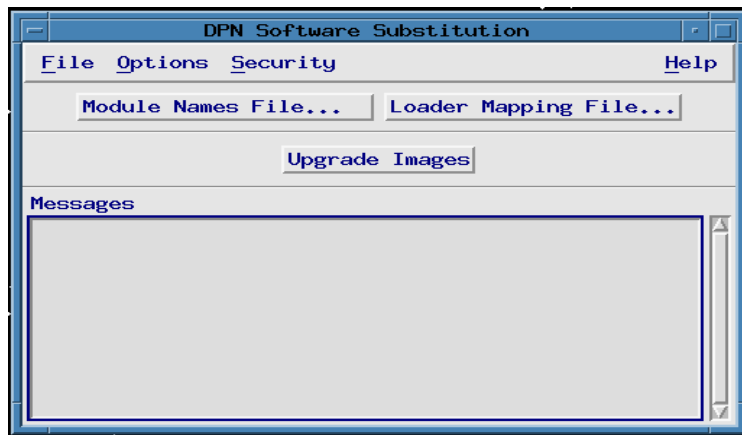
To open the Software Substitution tool, in the Preside MDM window, select Configuration -> DPN Devices -> Administration -> Software Substitution. See the figure “Software Substitution tool window” (page 195).

It provides the following functionality:

- File
See “File menu” (page 195).
- Options
See “Options menu” (page 195).
- Security
See “Security menu” (page 55)
- Help
See “Help menu” (page 55)

- Module Names File.
See “Module Names File button” (page 196).
- Loader Mapping File ...
See “Loader Mapping File button” (page 196).
- Upgrade Images
See “Upgrade Images button” (page 196).

Figure 14
Software Substitution tool window



File menu

The File menu contains the following commands:

- *Select Log file* opens the *Log File* dialog and allows you to enter the name of the log file in which to record output from the DPN Software Substitution tool. Output is always logged.
- *Exit* closes the DPN Software Substitution tool.

Options menu

Set Options opens the Options dialog.

Options dialog

This dialog allows you change the *No Substitution* and *No Distribution* options. Items in this dialog are:

- *No Substitution* uploads MCFs and reads the current image names but does not download any changes.
- *No Distribution* does not distribute new images to PMs.

Module Names File button

Click this button to display a dialog that allows you to select the module names file that you want. See also “Module Names File dialog” (page 196).

Loader Mapping File button

Click this button to display a dialog that allows you to create a loader mapping table for image migration. See also “Loader Mapping File dialog” (page 201).

Upgrade Images button

Click this button to initiate the migration from the old set of software images to the new set.

Module Names File dialog

This dialog allows you to enter the name of the module names file you wish to use. The file name can be entered directly into the *Module names file* data entry field, or the *Directories* and *Files* lists can be used to find the desired module names file.

The dialog initially appears with the default directory displayed. To change directories, either select a directory from the *Directories* list and then select the *Change Directory* button, or just double click the directory in the list. A directory tree can be easily navigated by successively moving through directories in the list.

Once you are in the correct directory, the module names file can be chosen either by selecting the module names file in the *Files* list and then selecting the *Use* button, or by double clicking the module names file in the list. The following commands are available:

- *Use* uses the module names file in the data entry field as the list of upload and download locations and modes.
- *Change Directory* moves from the current directory to the directory selected in the *Directories* list.
- *Close* closes the dialog window.

Substituting software

Software substitution can be performed from the UNIX command line or from the graphical user interface (GUI).

Using the software substitution GUI

Complete the following steps to perform software substitution using the graphical user interface.

- 1 In the Preside MDM window, select Configuration -> DPN Devices -> Administration -> *Software Substitution*.
The DPN Software Substitution tool opens.
- 2 The Connection Manager is displayed over the main window. Enter the appropriate authentication parameters (see “Connection Manager authentication” (page 48) for further information).
- 3 From the DPN Software Substitution window, click *Module Names File...*.
The DPN Software Substitution Module Names File dialog opens. The module names file must already exist. To create a module names file, see “Module names file” (page 199).
- 4 Select the required module names file name.
Selecting the module names file can be done two ways: select the directory, click *Change Directory* and then select a file, or double click the directory and then select a file.
- 5 Click *Use*.
The Module Names File dialog is closed.
- 6 Click *Loader Mapping File...* in the DPN Software Substitution window.

The Loader Mapping File dialog is displayed.

- 7 Select the loader mapping file name.

Selecting the loader mapping file can be done two ways, select the directory and click *Change Directory* and then select a file, or double click the directory and then select a file.

- 8 To add the files to the list, Click *Add to List* or double click the file name.

The images names appear in the list below. Add and delete images as appropriate.

- 9 Click *Use Mapping*.

The Loader Mapping File dialog is closed.

Steps 10 to 14 are optional. System defaults will be used unless otherwise specified.

- 10 Substitution is performed by default. If substitution is not required, choose *Set Options...* from the *Options* menu and click *No substitution*.

The No substitution toggle button will be highlighted.

- 11 Distribution is performed by default. If distribution is not required, choose *Set Options...* from the *Options* menu and click *No distribution*.

The No distribution toggle button will be highlighted.

- 12 Logging is always performed. If you would like the log file saved to a file other than *upgradeimg.log*, choose *Select Log File...* from the *File* menu.

The Log File dialog is displayed.

- 13 Select the directory and log file name.

The directory and file name will appear in the Log file data entry field.

- 14 Click *Use*.

The Log File dialog is closed.

- 15 On the main window click *Upgrade Images*.

A processing dialog appears over the main window until the substitution is complete. To stop the substitution, click Stop in the processing dialog. All error messages will appear in the Messages area on the main window.

NPM macros

- 16 After the software substitution process has completed, the NPM macros must be downloaded. Run the Software Distribution tool using the *-tif* option specifying the *npm.macros.rm.<generic>* and

npm.macros.nm.<generic> files. This will download all of the macro files within these control files.

Module names file

Each line in the module names file specifies the name of a target module, an associated MCF to be uploaded and the MCF to be downloaded. Any type of Preside Multiservice Data Manager (MDM) supported upload (user specified, keyed, dated, active or committed) and download (user specified, keyed or dated) may be used. An MCF may be uploaded from a module or from the disk, but the modified MCF must be downloaded to a target module. The download location may be omitted if it is the same as the upload location. The module names file must be created before using the graphical user interface.

Comments can be included in the module names file by adding a # character as the first non-blank character on the line. Blank lines are ignored.

The following is the format of the module names file.

```
-uploadlocation nms_disk|user_specified <pm_mnemonic>
-uploadmode active | committed | keyed <key>|
    dated <date_key> | user_specified <bundle> [<namsid>]
[-downloadlocation nms_disk |
user_specified <pm_mnemonic>]
-downloadmode user_specified <bundle> | keyed <key> |
    dated <date_key> | [<namsid>]
```

Option parameters are case sensitive.

The following is the minimum character required for the following keywords:

```
COMMITTED = c
ACTIVE = a
USER_SPECIFIED = u
KEYED = k
NMS_DISK = n
DATED = d
```

where:

```
-uploadlocation
    indicates where to upload the MCF from.
```

-uploadmode

indicates how to construct the name of the MCF to be uploaded. For a dated MCF, see “Dated algorithm” (page 45) for information on the date format.

-downloadlocation

indicates the download target PM mnemonic. If this option is not specified, the uploadlocation is assumed to be the intended download location.

-downloadmode

indicates how to construct the bundle of the new MCF to be downloaded. For a dated MCF, see “Dated algorithm” (page 45) for information on the date format.

The following example is uploading the active MCF on module RM1 and downloading it using a date key.

```
-uploadlocation u RM1 -uploadmode a -downloadmode d  
930101
```

The following example is uploading a keyed MCF on module AM1 and downloading it in keyed mode.

```
-uploadlocation u AM1 -uploadmode k newest  
-downloadmode k newest
```

Loader mapping file

The loader mapping file, *subst.all.<release>*, contains a mapping of Old Image names to New Image names. For the Old Image name, only the part of the name before the period (.) is required. For the New Image name, the entire image name is required.

The following example maps image names PELFG1 and RAUTP to new image names. All other image names are not mapped and therefore will not have new images retrieved for them.

```
PELFG1 PELFG1.PIMGRJ15  
RAUTP RAUTP.PIMGRJ15
```

Customizing the loader mapping file

Loader mapping files can be customized using the graphical user interface (GUI) or a text editor. Make a copy of the existing loader mapping file before making any changes.

The GUI allows you to select one or more mapping files. When more than one mapping file is selected, each file is merged into the existing list of images so that there is only one mapping for each Old Image. If an Old Image entry exists in both the table and the selected loader mapping file, the entry from the file whose *<release>* value is greater appears in the table after the merge. For example, *subst.all.G3403* contains the mapping FRELAY FRELAY.PIMGRH45 and *subst.all.G3404* contains the mapping FRELAY FRELAY.PIMGRH46. Both loader mapping files are selected and added to the loader mapping table. FRELAY FRELAY.PIMGRH46 is the mapping in the table after the merge.

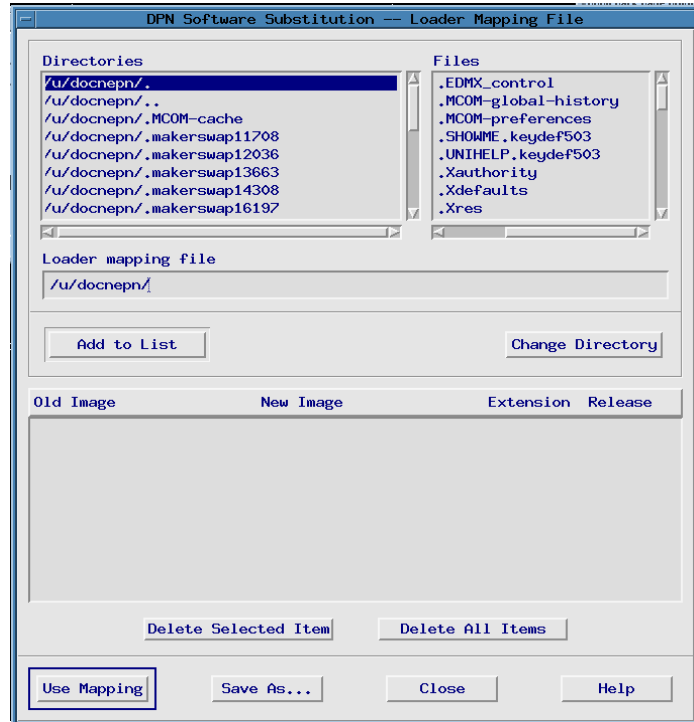
The loader mapping file can be customized to substitute images. For example Image A becomes Image B. These mapping files are not provided and must be created using a text editor.

Loader Mapping File dialog

This dialog allows you to create a loader mapping table to use for image migration. The top portion of the dialog consists of a file selection box used to enter the name(s) of the loader mapping file(s) you wish to use to create the table. Each loader mapping file name can be entered directly into the *Loader mapping file* data entry field, or the *Directories* and *Files* lists can be used to find the desired file.

See the figure “DPN Software Substitution - Loader Mapping File dialog” (page 202).

Figure 15
DPN Software Substitution - Loader Mapping File dialog



The middle portion of the dialog is the loader mapping table. Each table entry includes the *Old Image* name, the *New Image* name, the file *Extension* of the New Image filename, and the *Extension Release* level of the New Image. The bottom portion of the dialog contains the dialog action buttons.

The dialog initially opens with the default directory in the file selection box. To change directories, either select a directory from the *Directories* list and then select the *Change Directory* button, or double click the directory in the list. You can navigate the directory tree by successively moving through directories in the list.

Once you are in the correct directory, a loader mapping file can be chosen either by selecting that mapping file in the *Files* list and then selecting the *Add to List* button, or by double clicking the loader mapping file in the list. When this is done, the entries in the file are merged with the entries already in the list. This merge is performed in such a way that each Old Image name is unique in the list, that is, there is only one mapping for each old image, and in the case where an Old Image entry exists in both the list and the selected loader mapping file, the entry from the file with the highest release level is the entry that appears in the list after the merge.

Individual list entries can be deleted using the *Delete* entry on the popup menu on the item or by using the *Delete Selected Item* button. The entire list can be deleted by selecting the *Delete All Items* button.

Use Mapping uses the current loader mapping table in the migration process. A working file containing the loader mapping table entries is created in the /tmp directory. This file is transferred to the upgrading process as a command line parameter.

Using the loader mapping file GUI

This procedure describes the steps required to customize a loader mapping file using the GUI.

- 1 From the Software Substitution main window, click *Loader Mapping File...*
The DPN Software Substitution - Loader Mapping File dialog is displayed.
- 2 Select the loader mapping file to be used in the substitution.
Selecting the loader mapping file can be done two ways, select the directory and click *Change Directory* and then select a file, or double click the directory and then select a file.
- 3 To add the files to the list, Click *Add to List* or double click the file name.
- 4 To substitute more than one release at a time, perform steps 2 and 3 again and select other mapping files.
This will merge each new file into the existing list of images.
- 5 To delete an individual image, select the image and choose *Delete Selected Item*.
The image will be removed from the list.
- 6 To delete all the images, click *Delete All Items*.

All the images will be removed from the list.

- 7 To save a customized mapping file, click *Save As...* .

The Save As dialog is displayed. This mapping file may be used in future substitution processes.

- 8 Once all files have been selected, click *Use Mapping*.

The Software Substitution main window is displayed.

Command syntax

The following is the command syntax for the Software Substitution tool. Enter the following command syntax as one continuous command.

```
/opt/MagellanNMS/bin/upgradeimg -ncs <dest_mnemonic>  
  <capability_id> <password> -mf <module_names_file>  
  -lf <loader_mapping_file> [-logfile <log_file>]  
  [-nosub] [-nodist] [-h]
```

where:

-ncs <dest_mnemonic> <capability_id> <password>

NCS security flag. The following parameters are used to log in to the target module:

<dest_mnemonic> is the address to which the NCSCOM process will log on.

<capability_id> is the dest_mnemonic capability id.

<password> is the capability id password.

-mf <module_names_file>

Modules names file flag, where <module_names_file> is the name of the file which specifies the target module and associated MCF names for upload and download.

-lf <loader_mapping_file>

The name of the file which specifies the mapping between current image names and new image names.

-logfile <log_file>

Flag used to indicate that a logfile other than the default is to be used. Logging is always on. The default file name is *upgradeimg.log*.

-nosub

The no substitution option. Software Substitution runs but only looks through listed MCFs, determining which images will be required and then distributes those images to the modules. The modified MCFs are not downloaded. This option could be used to trial the substitution process and to prepare the modules for real substitution by having the Software Substitution tool download the necessary images to the modules ahead of time.

-nodist

The no distribution option. Stops Software Substitution from running Software Distribution automatically. However, modified MCFs are still downloaded. This may be used if all the necessary images are known to be on the module.

-h

Display command syntax and descriptions.

In the following example, for each service data view in *toronto.mfile* the new images required are determined by the mappings in the *subst.all.g3203* file. The new images are then distributed to the module but are not downloaded to a new bundle. All messages are output to a file called *toronto.log*

```
/opt/MagellanNMS/bin/upgradeimg -ncs oa id mypwd  
-mf toronto.mfile -lf /localdisk/dpn_img/  
subst.all.g3203 -logfile toronto.log -nosub
```

In the following example, for each service data view in *toronto.mfile*, the new images required are determined by the mappings in the *subst.all.g3203* file. The new images are not distributed to the module, but a new bundle is created and downloaded based on the new images. All messages are output to a file called *toronto.log*.

```
/opt/MagellanNMS/bin/upgradeimg -ncs oa id mypwd  
-mf toronto.mfile -lf /localdisk/dpn_img/  
subst.all.g3203 -logfile toronto.log -nodist
```

Chapter 10

Service Data Conversion

The DPN Service Data Conversion tool allows you to convert service data from one version to the latest service data version, one MCF at a time, or in batches using a command file.

Service data conversion is required when:

- a new main release of Preside Multiservice Data Manager (MDM) is deployed
- a module is entirely provisioned or has components provisioned by DPN Devices configuration.

An MCF must be converted to the latest service data level before the following DPN Devices configuration applications can use the service data:

- Global Data Manager
- Network Reporting System
- Component Provisioning
- Software Substitution

Each of the above applications will detect an MCF that has not been converted and issue a message that service data conversion is required.

Service data converted with the conversion tool is compatible with all supported DPN-100 generic software releases without service impact.

Service data conversion supports all methods of service data upload (ACTIVE, COMMITTED, KEYED, DATED, USER_SPECIFIED) and download (KEYED, DATED, USER_SPECIFIED). In the case of incremental downloads, only the components changed by the conversion are downloaded. Incremental downloads are allowed, however *complete downloads* are highly recommended to synchronize the MCFs with the new DPN Devices configuration release.

Service Data Conversion GUI

The graphical user interface (GUI) can be opened from the UNIX shell or by selecting Configuration -> DPN Devices -> Administration -> Service Data Conversion from the *DPN Devices configuration* toolset. This tool supports cut and paste from the *Messages* area.

Re-authentication can be done by selecting Authenticate from the Security menu. Note, that authentication is not performed when the parameters are entered, but when the actual conversion is started. If the authentication parameters are incorrect, the conversion will fail.

A log file and command file can also be run from the GUI but the command file must have been previously created from the UNIX window. When Verbose mode is selected, all information specific to each change in the service data is displayed in the *Messages* area or the log file

The Service Data Conversion tool's main window displays four pull-down menus, an Upload Parameters area, a Download Parameters area, and a Messages area. See the figure "DPN Service Data Conversion tool window" (page 210).

For more information, see the following sections:

- Menu bar
 - "File menu" (page 210)
 - "Options menu" (page 54)
 - "Security menu" (page 55)
 - "Help menu" (page 55)
- Target MCF upload parameters

- “Upload mode buttons” (page 211)
- “Bundle data entry field” (page 213)
- “Namsid data entry field” (page 213)
- “Upload source buttons” (page 211)
- Target MCF download parameters
 - “Download mode buttons” (page 212)
 - “Bundle data entry field” (page 213)
 - “Namsid data entry field” (page 213)
 - “Download type buttons” (page 212)
 - “Download target buttons” (page 213)
- Messages area
 - “Message area” (page 58)
 - “Verbose” (page 58)

Use the Service Data Conversion Tool to do the following:

- Convert selected service data
See “Converting service data using the GUI” (page 214).
- Use the command line
See “Command line” (page 214)
- Run a command file from the GUI
See “Command file” (page 217).
- Run a log file from the GUI
See “Log file” (page 218).

Figure 16
DPN Service Data Conversion tool window

DPN Service Data Conversion

File Options Security Help

Target MCF upload parameters

Upload mode: ☒ User specified ☐ Keyed ☐ Dated ☐ Committed ☐ Active

Bundle : NAMS ID :

Upload source: ☐ NMS disk ☒ PM :

Target MCF download parameters

Download mode: ☒ User specified ☐ Keyed ☐ Dated

Bundle : NAMS ID :

Download type: ☐ Incremental ☒ Complete

Download target: ☒ Default destination ☐ NMS disk ☐ PM

Convert

Messages ☒ Verbose

File menu

The File menu contains the following commands:

- *Log to File...* allows you to specify a log file.
- *Stop logging* stops recording output from the tool to the log file.
- *Exit* closes the DPN Service Data Conversion tool.

Target MCF Upload Parameters area

Enter the *upload mode* and *upload source* information in this area. The parameters are used in uploading the MCF to the old version.

Upload mode buttons

Upload mode indicates the search mode that the tool uses to find the name of the target MCF to be uploaded. The *NAMS ID* field is mandatory if uploading from the NMS_DISK. You may select one of five modes:

- *User specified* enables you to specify that the name of an MCF will be used to search for the MCF to be uploaded. Each time an upload takes place, you must specify the *bundle* (also the *NAMS ID* if uploading from the NMS_DISK) of the desired MCF. The search string used is:
MC.<bundle>.<namsid>.0
- *Keyed* enables you to specify that a key will be used to search for the MCF to be uploaded. You must specify a key each time an upload takes place. The search string used is:
MC.<key>nn.<namsid>.0, where *nn* ranges from 00 to 99. The MCF with the highest index (*nn*) is uploaded.
- *Dated* enables you to specify that a date will be used to search for the MCF to be uploaded. You must specify a date in the format *yyymmdd* each time an upload takes place. A dated MCF has the format
MC.<yyymmdd>nn.<namsid>.0 where *nn* ranges from 00 to 99. Using date mode is the same as keyed mode if an exact match exists for the date. However, when an exact match does not exist, the most recent MCF, relative to the date, is uploaded; that is, the dated MCF with the later date earlier than the given date. See “Dated algorithm” (page 45) for more information on the date format.
- *Committed* uploads the committed MCF on the PM.
- *Active* uploads the active MCF on the PM.

Upload source buttons

Upload source indicates the method used to find the location of the target MCF. You may select one of two modes:

- *NMS disk* searches for the target MCF in the workstation directory indicated in the *PFA.cfg* file.

- *PM* searches for the target MCF on the PM named in the data entry field.

Target MCF Download Parameters area

Enter the *download mode* and *target* information in this area. The parameters will be used in downloading the target MCF, which is the newly converted MCF.

Download mode buttons

Download mode indicates the mode that the tool uses to name the newly updated target MCF. The download NAMS ID, when not specified, is assumed to be the same as the NAMS ID of the uploaded MCF. You may select one of three modes:

- *User specified* enables you to specify the name of the MCF to be downloaded. Each time a download takes place, you must specify the bundle of the new target MCF. The following MCF is created:
MC.<bundle>.<namsid>.0
- *Keyed* enables you to specify the key to be used to name the new MCF to be downloaded. You must specify a key each time a download takes place. The following MCF is found: *MC.<key>nn.<namsid>.0*, where *nn* ranges from 00-99 and has the highest index (*nn*). A new target MCF with the next index in the sequence is created. The download fails if *MC.<key>99.<namsid>.0* exists.
- *Dated* enables you to specify that a date will be used to search for the MCF to be downloaded. You must specify a date in the format *yymmdd* each time a download takes place. A dated MCF has the format: *MC.<yymmdd>nn.<namsid>.0*, where *nn* ranges from 00-99. The MCF with the highest index (*nn*) is found, and the next MCF in the sequence is created. The download fails if *MC.<yymmdd>99.<namsid>.0* exists. See “Dated algorithm” (page 45) for more information on the date format.

Download type buttons

You can select one of the following types:

- *Incremental* creates only the MCFs that have been modified.
- *Complete* creates all MCFs supported by DPN. These MCFs will be named based on what you have specified for *Download Mode*.

Download target buttons

Download target indicates the mode that the tool uses to determine the destination for the new MCF. You may select one of three modes:

- *Default destination* is used to download the MCF to the target location from which it was uploaded. This location could be either the NMS disk or a PM.
- *NMS disk* is used to download the MCF to the workstation directory indicated in the *PFA.cfg* file.
- *PM* is used to download the MCF to the PM. A data entry field will be displayed in which the mnemonic of the PM may be entered.

Convert button

Click this button to begin converting the service data to the new version.

Bundle data entry field

Enter the bundle number of the MCF in this field. Bundles can be made up of letters, digits, and underscores. They cannot begin with an underscore, and they must be no more than 8 characters long.

Key data entry field

Enter the key of the MCF in this field. Keys can be made up of letters, digits, and underscores. They cannot begin with an underscore, and they must be no more than six characters long.

Date data entry field

Enter the date key of the MCF in this field. Valid date keys must have the format *yymmdd*. See “Dated algorithm” (page 45) for more information on the date format.

Namsid data entry field

Enter the NAMS ID contained in the MCF name in this field. NAMS IDs must be numbers between 256 and 49,151 inclusive.

PM data entry field

Enter the PM mnemonic in this field (including NCS routing information).

Converting service data using the GUI

- 1 From the Target MCF Upload Parameters area, select the Upload Mode and the Upload Source.

This specifies the name and location of the MCF to be converted.

- 2 From the Target MCF Download Parameters area, select the Download Mode, and Download target.

This specifies the mode and target destination to download the new MCF.

- 3 Click Convert.

All errors, warnings or informational messages will be displayed in the Messages area.

Command line

The UNIX command for service data conversion is found in the /opt/MagellanNMS/bin directory. It is recommended that if several PMs are being converted, that the command line be run as a background process with a command file.

Enter the following command syntax as one continuous command.

Command syntax with a command file

```
/opt/MagellanNMS/bin/sdconv -f <commandfilename>  
[-ncs <destination mnemonic> <capability id>  
<password>] [-log [<logfilename>]] [-terse] [-manual]  
[-h]
```

Command syntax without a command file

```
/opt/MagellanNMS/bin/sdconv -uploadmode <mode> [<bundle/  
key/date> [<upload_namsid>]]  
-uploadlocation <location_mode> [<location_value>]  
-downloadmode <mode> <bundle/key/date>  
[<download_namsid>]  
[-downloadlocation <location_mode> [<location_value>]]  
-ncs <destination mnemonic> <capability id> <password>  
[-downloadincremental] [-log [<logfilename>]] [-terse]  
[-manual] [-h]
```

Note 1: Input is not case sensitive, except for <commandfilename> and <logfilename>

Note 2: The following is the minimum character required for the following keywords:

COMMITTED = C
ACTIVE = A
USER_SPECIFIED = U
KEYED = K
NMS_DISK = N
DATED = D

where:

-downloadincremental

Indicates that an incremental download is required. A complete download is forced when upload_location and download_location are different, or when the upload_namsid and download_namsid are different.

-downloadlocation <location_mode> [<location_value>]

Option to indicate where the converted service data is to be stored. By default, if not specified, this location is the same as the upload location.

<location_mode> Must be User_specified or NMS_DISK.

<location_value> Represents the PM where the MCF is stored. Used only when location_mode is User_specified.

-downloadmode <mode><bundle/key/date> [<download_namsid>]

Mandatory option to indicate the mode to be used for storing the converted service data. It is the way of expressing the MCF file name.

<mode> Must be one of: User_specified, Keyed or Dated

<bundle/key/date> The bundle/key/date of the converted MCF. This parameter is to be used with the User_specified, Keyed or Dated.

<download_namsid> The NAMS ID for download. If not specified, NAMS ID of upload MCF is used. Valid: numeric 256-49151.

`-f <commandfilename>`

Indicates that the MCFs to be converted are in the command file. When this option is specified, only `-ncs`, `-log` and `-terse` are valid on the command line.

`-log [<logfilename>]`

Option to specify that diagnostic messages are to be logged to a file. The name of the log file must be specified if other than `sdconv.log`.

`-ncs <destination mnemonic> <capability id> <password>`

Mandatory option to use NCS authentication. The following parameters must be specified:

`<destination mnemonic>` NCS mnemonic of the OA interface
`<capability id>` NCS capability id
`<password>` NCS capability id password

`-uploadlocation <location_mode> [<location_value>]`

Indicates the location where service data to be converted currently resides.

`<location_mode>` Must be `User_specified` or `NMS_DISK`.
`Location_mode = NMS_DISK` is invalid in combination with
`upload_mode` is `Committed` or `Active`.

`<location_value>` Represents the PM where the MCF is stored. Used only when `location_mode` is `User_specified`.

`-uploadmode <mode> [<bundle/key/date> [<upload_namsid>]]`

Mandatory option to indicate the mode to be used for uploading. It is the way of expressing the MCF file name.

`<mode>` Must be one of: `Committed`, `Active`, `User_specified`, `Keyed` or `Dated`

`<bundle/key/date>` The bundle/key/date of the MCF to be converted. This parameter is to be used with the `User_specified`, `Keyed` or `Dated`.

`<upload_namsid>` The NAMS ID for upload. If the `upload_mode` is `NMS_DISK` this option is mandatory. Valid: numeric.

-terse

Indicates that the information specific to the conversion action must not be displayed or logged.

-manual

Indicates the manual NCS access mode. Authentication with NCS is bypassed if this option is specified.

-h

Option to request the display of the Help information. When no parameters are specified on the command line, the Help information is displayed.

Command file

The command file allows you to perform multiple MCF conversions at one time. The command file can be run through the graphical user interface or the UNIX command line. Comment and blank lines are allowed, but a comment line must start with a # character and strings with embedded blanks must be in quotes. Every line that is not a comment is a service data conversion request. The following is the syntax for lines in a command file.

```
-uploadmode <mode> [<bundle_or_key_or_date>
  [<upload_namsid>]
-uploadlocation <location_mode> [<location_value>]
-downloadmode <mode> <bundle_or_key_or_date>
  [<download_namsid>]
[-downloadlocation <location_mode> [<location_value>]]
[-downloadincremental]
```

The following is an example of a command file.

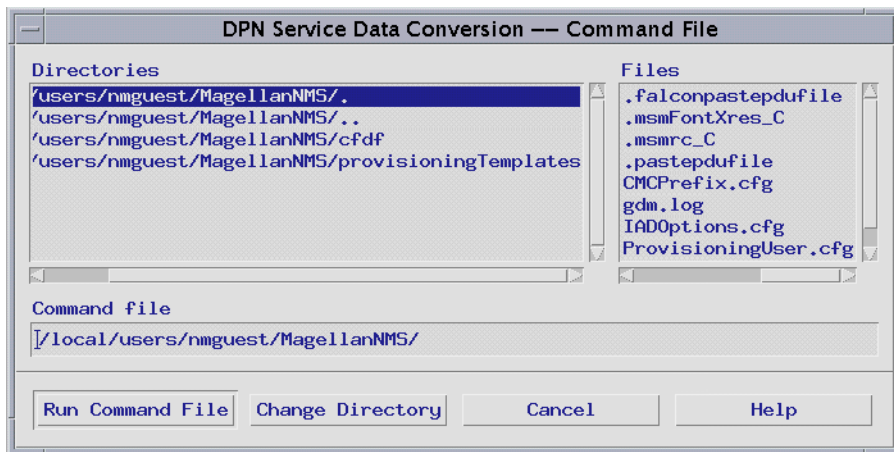
```
#This is a sample sdconv command file
#First request
-uploadmode dated 930323 -uploadlocation U R34
  -downloadmode dated 930324
#Second request
-uploadmode CoMMit -uploadlocation NMS_DISK -
downloadmode K New
```

Running a command file from the GUI

If you wish to use an existing command file from the GUI, perform the following steps from the anchor window.

- 1 From the *Options* menu choose *Run Command File...*

The DPN Service Data Conversion - Command File dialog is displayed.



Note: Parameters do not need to be specified in the anchor window as they are contained in the command file.

- 2 Select the directory and enter the name of the command file.
- 3 Click Run Command File.

All errors, warnings or informational messages will be displayed in the Messages area.

Log file

The log file contains log messages that are produced during a service data conversion. When logging is turned on, the default file name is `sdconv.log`; it can be changed if necessary. If a log file already exists, the new logs will be appended to the file. The log file is locked when in use and if the file is currently locked, the service data conversion aborts.

A log file contains the following information:

- The date and time the conversion was started.

- The user command.
- The name and location of the service data file to be converted and the time the service data was uploaded.
- The service data level of the uploaded MCF and the service data level that this MCF is going to be converted to.
- The field and envelopes that are impacted by the service data conversion. If *terse* mode has been selected, this information is not displayed.
- Indication that the service data conversion has completed, and details when it hasn't.
- The name and location of the converted service data files.

The following is an example of a log file.

```
NOTE: Conversion initiated by uibasher on 1997-11-25
13:33:48.
User command: sdconv -uploadmode KEYED CONVER
-uploadlocation USER_SPECIFIED R34
-downloadmode KEYED MYKEY -ncs CORENCS IWSA XXXX
NOTE: Successful upload of MC.CONVER00.1234.0 from
R34.
NOTE: Converting from SD_version: 4 to SD_version: 5.
NOTE: The Component PE 1 PI 1 PO 1 UTP 9 UTPLINK 0
HIGHUTILLEVEL:80 has been added.
NOTE: The Component PE 1 PI 1 PO 1 UTP 0 UTPLINK 0
TIMEINTLOWUTIL:2 has been added.
NOTE: The Component PE 1 PI 1 PO 1 UTP 0 UTPLINK 0
TIMINTHIGHUTIL:5 has been added.
NOTE: The Component PE 1 PI 1 PO 1 UTP 0 UTPLINK 0
THMETRICHANGE:15 has been added.
NOTE: The Component PE 1 PI 1 PO 0 UTP 0 UTPLINK 0
DELAYOVERRIDE: Undefined has been added.
NOTE: An invisible field has been added under the
component PE 1 PI 1 PO 1 UTP 0 UTPLINK 0.
NOTE: Conversion completed.
NOTE: Successful download of MC.MYKEY00.1234.0 to R34.
```

Running a log file from the GUI

- 1 From the *File* menu choose *Log to File...*

The Log File dialog is displayed. The menu item will toggle to Stop Logging.

- 2 Select the directory and enter the name of the log file.
- 3 Click *Log to File*.

How to stop logging

- 1 From the *Options* menu choose *Stop Logging*.

The menu item will toggle to Log to File... .

Chapter 11

Envelope Editor

The Envelope Editor tool is used to view, modify, create, or delete service data envelopes. See the figure “DPN Envelope Editor main window” (page 222).

You must be familiar with the service data format before using the Envelope Editor tool, as it does not provide service data validation. See 241-2001-340 *DPN-100 Envelope Definitions*, for acceptable service data values.

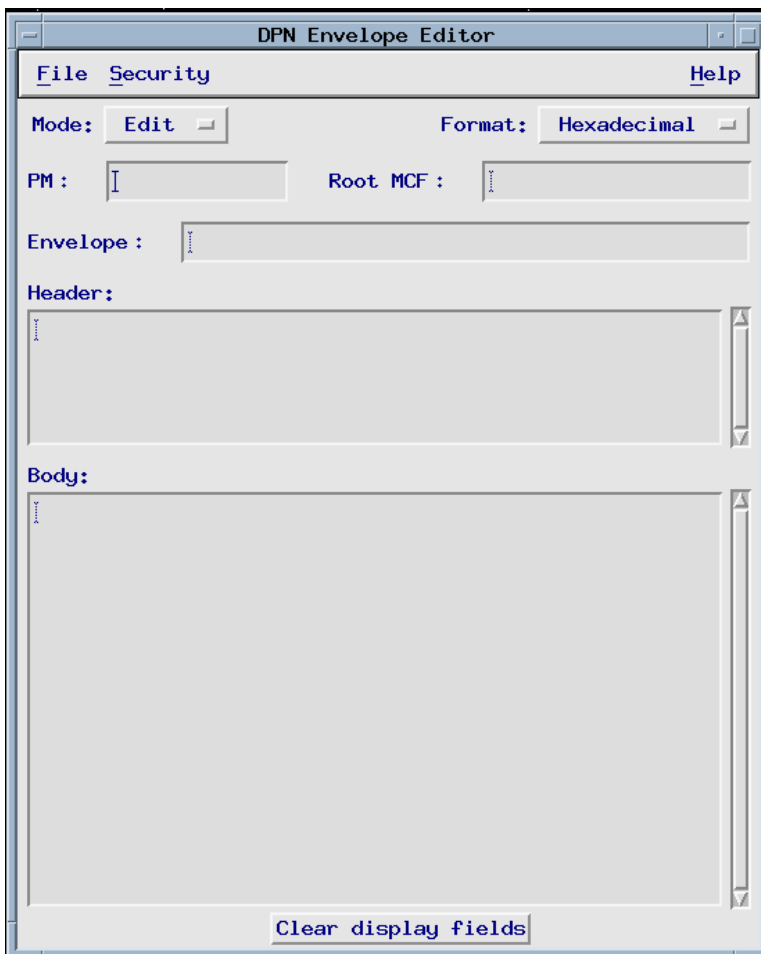
The Envelope Editor is used to edit envelopes for a particular packet module and for a particular Root MCF. Use the following procedures for editing envelopes:

- identify the DPN-100 module on which the service data resides
See “Retrieving data” (page 228).
- identify the Root MCF that contains the envelopes to be edited
See “Root MCF name” (page 225).
- identify the envelope to be edited, then edit it using the commands available from the *File* menu
See “Manipulating service data” (page 229).
- continue identifying and editing envelopes (or adding new envelopes) for the specified Root MCF until you are done
See “Locating envelopes” (page 231).

- send your changes to the specified PM using the *Download* command
See “Downloading service data” (page 232).

All changes made are stored in a temporary buffer until they are downloaded to the DPN module or the *Discard* command is chosen. See “Discarding service data” (page 232).

Figure 17
DPN Envelope Editor main window



The Envelope Editor main window

The Envelope Editor main window provides the following specific functionality:

- File menu
See “File menu” (page 224).
- Mode
See “Provisioning mode” (page 225).
- Format
See “Format pull-down menu” (page 225).
- PM
See “PM name” (page 225).
- Root MCF
See “Root MCF name” (page 225).
- Envelope
See “Envelope name” (page 226).
- Header
See “Service Data Header editing area” (page 227).
- Body
See “Service Data Body editing area” (page 227).
- Clear display fields
See “Main Window Clear button” (page 227).

File menu

This menu accesses the basic functions of the Envelope Editor:

- *Retrieve envelope* retrieves the specified SDA or envelope and displays it in the *Header* and *Body* areas.
- *Add envelope* adds a new service data envelope or SDA header. Select the *Add envelope* function only after you have filled in both the service data identification area and the service data display area.
Adding new envelopes must be done in a “top down” fashion. This means that when you are adding service data for connected components (for example, PE, PI, PO), you must add the service data for a PE before the PI(s) on that PE. Likewise, you must add the service data for a PI before you add it for a PO(s) on that PI, and so on down the service data hierarchy. See also “Adding service data” (page 229).
- *Replace envelope* replaces a specific service data envelope or SDA header with either an edited version, or with another existing service data envelope or SDA header. The contents of the envelope are displayed in the *header* and *body* areas and can be edited. See also “Replacing service data” (page 230).
- *Delete envelope* removes the specified service data envelope or the SDA from the Root MCF. If an SDA is deleted, all service data envelopes and SDAs within that SDA are also deleted. See also “Deleting service data” (page 231).
- *List envelopes...* displays a list of the envelopes and SDAs that match the wildcarded description in the *Envelope* field. All envelope field parameters must be entered in multiples of two. For example, if the parameter is PI 1 * you must add a * to make the number of parameters an even number. See also “Locating envelopes” (page 231).
- *Download* downloads all service data changes that have taken place since the last download or discard operation to the DPN-100 module. This command is not enabled unless changes have been made that may be downloaded. See also “Downloading service data” (page 232).
- *Discard* discards all service data changes since the last download or discard operation. This command is not enabled unless changes have been made that may be discarded.
- *Exit* exits the Envelope Editor tool.

Provisioning mode

The *Mode* pull-down menu area in the main window allows you to change the mode of a session to one of the following:

- *Edit* This mode (the default) allows changes to the service data and downloading of the modified view.
- *View* You will only be able to view the service data. No service data modifications or downloads can be performed in this mode.

Note: If an attempt is made to change the *Mode* during a session, a dialog will be displayed asking you to confirm the mode change. If *Yes* is selected, the uploaded provisioning data will be cleared regardless of any changes made to the current session.

Format pull-down menu

The Envelope Editor can display Service data in two formats:

- *Binary format* displays service data in lines of two words each. The bits of each word are displayed from high bit to low bit (bit 15 to bit 0). Bits are displayed in groups of four. Each group of bits is separated from other groups by a space.
- *Hexadecimal format* displays service data in lines of eight words each. Each word is made up of four hexadecimal digits. The most significant digit is displayed first, followed by the least significant digit. Words are separated from each other by a space.

PM name

Enter the name of the target DPN-100 module here. All editing operations will be done on the service data for this module.

Root MCF name

Enter the name of the target master configuration file here. All editing operations will be done on a copy of the service data contained in this MCF. Valid MCF names have the form: *MC.<bundle>.<namsid>.0*

For example: *MC.XYZ01.1234.0*

Envelope name

Enter the full name of the target service data area (SDA) or envelope here. If you do not know the exact name of the SDA or envelope that you wish to edit, use the wildcard (*) character.

Data Values

The SDA or envelope name must be specified in hierarchical order (e.g. PI then PO then envelope). The component, number, and envelope must be separated from each other by spaces. The complete envelope name must consist of name-number pairs; if a name usually has no associated number, use 0 (zero) instead. Examples of valid entries are:

```
PI 1
PI 2 PO 1 ITI 0 HARDWARE_ENV 0
PI 1 PO 4 ITI 0 ITIDNACUG 123456789012345
```

Using the wildcard character

Caution: When you generate a list of envelopes, envelopes named UNKNOWN may appear in the list. An UNKNOWN envelope is one with a type that the Envelope Editor does not understand. Envelopes with a type of UNKNOWN are still valid envelopes and may be retrieved, modified, added, or deleted just like any other envelope. However, caution is necessary when modifying the header of an UNKNOWN envelope, since altering the header may change the actual envelope type.

To have the Envelope Editor provide you with a list of SDAs or envelopes within a given SDA:

- In the *Envelope* field, enter the wildcard character (*) as the SDA number or envelope name. Examples of valid entries are:

* *	list all top level SDAs and envelopes
PI *	list all PIs
PI 3 PO *	list all POs on PI 3
PI 3 PO 1 * *	list service of PO 1
- Choose *List envelopes* from the *File* menu. A dialog appears prompting you to select one of the SDAs or envelopes that are listed.

- From the *List envelopes dialog*, select an SDA or envelope and press the mouse *menu button*, and choose *Add to name*. The name of the selected SDA or envelope is placed in the *Envelope* field.
- You can now retrieve the envelope, and as desired, perform any of the editing operations.

Service Data Header editing area

This scrolling text field is used for creating or modifying headers for SDA and envelopes. The editing commands that are available are:

- *Cut* cuts selected text from the window and places it in a buffer.
- *Copy* copies selected text to a buffer.
- *Paste* pastes the content of the buffer at the cursor location.
- *Delete* deletes selected text.
- *Select all* selects all the text in the window.
- *Deselect all* deselects the selected text.

Service Data Body editing area

This scrolling text field is used for creating or modifying service data bodies for SDA and envelopes. The same commands as described under “Service Data Header editing area” (page 227) are available.

Main Window Clear button

Click this button to discard the service data currently in the *Header* and *Body* areas.

List window

The SDAs and envelopes within the SDA identified in the *Envelope* field are listed in this window. The following commands are available:

- *Add to name* adds the selected SDA or envelope name to the current contents of the *Envelope* field.
- *Add to name and List envelopes...* adds the selected SDA or envelope name to the current contents of the *Envelope* field, and lists the SDAs and envelopes contained in the SDA or envelope.

- *Cancel* click this button to close the list window without performing a *List envelopes* operation.

Download Confirmation dialog

This dialog window shows that the download operation has successfully completed. The name of the new master configuration file (MCF) is shown in the window.

Click the *OK* button to close the download confirmation window.

Download window

To continue with the download of service data to a new MCF, enter the bundle number for the new MCF in the *New bundle* field and click *OK*.

Click the *OK* button to download the service data changes to a new MCF. The new MCF will have the bundle number entered in the *New bundle* field.

Click the *Cancel* button to cancel the download operation and close the download window.

Retrieving data

The Retrieve envelope command is used to retrieve specific service data envelopes. The retrieved service data is placed in the *Header* and *Body* areas on the main window.

The SDA or envelope name must be specified in hierarchical order, for example, PI then PO then envelopes. The component, number, and envelope must be separated by a space. The complete envelope name must consist of name-number pairs; if a name has no associated number, use 0 (zero) instead. The following are examples of valid entries:

```
PI 1
PI 2 PO 1 ITI 0 HARDWARE_ENV 0
PI 1 PO 4 ITI 0 DNACUG X12345678901234
```

Retrieving a service data envelope

- 1 Enter the PM, Root MCF on the PM, Envelope or SDA name.
- 2 From the File menu choose *Retrieve envelope*.

The service data for the specified envelope appears in the Header and Body areas.

Manipulating service data

This section explains how to perform all the essential service data operations, including

- adding service data
See “Adding service data” (page 229).
- replacing service data
See “Replacing service data” (page 230).
- deleting service data
See “Deleting service data” (page 231).
- locating envelopes
See “Locating envelopes” (page 231).
- downloading service data
See “Downloading service data” (page 232).
- discarding service data
See “Discarding service data” (page 232).
- clearing fields
See “Clear display fields command” (page 232).

Adding service data

You can use the Add envelope command to create a new service data envelope or SDA header for a DPN module; for example, to add a new port to a DPN module. See 241-2001-340 *DPN-100 Envelope Definitions* for service data envelope values.

Adding a service data envelope

- 1 Specify the envelope you wish to add and the location.
- 2 Place the cursor in the Header or Body area. Enter the new service in hexadecimal or binary format.
- 3 From the File menu choose *Add envelope*.

The Header and Body areas are cleared of information. The service data is copied to the location specified in the service data identification area only after a Download is performed.

or

- 1 Retrieve the service data envelope.
- 2 Edit the information in the Header or Body areas.
- 3 Change the name and location of the envelope in the *Envelope* area.
- 4 From the File menu choose *Add envelope*.

The Header and Body areas are cleared of information. The service data is copied to the location specified in the service data identification area only after a Download is performed.

Replacing service data

The Replace envelope command is used to make changes to a particular service data envelope or SDA header. You can use the Replace envelope command to edit service data or to overwrite service data with existing service data.

Replacing a service data envelope

- 1 From the File menu choose *Retrieve envelope*.

The service data specified appears in the Header and Body areas.

- 2 Edit the Header and Body information as appropriate.
- 3 Change the name and location of the envelope in the *Envelope* area.
- 4 When you have completed the changes, choose Replace envelope from the *File* menu.

The Header and Body areas are cleared of information. The changes are implemented after a download is performed.

Deleting service data

The Delete envelope command allows you to remove specific service data envelopes or SDAs from an MCF.

Deleting a service data envelope

- 1 From the File menu choose *Retrieve envelope*.

The service data specified appears in the Header and Body areas.

- 2 From the *File* menu choose *Delete envelope*.

A dialog appears asking you to confirm the delete operation.

- 3 Click OK to complete the delete operation.

Locating envelopes

The List envelopes command allows you to list envelopes and SDAs within a specified wildcarded SDA. The wildcard is used in the Envelope area in place of an envelope or SDA name. There must be an even number of variables in the Envelope field when specifying a wildcard. For example, ** **, *PI ** or *PO 2 * **.

Note: See also “Using the wildcard character” (page 226).

Listing service data envelopes

- 1 Enter the wildcard character (***) in the *Envelope* area in place of an SDA or envelope name.

- 2 From the *File* menu choose *List envelopes*.

The Envelope Editor list dialog appears with a list of SDAs or envelopes that are available.

- 3 Select the item you wish to list.

- 4 Press menu and choose Add to name and list envelopes.

An Envelope Editor list dialog re-appears with the contents of the specified item.

- 5 Select the item you wish to add.

- 6 Press menu and choose Add to name.

This replaces the *** with the added item.

- 7 From the File menu choose *Retrieve envelope*.

The service data specified appears in the Header and Body areas.

Downloading service data

The Download command downloads all service data changes since the last download. This command becomes enabled only when a change has been made to service data. You must perform the download operation before you make any changes to another MCF, such as adding, replacing and deleting.

- 1 From the File menu choose *Download*.

The download dialog appears.

- 2 Enter the bundle number of the modified service data.
- 3 Click OK.

A download completed dialog appears when the download operation is complete.

Discarding service data

The Discard command is used to discard any changes that have not been saved. The Discard command becomes enabled only when a change has been made to the service data.

- 1 From the File menu choose *Discard*.

A dialog appears asking you to confirm whether you wish to discard all service data changes that have not been downloaded.

- 2 To complete the discard operation, click OK.

Clear display fields command

The Clear display fields button is used to clear the Header or Body text fields. This command does not affect any previous changes to service data, such as the *add* and *replace* commands; it provides a clear area for entering service data in the service data header and body area.

Clearing text fields

You have called up service data that now appears in the Header and Body areas of the *Envelope Editor* main window. You wish to clear this information and call up some new service data.

- 1 Click Clear display fields.

The service data is cleared from the text fields. You can now either view more service data or exit from the Envelope Editor.

Unknown envelopes and unknown SDAs

Envelopes or SDAs that the Envelope Editor does not recognize, may be retrieved, added, replaced, or deleted like any other envelope or SDA.

Unknown envelopes or SDA headers must follow the format described in 241-2001-340 *DPN-100 Envelope Definitions*.

Chapter 12

Network Activation

The Network Activation Tool (NAT) simplifies and automates the activation process for multiple modules in a network. The activation and commit operations can be performed interactively or in batch mode.

For DPN modules, the NAT can be used to:

- download MCFs from an NMS Disk
- distribute the software images used by an MCF from a Software Distribution Site (SDS) or from a Remote Download Site (RDS)
- activate MCFs
- commit MCFs
- commit loaders

For Passport modules, the NAT can be used to

- activate a View
- commit a View

There are two interfaces for the NAT:

- a graphical user interface
See “Network Activation window” (page 237).
- a command line interface
See “Network Activation Tool command line interface” (page 273).

For network activation procedures associated with the Network Activation Tool, see “Using the Network Activation tool” (page 261).

The module type, module name, MCF or View names, and actions for network activation are stored in a Network Activation File (NAF). The graphical user interface lets you create or modify the NAF. To reduce the possibility of error, we strongly recommend that you use the graphical user interface for creating or modifying a NAF instead of using an editor like vi.

For a description of the fields in a NAF, see “Network Activation File (NAF)” (page 269).

Special benefits of using the Network Activation Tool for DPN

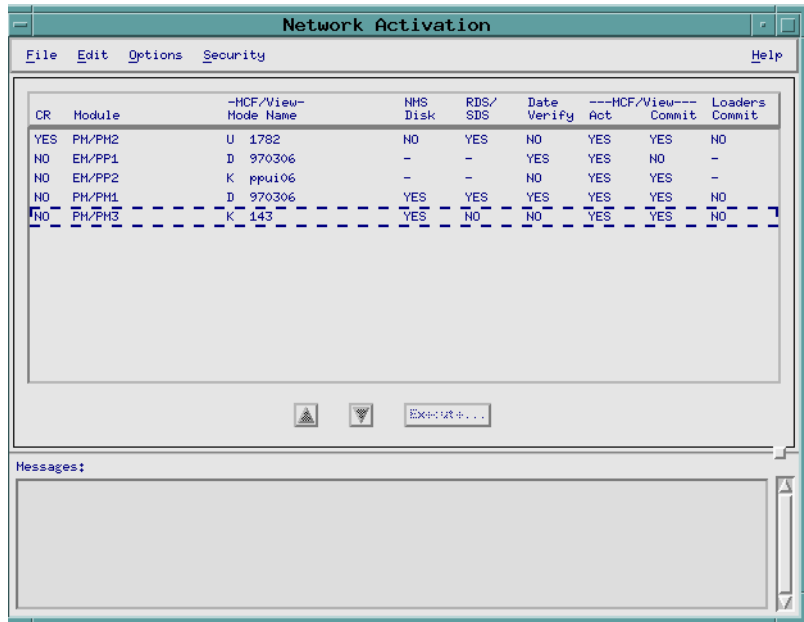
Configuring a DPN module usually involves the following steps:

- 1 Configure the MCF with the Component Provisioning Tool.
- 2 Download the MCF to the DPN module now, or save the MCF on NMS disk and download it later (see “Component Provisioning” (page 61)).
- 3 Distribute the necessary images for the MCF with the Software Distribution Tool (see “Software Distribution” (page 179)).
- 4 Activate and commit the MCF with the Command Console Tool.

If several DPN modules are involved, you need to repeat these steps for each module in the network. The Network Activation Tool (NAT) lets you automate all the steps that follow step 1, thereby saving time and reducing the risk of errors caused by data entry mistakes.

For an illustration of the Network Activation Tool, see the figure “Network Activation window” (page 237)

Figure 18
Network Activation window



Network Activation window

The Network Activation window contains a menu bar, a working area, and a *Messages* area. The working area displays a list of Network Activation (NA) records and contains three buttons for rearranging the order of records in the list and for executing them. The *Messages* area is used to display status or error information.

For information about items in the Network Activation Window, see the following sections:

- “Menu bar” (page 238)
- “Working area” (page 240)
- “Messages area” (page 245)

Menu bar

The menu bar contains the menus described in the following sections:

- “File menu” (page 238)
- “Edit menu” (page 238)
- “Options menu” (page 239)
- “Security menu” (page 239)
- “Help menu” (page 239)

File menu

The *File* menu contains the following commands:

- *Load...* loads records from a network activation file (NAF) into the record list. This command opens the Load NAF dialog in which you specify the NAF to load. If the record list has any records displayed in it, a confirmation dialog opens and prompts for permission to clear the list before loading the NAF.
- *Save...* saves new or modified records to a NAF. If there are no additions or changes in the record list to be saved, or if you have not loaded a NAF, this command is disabled (grayed out).
- *Save As...* saves records to a specified NAF. This command opens the Save NAF dialog for specifying the full path name of the NAF. If there are no entries in the record list, this command is disabled.
- *Exit* closes all windows and closes the tool.

Edit menu

The *Edit* menu contains the following commands:

- *Add DPN Record...* adds a DPN record to the record list. This command opens the DPN Edit dialog for entering the data. The new record is added after the record that is being pointed at (the record that is surrounded by the box with a dashed line).
- *Add Passport Record...* adds a Passport record to the record list. This command opens the Passport Edit dialog for entering the data. The new record is added after the record that is being pointed at (the record surrounded by the box with a dashed line).

- *Clear* removes all records from the record list. If the list has been modified but not saved, a confirmation dialog opens to obtain confirmation of the clear.

Options menu

The *Options* menu contains the following commands:

- *DPN Preferences* opens the DPN Preference dialog. This dialog is used for entering the preferred values for a new DPN record.
- *Passport Preferences* opens the Passport Preference dialog. This dialog is used for entering the preferred values for a new Passport record.
- *Save Preferences* saves, for future sessions, any changes you made in the DPN Preference or Passport Preference dialogs.

Security menu

The *Security* menu contains the following commands:

- *Group Authenticate...* opens the Passport Group Authentication dialog to perform authentication for accessing a group of Passport modules. Although you can authenticate with more than one group, only the last group you authenticated with is active.
- *NCS Authenticate...* opens the DPN Authentication dialog to perform authentication for accessing DPN modules that are managed by one OA. Although you can authenticate with more than one OA, only the last OA you authenticated with is active.

Help menu

The *Help* menu contains the following commands:

- *On Context* lets a user obtain help information for an item in the NAT main window. Choosing this command changes the cursor to a question mark. Moving the question mark to an item in the window and clicking the *select* button provides help information about the item selected.
- *On Help* displays help text about how to use the help facility.
- *On Window* displays help text about the application main window and its general contents.

- *On Keys* displays help text about the function keys, mnemonics, and keyboard accelerators. The accelerators are as follows:

Ctrl + L = Load...

Ctrl + S = Save

Ctrl + A = Save As...

Ctrl + E = Exit

Ctrl + G = Group Authenticate...

Ctrl + N = NCS Authenticate...

Working area

The working area of the Network Activation Tool (NAT) contains a Network Activation (NA) record list that uses color indicators to indicate the status of network activation. The record list also supports a pop-up menu and contains three action buttons. For descriptions of these items, see:

- “NA record list” (page 240)
- “Color indicators” (page 242)
- “Pop-up menu” (page 243)
- “Up and down arrow buttons” (page 243)
- “Execute button” (page 244)

NA record list

The NA record list displays Network Activation (NA) records. The content of the records and their order in the list can be modified using commands and action buttons. See also:

- “Pop-up menu” (page 243)
- “Up and down arrow buttons” (page 243)
- “Execute button” (page 244)

You can select a set of records in the NA record list for execution. While execution is in progress, fields in the records change color to indicate the execution status. See also: “Color indicators” (page 242).

The NA record list contains the following fields:

- *CR* indicates (YES|NO) whether the MCF/View is critical.

Critical records are executed first, one at a time, in the order in which they appear in the list. Then the non-critical records are executed. If a critical record cannot be executed, the tool stops and does not execute the next record.

- *Module* displays the module name in the format *PM*/*<PM name>* for DPN modules or *EM*/*<Passport name>* for Passport modules.
- *MCF/View Mode* indicates the method used for accessing the MCF or View. The mode is one of:

K access with a key

D access by date

U access according to a user-specified information

- *MCF/View Name* indicates the name of the key, the date, the *bundle_id* (for DPN), or the View (for Passport) used for activation or committing.
- *NMS Disk* indicates whether an MCF is to be downloaded from an NMS disk to a DPN module. For a Passport module, this field is not applicable and is always set to “-”.
- *RDS/SDS* indicates whether the software images used by an MCF are to be distributed to a DPN module from a Remote Distribution Site (RDS) or a Software Distribution Site (SDS). For a Passport module, this field is not applicable and is always set to “-”.
- *Date Verify* indicates whether date verification is to be performed on an MCF or a View that is to be activated by date. When *Date Verify* is set to YES, the date of the MCF or View is checked against the date of the active MCF or View. If the MCF or View has a dated key that predates the active MCF or View, activation fails and the record turns red.

- *MCF/View Act* indicates whether the MCF or View is to be activated.
- *MCF/View Commit* indicates whether the MCF or View is to be committed.
- *Loaders Commit* indicates whether the loaders are to be committed for a DPN module. For a Passport, this field is not applicable and is always set to '-'.

The NA record list is a multi-select list, which means you can select more than one record at a time.

The NA record list also supports double-clicking. Double-clicking on a record that has not been executed selects the record and opens a dialog for viewing or editing the record. Double-clicking on a record that has been executed selects the record and opens a dialog that displays log information about execution of the record.

Color indicators

Different colors are used to indicate the status of the NA records. The colors and their meanings are as follows:

- No color means the record is ready for execution.
- *Blue* means the record has been executed successfully.
- *Green* means execution is in progress. When a specific action is being performed, the corresponding field turns from blue to green. If the action completes successfully, the field turns from green to blue and the next field turns green. When all actions on a record are completed successfully, the entire record turns *blue*. If an action fails, the entire record turns *red* or *yellow*, according to the severity of the error.
- *Yellow* means that a minor error was found during execution or that execution was interrupted by the user.
- *Red* means a major error was found during execution. This record can only be re-executed if the user resets the state manually.

After execution is complete, a user can reset the color of the records back to no color in preparation for re-execution by means of the *Reset* command. This command is available in the record list pop-up menu.

Pop-up menu

The record list is equipped with a pop-up menu that contains the following commands:

- *Edit* opens the *DPN Edit* dialog or the *Passport Edit* dialog for viewing or editing a record that is selected in the record list. The module *name* cannot be changed during the edit.
- *Use Preferences* applies values that were pre-defined in the *DPN Preference* dialog or in the *Passport Preference* dialog to records that are selected in the record list.
- *Add DPN Record...* opens the *DPN Edit* dialog for entering a new DPN record. The new record is added after the highlighted record.
- *Add Passport Record...* opens the *Passport Edit* dialog for entering a new Passport record. The new record is added after the highlighted record.
- *Delete* deletes records that are selected from the NA record list. A confirmation dialog opens and prompts for permission to perform the deletion.
- *Show Status* opens a dialog that shows execution information for a record that is selected in the NA record list. This command is only enabled if the record has been executed.
- *Reset* changes the state of selected records back to their initial state then deselects the records. This allows the records to be re-selected and re-executed, regardless of their previous state.
- *Select All* selects all records in the NA record list.
- *Deselect All* deselects all selected records.

Up and down arrow buttons

The up arrow button moves records that are selected in the NA records list upwards towards the top of the list. The down arrow button moves them downwards. You can select more than one record at a time to move up or down.

The up and down arrows are especially useful for rearranging records to change their execution order, or for reducing the number of times you need to authenticate to execute all of the records in the record list.

Critical records in the record list are always executed first, one at a time, in the order in which they appear in the list, followed by the non-critical records. You can rearrange the critical records with the arrows to specify the order in which the critical records, followed by the non-critical records, are executed.

With the Network Activation Tool, you can only execute records for DPNs managed by one OA or for Passports in one Passport group at a time. On occasion, records may apply to modules that are managed by different OAs or that belong to different Passport groups. To execute all of the records, you need to authenticate with the OAs or Passport groups as needed. You can use the arrows to group all the records for one OA or Passport group together, minimizing the number of times you need to authenticate.

The up and down arrows are disabled unless at least one record is selected in the list.

Execute button

The *Execute...* button executes the records that are selected in the NA record list.

When you click *Execute...*, a confirmation dialog opens and displays the list of modules on which the actions are to be performed, prompting for confirmation. For more information, see “Network Activation - confirmation dialog” (page 260).

Clicking *OK* in the confirmation dialog opens an *Execution* dialog for specifying the parameters for the execution. Once you have set up the execution parameters in the *Execution* dialog, clicking on the *Execute* button starts execution of the records. For more information, see “Execution dialog” (page 256).

When execution of a record begins, the entire record turns blue. Then, as each step in the execution takes place, the field associated with the step turns from blue to green. If the step is successful, the field turns from green to blue, and the next field turns green. If all steps in are executed successfully for a record, the entire record turns blue. If a step fails, the entire record turns red or yellow, according to the severity of the failure.

While execution is underway, the *Execute...* button is replaced by a *Stop* button that can be used to halt execution. Halting execution turns the record in which execution was halted to yellow.

Records in the record list are executed as follows:

- Red, yellow, or blue color records are not executed.
- Critical records are executed first, one at a time, in the order in which they appear in the record list.
- Non-critical records are executed after critical records, also in the order in which they appear in the list.
- If execution of a critical MCF or View fails, the tool stops and does not execute the next record.
- Records are only executed for the Passport group or OA whose authentication is currently active. That is, the group or OA that has most recently been authenticated by selecting *Group Authenticate...* or *NCS Authenticate...* from the *Security* menu.

Messages area

The *Messages* area displays execution status information and error messages.

Dialogs

For information about dialogs for the NAT, see the following:

- “Network Activation - Load NAF dialog” (page 246)
- “Network Activation - Save NAF dialog” (page 247)
- “Network Activation - DPN Edit dialog” (page 248)
- “Network Activation - Passport Edit dialog” (page 252)
- “DPN Preference dialog” (page 256)
- “Passport Preference dialog” (page 256)
- Group Authentication dialog, see 241-6001-023 *Preside MDM Configuration Management for Passport User Guide*
- NCS Authentication dialog, see “Authentication dialog” (page 50)
- “Execution dialog” (page 256)

- “Processing dialog” (page 259)
- “Network Activation - confirmation dialog” (page 260)
- “Network Activation - log information dialog” (page 260)
- “Error dialog” (page 261)
- “Warning dialog” (page 261)

Network Activation - Load NAF dialog

The Network Activation - *Load NAF* dialog lets you specify the name of a NAF file that contains records to be loaded into the NA record list. See the figure “Network Activation -Load NAF dialog” (page 247).

The dialog contains the following items:

- a *Filter* field for specifying the path to the directory that is to be used as a starting point for finding the NAF to load

The subdirectories of the directory specified in this field are displayed in the *Directories* panel of the dialog when you enter a carriage return in this field, or when you click the *Filter* button.

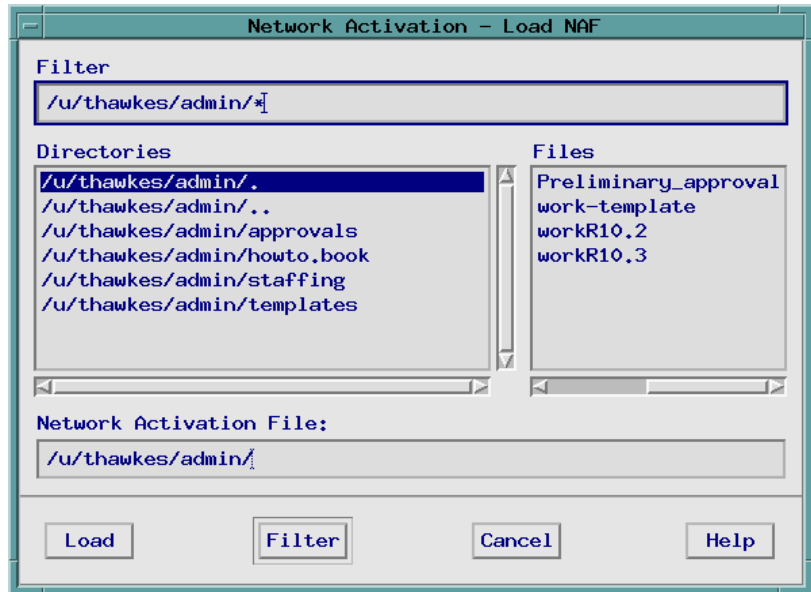
- a *Directories* panel for displaying the available subdirectories of the directory specified in the *Filter* field
- a *Files* panel for displaying the available files of the directory selected in the *Directories* panel
- a *Network Activation File* field for specifying the full path name of the NAF to be loaded

You can specify the name of a NAF to be loaded in one of two ways: by entering its full path name in this field; or, by entering information in the *Filter* field, selecting a directory in the *Directories* panel, and selecting a file in the *Files* panel.

- a *Load* button for loading the NAF specified in the *Network Activation File* field into the NA record list
- a *Filter* button for updating the *Directories* panel, the *Files* panel, and the *Network Activation File* field according to the pathname entered in the *Filter* field

- a *Cancel* button for aborting the load and closing the dialog
- a *Help* button for displaying help information about the dialog

Figure 19

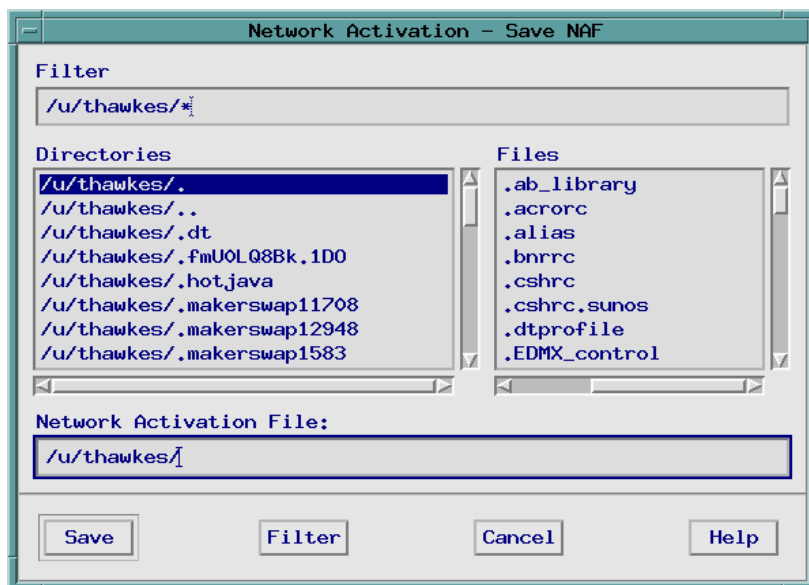
Network Activation -Load NAF dialog**Network Activation - Save NAF dialog**

The *Network Activation - Save NAF* dialog lets you specify the full path name of a NAF in which to save new or modified records from the NA record list. See the figure “Network Activation - Save NAF dialog” (page 248).

Fields, panels, and buttons in the dialog are similar to those in the Network Activation - Load NAF dialog. See also “Network Activation - Load NAF dialog” (page 246).

Figure 20

Network Activation - Save NAF dialog



Network Activation - DPN Edit dialog

The Network Activation - *DPN Edit* dialog lets you specify information and actions for a new DPN record that is to be added to the NA record list, or to modify an existing DPN record that is selected in the NA record list. Information in the dialog applies to one MCF. See the figure “Network Activation - DPN Edit dialog” (page 252).

Double-clicking on an existing DPN NA record opens the *DPN Edit* dialog that contains the data from the record. From this dialog, you can change any parameters and actions, except the module name displayed in the *PM* field.

If you select *Add DPN Record...* from the *Edit* menu or from the NA record list pop-up menu, the *DPN Edit* dialog opens and displays the preferences defined in the *DPN Preference* dialog. The *PM* field is empty. If no preferences have been set, the following defaults are used:

<i>PM</i> data entry field	Empty
Critical check	NO
MCF Mode	User specified
MCF Mode Data entry field	Empty
Check against active MCF	NO
Download MCF from NMS disk	NO
Software Distribution	NO
Activate	NO
Commit	NO
Timeout (in minutes)	50
Commit Loaders	NO
Comments	Empty

The *DPN Edit* dialog contains the following items:

- a *PM* data entry field for specifying the DPN module name
If you are editing an existing record, the *PM* field displays the DPN module name associated with the record you are editing. You cannot modify this name while editing the record.
- a *DPN MCF Parameters* panel for specifying parameters associated with the target MCF, which consists of:

- a *Critical* check button to indicate whether the action to be performed is critical or non-critical
- a set of radio buttons labelled *Keyed*, *Dated*, or *User specified*, and a data entry field

If you select *Keyed*, the label of the data entry field changes to *Key* and you need to enter a valid key for the MCF.

If you select *Dated*, the label changes to *Date* and you need to enter a date for the MCF in the format *yymmdd*. If *Dated* is selected as a preference in the *DPN preference* dialog, the current date appears in the field. However, if *Date* is not selected as a preference and you click *Dated*, the *Date* field appears but is blank. To put the current date into the *Date* field, click the *Dated* radio button again. See “Dated algorithm” (page 45) for more information on the date format.

If you select *User specified*, the label changes to *Bundle* and you need to enter a valid bundle name for the MCF.

- a check button labelled *Check against Dated MCF* to specify whether the date is to be verified against the date of the current MCF before activating or committing it

If you select this button, the date of the MCF is verified against the date of the active MCF. If the date specified is earlier than that of the active MCF, execution of the record fails.

This check button is only enabled when the *Dated* mode is selected.

- a set of check buttons labelled *Activate*, *Commit*, and *Commit Loaders* for specifying whether activate and/or commit actions are to be performed for the MCF

If you click the *Commit Loaders* button, the *L2 Loader* and *L3 Loader* entry fields are enabled and you need to enter valid L2 and L3 loader names in these fields.

- a data entry field labelled *Timeout (in minutes)* for specifying the activation timeout period

- a Download panel for specifying the location of the MCF to be downloaded and the source of software associated with the MCF

This panel consists of:

- a check button to select *Downloading MCF from NMS disk*

If you click this button, a set of radio buttons for the source MCF mode and its associated data entry fields are enabled. These are *Keyed*, *Dated*, and *User specified*.

- a check button labelled *Download Software From*

If you click this button, two radio buttons for specifying the source of images associated with the MCF (*RDS*, *SDS*) are enabled.

- a text area labelled *Comments* for adding user comments
- a text area labelled *Messages* for displaying messages about attempts to add or modify information in the dialog
- an *OK* button that is used to add or replace the record in the list and close the dialog

If you fail to enter information in a required field, an error icon (*X*) appears beside the corresponding field in the dialog and a message indicating the error appears in the *Messages* area. You need to enter the correct information in the field before the dialog will close and the record can be added or saved.

- a *Cancel* button that closes the dialog without saving additions or changes that made in the dialog
- a *Help* button that displays help information about the dialog

Figure 21

Network Activation - DPN Edit dialog

PM :

DPN MCF Parameters:

☐ Critical

☐ Keyed ☐ Dated ☒ User Specified

Bundle :

☐ Check against active MCF

☒ Activate ☒ Commit

Timeout (in minutes) :

☐ Commit Loaders

L2-Loader :

L3-Loader :

☐ Download MCF From NMS Disk

☐ Keyed ☐ Dated ☒ User specified

Bundle :

NamsID :

☐ Download Software From:

☒ RDS ☐ SDS

Comments:

Messages:

OK Cancel Help

Network Activation - Passport Edit dialog

The Network Activation - *Passport Edit* dialog lets you specify the information and actions for a new Passport record that is to be added to the NA record list, or to modify an existing Passport record that is selected in the NA record list. Information in the dialog applies to one View. See the figure “The Network Activation - Passport Edit dialog” (page 255).

Double-clicking on an existing Passport record opens the *Passport Edit* dialog that contains the data from the record. From this dialog, you can change any parameters and actions, except the module name displayed in the *EM* field.

If you select *Add Passport Record...* from the *File* menu or from the NA record list pop-up menu, the *Passport Edit* dialog opens with the data defined in the *Passport Preference* dialog and the *EM* field empty. If no preferences have been set, the following defaults are used

<i>EM</i> data entry field	Empty
Critical	NO
Keyed	NO
Dated	NO
User Specified	YES
Data entry field	Empty
Check against current view	NO
Activate	NO
Commit	NO
Timeout (in minutes)	50
Comments	Empty

The Passport Edit dialog contains the following items:

- an *EM* data entry field for specifying the Passport module name
If you are editing an existing record, the *EM* field displays the Passport module name associated with the record you are editing. You cannot modify this name while editing an existing record.
- a *Passport View Parameters* panel for specifying parameters associated with the target Passport View, which consists of:
 - A *Critical* check button to indicate whether the action to be executed is critical or non-critical

- a set of radio buttons labelled *Keyed*, *Dated*, and *User specified*, and a data entry field, which together specify the View access mode

If you select *Keyed*, the label of the data entry field changes to *Key* and you need to enter the name of a valid key for the Passport view.

If you select *Dated* the label changes to *Date* and you need to enter a date for the Passport view in the format *yymmdd*. If *Dated* is selected as a preference in the *Passport preference* dialog, the current date appears in the field. However, if *Date* is not selected as a preference and you click *Dated*, the *Date* field appears but is blank. To put the current date into the *Date* field, click the *Dated* radio button again. See “Dated algorithm” (page 45) for more information on the date format.

If you select *User specified*, the label changes to *View* and you need to enter a valid View name.

- a check button labelled *Check against current view* for specifying whether the date is to be verified against the date of the current View before activating or committing

If you select this button, the date of the View is verified against the date of the active View. If the date specified is earlier than that of the active View, execution of the record fails.

This check button is only enabled when the *Dated* mode is selected.

- a set of check buttons labelled *Activate* and *Commit* for specifying whether activate and/or commit actions are to be performed
- a data entry field labelled *Timeout (in minutes)* for specifying the activation timeout period
- a text area labelled *Comments* for adding user comments
- a text area labelled *Messages* for displaying messages about attempts to add or modify information in the dialog

- an *OK* button that is used to add or replace the record in the list and close the dialog

If you fail to enter information in a required field, an error icon (X) appears beside the corresponding field in the dialog and a message indicating the nature of the error appears in the *Messages* panel. You need to enter the correct information in the field before the dialog will close and the record can be added or saved.

- a *Cancel* button that closes the dialog without saving any additions or changes
- a *Help* button that displays help information about the dialog

Figure 22

The Network Activation - Passport Edit dialog

The screenshot shows a dialog box titled "Network Activation - Passport Edit". At the top, there is a label "EM:" followed by a text input field. Below this is a section titled "Passport View Parameters:" which contains several options: a checkbox for "Critical", three radio buttons for "Keyed", "Dated", and "User Specified" (with "User Specified" being selected), a "View:" label followed by a text input field, and a checkbox for "Check against current view". Below these options is a box containing two checked checkboxes, "Activate" and "Commit", and a "Timeout (in minutes):" label followed by a text input field containing the value "50". At the bottom of the dialog is a "Comments:" label followed by a large text area. Below the text area is a "Messages:" label followed by another large text area. At the very bottom of the dialog are three buttons: "OK", "Cancel", and "Help".

DPN Preference dialog

The *DPN preference* dialog lets you specify:

- the default data to be used for adding a new DPN record to the record list
- the values to apply to DPN NA records that are selected in the record list when you choose the *Use Preferences* command from the record list pop-up menu

The *DPN preference* dialog is identical to the *DPN Edit* dialog, except that:

- The *PM* field and the *Comments* and *Messages* text fields are absent.
- The *OK* button sets the preferences values for the current session and closes the dialog.

See also “Network Activation - DPN Edit dialog” (page 248).

Passport Preference dialog

The *Passport preference* dialog lets you specify:

- the default data to be used for adding a new Passport NA record to the record list
- the values to apply to Passport records that are selected in the record list when you choose the *Use Preferences* command from the record list pop-up menu

The *Passport preference* dialog is identical to the *Passport Edit* dialog, except that:

- The *EM* field and the *Comments* and *Messages* text fields are absent.
- The *OK* button sets the preferences values for the current session and closes the dialog.

See also “Network Activation - Passport Edit dialog” (page 252).

Execution dialog

The *Execution* dialog lets you specify parameters such as the working directory and the number of processes for executing NA records. See the figure “Execution dialog” (page 259).

The *Execution* dialog contains the following items:

- a *Working Directory* field for specifying the directory for storing working files that are created while the tool is running.
- a *Number of Processes* field for specifying the number of non-critical records in the list on which execution can be performed simultaneously. The default is 1.

The number to specify depends on the amount of memory available on the workstation. The higher the number, the more memory is used.

This parameter only applies to non-critical records. For critical records, only one record is executed at a time, regardless of the number you specify for this parameter.

- a *Log to File* check button for specifying whether information about the execution is to be captured in a log file

If this button is not selected the panels, fields, and buttons in the log file specification area are disabled (grayed out). The default is no log file.

- a *Log File* specification area that is used to specify the full path name of a log file for log messages that are produced during the execution.

The log file specification area consists of the following items:

- a *Filter* field for specifying the path to the directory that is the starting point for choosing the directory in which to store the log file

The subdirectories of the directory specified in this field are displayed in the *Directories* panel when you enter a carriage return in this field or when you click the *Filter* button.

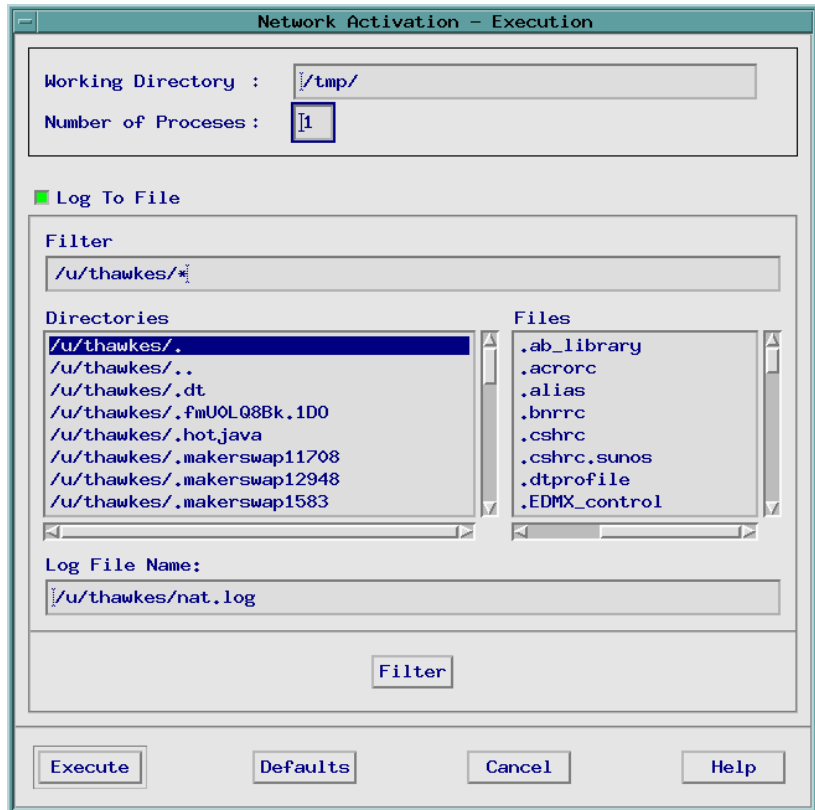
- a *Directories* panel for displaying the available subdirectories of the directory specified in the *Filter* field
- a *Files* panel for displaying the available files of the directory selected in the *Directories* panel

- a *Log File Name* field for specifying the full path name of the log file to be stored

You can specify the name of a log file in two ways: by entering its full path name in this field; or, by entering information in the *Filter* field, selecting a directory in the *Directories* panel, and selecting a file in the *Files* panel. The default is *nat.log* in the user's home directory.

- a *Filter* button for updating the *Directories* panel, the *Files* panel, and the *Log File* field according to the pathname entered in the *Filter* field
- an *Execute* button for executing the action based on the information
- a *Defaults* button that resets all items in the dialog back to their default values
- a *Cancel* button that closes the dialog without performing the execution or saving the execution parameters
- a *Help* button that displays help information about the dialog

Figure 23
Execution dialog



Processing dialog

The Processing dialog opens if you click on the *Stop* button in the Network Activation Tool window while execution is underway. This dialog displays the message *Stopping all execution processes, please wait* to indicate that no further user action is permitted until all execution software processes are terminated, at which time the dialog closes.

Network Activation - confirmation dialog

The confirmation dialog prompts you for confirmation before the software takes the next step:

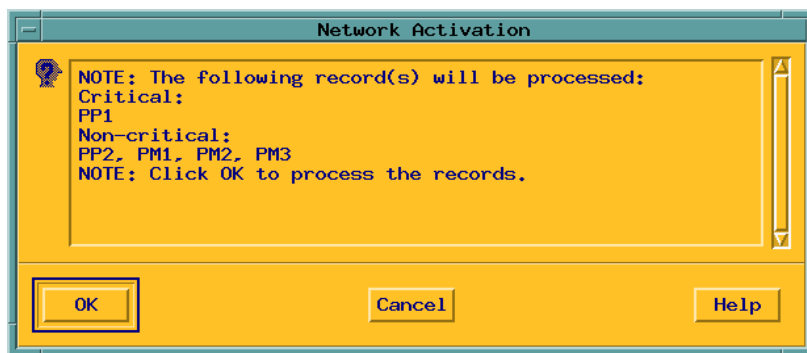
- When you click *Execute* in the Network Activation Tool (NAT) window, the dialog displays information about the records to be processed and asks you for permission to continue.
- When you select *Delete* from the record list pop-up menu, the dialog prompts for confirmation to remove the selected record.
- When you select *Exit* without saving new DPN or Passport records to a Network Activation File (NAF), the dialog asks if you really want to exit without saving.

Buttons in the dialog are as follows:

- *OK* continues the execution.
- *Cancel* closes the dialog without performing the execution.
- *Help* displays information about the dialog.

See the figure “Network Activation -sample confirmation dialog” (page 260).

Figure 24
Network Activation -sample confirmation dialog

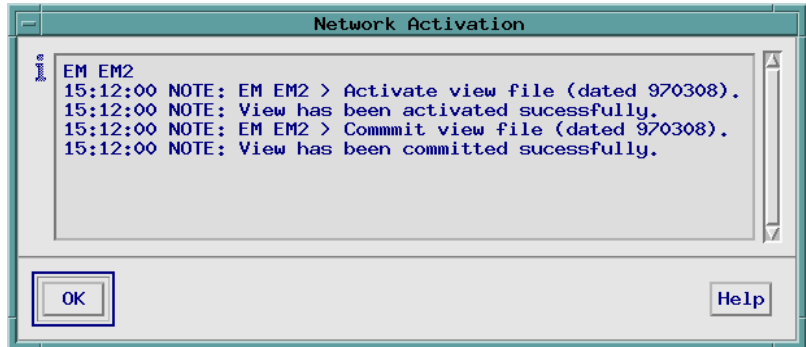


Network Activation - log information dialog

The log information dialog displays status information for a record that has been executed. See the figure “Sample log information dialog” (page 261).

To display the information, double-click on an executed record in the record list; or, select the log in the record list and choose *Show Status...* from the record list pop-up menu.

Figure 25
Sample log information dialog



Error dialog

The Network Activation error dialog displays a message to indicate why an action cannot be performed. Once you have read the message, click *OK* to close the dialog. Then, correct the source of the error and try the action again.

Warning dialog

The Network Activation warning dialog displays a message to indicate the consequences of the action you are about to take. This dialog also prompts you for confirmation of the action.

Buttons in the dialog are as follows:

- *OK* closes the dialog continues the action.
- *Cancel* closes the dialog without performing the action.
- *Help* displays information about the dialog.

Using the Network Activation tool

For procedures to use the Network Activation tool (NAT) see the following:

- “Starting the Network Activation tool” (page 262)

- “Loading a Network Activation File” (page 262)
- “Adding new NA records” (page 263)
- “Modifying NA records” (page 263)
- “Deleting records” (page 265)
- “Saving to a Network Activation File” (page 265)
- “Executing a Network Activation File from the GUI” (page 266)
- “Executing a Network Activation File using the command line” (page 269)

Starting the Network Activation tool

- 1 In the Preside MDM window, select Configuration ->DPN Devices -> Administration ->Network Activation Tool.

The *Network Activation* window opens.

Loading a Network Activation File

- 1 From the *File* menu, choose *Load...*

The Network Activation - Load NAF dialog opens. See also: “Network Activation - Load NAF dialog” (page 246).

If there are any records displayed in the record list, a confirmation dialog opens and prompts you for permission to clear entries in the record list before loading the Network Activation File (NAF).

- 2 Specify the Network Activation File to load in one of the two following ways:
 - Enter the full path of the file in the *Network Activation File* field.
 - In the *Filter* field, enter the full path of the directory to be used as the starting point for finding the NAF to load. In the *Directories* panel, click on the name of the appropriate subdirectory. In the *Files* panel, click on the name of the NAF to load. The name of the file you have selected appears in the *Network Activation File* field.
- 3 Click *Load*.

The Network Activation - Load NAF dialog closes and the records from the NAF are loaded into the record list.

Adding new NA records

- 1 If the record list is empty, go to step 4.

- 2 Click on a record.

The entire record becomes highlighted to indicate that it is selected. Any new record is added immediately below the record that is selected (highlighted).

- 3 If the record needs to be inserted after a different record from the one that is currently selected, click the up or down arrow in the NAT window to select the record immediately above where the new record is to be inserted.

- 4 To add a new DPN NA record, choose *Add DPN Record...* from the *Edit* menu or from the record list pop-up menu.

To add a new Passport NA record, select *Add Passport Record...* from the *Edit* menu or from the record list pop-up menu.

If you select *Add DPN Record...*, the DPN Edit dialog opens. See "Network Activation - DPN Edit dialog" (page 248).

If you select *Add Passport Record...*, the Passport Edit dialog opens. See "Network Activation - Passport Edit dialog" (page 252).

- 5 Enter the module name, target MCF or View, and specify the actions to be performed.

- 6 Click *OK* to add the new record to the record list.

The new record appears after the currently selected record in the NAT window.

- 7 Repeat this procedure, once for each new record to be added to the record list.

You are now ready to save the records to a NAF or to execute the NA records in the record list.

Modifying NA records

Use the following procedures to modify existing DPN or Passport NA records in the record list. You can modify a single record at a time using the *Edit DPN* or *Edit Passport* dialogs, or you can modify several records at once using the *DPN Preference* or *Passport Preference* dialogs.

If you choose to modify several records by means of the preferences dialogs, you can change all the information, except the module name. If you wish to change the module name, you need to edit each record individually.

Modifying a single record

- 1 Double-click on the record to be modified; or, select the record and choose *Edit* from record list pop-up menu.

The DPN Edit dialog opens if the record is a DPN NA record or the Passport Edit dialog opens if the record is a Passport NA record.

- 2 Modify the data in the record.

For more information, see “Network Activation - DPN Edit dialog” (page 248) or “Network Activation - Passport Edit dialog” (page 252).

- 3 Click *OK* to apply the changes.

Modifying several records using the DPN Preference or Passport Preference dialogs

- 1 Choose *DPN Preferences...* or *Passport Preferences...* from the *Options menu*.

The DPN Preference dialog or the Passport Preference dialog opens.

- 2 Change the appropriate preferences and click *OK*.

For more information, see “DPN Preference dialog” (page 256) or “Passport Preference dialog” (page 256).

- 3 If you want to preserve these preferences for future use, choose *Save Preferences* from the *Options...* menu.

- 4 In the NA record list, click on each of the records to which the preferences are to be applied.

Each record becomes highlighted to indicate that it is selected.

- 5 From the record list pop-up menu, choose *Use Preferences*.

All the selected records now have the same data values as defined in the *DPN Preference dialog* or *Passport Preference dialog*.

You are now ready to save the changes to a Network Activation File (NAF) or to execute the NA records in the record list.

Deleting records

Use the following procedures to remove records from the record list. There are two ways to do this: clear all records from the record list, or delete individual records from the record list.

Clearing all records from the record list

- 1 From the *Edit* menu, select *Clear*.

A dialog opens prompting you to confirm that you wish to remove all of the records from the record list.

- 2 Click *OK*.

The confirmation dialog closes and all records are cleared from the record list.

Deleting individual records from the record list

- 1 In the record list, click on each record that you wish to delete.

Each record becomes highlighted to indicate that it is selected.

- 2 From the record list pop-up menu, select *Delete*.

A dialog opens prompting you to confirm that you wish to remove the selected records from the record list.

- 3 Click *OK*.

The confirmation dialog closes and the selected records are deleted from the record list.

You are now ready to save the changes to a Network Activation File (NAF) or to execute the NA records in the record list.

Saving to a Network Activation File

Use the following procedures to save records in the record list to a Network Activation File (NAF). Two commands are available for saving new or modified records from the record list to a NAF: *Save* and *Save As...* The command to use depends on whether you loaded a NAF and whether you want to save the record list to an existing NAF or to a new NAF.

Saving records to a NAF that is loaded into the record list

- 1 Select *Save* from the *File* Menu.

Note: The *Save* command is disabled if you haven't loaded a NAF or if no changes have been made to the record list.

The changes are saved to the NAF you loaded.

Saving records to a NAF when you haven't loaded one, or to a NAF other than the one you loaded

- 1 Select *Save As...* from the *File* menu.

The Save NAF dialog opens. See "Network Activation - Save NAF dialog" (page 247).

- 2 Specify the NAF file name in one of the two following ways:
 - Enter the full path of the file in the *Network Activation File* field.
 - In the *Filter* field, enter the full path of the directory to be used as the starting point for saving the NAF. In the *Directories* panel, click on the name of the appropriate subdirectory. In the *Files* panel, click on the name of the NAF to save the file as. The name of the file you have selected appears in the *Network Activation File* field.
- 3 Click *OK*.

The dialog closes and the contents of the record list are saved to the specified NAF.

Executing a Network Activation File from the GUI

Executing a Network Activation File (NAF) from the GUI involves the following steps:

- loading a NAF, if you wish to execute records from an existing NAF
- making any required modifications to the NA records
- rearranging records so that they appear in the record list in the desired execution order
- selecting the records to execute in the record list
- authenticating with the NCS destination or the Passport group that is the target for the MCF or View
- clicking on *Execute...* to open the *Execute* dialog
- setting up parameters for the execution in the *Execute* dialog
- clicking OK in the execution dialog to execute the records

Blue, yellow, or red records are not executed. If both critical and non-critical records are selected, the critical records are always executed sequentially before non-critical records. If the activation of a critical MCF or View fails, the tool will not process the next record.

If records apply to Passports in more than one group or to DPNs that are managed by more than one OA, you need to authenticate with each group or OA to execute all records. To minimize authentication, use the up and down arrows to group records according to the managing OA or Passport group before you execute them.

To execute a NAF using the graphical user interface of the NAT, do the following:

- 1 If you wish to execute an existing NAF, load the NAF into the records list as described in “Loading a Network Activation File” (page 262).

Note: You do not need to load a NAF to execute NA records. You can create new records in the record list and execute them, and if desired, save them to a NAF later.

- 2 If desired:

- Add any new records as described in “Adding new NA records” (page 263).
- Modify existing records as described in “Modifying NA records” (page 263).
- Delete undesired records as described in “Deleting records” (page 265).

- 3 Re-arrange the execution records into the desired execution order.

To move a record, click on the record to select it, then click the up arrow or the down arrow to move the record up or down in the list.

If records apply to DPNs that are managed by more than one OA or to Passports that belong to more than one Passport group, we recommend you group records according to the OA or the Passport group.

Note 1: You can select and move more than one record at a time.

Note 2: All critical records are executed first, one at a time, followed by the non-critical records.

- 4 In the NAF window, select the records to be executed by clicking on them.

Only select records that are managed by the same OA or that belong to Passports in the same Passport group.

The records become highlighted to indicate that they are selected.

- 5** If you have selected DPN NA records to execute, go to step 6.

If you have not selected any DPN records to execute, go to step 9.

- 6** Select NCS Authenticate... from the Security menu.

The DPN Authentication Dialog opens. For more information, see "Authentication dialog" (page 50).

- 7** Enter or select an NCS destination mnemonic, and enter a valid userid and password for the destination.

Click *OK* to authenticate and close the dialog if authentication is successful.

- 8** If you have selected Passport NA records to execute, go to step 9.

If you have not selected Passport NA records to execute, go to step 11.

- 9** Select Passport Group Authenticate... from the Security menu.

The Passport Group Authentication Dialog opens. For more information, see 241-6001-023 *Preside MDM Configuration Management for Passport User Guide*.

- 10** Enter or select the Passport group name, and enter a valid userid and password for the group.

- 11** Click *OK* to authenticate.

Authentication takes place. If authentication is successful, the dialog closes.

- 12** In the NAF window, click *Execute...*

The Execution dialog opens.

- 13** In the *Execution* dialog, specify:

- the working directory, if desired
- the number of processes to a number other than 1, if required
- the name of a log file to be used for execution information

For more information, see "Execution dialog" (page 256).

- 14** Click *Execute* to begin executing the selected records.

Execution begins and colors of fields and records change as execution progresses. Information about the execution is written into the log file you specified in the Execution dialog.

As each process (download from NMS disk, load software from RDS/SDS, and so on) is performed, the corresponding field in the record turns from blue to green.

If the action completes successfully, the field turns from green to blue and the next field turns green. When all actions on a record are completed successfully, the entire record turns blue. If an action fails, the entire record turns red or yellow according to the severity of the error.

- 15 If there are records to execute for DPNs that are managed by another OA or for Passports in another Passport group, go back to step 4, to select these records, re-authenticate, then execute them.
- 16 If you wish to execute the records again, select the records to be executed, choose *Reset* from the record list pop-up menu, then start back at step 12 to re-execute the records.

Executing a Network Activation File using the command line

To execute a Network Activation File (NAF) from the command line, do the following:

- 1 Create the NAF. You can do this with the GUI of the NAT or with an editor such as *vi*. To reduce the possibility of error, we recommend that you use the GUI instead of an editor for performing this task.

For information about the structure of a NAF, see “Network Activation File (NAF)” (page 269).

- 2 Execute the NAF from a Unix window, by running the *natcmd* command to process the NAF.

See “Network Activation Tool command line interface” (page 273) for the syntax of the *natcmd* utility.

Network Activation File (NAF)

The Network Activation file (NAF) is used as the input file for both the command line and the GUI. Nortel Networks recommends that you use the GUI to edit the NAF, in order to ensure its syntactic and logical correctness (although it can be edited using any editor).

Each NA record in the NAF is defined in a single line. Each record specifies the module type, module name, the target MCF/View, a set of actions, and associated parameters. The syntax of a record in a NAF is as follows:

```
-[pm | em] <module_name>  
  -sdfilename <mode> <name>  
  [-critical]  
  [-activate]  
  [-commit]  
  [-timeout <minutes>]  
  [-loader <L2Loader> <L3Loader>]  
  [-verify_date]  
  [-download <mode> <name> <namsid>]  
  [-rds_swd | -sds_swd]  
  [# comments]
```

Note: Although we have presented the fields on different lines in this document, all of the fields in a NAF record are part of the same line.

where:

-pm

indicates an NA record for a DPN module.

-em

indicates an NA record for a Passport module.

<module_name>

is the name of the DPN or Passport module.

-sdfilename

is the keyword for specifying the MCF or View name. When specified, this keyword needs to be followed by the <mode> and <name> parameters.

<mode>

is one of *keyed*, *dated*, or *user-specified*.

`<name>`

is the name of a valid key, a valid date in the format *yymmdd*, or a bundle-id (for DPN) or a View name (for Passport).

`-critical`

indicates that the MCF or View is critical.

`-activate`

indicates that the MCF or View is to be activated.

`-commit`

indicates that the MCF or View is to be committed.

`-timeout`

indicates the activation timeout period. When specified, this keyword needs to be followed by the `<minutes>` parameter. When not specified, the timeout period defaults to 50 minutes.

`-loader`

is the keyword to specify that the DPN loaders are to be committed. This action is only valid for DPN modules. When specified, this keyword needs to be followed by the `<L2Loader>` and `<L3Loader>` parameters.

`<L2Loader>`

is the L2 Loader name.

`<L3Loader>`

is the L3 Loader name.

`-verify_date`

specifies that date verification is to be performed.

When this option is specified, the date of the MCF or view is verified before activation to ensure that the date is later than that of the current MCF or View. The current MCF or View also needs to be assigned the *Dated* mode of activation.

-download

is the keyword to specify that the MCF is to be downloaded to DPN.

When specified, the MCF from the NMS disk is downloaded to the DPN module. This keyword needs to be followed by the *<mode>*, *<name>*, and *<namsid>* parameters.

<namsid>

is the NAMSID of the DPN module.

-rds_swd

specifies that DPN software associated with the MCF is to be distributed to the DPN module software distribution from the RDS.

When this option is specified, the *sds_swd* option cannot be specified.

-sds_swd

specifies that DPN software associated with the MCF is to be distributed to the DPN module software distribution from the SDS.

When this option is specified, the *rds_swd* option cannot be specified.

<#comments>

are comments applicable to the record.

Anything after a pound (#) sign is treated as a comment.

Sample of a Network Activation File

The following is a sample NAF:

```
-pm PM1 -sdfile dated 960605 -verify -activate -loader  
L2LOADER.PIMG4044 L3LOADER.PIMG4044  
  
-pm PM2 -sdfile dated 960605 -activate -commit -loader  
L2LOADER.PIMG5004 L3LOADER.PIMG5004  
  
-pm PM3 -sdfile dated 970707 -download keyed west 1234  
-rds_swd -activate -commit  
  
-em PP1 -sdfile dated 960605 -activate
```

```
-em PP2 -sdfile keyed West1 -critical -activate -commit  
#Western region
```

Note: Although records 2, 3 and 5 are split into two lines in this document, each record is actually one line in the NAF.

Network Activation Tool command line interface

The Network Activation Tool (NAT) provides the user a command line to process the NAF. It can be invoked from a UNIX window. The syntax of the command is as follows:

```
/opt/MagellanNMS/bin/natcmd -f <NAF_filename> \  
[-auth <passport_group_name> <userid> <password>] \  
[-ncs <dest_name> <capability_id> <password>] \  
[-logfile [<log_filename>]] \  
[-np <number_of_processes>] \  
[-wd <working_dir>] \  
[-quiet]  
[-h]
```

where:

-f

is the keyword to specify a Network Activation File (NAF).

This keyword needs to be followed by the *<NAF_filename>* parameter.

<NAF_filename>

is the full path name of the NAF file that contains the records to be executed.

-auth

is the keyword to specify Passport group authentication.

This keyword needs to be specified if the NAF contains Passport NA records. When specified, this keyword needs to be followed by the *<group_name>*, *<userid>*, and *<password>* parameters.

`<group_name> <userid> <password>`

is the name of the Passport group, the userid, and the password to log on to switches in the Passport group.

`-ncs`

is the keyword to specify NCS authentication.

This keyword needs to be specified if the NAF contains DPN NA records. When specified, this keyword needs to be followed by the `<dest_name>`, `<capability_id>`, and `<password>` parameters.

`<dest_name> <capability_id> <password>`

are the destination mnemonic, the NCS capability_id, and the password to log in to the NCS.

`-logfile`

is the keyword to specify that log information is to be written to a log file.

If this keyword is specified without the `<log_filename>` option, log information is written to the file `$HOME/`

`nat<pid>.<yy><mm><dd>_<hh><mm><ss>.log`

For example: `/u/thawkes/nat106.970311_110201.log`.

See “Dated algorithm” (page 45) for more information on the date format.

`<log_filename>`

specifies the full pathname of the log file.

`-np`

is the keyword to indicate the number of processes to run.

When specified, this keyword needs to be accompanied by the `<number_of_processes>` parameter.

<number_of_processes>

specifies the number of records that can be executed simultaneously.

The default is 1. The number to specify depends on the amount of memory available on the workstation. The higher the number, the more memory is used.

-wd

is the keyword to specify the working directory for storing the default log file and other intermediate working files.

When specified, this keyword needs to be accompanied by the <working_dir> parameter.

working_dir

specifies the full path name of the working directory for storing the default log file and other intermediate working files.

-quiet

specifies that records in the NAF are to be executed without producing messages or storing execution log information in a log file.

[-h]

provides help information for the *natcmd*.

Cron job

Because the Network Activation tool (NAT) command line starts up all the session servers (*cmcfun* and *CM*), you can invoke the NAT command line by using the Unix *cron* facility.

To set up a cron:

- You need to set a value for the *EDITOR* environment variable. If none is set, we suggest setting it to *vi* by entering the command *setenv EDITOR vi*.
- If file */etc/cron.d/cron.allow* exists, the root user account needs to be listed in it.

- The root user account cannot be listed in file */etc/cron.d/cron.deny*.

To set up a cron, do the following:

- 1 Open the *crontab* file for editing, with the default editor set with environment variable *EDITOR*:

crontab -e

The current crontab file opens for editing.

- 2 Add an entry in the following form to the file:

**<minute> <hour> <day> <month> \ /opt/MagellanNMS/bin/
natcmd <parameters>**

where:

<minute> is a value from 0 to 59.

<hour> is a value from 0 to 23.

<day> is a value from 1 to 31.

<month> is a value from 1 to 12.

<parameters> are parameters of the *natcmd* as described in "Network Activation Tool command line interface" (page 273).

- 3 Save the crontab file and exit from it. If your editor is vi, press *Esc* and enter the following command:

:wq!

The file is now saved and is ready to be executed automatically.

The following entry in the crontab file executes a NAF called *mynaf* in the root (/) directory, at 0200 hours (2 AM), March 11, 1997. Because the NAF only contains Passport NA records applicable to a Passport group called *west*, the command includes the Passport group name, userid, and password needed to log on to Passport switches in the group. The command also outputs the logs in file */tmp/mylogfile*.

**00 2 11 3 /opt/MagellanNMS/bin/natcmd -f /mynaf -auth
west myid xys2 -logfile /tmp/mylogfile**

Chapter 13

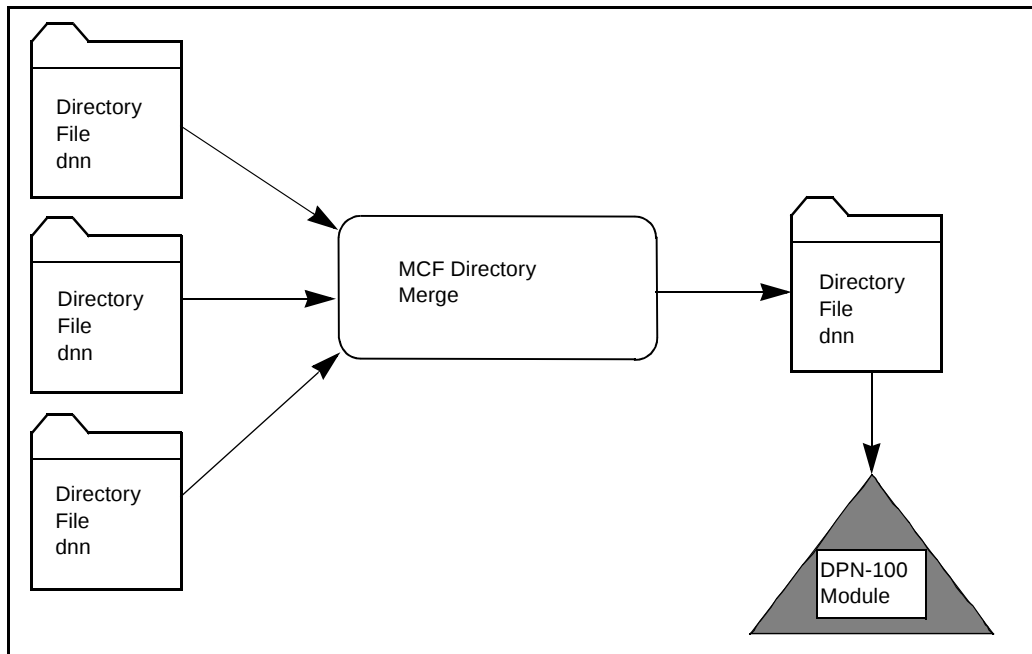
MCF Directory Merge

The master configuration file (MCF) directory merge program is a UNIX command line application used to merge a selected number of MCF directory files into a new MCF directory file. See the figure “MCF Directory merge data flow” (page 278). This operation is activated by the `mcfdirmerge` command, in which you specify the directory files to be merged. The new directory file is copied to the DPN-100 module leaving the original files unaltered. The MCF directory files that are merged must exist on the same DPN-100 module.

In order to understand the purpose of the MCF directory merge command, you must first understand how the `tidy` command works on a DPN-100 module. After having performed several downloads from the Preside Multiservice Data Manager (MDM) workstation, you may be left with more than three bundles (MCF directories and associated files). You may want to keep three or more bundles on the DPN-100 module.

The `mcfdirmerge` command allows you to keep more than three bundles on the DPN-100 module after the `tidy` command has been activated. When you use the `tidy` command, all bundles (MCF directories and associated MCFs) are deleted except for three: the bundle containing the committed or activated MCF and the two bundles containing the two directories specified in the `tidy` command. The `tidy` command limits a maximum of three bundles on your module. The `mcfdirmerge` command allows you to overcome this limitation by merging two or more bundles into a single directory which looks like an MCF directory to the `tidy` command. In other words, using `mcfdirmerge` command, you can keep more than three bundles on your module even after you have used the `tidy` command.

Figure 26
MCF Directory merge data flow



MCF directory merge command arguments

Enter the following command syntax as one continuous command.

```
/opt/MagellanNMS/bin/mcfdirmerge <node-name> <mcfdir>...
    [to <bundle>] [-s <oa_interface_name> <op_id>
    <password>] [-t] [-e]
```

where:

<node-name>

The mnemonic of the DPN-100 module where the files to be merged reside.

<mcfdir>...

The MCF directory files which are to be merged. At least two files must be specified for this command. File names must be no longer than 32 characters.

to <bundle>

A separator used to indicate the end of the list of directory files that are to be merged.

The <bundle> option is the 7 character string included in the MCF directory file name. The new MCF directory file name is in the following format: *MC.C<bundle>.0.DIR*.

If this parameter is omitted, the contents of the MCF directory files <mcfdir> is reported. If more than one is specified, the last bundle is used.

-s <oa_interface_name> <op_id> <password>

The -s option is used when an operator id and password are required to interface with the OA. Along with -s you must enter the following:

<oa_interface_name> NCS OA mnemonic.

<op_id> The operator identification.

<password> The password for the op-id.

-e

Option to send all messages to the standard output device instead of to the standard error device.

-t

Turn debugging trace ON. By default, trace is turned OFF.

In the following example, an MCF directory merge is performed on three MCF directory files. The following command is entered:

```
/opt/MagellanNMS/bin/mcfdirmerge MTLAM-1  
MC.23.3062.0.DIR MC.27.3062.0.DIR MC.79.3062.0.DIR to  
comp23  
-s <oa_interface_name> <op_id> <password>
```

where:

MTLAM-1

The mnemonic of the DPN-100 module where the files to be merged are resident.

MC.23.3062.0.DIR

One of the MCF directory files that is to be merged. At least two files must be specified for this command.

MC.27.3062.0.DIR

One of the MCF directory files that is to be merged.

MC.79.3062.0.DIR

One of the MCF directory files that is to be merged.

to

A mandatory separator used to indicate the end of the list of directory files that are to be merged.

comp23

The 7 character string included in the MCF directory filename, referred to as the bundle_id. The string is specified by the user. With comp23 specified, the new MCF directory filename is MC.CCOMP23.3062.0.DIR. The new MCF directory filename is in the following format: MC.C<new_bundle_id>.0.DIR.

Chapter 14

MCF management

This chapter contains the commands used to manage MCFs on PMs, NMS Backup disk, and NMS disk.

MCF management on PMs

The PM Delete MCF and PM Tidy MCF tools are used to manage MCFs on PM disks.

The PM Tidy MCF tool can be used to automate the management of MCFs on the PM disk. The PM Delete MCF tool can be used to delete specific MCFs.

PM Delete MCF tool

The PM Delete MCF tool is used to delete specific MCFs and the software images from a PM disk. This tool supports incremental MCFs since it does not delete the MC files and software images that are referenced by the MCFs that are not being deleted. This tool does not allow the deletion of the ACTIVE and COMMITTED MCFs.

Note: This tool does not delete L2LOADER and L3LOADER software images.

It is recommended that this tool be run when specific MCFs must be deleted.

At least one MCF must be specified. This can be done by using the *-mcffile* option or by specifying MCFs on the command line. Both can be specified at the same time.

For return codes, see the table “PM Delete MCF return codes” (page 284).

Command syntax

The following is the command syntax for the PM Delete MCF command. This command can be executed from the NCS command console, remote NCS, or a UNIX command line.

Enter the following command syntax as one continuous command.

```
/opt/MagellanNMS/bin/pmdeletemcf <PM> [<MCF1>
[<MCF2>...]] [-ncs <destination mnemonic>
<capability id> <password>] [-mcffile <file of MCFs>]
[-deletesoftware] [-log [<log file name>]] [-quiet] [-h]
```

where:

<PM>

The PM mnemonic to be deleted. This parameter is not case sensitive.

<MCFx>...

One or more MCF(s) to be deleted. The MCF must be in format:
MC.<bundle>.<namsid>.0. This parameter is not case sensitive.

-ncs <destination mnemonic> <capability id> <password>

Option to use NCS authentication. The following parameters are not case sensitive.

<destination mnemonic> NCS mnemonic of the MDI interface

<capability id> NCS capability id

<password> NCS capability id password

If this option is not specified, the tool assumes that an NCS connection already exists as is the case when calling the tool from the NCS command console or from remote NCS.

-mcffile <file of MCFs>

Option used to specify a file containing a list of MCFs to be deleted. The <file of MCFs> is a file containing a list of MCFs, one per line. The MCF must be in the format: *MC.<bundle>.<namsid>.0*. The MCFs are not

case sensitive but the file name is. For example, */localdisk/admin/mcf.list*. Comment and blank lines are permitted, but comment lines must start with a # character.

-deletesoftware

Option used to specify that software images only referenced by MCFs being deleted are to be deleted.

-log [<log file name>]

Option to have the messages recorded in a log file. If the *<log file name>* is not specified, the default file name is *pmdeletemcf.log*.

-quiet

Option to suppress the generation of information messages.

-h

Option to display command syntax and examples.

The following is an example of a *pmdeletemcf* session.

```
/opt/MagellanNMS/bin/pmdeletemcf a0301 MC.TEST.301.0  
MC.451.301.0 -ncs mdi id pw  
  
09:29:18 NOTE: The pmdeletemcf tool is starting. Date:  
1994-03-12.  
09:29:18 NOTE: Following are the configuration  
options:  
NCS parameters:   MDI ID XXXXXXXX.  
PM:   A0301.  
Delete software:No.  
09:29:19 NOTE: Establishing the NCS connection to MDI.  
09:29:27 NOTE: The following 2 MCFs will be deleted:  
MC.TEST.301.0  MC.451.301.0  
09:29:27 NOTE: Generating MC file list for the 18 MCFs  
on PM A0301.  
.....  
09:31:41 NOTE: Starting to delete the MCF(s)  
09:32:00 NOTE: MCF(s) deleted successfully.  
09:32:02 NOTE: The pmdeletemcf tool has completed  
successfully.
```

Table 3
PM Delete MCF return codes

Return code	Description
0	Success. The MC files and software images that were no longer needed have been deleted.
1	Error. Problems were found and error messages have been generated.
2	User requested termination. A termination signal (Control-C) was received by the tool.

Command output

The PM Delete MCF tool directs command output to standard error and optionally to a log file.

All progress and error messages are directed to standard error. A progress message is displayed at the beginning to notify the user that the tool is starting. The list of MCFs that will be deleted is displayed and a progress message is displayed after every five MCFs deleted. Error messages are printed as they occur and a termination message is displayed.

The log file contains all the messages that are printed to standard error.

PM Tidy MCF tool

The PM Tidy MCF tool is used to clean-up a PM disk by removing MCFs and software images that are no longer required. This tool supports incremental MCFs since it does not delete the MC files and software images that are referenced by the MCFs that are not being deleted.

Note: This tool does not delete L2LOADER and L3LOADER software images.

For return codes, see the table “PM Tidy MCF return codes” (page 291)

This command ensures that some basic time synchronization is present on the PMs. It ensures that, for the MCFs where it is relevant, none of them have a file system date earlier than 19800101 and greater than the current date plus one day. If this occurs, an error is reported for that PM and the PM is left unprocessed.

Before describing the rules used when determining the MCFs to keep, the concept of a *stream* must be defined.

For Dated MCFs, all the MCFs with the same date are part of the same stream. For Keyed MCFs, all the MCFs with the same key are part of the same stream. For User Specified MCFs, each MCF represents a different stream. The latest MCF in a stream is the one with the highest index. The latest MCF in a stream is used when determining if the stream is before or after the delete date. For Dated MCFs, the bundle date is used when comparing delete dates not the file system date. The file system date is used for all other MCFs.

It is recommended that this tool be run periodically when only necessary MCFs should be kept.

The following rules are used to determine which MCFs are kept on the PM.

- 1 The specified MCF(s), if any, is kept.
- 2 The COMMITTED MCF is kept.
- 3 The ACTIVE MCF is kept.
- 4 The MCFs that are associated with a different PM, MCFs with a different NAMS ID, are kept.
- 5 For streams of Dated MCFs with a bundle date older than the specified delete date, the highest MCF of the highest <n> streams are kept. Numeric comparison of the dated key is used to rank the MCFs.
- 6 For streams of Keyed MCFs with a file system date older than the specified delete date, the highest MCF of the highest <n> streams are kept. ASCII comparison of the key is used to rank the MCFs.
- 7 For streams of User Specified MCFs with a file system date older than the specified delete date, the highest MCF of the highest <n> streams are kept. ASCII comparison of the bundle name is used to rank the MCFs.

- 8 For streams of dated MCFs with a bundle date later than the specified delete date, the highest <m> MCFs of each stream are kept.
- 9 For streams of keyed MCFs with a file system date later than the specified delete date, the highest <m> MCFs of each stream are kept.
- 10 For streams of user specified MCFs with a file system date later than the specified delete date, the highest <m> MCFs of each stream are kept.

In the above rules, the delete date, <n> and <m> can be specified on the command line using the *-deletedate*, *-paststreams*, and *-mcfspfuturestream* options respectively.

The table “PM Tidy MCF example” (page 286) illustrates examples of the above rules. The table shows which MCFs would be kept and which would be deleted if using the tool on the same MCFs but with three different delete dates. In all three cases, a past stream of 2 and an MCF per future stream of 1 is used. The COMMITTED and ACTIVE MCF is MC.94021535.1234.0.

Table 4
PM Tidy MCF example

MCF	File system date (yymmdd)	Delete date 931231 (yymmdd)	Delete date 940215 (yymmdd)	Delete date 940401 (yymmdd)
MC.94020700.1234.0	940204(*)	delete (rule 9)	delete (rule 5)	delete (rule 5)
MC.94020701.1234.0	940204(*)	delete (rule 9)	delete (rule 5)	delete (rule 5)
MC.94020702.1234.0	940205(*)	keep (rule 9)	keep (rule 5)	delete (rule 5)
MC.94021535.1234.0	940210(*)	keep (rule 2)	keep (rule 2)	keep (rule 2)
MC.94021536.1234.0	940210(*)	keep (rule 9)	keep (rule 9)	keep (rule 5)
MC.94033000.1234.0	940320(*)	keep (rule 9)	keep (rule 9)	keep (rule 5)
MC.TEST.1234.0	940110	keep (rule 11)	keep (rule 7)	keep (rule 7)
MC.TEST2.1234.0	940111	keep (rule 11)	keep (rule 7)	keep (rule 7)
MC.ABCD.1234.0	940213	keep (rule 11)	delete (rule 7)	delete (rule 7)
(Sheet 1 of 2)				

Table 4 (continued)
PM Tidy MCF example

MCF	File system date (yymmdd)	Delete date 931231 (yymmdd)	Delete date 940215 (yymmdd)	Delete date 940401 (yymmdd)
MC.GHIJ.1234.0	940323	keep (rule 11)	keep (rule 11)	delete (rule 7)
MC.M56100.1234.0	940131	keep (rule 10)	keep (rule 6)	delete (rule 6)
MC.M57100.1234.0	940331	keep (rule 10)	keep (rule 10)	delete (rule 6)
MC.WK0600.1234.0	940213	delete (rule 10)	delete (rule 6)	delete (rule 6)
MC.WK0601.1234.0	940214	keep (rule 10)	keep (rule 6)	keep (rule 6)
MC.WK0800.1234.0	940210	delete (rule 10)	delete (rule 10)	delete (rule 6)
MC.WK0801.1234.0	940223	keep (rule 10)	keep (rule 10)	keep (rule 6)
MC.94021200.9999.0	940331	keep (rule 4)	keep (rule 4)	keep (rule 4)
MC.TEST.9999.0	940331	keep (rule 4)	keep (rule 4)	keep (rule 4)
Note: (*) Remember that the file system date is irrelevant for DATED MCFs. The date in the MCF name is used instead.				
(Sheet 2 of 2)				

Command syntax

The following is the command syntax for the PM Tidy MCF command. This command can be executed from the NCS command console, remote NCS, a UNIX command line or a cron job.

Enter the following command syntax as one continuous command.

```
/opt/MagellanNMS/bin/pmtidymcf [<MCF1>] [<MCF2>...]]
  [-ncs <destination mnemonic> <capability id>
  <password>]
  [-pm <PM> | -f <file of PMs>]] [-mcffile <file of MCFs>]
  [-deletedate <date>] [-paststreams <number of streams>]
  [-mcfspersfuturestream <number of MCFs>]
  [-deletesoftware] [-noconfirm] [-log [<log file name>]]
  [-quiet] [-h]
```

where:

<MCFx>

One or more MCF(s) to be kept. The MCF must be in format: *MC.<bundle>.<namsid>.0*. This parameter is not case sensitive.

-nsc <destination mnemonic> <capability id> <password>

Option to use NCS authentication. The following parameters are not case sensitive.

<destination mnemonic> NCS mnemonic of the MDI interface

<capability id> NCS capability id

<password> NCS capability id password

If this option is not specified, the tool assumes that an NCS connection already exists as is the case when calling the tool from the NCS command console or from remote NCS.

-pm <PM>

Option to specify one PM to perform the tidy against. This parameter is not case sensitive.

-f <file of PMs>

Option to specify a list of PMs to perform the tidy against. The <file of PMs> is a file containing a list of PM mnemonics, one per line. These mnemonics are not case sensitive but the file name is. For example, */localdisk/admin/pm.list*. Comment and blank lines are permitted, but comment lines must start with a # character.

-mcffile <file of MCFs>

Option used to specify a file containing a list of MCFs to be kept. The <file of MCFs> is a file containing a list of MCFs, one per line. The MCF must be in the format: *MC.<bundle>.<namsid>.0*. The MCFs are not case sensitive but the file name is. For example, */localdisk/admin/mcf.list*. Comment and blank lines are permitted, but comment lines must start with a # character.

-deletedate <date>

Option to specify a date to use when selecting the MCFs to keep. The *<date>* must be valid and in the format *yymmdd*. See “Dated algorithm” (page 45) for more information on the date format. This date determines which streams are considered future or past. If this option is not specified, the current date is used.

-paststreams <number of streams>

Option used to specify the number of Dated, Keyed, and User Specified streams older than the delete date that are kept. The *<number of streams>* indicates the number of streams to keep. The value must be from 1 - 10000. If this option is not specified, one stream is kept for each stream type.

-mcfspersfuturestream <number of MCFs>

Option used to specify the number of MCFs to keep per future stream. The *<number of MCFs>* indicates the number of MCFs to keep. The value must be from 1 - 100. If this option is not specified, all future MCFs are kept.

-deletesoftware

Option used to specify that software images only referenced by MCFs being deleted are to be deleted.

-noconfirm

Option used to delete the MCFs without asking the user for confirmation.

The *-noconfirm* option is implied when executing the tool from the NCS command console or from remote NCS. This option must be specified when executing the tool from cron.

-log [<log file name>]

Option to have the messages recorded in a log file. If the *<log file name>* is not specified, the default file name is *pmtidymcf.log*.

-quiet

Option to suppress the generation of information messages.

-h

Option to display command syntax and examples.

If the *-f* and *-pm* options are not specified, all the PMs reporting to the NCS OA represented by the <destination mnemonic> parameter or reporting to any OA that exists in the hierarchy of the NCS OA are considered.

The following is an example of a *pmtidymcf* session.

```
/opt/MagellanNMS/bin/pmtidymcf -pm a1234 -ncs mdi id  
pw -deletedate 940215 -paststreams 2  
-mcfsperfuturestream 1
```

```
16:44:27 NOTE: The pmtidymcf tool is starting. Date:  
1994-04-06.
```

```
16:44:27 NOTE: Following are the configuration  
options:
```

```
NCS parameters:          MDI ID XXXXXXXX.  
PM selection mode:       PM A1234.  
Delete software:         No.  
Delete date:             940215.  
Past streams:            2.  
MCFs per future stream:  1.  
Confirm deletion:        Yes.
```

```
16:44:28 NOTE: Establishing the NCS connection to MDI.
```

```
16:44:28 NOTE: Processing PM A1234.
```

```
16:44:41 NOTE: The following 13 MCF(s) will be kept:
```

```
MC.94020702.1234.0 MC.94021535.1234.0  
MC.94021536.1234.0 MC.94033000.1234.0 MC.GHIJ.1234.0  
MC.M56100.1234.0 MC.M57100.1234.0 MC.TEST.1234.0  
MC.TEST2.1234.0 MC.WK0601.1234.0 MC.WK0801.1234.0  
MC.94021200.9999.0 MC.TEST.9999.0
```

```
16:44:44 NOTE: The following 5 MCF(s) will be deleted:
```

```
MC.94020700.1234.0 MC.94020701.1234.0 MC.ABCD.1234.0  
MC.WK0600.1234.0 MC.WK0800.1234.0
```

```
Delete the MCF(s)? [y,n] (y):
```

```
16:44:44 NOTE: Generating MC file list for the 21 MCFs  
on PM A1234.
```

```
.....
```

```
16:45:28 NOTE: Starting to delete the MCF(s).
```

16:45:29 NOTE: Still 5 MCF(s) to be deleted.
 16:50:37 NOTE: MCF(s) deleted successfully.
 16:50:38 NOTE: The pmtidymcf tool has completed successfully.

Table 5
PM Tidy MCF return codes

Return code	Description
0	Success. The MC files and software images that were no longer needed have been deleted.
1	Error. Problems were found during parameter validation.
2	User requested termination. A termination signal (Control-C) was received by the tool.
11, 12, ...	Partial success. The tool completed but some PMs were not tidied successfully. The number of PMs where the tidy was not successful is <return code> minus 10. For example, if the return code is 12, then the tidy was not successful on 2 PMs.

Command output

The PM Tidy MCF tool directs command output to standard error and optionally to a log file.

All progress and error messages are directed to standard error. A progress message is displayed at the beginning to notify the user that the tool is starting. The list of PMs being processed is also displayed. For each PM, the list of MCFs to be kept and deleted is displayed. A progress message is displayed after every five MCFs deleted. Error messages are printed as they occur and a termination message is displayed.

The log file contains all the messages that are printed to standard error.

MCF management on Backup disks

The Backup Delete MCF and Backup Tidy MCF tools are used to manage MCFs on the NMS Backup disk.

The Backup Tidy MCF tool can be used to automate the management of backup MCFs. The Backup Delete MCF tool can be used to delete specific backup MCFs.

Backup Delete MCF tool

The Backup Delete MCF tool is used to delete specific backup MCFs from the NMS Backup disk. This tool does not delete the MCFs that are referenced by the backup MCFs that are not being deleted (supports incremental MCFs).

At least one backup MCF must be specified. This can be done by using the *-mcffile* option or by specifying backup MCFs on the command line. Both can be specified at the same time.

For return codes, see the table “Backup Delete MCF return codes” (page 294).

Command syntax

The following is the command syntax for Backup delete MCF(*bdeletemcf*). This tool can be executed from a UNIX command line. This command should be executed from the *root* user.

Enter the following command syntax as one continuous command.

```
/opt/MagellanNMS/bin/bdeletemcf [<B_MCF1>
[<B_MCF2> ...]] [-mcffile <file of backup MCFs>]
[-log [<log file name>]] [-quiet]
[-backupdir <backup directory>] [-h]
```

where:

<B_MCFx>

One or more backup MCF(s) to be deleted. The backup MCFs must be in format B_MC.<bundle>.<namsid>.0. This parameter is not case sensitive.

-mcffile <file of backup MCFs>

Option used to specify a file containing a list of backup MCFs to be deleted. The *<file of backup MCFs>* is a file containing a list of backup MCFs, one per line. The backup MCFs are not case sensitive but the file name is. For example: */localdisk/admin/mcf.list*. Comment and blank lines are permitted, but comment lines must start with a # character.

-log [<log file name>]

Option to have the messages recorded in a log file. If the <log file name> is not specified, the default file name is *bddeletemcf.log*.

-quiet

Option to suppress the generation of information messages.

-backupdir <backup directory>

Option to specify the directory containing the backup MCFs. By default, the directory is determined by looking for the value of variable *UNIX_BACKUP_DIR* in the */opt/MagellanNMS/cfg/PFA.cfg* configuration file.

-h

Option to display command syntax and examples.

The following is an example of an *bddeletemcf* session.

```
/opt/MagellanNMS/bin/bddeletemcf B_MC.TEST.301.0.301  
B_MC.WK0601.301.0
```

```
09:29:18 NOTE: The bddeletemcf tool is starting. Date:  
1994-03-12.
```

```
09:29:18 NOTE: Following are the configuration  
options:
```

```
Backup directory: /opt/MagellanNMS/data/BACKUP_MCF.
```

```
09:29:23 NOTE: The following 2 backup MCFs will be  
deleted:
```

```
B_MC.TEST.301.0 B_MC.WK0601.301.0
```

```
09:29:41 NOTE: Starting to delete the backup MCF(s) for  
NAMS ID 301.
```

```
09:30:00 NOTE: Backup MCF(s) deleted successfully.
```

```
09:30:01 NOTE: The bddeletemcf tool has completed  
successfully.
```

Table 6
Backup Delete MCF return codes

Return code	Description
0	Success. The MC files that were no longer needed have been deleted.
1	Error. Problems were found and error messages have been generated.
2	User requested termination. A termination signal (Control-C) was received by the tool.

Command output

The Backup Delete MCF tool directs command output to standard error and optionally to a log file.

All progress and error messages are directed to standard error. A progress message is displayed at the beginning to notify the user that the tool is starting. The list of backup MCFs that will be deleted is displayed and a progress message is displayed after every five backup MCFs deleted. Error messages are printed as they occur and a termination message is displayed. These messages are not generated when the *-quiet* option is specified.

The log file contains all the messages that are printed to standard error.

Backup tidy MCF tool

The Backup Tidy MCF tool is used to clean up Backups for one or more PMs by removing backup MCFs that are no longer required. This tool does not delete the MC files that are referenced by the backup MCFs that are not being deleted (supports incremental MCFs).

Before describing the rules used when determining the backup MCFs to keep, you need to understand the concept of a *stream*.

For Dated backup MCFs, all the backup MCFs with the same date are part of the same stream. For Keyed backup MCFs, all the backup MCFs with the same key are part of the same stream. For User Specified backup MCFs, each backup MCF represents a different stream. The latest backup MCF in a stream is the one with the highest index. The latest backup MCF in a stream

is used when determining if the stream is before or after the delete date. For Dated backup MCFs, the bundle date is used when comparing delete dates not the file system date. The file system date is used for all other backup MCFs.

It is recommended that this tool be run periodically when only necessary backup MCFs should be kept.

The following rules are used to determine which backup MCFs are kept on the PM.

- 1 The specified backup MCF(s), if any, are kept.
- 2 The MCF presently COMMITTED on the PM, if present in the NMS Backup disk, is kept.
- 3 The MCF presently ACTIVE on the PM, if present in the NMS Backup disk, is kept.
- 4 The backup MCFs that are for a different PM (backup MCFs with a different NAMSID) are kept.
- 5 For the streams of Dated backup MCFs with a bundle date older than the specified delete date, the highest backup MCF of the highest <n> streams are kept. Numeric comparison of the dated key is used to rank the backup MCFs.
- 6 For the streams of Keyed backup MCFs with a file system date older than the specified delete date, the highest backup MCF of the highest <n> streams are kept. ASCII comparison of the key is used to rank the backup MCFs.
- 7 For the streams of User Specified backup MCFs with a file system date older than the specified delete date, the highest backup MCF of the highest <n> streams are kept. ASCII comparison of the bundle name is used to rank the backup MCFs.

- 8 For the streams of Dated backup MCFs with a bundle date later than the specified delete date, the highest <m> backup MCFs of each stream are kept.
- 9 For the streams of Keyed backup MCFs with a file system date later than the specified delete date, the highest <m> backup MCFs of each stream are kept.
- 10 For the streams of User Specified backup MCFs with a file system date later than the specified delete date, the highest <m> backup MCFs of each stream are kept.

In the above rules, the delete dates <n> and <m> can be specified on the command line using the *-deletedate*, *-paststreams* and *-mcfperfuturestream* options.

For return codes, see the table “Backup Tidy MCF return codes” (page 301).

The table “Backup Tidy MCF example” (page 296) illustrates examples of the above rules. The table shows which backup MCFs would be kept and which would be deleted if using the tool on the same backup MCFs but with three different delete dates. In all three cases, <n> is 2 and <m> is 1. The COMMITTED and ACTIVE MCF on the module is MC.94021535.1234.0.

Table 7
Backup Tidy MCF example

MCF	File system date (yymmdd)	Delete date 931231 (yymmdd)	Delete date 940215 (yymmdd)	Delete date 940401 (yymmdd)
B_MC.94020700.1234.0	940204	delete (rule 9)	delete (rule 5)	delete (rule 5)
B_MC.94020701.1234.0	940204	delete (rule 9)	delete (rule 5)	delete (rule 5)
B_MC.94020702.1234.0	940205	keep (rule 9)	keep (rule 5)	delete (rule 5)
B_MC.94021535.1234.0	940210	keep (rule 2)	keep (rule 2)	keep (rule 2)
B_MC.94021536.1234.0	940210	keep (rule 9)	keep (rule 9)	keep (rule 5)
B_MC.94033000.1234.0	940320	keep (rule 9)	keep (rule 9)	keep (rule 5)
(Sheet 1 of 2)				

Table 7 (continued)
Backup Tidy MCF example

MCF	File system date (yymmdd)	Delete date 931231 (yymmdd)	Delete date 940215 (yymmdd)	Delete date 940401 (yymmdd)
B_MC.TEST.1234.0	940110	keep (rule 11)	keep (rule 7)	keep (rule 7)
B_MC.TEST2.1234.0	940111	keep (rule 11)	keep (rule 7)	keep (rule 7)
B_MC.ABCD.1234.0	940213	keep (rule 11)	delete (rule 7)	delete (rule 7)
B_MC.GHIJ.1234.0	940323	keep (rule 11)	keep (rule 11)	delete (rule 7)
B_MC.M56100.1234.0	940131	keep (rule 10)	keep (rule 10)	delete (rule 6)
B_MC.M57100.1234.0	940331	keep (rule 10)	keep (rule 10)	delete (rule 6)
B_MC.WK0600.1234.0	940213	delete (rule 10)	delete (rule 6)	delete (rule 6)
B_MC.WK0601.1234.0	940214	keep (rule 10)	keep (rule 6)	keep (rule 6)
B_MC.WK0800.1234.0	940210	delete (rule 10)	delete (rule 10)	delete (rule 6)
B_MC.WK0801.1234.0	940223	keep (rule 10)	keep (rule 10)	keep (rule 6)
B_MC.94021200.9999.0	940331	keep (rule 4)	keep (rule 4)	keep (rule 4)
B_MC.TEST.9999.0	940331	keep (rule 4)	keep (rule 4)	keep (rule 4)
(Sheet 2 of 2)				

Command syntax

The following is the command syntax for the Backup Tidy MCF command. This tool can be executed from a UNIX command line or from a cron job. This command should be executed from the *root* user.

Enter the following command syntax as one continuous command.

```
/opt/MagellanNMS/bin/bdtidymcf [<B_MCF1> [<B_MCF2> ...]]
  -ncs <destination mnemonic> <capability id> <password>
  [-pm <PM> | -f <file of PMS>]
  [-mcffile <file of backup MCFs>]
  [-deletedate <date>] [-paststreams <number of streams>]
  [-mcfspersfuturestream <number of backup MCFs>]
  [-noconfirm] [-log [<log file name>]] [-quiet]
  [-backupdir <backup directory>] [-h]
```

where:

<B_MCFx>

One or more backup MCF(s) to be kept. The backup MCFs must be in format B_MC.<bundle>.<namsid>.0. This parameter is not case sensitive.

-ncs <destination mnemonic> <capability id> <password>

Option to use NCS authentication. The following parameters are not case sensitive.

<destination mnemonic> NCS mnemonic of the MDI interface.

<capability id> NCS capability id.

<password> NCS capability id password.

-pm <PM>

Option to specify one PM to perform the tidy against. This parameter is not case sensitive.

-f <file of PMs>

Option to specify a list of PMs to perform the tidy against. The <file of PMs> is a file containing a list of PM mnemonics, one per line. These mnemonics are not case sensitive but the file name is. For example, */localdisk/admin/pm.list*. Comment and blank lines are permitted, but comment lines must start with a # character.

-mcffile <file of backup MCFs>

Option used to specify a file containing a list of backup MCFs to be kept. The <file of backup MCFs> is a file containing a list of backup MCFs, one per line. The backup MCFs must be in format B_MC.<bundle>.<namsid>.0. The backup MCFs are not case sensitive but the file name is. For example, */localdisk/admin/mcf.list*. Comment and blank lines are permitted, but comment lines must start with a # character.

-deletedate <date>

Option to specify a date used when determining if backup MCFs are in the future or in the past. This date determines which streams are considered future or past. The <date> must be valid and in the format *yyymmdd*. See “Dated algorithm” (page 45) for more information on the date format. This command should be executed from the *root* user.

-paststreams <number of streams>

Option used to specify the number of Dated, Keyed, and User Specified streams older than the delete data that are kept. The <*number of streams*> indicates the number of streams to keep. The value must be from 1 - 10000. If this option is not specified, one stream is kept for each stream type.

-mcfsperefuturestream <number of backup MCFs>

Option used to specify the number of backup MCFs to keep per future streams. The <*number of MCFs*> indicates the number of backup MCFs to keep per future stream. The value must be from 1 - 100. If this option is not specified, all future backup MCFs are kept.

-noconfirm

Option used to delete the backup MCFs without asking for confirmation. This option must be specified when executing the tool from cron.

-log [<log file name>]

Option to have the messages recorded in a log file. If the <*log file name*> is not specified, the default file name is *bdtidymcf.log*.

-quiet

Option to suppress the generation of information messages.

-backupdir <backup directory>

Option to specify the directory containing the backup MCFs. By default, the directory is determined by looking for the value of variable *UNIX_BACKUP_DIR* in the */opt/MagellanNMS/cfg/PFA.cfg* configuration file.

-h

Option to display command syntax and examples.

If the *-f* and *-pm* options are not specified, all the PMs reporting to the NCS OA represented by the <destination mnemonic> parameter or reporting to any OA that exists in the hierarchy of the NCS OA are considered.

The following is an example of an *bdtidymcf* session.

```
/opt/MagellanNMS/bin/bdtidymcf -pm a1234 -ncs mdi id  
pw -deletedate 940215 -paststreams 2  
-mcfspfuturestream 1
```

```
16:44:27 NOTE: The bdtidymcf tool is starting. Date:  
1994-04-06.
```

```
16:44:27 NOTE: Following are the configuration  
options:
```

```
NCS parameters:          ID XXXXXXXX.
```

```
PM selection mode:       PM A1234.
```

```
Delete date:             940215.
```

```
Past streams:           2.
```

```
MCFs per future stream: 1.
```

```
Confirm deletion:       Yes.
```

```
Backup directory: /opt/MagellanNMS/data/BACKUP_MCF.
```

```
16:44:28 NOTE: Establishing the NCS connection to MDI.
```

```
16:44:28 NOTE: Processing PM A1234.
```

```
16:44:41 NOTE: The following 13 backup MCF(s) will be  
kept:
```

```
B_MC.94020702.1234.0      B_MC.94021535.1234.0
```

```
B_MC.94021536.1234.0      B_MC.94033000.1234.0
```

```
B_MC.GHIJ.1234.0          B_MC.M56100.1234.0
```

```
B_MC.M57100.1234.0        B_MC.TEST.1234.0
```

```
B_MC.TEST2.1234.0         B_MC.WK0601.1234.0
```

```
B_MC.WK0801.1234.0        B_MC.94021200.9999.0
```

```
B_MC.TEST.9999.0
```

```
16:44:44 NOTE: The following 5 backup MCF(s) will be  
deleted:
```

```
B_MC.94020700.1234.0      B_MC.94020701.1234.0
```

```
B_MC.ABCD.1234.0          B_MC.WK0600.1234.0
```

```
B_MC.WK0800.1234.0
```

```

Delete the backup MCF(s)? [y,n] (y):
16:45:28 NOTE: Starting to delete the backup MCF(s) for
NAMS ID 1234.
16:45:29 NOTE: Still 5 backup MCF(s) to be deleted.
16:46:57 NOTE: Backup MCF(s) deleted successfully.
16:46:58 NOTE: The bdtidymcf tool has completed
successfully.

```

Table 8
Backup Tidy MCF return codes

Return code	Description
0	Success. The MC files that were no longer needed have been deleted.
1	Error. Problems were found during parameter validation.
2	User requested termination. A termination signal (Control-C) was received by the tool.
11, 12, ...	Partial success. The tool completed but some PMs were not tidied successfully. The number of PMs where the tidy was not successful is <return code> minus 10. For example, if the return code is 12, then the tidy was not successful on 2 PMs.

Command output

The Backup Tidy MCF tool directs command output to standard error and optionally to a log file.

All progress and error messages are directed to standard error. A progress message is displayed at the beginning to notify the user that the tool is starting. The list of PMs being processed is also displayed. For each PM, the list of backup MCFs to be kept and deleted is displayed. A progress message is displayed after every five backup MCFs deleted. Error messages are printed as they occur and a termination message is displayed. These messages are not generated when the *-quiet* option is specified.

The log file contains all the messages that are printed to standard error.

Verifying the completeness of MCFs

The following command verifies the completeness of MCFs.

checkmcf command

The checkmcf command checks the completeness of an MCF by checking for the existence of the MC.* files contained in its DIR file.

Note: This check differs from the on-switch check mcf command and therefore PE images are not included in the check.

Enter the checkmcf command in the following format:

```
/opt/MagellanNMS/bin/checkmcf MC.<bundle>.<namsid>.0 ...
```

The following example checks MC.4076.4034.0 before and after deleting one of its associated files.

```
/opt/MagellanNMS/bin/checkmcf /localdisk/uibasher/  
MC.4076.4034.0
```

The response would be:

```
NOTE: Checking /localdisk/uibasher/MC.4076.4034.0  
NOTE: MC.4076.4034.0 is complete.  
rm /localdisk/uibasher/MC.4076.4034.GCR  
/opt/MagellanNMS/bin/checkmcf /localdisk/uibasher/  
MC.4076.4034.0  
NOTE: Checking /localdisk/uibasher/MC.4076.4034.0  
ERROR: Missing MC.4076.4034.GCR
```

Deleting MCF MC files

The following command deletes MC.* files associated with an MCF.

deletemcf command

The deletemcf command deletes all the MC.* files associated with an MCF. Any files that are used by other MCFs in the same directory will not be deleted.

Enter the deletemcf command in the following format:

```
/opt/MagellanNMS/bin/deletemcf MC.<bundle>.<namsid>.0...
```

The following example deletes all the MC.* files associated with only MC.92061600.4034.0.

```
/opt/MagellanNMS/bin/deletemcf /localdisk/uibasher/  
MC.92061600.4034.0
```

The response would be:

```
NOTE: /localdisk/uibasher/MC.4076.4034.7 used by other  
bundles. Not removing.  
NOTE: /localdisk/uibasher/MC.4076.4034.6 used by other  
bundles. Not removing.  
NOTE: /localdisk/uibasher/MC.4076.4034.5 used by other  
bundles. Not removing.  
NOTE: /localdisk/uibasher/MC.4076.4034.3 used by other  
bundles. Not removing.  
NOTE: /localdisk/uibasher/MC.4076.4034.2 used by other  
bundles. Not removing.  
NOTE: /localdisk/uibasher/MC.4076.4034.1 used by other  
bundles. Not removing.  
NOTE: /localdisk/uibasher/MC.4076.4034.SCR used by  
other bundles. Not removing.  
NOTE: /localdisk/uibasher/MC.4076.4034.DCR used by  
other bundles. Not removing.  
NOTE: /localdisk/uibasher/MC.4076.4034.ACR used by  
other bundles. Not removing.  
NOTE: /localdisk/uibasher/MC.4076.4034.GCR used by  
other bundles. Not removing.  
NOTE: /localdisk/uibasher/MC.4076.4034.RID used by  
other bundles. Not removing.  
NOTE: Removing /localdisk/uibasher/  
MC.92061600.4034.0.DIR  
NOTE: Removing /localdisk/uibasher/MC.92061600.4034.0  
NOTE: /localdisk/uibasher/MC.4076.4034.FEAT used by  
other bundles. Not removing.  
NOTE: /localdisk/uibasher/MC.4076.4034.GSCR used by  
other bundles. Not removing.  
NOTE: /localdisk/uibasher/MC.4076.4034.DSP0 used by  
other bundles. Not removing.  
NOTE: /localdisk/uibasher/MC.4076.4034.PROF used by  
other bundles. Not removing.
```

Listing MCF files

The following command lists files included in an MCF.

listmcf command

The listmcf command lists the files included in an MCF by examining the contents of its DIR file.

Enter the listmcf command in the following format:

```
/opt/MagellanNMS/bin/listmcf MC.<bundle>.<namsid>.0...
```

The following example lists the files associated with MC.4076.4034.0.

```
/opt/MagellanNMS/bin/listmcf /localdisk/uibasher/  
MC.4076.4034.0
```

The response would be:

```
NOTE: Listing /localdisk/uibasher/MC.4076.4034.0  
MC.4076.4034.0.DIR  
MC.4076.4034.FEAT  
RMOFF386.PIMG9007  
RAUTP.PIMG9007  
PELFF2.PIMG9007  
RMSERVER.PIMG9007  
PELFG1.PIMG9007  
L2LOADER.PIMG9007  
L3LOADER.PIMG9007  
MC.4076.4034.PROF  
MC.4076.4034.1  
MC.4076.4034.2  
MC.4076.4034.3  
MC.4076.4034.5  
MC.4076.4034.6  
MC.4076.4034.7  
MC.4076.4034.SCR  
MC.4076.4034.DCR  
MC.4076.4034.ACR  
MC.4076.4034.RID  
MC.4076.4034.GSCR  
MC.4076.4034.GCR  
MC.4076.4034.DSPO  
MC.4076.4034.0
```

Chapter 15

Using HP OpenView NNM desktop

This chapter describes how you can access DPN Devices configuration tools from the HP OpenView Network Node Manager (NNM) desktop application. It contains the following information:

- “About HP OpenView NNM desktop” (page 305)
- “Configuration tools available from HP OpenView NNM desktop” (page 306)
- “Accessing HP OpenView NNM desktop from MDM” (page 306)
- “Accessing DPN Devices configuration tools from HP OpenView NNM desktop” (page 306)
- “How HP OpenView NNM desktop displays DPN device names” (page 309)
- “Viewing online documentation” (page 309)
- “Exiting HP OpenView NNM desktop” (page 310)

About HP OpenView NNM desktop

HP OpenView NNM desktop application is an optional feature of Preside Multiservice Data Manager (MDM) that runs on an HP OpenView platform. With this feature you can launch, from the HP OpenView NNM desktop, tools from the DPN Devices configuration toolset. Or, you can use the surveillance and configuration tools in the HP OpenView NNM desktop toolset.

Configuration tools available from HP OpenView NNM desktop

See the following sections for information on the DPN Devices configuration tools that you can launch from HP OpenView NNM desktop:

- “Component Provisioning” (page 61)
- “Envelope Editor” (page 221)
- “Service Data Backup” (page 161)
- “Service Data Restore” (page 169)
- “Global Data Manager” (page 127)
- “Software Distribution” (page 179)
- “Network Activation” (page 235)
- “Software Substitution” (page 193)
- “Service Data Conversion” (page 207)
- Service Integrity Simplification, See 241-6001-022 *Preside MDM Network Reporting System User Guide*

Accessing HP OpenView NNM desktop from MDM

Access HP OpenView NNM desktop from the Preside Multiservice Data Manager (MDM) Toolsets menu.

Accessing DPN Devices configuration tools from HP OpenView NNM desktop

See the following procedures for information on how to start HP OpenView NNM desktop and access the DPN Devices configuration tools:

- “Starting HP OpenView NNM desktop” (page 307)
- “Starting DPN Devices configuration tools from the Configuration menu” (page 308)
- “Starting DPN Devices configuration tools from the pop-up menu” (page 308)

Starting HP OpenView NNM desktop

- 1 In a UNIX window start HP OpenView:

`/opt/OV/bin/ovw &`

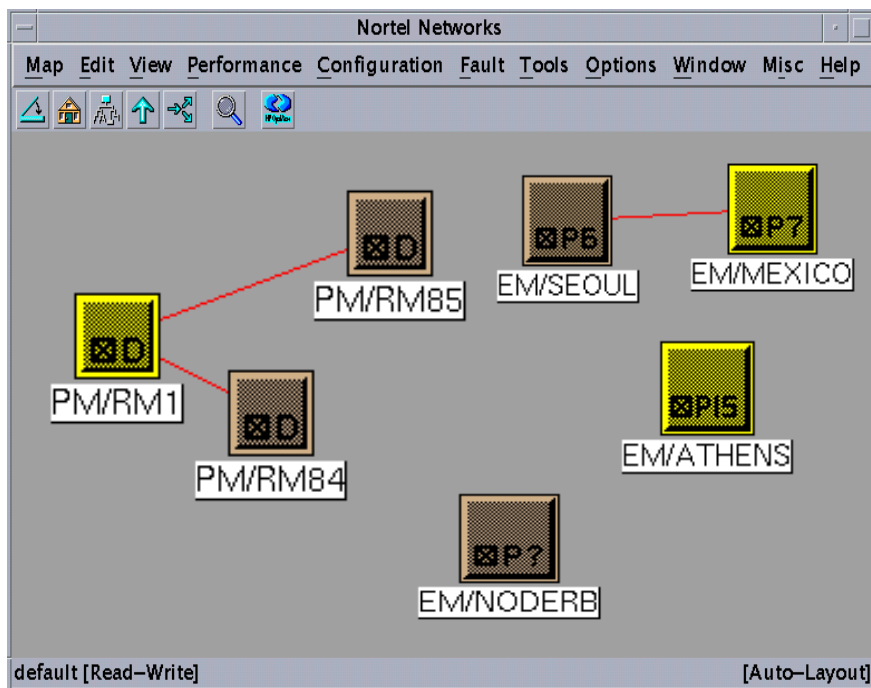
The About HP OpenView window opens. Click Close to close the window or wait for it to close on its own.

The Root map opens, displaying the Nortel Networks symbol and the IP Internet symbol. These symbols indicate the state of their respective networks through color. The standard HP OpenView color scheme is used, as shown in the HP OpenView Display Legend.

The Event Categories window opens. It may display a status message at the bottom, stating the percentage of the trapd.log file that has been loaded.

- 2 To view your network on the Root map, double-click the Nortel Networks symbol.

The Nortel Networks submap opens and displays the devices in your network. The color of the icon indicates the states of the network devices. Icons depicting DPN devices in the network contain an O or D. See also, "How HP OpenView NNM desktop displays DPN device names" (page 309).



- 3 Access the DPN Devices configuration tools. There are two methods: see "Starting DPN Devices configuration tools from the Configuration menu" (page 308) or "Starting DPN Devices configuration tools from the pop-up menu" (page 308).

Starting DPN Devices configuration tools from the Configuration menu

- 1 At the OVW submap, select a DPN device by clicking the left mouse menu button.
- 2 Select DPN Configuration.
- 3 Select the tool that you want to open.

Starting DPN Devices configuration tools from the pop-up menu

- 1 At the OVW submap, select a DPN node by clicking the left mouse button.

- 2 Press the mouse menu button to display the node pop-up menu, and select DPN Configuration.
- 3 Select the tool that you want to open.

How HP OpenView NNM desktop displays DPN device names

Icons representing DPN devices contain a D or O. They are displayed on the Nortel Networks submap as follows, depending on the type of DPN device:

- DPN-100 device names are displayed as PM/<device_name>. For example, PM/PMDEV1
- Passport 4120 device names are displayed as PM/<device_name>. For example, PM/PM/DEV2
- Operating Agent on DPN-100 or Passport 4120 are displayed as OA/<agent_name>. For example, OA/AGENT3

There is no subcomponent submap for DPN devices. To see a list of the subcomponents and their states, use the Component Information Viewer.

Note: The device name that appears on the *Nortel Networks submap* is the name with which the device is configured. Lowercase letters in a configured name appear as uppercase letters in the submap display.

Viewing online documentation

- 1 From the Root map Help menu or any submap Help menu, choose Online Documentation.
The Netscape browser opens with online documentation.
- 2 In the left pane of the browser, select a document suite name.
The left pane displays the documentation categories.
- 3 In the left pane, select a document name.
A table of contents appears. You can now select a topic from the document.
- 4 In the left pane, select the topic you want to view.
The topic details display in the right frame.

See 241-6001-804 *Preside MDM Workstation Utilities User Guide*.

Exiting HP OpenView NNM desktop

- 1 From the Root map or any submap, select Map -> Exit.

An OpenView Windows warning dialog opens.

- 2 To continue the exit process, click OK.

The dialog closes along with the Event Categories window and any open submaps.

Appendix A

Service data format

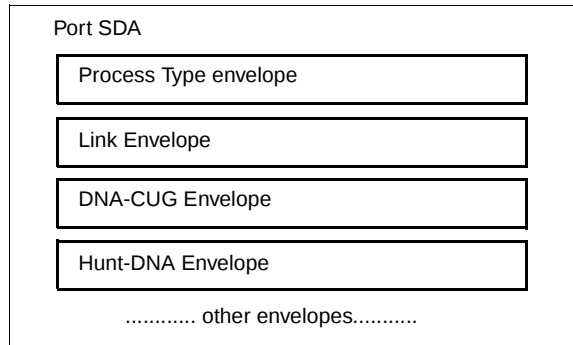
This appendix provides you with a conceptual model of how service data is presented by the Component Provisioning tool. Acquiring such knowledge will be beneficial for using the Component Provisioning tool.

Before discussing the conceptual model, review how service data is structured in the Master Configuration Files (MCF), as described in 241-2001-340 *DPN-100 Envelope Definitions*. You need to refer to this document for detailed descriptions of service data fields.

Within the context of 241-2001-340 *DPN-100 Envelope Definitions*, service data can be viewed as consisting of fields which are grouped into envelopes. Envelopes are, in turn, grouped into a service data area (SDA). SDAs and other envelopes are grouped into larger SDAs. Each envelope and SDA is accessed by a key.

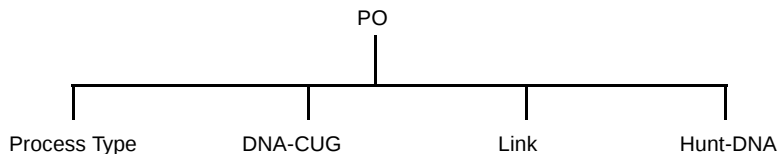
For example, a port providing ITI service is structured as shown in the figure “ITI service structure” (page 312).

Figure 27
ITI service structure



Conceptually, this structure can be described as an up-side-down tree, as shown in the figure “up-side-down tree” (page 312).

Figure 28
up-side-down tree



The Component Provisioning tool follows this model with some extensions to help you access the data more easily. For example,

- 1 There is no need for you to enter any data into the Process Type Envelope. Therefore, this envelope is not visible from Component Provisioning.
- 2 The DNA-CUG Envelope contains NCUGs. You want to be able to access each NCUG directly.

Component Provisioning presents the previous example in the following format:

```
PO/2
  ITI
    Link
      DNA/X3021224321
        DNA_CUG
          NCUGs
            NCUG_Index/2
            NCUG_Index/3
          ICUGs
            ICUG_Index/6
        Hunt_DNA
```

Each line in the above example is called a component. The example implies the following:

- The port 2 offers ITI service. The previous figure does not help you to distinguish services that have the same types of envelopes. This component is called navigation component, it does not have any fields.
- The Link component is a subordinate of the ITI component, shown by a large indentation. Since its key is always constant, you do not need to be concerned about, in contrast to NCUG_Index or ICUG_Index. This is an editable component, since it has fields. You can position the cursor at this component and use the right button on your mouse to display the editable screen.
- The DNA_CUG and Hunt_DNA components have the identical key. The navigation component DNA saves you from typing the key X3021224321 twice. The level of identification tells you that the DNA component is a subordinate of the ITI component. It has two subordinates of its own: DNA_CUG and Hunt_DNA. They are editable components.
- The components NCUGs and ICUGs tell you that the DNA_CUG component has a group of NCUG_Index and a group ICUG_Index. The NCUGs component has two subordinates with the key of 2 and 3. The ICUGs component has one subordinate with the key of 6.

In summary, every line on the navigation window, is a component. Components that have an editable screen are called editable components. Other components are called navigation components.

Appendix B

Component Provisioning paste keys

This appendix details the services that are supported when pasting PVC or direct call components when the Change Keys option is selected from Component Provisioning.

See the following tables:

- “Direct call paste keys” (page 315)
- “PVC paste keys” (page 316)

Table 9
Direct call paste keys

Service name	UI Prompt	Fields
X25	Remote DNA	REMOTEDNA
X32	Remote DNA	REMOTEDNA
ITI	Remote DNA	REMOTEDNA
POS	Remote DNA	REMOTEDNA
DS_0B	Remote DNA	REMOTEDNA
NCS Superior Call	Remote DNA OA mnemonic	REMOTEDNA OAMNEMONIC
Swift BCS	Remote DNA	REMOTEDNA
Token Ring SNA PAD- service level	Remote DNA	REMOTEDNA
(Sheet 1 of 2)		

Table 9 (continued)
Direct call paste keys

Service name	UI Prompt	Fields
Token Ring SNA PAD-device level	Remote DNA	REMOTEDNA
SNA mnemonic call multi-host	Remote DNA	REMOTEDNA
Token Ring ISRB	Remote DNA	ISRBDCREMOTEDNA
Data Spooling	DNA of data collection system	DSPREMOTEDNA
Broadcast Service	Remote DNA	REMOTE DNA
Icon	Remote DNA	REMOTEDNA
	Device Type	FAXD0DATA
	PM mnemonic	FAXD1DATA
	OA mnemonic	FAXD2DATA
SABRE	Remote DNA	REMOTEDNA
DSP HPAD	Remote DNA	REMOTEDNA
API Service	Remote DNA	REMOTEDNA
(Sheet 2 of 2)		

Table 10
PVC paste keys

Service name	UI Prompt	Fields
X25	Remote DNA Remote LCN	REMOTEDNA X25REMOTELCN
X32	Remote DNA Remote LCN	REMOTEDNA X25REMOTELCN
ITI	Remote DNA Remote LCN	REMOTEDNA REMOTELCN
POS	Remote DNA Remote LCN	REMOTEDNA REMOTELCN
(Sheet 1 of 2)		

Table 10 (continued)
PVC paste keys

Service name	UI Prompt	Fields
DS_0B	Remote DNA Remote LCN	REMOTEDNA REMOTELCN
SNA-multihost, LU	Remote DNA Remote LCN	REMOTEDNA REMOTELCN
Frame Relay	Remote DNA Remote DLCI	REMOTEDNA FRREMOTEDLCI
X75	Remote DNA Remote LCN	REMOTEDNA X25REMOTELCN
X25 Gateway	Remote DNA Remote LCN	REMOTEDNA X25REMOTELCN
Broadcast Service	Remote DNA Remote LCN	REMTOEDNA REMOTELCN
(Sheet 2 of 2)		

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Preside Multiservice Data Manager Configuration Management for DPN

User Guide

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