NØRTEL
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Preside Multiservice Data Manager

Workstation Utilities

User Guide

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Preside Multiservice Data Manager
Workstation Utilities
User Guide

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Contents

Chapter 3

Operational Commands GUI   **57**

Chapter 4
Remote Access 81

Chapter 5
Online Documentation 89

About this document

The following topics are discussed in this section:

- "Who should read this document and why" (page 13)

- "What you need to know" (page 13)

- "How this document is organized" (page 14)

- "Text conventions" (page 14)

- "Related documents" (page 16)

Who should read this document and why

This document is for those who want to learn about the Preside Multiservice Data Manager (MDM) Utilities toolset. This document provides a description of the tools in the Utilities toolset and information on how to them.

What you need to know

This document assumes that you have basic knowledge of the following

- how to log on to a Preside Multiservice Data Manager (MDM) workstation

- how to use MDM

- the UNIX operating system

- UNIX vi text editor

How this document is organized

241-6001-804 *Preside MDM Workstation Utilities User Guide* contains the following sections:

- "The Utilities toolset" (page 17) is a general introduction to the Preside Multiservice Data Manager (MDM) toolset.

- "Command Console" (page 21) explains how to use the Command Console utility for fault detection and correction.

- "Operational Commands GUI" (page 57) explains how to use the Java-based MDM Operational Commands GUI to run commands and macros.

- "Remote Access" (page 81) explains how to use the Remote Access utility to access a host.

- "Online Documentation" (page 89) describes the Online Documentation browser to view online documentation.

- "Memory Utilization tool" (page 93) explains how to use the Virtual Memory Utilization tool to find out how much virtual memory is available on your workstation.

- "Network Model Shared Memory Utilization tool" (page 97) explains how to use the Network Model Shared Memory Utilization tool to display information about the amount of shared memory available on the workstation for the Network Model.

- "Customer Data Tool" (page 103) explains how to use the Customer Data tool to access a customer data database.

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

  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 /).

Related documents

See the following documents for related information:

- 241-1001-506 *DPN-100 Alarm Console Indications*

- 241-2001-341, *NM Service Envelope Definitions*

- 241-6001-011 *Preside MDM Fault Management User Guide*

- 241-6001-012 *Preside MDM Configuration Management for DPN User Guide*

- 241-6001-015 *Preside MDM Network Model Administrator Guide*

- 241-6001-101 *Preside MDM Engineering Guide*

- 241-6001-211 *Preside MDM Embedded Programming Interface Reference Guide*

- 241-6001-303 *Preside MDM Administrator Guide*

- 241-6001-304 *Preside MDM Configuration Management for DPN Administration*

- 241-6001-501 *Preside MDM Alarms Reference Guide*

- 241-6001-801 *Preside MDM Overview*

- 241-6001-802 *Preside MDM User Interface Primer*

- 241-6001-809 *Preside MDM EPIC Reference Guide*

- NN10600-500 *Nortel Networks Multiservice Switch 7400/15000/20000 Alarms Reference*

Chapter 1
The Utilities toolset

The Utilities toolset is a set of Preside Multiservice Data Manager (MDM) utilities. This chapter contains the following:

- "MDM Utilities" (page 17)

MDM Utilities

Preside Multiservice Data Manager (MDM) Utilities are productivity tools that include:

- UNIX Access creates a window that runs a UNIX shell.

  Note: The UNIX Access utility is not provided by MDM. It is a standard application delivered with the Solaris operating system to which the Utilities toolset provides access.

- EPIC is an interactive command line interface that simplifies network element surveillance and provisioning

  — see the 241-6001-809 *Preside MDM EPIC Reference Guide*

- Remote Access lets you access a host from a remote location.

  — see "Remote Access" (page 81)

- Command Console allows you to directly access the switching element and its corresponding command set.

  — see "Command Console" (page 21).

- Memory Utilization displays information about the amount of virtual memory available on the workstation.

— see "Memory Utilization tool" (page 93)

• Network Model Shared Memory Utilization displays information about the amount of shared memory available on the workstation for the network model.

— see "Network Model Shared Memory Utilization tool" (page 97)

• the MIB Browser utility lets you browse MIBs and perform other related functions

— see "MIB Browser" (page 18)

• Customer Data provides access to the customer data database and allows you to add, change, query, delete, and view customer information.

— see "Customer Data Tool" (page 103)

• The online documentation and help facility provides access to the complete set of MDM online documents.

— see "Online Documentation" (page 89)

MIB Browser

The MIB Browser is provided as a general utility and is supported by the Preside Multiservice Data Manager (MDM) using the AdventNet Web NMS software.

The MDM performance management tool Data Viewer uses the AdventNet Web NMS toolkit. The MIB Browser part of that toolkit has been integrated into MDM. Use the MIB Browser to load and view multiple MIB modules, traverse the MIB tree to look at the definitions, and view and operate on data available through an SNMP agent on a network managed device.

For additional information on the MIB Browser, use the MIB Browser's Help menu or refer to the AdventNet web site at http://www.adventnet.com.

Starting the MIB Browser

1 In the application main window, select System -> Utilities -> MIB Browser.

The MIB Browser opens.

Saving loaded MIB files

If you do not save the loaded MIB files, all of the loaded files will be lost when the browser is restarted and you will have to load them again.

Procedure steps

1   Copy the file /opt/MagellanNMS/lib/cfg/loadmib.cfg to /opt/MagellanNMS/cfg.

2   Add MIB files, in order, to /opt/MagellanNMS/cfg/loadmib.cfg. Some common MIB files can be found in /opt/MagellanContrib/Advent/current/builder/mibs.

XFile

XFile is a standalone tool that is used by applications in Preside Multiservice Data Manager (MDM) as a general utility for viewing files. For example, both Alarm Display and DPN Performance Viewer use this utility as their log file viewer.

The XFile window has the following components:

- The **File Name** text field. You use this field to enter the name of the file that you want to view.

- A scrollable area in which the file contents are displayed.

- The **Show** button that refreshes the contents of the display area with the current content of the specified alarm file.

- The **Pause/Resume** button that lets you pause the display of incoming alarms. When the display has been paused, a red border surrounds the alarm information and the label on the button changes to Resume. Clicking the Resume button removes the red border and resumes the display the incoming alarms.

- The **Close** button that closes the window.

Chapter 2
Command Console

Command Console is an operator command application that lets you directly access network nodes and their corresponding command sets.

Note: In the Operator Client environment, a connection to a group established through either Command Console or Operational Commands (using the Connection Management application), or Passport Shelf View is shared among all of these applications. As a result, terminating a connection by selecting "Disconnect" from Connection Management impacts all of the connections. Any of the above applications that are using the group connection will also be disconnected. Passport supports a maximum of 35 FMIP sessions per node. This sharing of connections by multiple tools for a single user session is necessary to minimize the consumption of FMIP sessions on-switch.

Navigation

Command Console procedures

Starting and exiting the Command Console

Managing connections

Setting up command routing

Enabling and disabling logging

Starting the Command Console

1 In the Preside Multiservice Data Manager window, select **System**, **Utilities** and then **Command Console**.

The Command Console window opens.

Exiting the Command Console

1 From the Command Console window, click **File** and then **Exit**.

The Command Console window closes.

Connecting to the network

Use the following procedure to establish a connection to a network destination.

1   From the Command Console window, click **Security** and then **Connection Management**.

The Connection Management dialog opens. The host to which the Connection Manager is currently connected is displayed at the top of the dialog followed by the Network Destination List just below it. You can use the Show Groups and Show Dest Mnem buttons to determine the contents of the Destination List.

The Show Groups button can include or exclude groups or OA's.

2   From the System menu, click **Administration** and then **Service Selection-User Specific** to start the Service Selection tool.

The Service Selection-User Specific dialog opens.

3   From the Service Selection-User Specific dialog, make any required changes to the current network access service selections.

As you make changes in the Service Selection tool, the connection dialog updates to show the available destinations on that server. When you perform a service selection, your existing connections are retained (whatever server they were actually established against).

4   From the Connection Management dialog, enter a destination in the Destination field. Alternatively, double-click an entry in the Destination list.

5   Type your user ID and password in the appropriate fields. Alternatively, double-click an entry in the User ID field.

You must fill in these text fields before you can connect to the network.

Note: If you have already successfully entered a user ID and password during the current login session, choosing a user ID from the User Id list pastes this information in these fields.

6   Click **Connect**.

When the connection is successful, the Connection Management dialog remains open so you can make other connections.

7   Click **Close**.

The Connection Management dialog closes. You can now issue commands to the destination address. After a successful connection, the Route field in the Command Console changes to this connection. All

subsequent commands in the Command Console are directed to that route. The message area displays any messages pertinent to this connection.

Setting the current connection in MDM Toolset

Use the following procedure to determine which network connections are currently available.

1   From the Command Console window, click **Options** and then **Current Connections….**

The Current Connections Dialog opens. A list of active components and the host used to establish the connection are displayed in the dialog.

2   To set your current route to one of the routes in the list, click the desired route name and then click **Set Route**.

The route indicator in the main Command Console window displays the new route and host used in establishing the connection.

Disconnecting from the network

Use the following procedure to disconnect an existing network connection.

1   From the Command Console window, click **Security** and then **Connection Management.**

The Connection Management dialog opens.

2   Select the destination to disconnect from the **Destination** list.

3   Click **Disconnect**.

4   To close the Connection Management dialog and return to the Command Console, click **Close**.

The Connection Management dialog closes and the Command Console main window opens. The message area displays any messages pertinent to this disconnection.

Setting up command routing

A command route specifies the destination for a command entered in the command entry area. The default is a dollar sign ($), which directs the command to UNIX on the workstation. Use the following procedure to set the current route.

1   In the Command Console window, click the downward pointing arrow on the right side of the **Route** box.

A list box opens and displays the list of available routes.

2   Click an entry from the list of available routes.

The name of the selected route is displayed in the Route field.

You can change the current route shown on the Route field by performing one of the following actions:

•   entering a new route name as a command. Entering the dollar sign ($) command sets the route back to the UNIX system.

•   entering a new route name followed by a command to execute the command and change the default route to the new route name

•   double-clicking on a route from the list of routes in the Current Connections Dialog

In each of these cases, you need to enter a route that is connected through the Connection Manager. The only exception to this is route $, the UNIX system, which is available by default. The current prefix is also cleared (that is, set to none) in each case.

Enabling command response logging

Use the following procedure to specify a log file that automatically collects all command responses.

1   From the Command Console window, click **File** and then **Log to file…**.

The Log to file dialog opens.

2   Specify the directory and file where the logs are to be stored by selecting the appropriate entries in the **Directories** and **Files** lists. If necessary, click **Change Directory** to change the listing of directories. Alternatively, you can type the pathname in the Selection field.

3   If a log file currently exists and you want to overwrite it with the new responses, enable the **Overwrite if existing?** button.

4   To activate the log to file process,

if running...	click...
MDM Toolset	Start Logging.
MDM Operator Client	Open.

Disabling command response logging

    1   From the Command Console window,

if running...	click...
MDM Toolset	**File** and then **Stop file logging**
MDM Operator Client	the check mark beside **Log to File** to remove the check mark.

    Logging to file is immediately terminated.

Operator Commands procedures

-   "Starting the Operator Commands tool" (page 26)

-   "Executing an alternate command" (page 27)

Starting the Operator Commands tool

    1   From the supporting tool (Network Viewer, Component Information Viewer, or Alarm Display), select the component to which you want to make a network connection.

    2   From the Start Tool submenu, click **Utilities** and then **Operator Commands**.

    The Operator Commands tool opens with a choice of command selections.

    Note: The command selections vary depending on the type of component you choose.

    3   Select the number or letter corresponding to the command you want issued.

    4   Press the Return key.

If a network connection exists for the appropriate node, the connection is used to execute the command. If a network connection does not exist, you are prompted for authentication information: Destination, Capability ID and Password.

5 After the command execution is complete, to display the command menu, press the Return key.

6 To exit the Operator Commands tool, select **q**.

The Operator Commands tool closes.

Executing an alternate command

Note: To enter a command that is not available in the current menu list, use the o and O options.

1 From the supporting tool, select the module to which you want to make a network connection.

2 On the Start Tool submenu, choose Operator Commands.

The Operator Commands tool opens with the choice of command selections.

3 Enter either o for Other Command on Component or O for Other Command on Destination.

The tool prompts you to manually enter commands for the current component or for the OA/Group destination.

4 Enter the command on the prompt line and press the Return key.

If a network connection does not exist, you are prompted for authentication information: Destination, Capability ID and Password. If a network connection exists for the appropriate node, the connection is used to execute the command.

5 After the command is executed, press the Return key and manually enter a new command.

6 Press the Return key (empty line) to return to the main menu.

7 To quit the Operator Commands tool, select q.

The window closes.

Note: You can quit the window at any time: type Ctrl-C to cancel the operation then press the Return key to exit the window.

Prefix Editor procedures

Starting and exiting the Prefix Editor

Creating, Saving, and Deleting command prefixes

Activating and Deactivating a pre-defined command prefix

Managing automatic prefixes

Starting the Prefix Editor

1   From the Command Console window, click **Options** and then **Prefix Editor**.

The Prefix Editor dialog opens.

Exiting the Prefix Editor

1   From the Prefix Editor dialog, click **Close**.

The Prefix Editor dialog closes.

Creating command prefixes

Use the following procedure to create a prefix from the Prefix Editor Dialog. For a description of the dialog, see "Prefix Editor dialog" (page 43).

1   From the Prefix Editor dialog, type the desired text in the Edit prefix field.

You can specify a number for the prefix by typing a number, a space, and then the desired text.

If you specify a number for the prefix and a prefix currently exists with this number, it is overwritten with the new prefix text. The new prefix is automatically activated and becomes the current prefix. For a prefix that begins with a number, you need to specify both the number of the prefix and the prefix; otherwise, the Command Console takes the leading number of the prefix and uses it as the index for the prefix.

2   Click **Add**.

The text is added to the prefix list. If you specify a number, the prefix is added in the specified order. If you do not specify a number, the prefix is placed at the end of the list and is given the next available number.

Saving command prefixes to a file

Use the following procedure to save prefixes to a file, making them available for subsequent Command Console sessions.

1   From the Prefix Editor dialog, click **Save Prefix List**.

The prefixes are saved and are available the next time you start the Command Console.

This button is available only when a modification is made to the prefix list. Modifications include the addition of a new prefix, a change to an existing prefix, and the deletion of a prefix.

Deleting a command prefix

Use the following procedure to delete a defined prefix from the Prefix Editor dialog.

1   From the Prefix Editor dialog Prefix list, click on the prefix you want to delete.

2   Click **Delete**.

The selected prefix is deleted from the list.

Activating a pre-defined command prefix from the Command Console window

Use the following procedure to activate a command prefix.

1 From the Command Console window, click the **downward pointing arrow** to the right of the Prefix box.

A list of available prefixes is displayed.

2 From the list of prefixes, click the desired prefix.

The selected prefix is displayed in the Prefix field.

Activating a pre-defined command prefix from the Prefix Editor

Use the following procedure to activate a command prefix.

1 From the Prefix Editor dialog, click an entry in the Prefix list.

2 Click **Activate**.

The selected prefix appears in the Prefix field.

Note: This prefix continues to be used until it is deactivated, until another prefix is selected or added, or until the Route is changed. You can also double click on a prefix in the list to activate it. When a prefix is added it becomes the current prefix.

Deactivating a pre-defined command prefix from the Prefix Editor

Use the following procedure to deactivate a command prefix.

1 From the Prefix Editor dialog, click an entry in the Prefix list

2 Click **Deactivate**.

The current prefix is deactivated and removed from the command entry area of the main window. The value in the command defaults area is set to none.

Setting automatic prefix mode

Use the following procedure to turn automatic prefix mode on or off. For more information, see "Automatic prefix mode" (page 54)

1 From the Command Console window, perform one of the following tasks:

     a.   On the Options menu, click Set Auto-Prefix On.

     b.   On the keyboard press Ctrl+A.

Automatic prefix mode is enabled and the menu command changes to Set Auto-Prefix Off. When the Auto-Prefix command is enabled, typed commands are converted to prefix for the next command.

Choose Set Auto-Prefix Off, or press Ctrl+A again to disable automatic prefix mode. The content of the command entry area is cleared and replaced by the current default prefix, if any.

Use the following procedure to convert a previous command into a prefix. For more information, see "Setting automatic prefixes" (page 56)

Controlling automatic prefixes

1   From the Command Console window, click a previous command from the command history area. If no selection is made, the last issued command will be used.

2   On the Options menu, click **Recall History as Prefix.** Alternatively, you can press Ctrl+H.

    The selected, or last, command is converted to prefix for the next command.

Command Console interface in MDM Toolset

Preside Multiservice Data Manager (MDM) provides the Command Console utility for fault detection and correction. The Command Console is a utility under the System toolset in the MDM main window.

The Command Console main window consists of the following areas:

- "Command Console menu bar in MDM Toolset" (page 32)

- "Command Console response area" (page 37)

- "Command Console command area" (page 37)

See the figure "Command Console main window in MDM Toolset" (page 32) for a sample Command Console main window.

Figure 1
Command Console main window in MDM Toolset
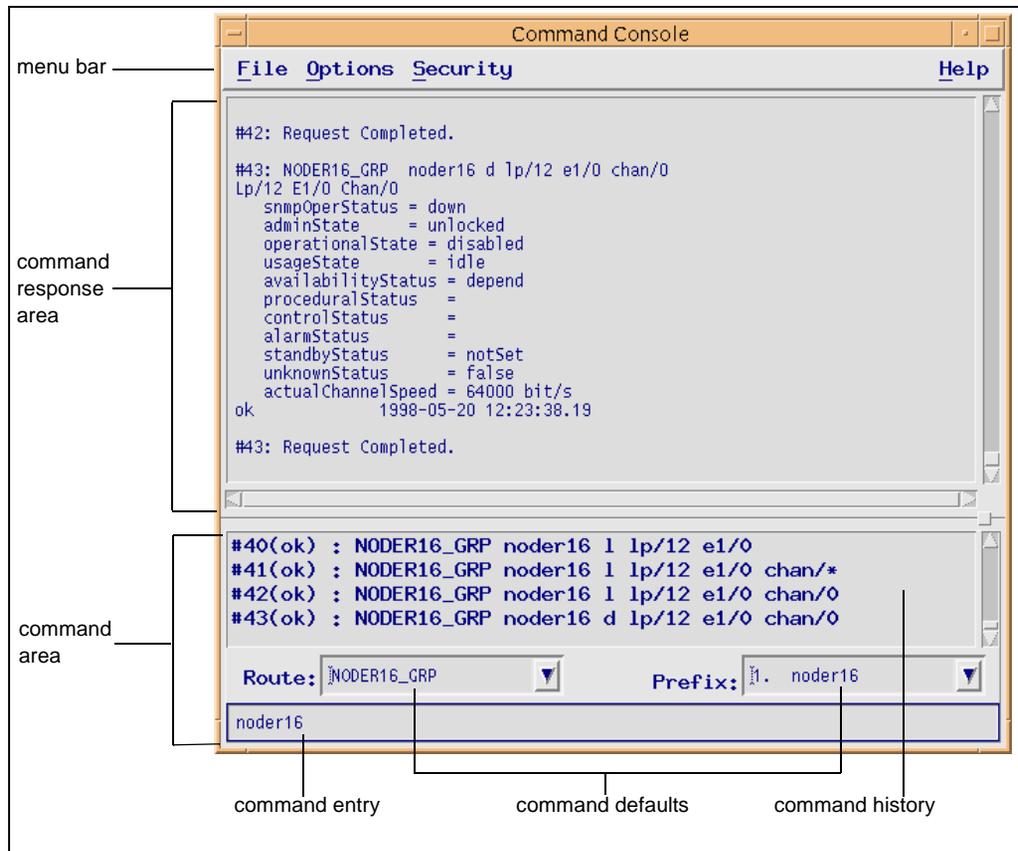
Command Console menu bar in MDM Toolset

The Command Console menu bar consists of the following menus:

- "File menu" (page 33)

- "Options menu" (page 33)

- "Security menu" (page 34)

- "Help Menu" (page 34)

File menu

The File menu provides the following commands:

Command	Description
Log to file…	opens the Log to File Dialog allowing you to specify the file to use for logging all subsequent command output. This command is available only when logging to a file is disabled.
Stop file logging	stops command output from being logged to a file. This command is available only logged to a file is enabled.
Exit	ends the Command Console session

Options menu

The Options menu provides the following commands:

Command	Description
Prefix Editor…	displays the Prefix Editor dialog. For details on the dialog, see "Prefix Editor dialog" (page 43)
Current Connections…	displays the Current Connections Dialog. For details on the dialog, see "Current Connections dialog" (page 42)
Set Auto-Prefix On	enables automatic prefix mode. This command is available only when automatic prefix mode is disabled. For details, see "Automatic prefix mode" (page 54).
Set Auto-Prefix Off	disables automatic prefix mode. This command is available only when automatic prefix mode is enabled. For details, see "Automatic prefix mode" (page 54).
Recall History as Prefix	recalls the selected command history entry or the last executed command as a command prefix for the next command. For details, see "Automatic prefix mode" (page 54)

Security menu

The Security menu provides the following command:

Command	Description
Connection Management…	displays the Connection Management Dialog allowing you to make and remove connections to network destinations. For details, see "Connection Management dialog" (page 41).

Help Menu

The Help menu provides the following commands:

Command	Description
Help on Window	Provides help on the Network Browser window.
Help on Context	Provides help on certain parts of the window.

Command Console interface in MDM Operator Client

Preside Multiservice Data Manager (MDM) provides the Command Console utility for fault detection and correction. The Command Console is a utility under the System toolset in the MDM main window.

The Command Console main window consists of the following areas:

- "Command Console menu bar in MDM Operator Client" (page 35)

- "Command Console response area" (page 37)

- "Command Console command area" (page 37)

See the figure "Command Console main window in MDM Operator Client" (page 35) for a sample Command Console main window.

Figure 2
Command Console main window in MDM Operator Client
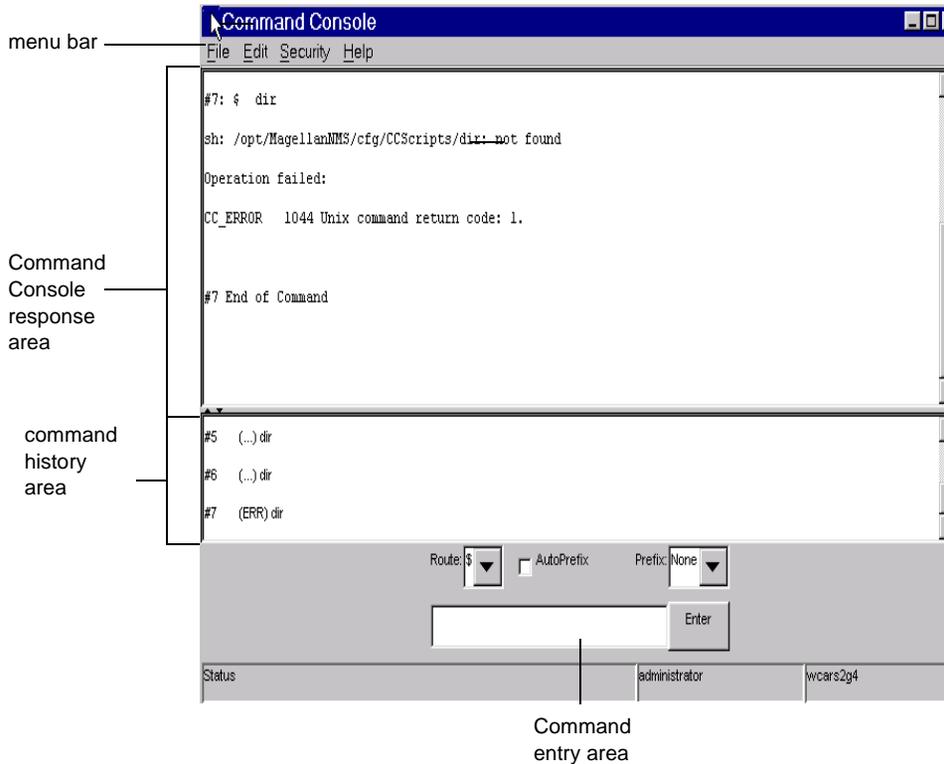
Command Console menu bar in MDM Operator Client

The Command Console menu bar consists of the following menus:

- "File menu" (page 33)

- "Options menu" (page 33)

- "Security menu" (page 34)

- "Help Menu" (page 34)

File menu

The File menu provides the following commands:

Command	Description
Save output as...	saves the output file as a text file.
Prefix Editor...	displays the Prefix Editor dialog. For details on the dialog, see "Prefix Editor dialog" (page 43)
Log to file...	saves the log session as a text file.
Print	prints the log session.
Exit	ends the Command Console session

Edit menu

The Edit menu provides the following command:

Command	Description
Copy	copies text

Security menu

The Security menu provides the following command:

Command	Description
Connection Management…	displays the Connection Management Dialog allowing you to make and remove connections to network destinations. For details, see "Connection Management dialog" (page 41).

Help menu

The Help menu provides the following commands:

Command	Description
Help on Window	Provides help on the Network Browser window.
What's This?	Provides help on certain parts of the window.

Command Console response area

The command response area displays both the operator command and the response to the command. Each command in the command response area has an associated sequence number for easy reference.

Commands in the command response area are displayed in full, that is, the command is shown with any command route and prefix in effect. For example, if you set Route to NODER16_GRP and Prefix to noder16, then enter the command d lp/0, the command is displayed in the command response area as #1 : NODER16_GRP noder16 d lp/0.

If a response to a command is interspersed with responses from other commands, the command text is followed by the string …continued…. The end of the response for any command is indicated by a line that contains the command number and the string Request Completed.

To save the contents of the command response area, use one of the following methods:

- enable Log to file… which also saves the command response area

- cut and paste to extract portions of the response text

- use drag and drop techniques to select portions of text to drop onto the printer icon in the common desktop environment (CDE) Front Panel

Command Console command area

The command area is made up of three smaller areas which include the following:

- "Command history area" (page 38)

- "Command defaults area" (page 39)

- "Command entry area" (page 39)

Command history area

The command history area displays a list of all the commands you entered in the command entry area. All commands except for connect and disconnect are added to the command history. Each entry has a sequence number to associate a command with its response. In addition to commands, the following character indicators can also appear in the command history area:

- (…) to indicate a command is executing

- (ok) to indicate successful completion of a command

- (X) to indicate completion of a command but with errors

Use the command history area to re-execute a previous command. The following methods are available:

- Double-click, using the mouse select button, on a command in the command history.

- Select a command in the command history. To do so, click, using the mouse select button, on a command. The command is automatically pasted in the command entry area. If needed, you can edit the command; otherwise, execute the command by pressing the Return key.

- Select a command from the command history by clicking on a command using the mouse select button. From the Options menu, choose Recall History as Prefix. The selected command is pasted into the command entry area as a prefix. Type the command verb and press the Return key.

The command history area provides additional functionality through its pop-up menu. To display the command history pop-up menu, click on a command in the command history using the mouse menu button. The command history pop-up menu opens providing the following commands:

- Cancel stops the command that is currently executing. Currently executing commands are shown with the indicator (…). You can cancel only DPN and UNIX commands.

- Show Response finds the command in the command response area and highlights the beginning of the response. If the response is interspersed with other commands, you can issue subsequent Show Response commands on the same history item to show the remaining output.

Command defaults area

The command defaults area contains two boxes that display the current command route and any active prefix. The boxes and their functions are as follows:

- Route: lets you define a destination for a command. This destination is known as the command route. To access available routes, click the downward pointing arrow on the right side of the Route box. The list of available routes includes any group to which you are currently connected and three specialized routes. For instructions on how to set a command route, see "Setting up command routing" (page 24). The specialized routes consist of the following:

    — $ (UNIX macro route): lets you direct a command to the UNIX workstation and is the default route

    — @ (SNMP command route): lets you perform Simple Network Management Protocol commands

    — * (wild-card route): lets you direct commands to nodes in any of the connected groups without having to know to which group the node belongs

    — The Command Console automatically routes the command to the appropriate group.

- Prefix: lets you add a prefix to a command. A prefix is a command string that is added automatically to the beginning of any command you enter in the command entry area. You can select a prefix from a list of available prefixes; or, you can use the automatic prefix option. For more information on prefixes, see "Prefix fundamentals" (page 54). For instructions on how to set command prefixes, see "Prefix Editor procedures" (page 28)

Command entry area

Use the command entry area to enter commands. You can perform the following functions using the command entry area:

- enter a command

- edit an existing command displayed in the command entry area

- recall the last command by entering an equal sign (=)

- paste a command copied from the command response area

- automatically paste commands by clicking on a command in the command history area

- create a prefix using the command

- .PREF DEF <prefix_value>

- create or replace a prefix using the command

- .PREF <pref_num> DEF <prefix_value>

- delete a prefix using the command

- .PREF <pref_num> UNDEF

If you set a Prefix command default, this default is added automatically to the command entry area. For example, if you set Prefix to R72, then the string R72 is automatically pasted into the command entry area. Each command that you type in the command entry area will have the prefix R72 appended to it.

You can temporarily override a prefix using the command entry area. Any changes you make to a prefix in the command entry area apply only to the next command you execute. For example, assume you have set Route to CORENCS and Prefix to R72 but you want to execute the display command with a prefix of R7 on the next command. The existing default R72 is automatically pasted into the command entry area. To change this prefix, delete 2 from the prefix R72 in the command area and then type display. The command CORENCS R7 DISPLAY is executed. The ability to modify a prefix in the command entry area is useful when working with large prefixes.

You can change the default route setting using the command entry area. To do so, type another route as the first token in the command entry area. Providing a route as the first token also deactivates the current prefix setting because prefixes are usually route-specific. For example, if you have set Route to CORENCS and Prefix to R72 and then enter TOPNCS dir in the command entry area, the route changes to TOPNCS, the prefix changes to none, and the command TOPNCS dir executes.

The command entry area has a pop-up menu that contains the command Get Context. This command allows you to paste the current component from context into the command area.

Command Console dialogs

The Command Console provides the following dialogs:

- "Connection Management dialog" (page 41)

- "Current Connections dialog" (page 42)

- "Prefix Editor dialog" (page 43)

- "Log to File Dialog" (page 44)

- "Bad Log File Error Dialog" (page 44)

Connection Management dialog

The Connection Management dialog lets you to log on to a network destination. This dialog provides the following options:

- Server Host displays the server host name. All network communications are performed through this host.

- Destination List lists all the destination nodes which are available from the current server host. Available nodes are identified by either a mnemonic or a GROUP name. Selecting an item from the destination list, populates the Destination and User Id fields.

- In MDM Toolset, 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 let you to hide/show the destinations.

- Service Selection... opens the Connection Service Selection dialog of the Service Selection tool. This dialog lets you select a different service host from the network access selection areas. Opened in this way, the Service Selection tool applies changes to a single user session only; it does not apply changes to other users of the same workstation. This lets you rapidly connect to different groups and OAs supported by different Preside Multiservice Data Manager servers. For details on the tool, see the 241-6001-303 *Preside MDM Administrator Guide*.

- User Id List displays all previously authenticated user IDs associated with the selected destination and allows you to re-use authentication data.

- Destination lets you type a destination into this field rather than selecting one from the Destination list.

- User Id lets you type a user ID into this field rather than selecting one from the User Id List.

- Password lets you to type a Password into this field if the field has not already been populated.

- Message displays messages related to the current authentication request.

- Connect performs authentication. The Messages field displays the status of the authentication request. The dialog remains open upon successful completion to allow you to make other connections.

- Disconnect terminates the connection to the network destination.

- Close closes the dialog and returns to the Command Console.

The Connection Management dialog appears automatically the first time you start the Command Console and there is no current group or operations agent (OA) connection.

Current Connections dialog

The Current Connections dialog lets you view all the currently available connections and select a new route.

The dialog contains a connection list with the following information for each connection:

- Route is the name of the operations agent (OA) or group that is connected.

- Type is one of the following connection types:

  — MACRO (UNIX macro route $)

  — SNMP (SNMP command route @)

  — ALL GROUPS (wild-card route *)

  — GROUP

— DEST MNEM (destination mnemonic)

Via Host is the host name of the workstation that is used for establishing the connection.

The dialog also contains the following buttons:

*   Set Route sets the current route to the selected route. It is operable only when a selected item in the connection list is available.

*   Close exits the Current Connections Dialog.

*   Help displays information on the Current Connections Dialog

Prefix Editor dialog

The Prefix Editor dialog lets you enter or modify a set of prefixes as follows:

*   Prefix List provides a sequential list of available prefixes. You can activate a prefix by double-clicking an entry in the Prefix List.

*   Edit Prefix enables you to edit a single entry. To enter a prefix to edit, click an item in the Prefix List.

The dialog contains the following buttons:

*   Add adds a new or changed value in the selection area to the list. If the selection is numbered, it replaces or inserts the prefix in the list. If the selection is not numbered, it is added to the end of the list with the next valid prefix number. This button is available after you enter a new prefix or modify an existing prefix.

*   Delete deletes a selection from the list. This button is available only when you select an entry from the Prefix List.

*   Activate makes the selected prefix the current prefix and gives the current prefix special status in the command entry area of the main window. This button is available after you select an entry prefix from the Prefix List.

*   Deactivate removes the selected prefix from its special status in command line initialization. This button is available after you have activated a prefix.

- Save Prefix List saves the prefix list and is available when at least one prefix has added, modified, or deleted.

- Close closes the Prefix Editor dialog.

- Help displays information on the Prefix Editor dialog.

Log to File Dialog

The Log to File Dialog lets you specify the file for logged command output.

This dialog is a standard Motif File Selection dialog with an additional Overwrite if existing? toggle button. The dialog controls are as follows:

- Overwrite if existing? discards the contents of an existing file when logging starts.

- Start Logging closes the dialog and begins logging command output to the file identified in the Selection field.

- Cancel closes the dialog without logging.

- Change Directory changes the pathname in the Selection field to the directory selected in the Directories list.

- Help displays information on the Log to File Dialog.

If the selected file cannot be opened for logging, an error dialog will be displayed and a new file can be selected.

Bad Log File Error Dialog

If you select a file from the Log to File Dialog than cannot open for output, then the Bad Log File Error Dialog is displayed. The file or the directory may have incorrect access privileges. To continue, close the dialog, fix the problem, and select either the same log file or a different log file.

Command Console fundamentals

The Command Console is an operator command application that allows you to directly access the switching node and its corresponding command set.

The Command Console provides the following functionality:

- an interactive operator command interface for network control

- the ability to issue operator commands directly to a switching element

- a DPN network control system (NCS) command interface

- a Passport command interface

- the ability to use UNIX commands and Simple Network Management Protocol (SNMP) commands

- multiple simultaneous connections to NCS operation agents (OAs) and operator interfaces

- simple text entry for commands and delivery of whole command lines to remote systems

- command prefixing and command routing

- automatic prefixing which converts the previously issued command into a properly structured prefix for the next command

- the ability to log command and command output to a file

To use the Command Console, you need to be familiar with operator commands described in the following documents:

- 241-6001-303 *Preside MDM Administrator Guide*

- 241-1001-303 *DPN-100 Operator Commands and Responses*

- NN10600-050 *Nortel Networks Multiservice Switch 7400/15000/20000 Command Reference*

- 241-2001-351 *DPN-100 Network Control System Operations and Maintenance*.

Establishing a network connection

The Command Console establishes communications with nodes through the Connection Manager. The actual connection process is transparent. After you select a destination and type your user ID and password in the Connection Manager Dialog, a network connection is requested.

Note: Your Preside Multiservice Data Manager system administrator may have configured your workstation to open the Command Console automatically when you log on.

Sharing connections

You can run multiple Command Console sessions on your workstation. If you do, each session has access to connections that any other Command Console session makes. Also, each session is informed when a connection is established.

Dealing with connection failures

Connection failures result in the cancellation of all outstanding commands that are running against the failed connection. If the current route is the same as the connection that fails, the current route is set to $. You may have to find the source of the problem and correct it, or you may have to reconnect.

Entering commands

When you enter a command, the first stage of command processing is a scan for prefix substitution. If a prefix is present in the line, substitution is performed; the current prefix is set as the prefix used in the command. The next stage is the assignment of a command route to the command. For information about command routes, see "Setting up command routing" (page 24).

> *Note:* To ensure that commands are executed in operational mode (not provisioning mode), use the -o or -c options with each command you enter. Alternatively, check that you are already in operational mode by entering the ME command. The syntax is: <nodename> ME.

The command is then sent for execution. If no prefix is used, the command line is directly sent directly for execution. For information about prefixes, see "Prefix Editor procedures" (page 28).

The command is then assigned a sequence number and copied to both the response area and history list. It is displayed in the command history area using a (…) indicator until it is complete. If it completes successfully (or with no error return code), the indicator is changed to (ok). If it completes unsuccessfully, the indicator is changed to (X). Results of command execution are displayed in the command response area as they are received.

You can send the following classes of commands from the Command Console.

Network control system (NCS) commands These are described in the following publications:

- 241-1001-301, *Network Module Operator Commands and Responses*

- 241-1001-303 *DPN-100 Operator Commands and Responses*

- 241-2001-350, *NCS Operations and Maintenance*

You need to be logged on to an OA to issue NCS commands and view the responses.

Group commands These are described in NN10600-050 *Nortel Networks Multiservice Switch 7400/15000/20000 Command Reference*. You need to be logged on to a GROUP to issue these commands and view the responses.

Hold command To stop an NCS command from timing out, type the command hold in the command entry area before the NCS command. For example

```
hold N12 test 9 48 card 5
```

Command prefixes Command prefixes are text command strings that you place before any command in the input area. The Command Console lets you create, store, and use up to 60 different command prefixes. For detailed information about prefixes see "Prefix Editor procedures" (page 28).

UNIX commands (macros) You can type UNIX commands from the Command Console by prefixing $ to the command. For example, to get a list of files in the UNIX working directory, type the following command:

```
$ls -1
```

You can find UNIX commands in UNIX handbooks. The Preside Multiservice Data Manager (MDM) documentation describe only the commands needed to run the MDM software.

Disruptive Commands
The Disruptive Command Safeguard facility needs to be installed by the MDM system administrator. The Disruptive Command Safeguard searches command strings that you enter for any keywords that are considered disruptive. See 241-6001-303 *Preside MDM Administrator Guide*, for instructions on configuring the Disruptive Command Safeguard facility.

If you have the capability to execute a command that might be disruptive, a prompt is displayed when you enter one. If you do not have this capability, the command is rejected and no message is issued.

Disruptive keywords

The following keywords are considered disruptive by default. Contact your system administrator for other keywords that may be added to the following list.

- ACTIVATE

- COMMIT

- CONFIRM

- DEREGISTER

- DISABLE

- ERASE

- FILTER

- FORMAT

- LOAD (see note below)

- REFUSE

- REGISTER

- RELOAD

- RESET

- RESTART

- STOP

Note: If any of these keywords are preceded by the keyword Query or Display, the keyword is not considered disruptive. For example, Display Committed and Query Load are not disruptive; however, Load and Committed are disruptive.

Creation, modification, and deletion of prefixes from the command entry area

The syntax used to change the command prefix in the command entry area of the Command Console window is as follows:

```
PREF <pref_num> DEF <pref_value>
```

This command adds or replaces a prefix whose prefix number is <pref_num> with value <pref_value>.

```
PREF DEF <pref_value>
```

This command adds the prefix <pref_value> to the next sequential location in the prefix list.

```
PREF <pref_num> UNDEF
```

This command deletes the prefix whose prefix number is <pref_num> from the prefix list.

You can invoke prefixes by entering <prefix-num> as the first token in the command entry area. The prefix system supports the use of routing IDs within prefix definitions.

The special prefix value (.) is used to deselect the current prefix and return a null initial value to the command line. Additionally, if you type only a prefix in the command entry area, it changes only the current prefix.

When a prefix value is encountered in the first token of a command line, the system completes prefix substitution and resets the current prefix to the substituted value.

When a line is submitted that does not use any prefix, that line is passed to the routing system for transmission to the appropriate managed device.

Examples:

Suppose the following conditions exist:

- You have a prefix list consisting of

  — 1. R72

  — 2. N12

- Connections CORENCS and TOPNCS are available, where TOPNCS is the current route.

Typing:

- 2 sets the current prefix to N12.

- .2 DIR executes the command TOPNCS N12 DIR.

- CORENCS .1 DIR changes the current prefix to R72, changes the current route to CORENCS, and executes the command CORENCS R72 DIR.

- . (a period) sets the current prefix to none.

To save prefixes for use in subsequent Command Console sessions, click Save Prefix List in the Prefix Editor dialog.

Keyboard shortcuts

The Command Console provides the following command shortcuts:

- Ctrl+E closes the Command Console.

- Ctrl+P opens the Prefix Editor dialog.

- Ctrl+C opens the Connection Management dialog.

- Ctrl+A sets automatic prefix on or off

- Ctrl+H converts a previous command into a prefix for the next command

Command Console customization

You can customize the Command Console to

- ensure that the Connection Management dialog opens automatically when you open the Command Console

- prevent the execution of UNIX commands from the Command Console

- initiate the log-to-file feature when the Command Console starts

To customize an installation, you need to change the application default file for the Command Console. The default file is /opt/MagellanNMS/lib/ app-defaults/<lang>/CMC directory, where <lang> is one of: C (English), ja (Japanese), or zh (Chinese). Changes to this file affect all users of that installation.

Note: Specifications made in a user's .Xdefaults file override any corresponding specifications in application default files.

To customize a single user, you need to change the user's .Xdefaults file in the user's home directory. For example, the user oper1 can edit the file /home/oper1/.Xdefaults/<lang> where <lang> is one of C (English), ja (Japanese), or zh (Chinese). Changes to this file affect a single user only and are usually put into effect when the user logs in to the account. Changes to the.Xdefaults file can be made effective immediately by executing the following command from a UNIX access window:

```
/usr/openwin/bin/xrdb -merge .Xdefaults
```

The table "Resources for customizing the Command Console" (page 51) lists the resources you use to customize the Command Console.

Table 1 Resources for customizing the Command Console

Resource	Description	Legal values
CMC*pop-upCM	If the value is set to True, the Connection Manager window automatically opens when you start the Command Console. If the value is set to False, the Connection Manager window does not open automatically. The default value is False.	True or False
CMC*unixAccess	If the value is set to True, UNIX commands are executed. If the value is set to False, UNIX commands are prevented from executing. The default value is True.	True or False
(Sheet 1 of 2)		

Table 1Resources for customizing the Command Console (Continued)

Resource	Description	Legal values
CMC*logToFile	If the value is set to True, the console automatically logs all output to a file in the home account. The file is called CmcLog.YYMMDD-HHMMSS.PID. If the value is set to False, the console does not automatically log output to a file. The default value is False.	True or False
CMC*logFilePath	This resource specifies the pathname of the log file in the home account. The default is CmcLog.<date time>.<pid>.	
CMC*logAppend	If the value is set to True, the output is appended to a log file if it already exists. If the value is set to False, the output overwrites a log file if it already exists. The default value is False.	True or False
(Sheet 2 of 2)		

Operator Commands fundamentals

You can enter selected operator commands from anywhere a component can be selected and from within tools that support a Start Tool submenu; namely, the network viewer, the component information viewer and the alarm display.

The Operator Commands tool is supported for:

- DPN-100

  — PMs

  — OAs

  — PM-PEs

  — PM-PIs

— PM-POs

• Passport nodes and any subcomponent

Note: The Operator Commands tool is also supported on RTRs, ERTRs, Hosts, and MDM workstations. Invoking the Operator Commands tool on one of these starts a Telnet session to that node name. For this Telnet session, a corresponding IP address to node name needs to exist in the /etc/hosts file.

Operator Commands tool connection configuration

The Operator Commands tool uses information contained in the .nmsrc file (located in your $HOME/MagellanNMS directory) to determine which OA/ groups are used to establish a network connection. This connection is completed using the same mechanism that the Command Console uses. If a network connection on a component is not yet established, the Operator Commands tool prompts for authentication information to complete the connection. The Operator Commands tool reuses existing network connections.

Note: The Operator Commands tool automatically creates a file if one does not already exist by using the first used OA or Group as the default for future connections.

If you want to define a specific OA destination for a given DPN-100 node, add an entry in the following format to the .nmsrc file in your $HOME/ MagellanNMS directory:

    [<module name>] OA <OA name> [<userid> [<password>]]

Example:

    R78 OA CORENCS DAVE

If you want to add a specific group destination for a given Passport node, add an entry in the following format to the .nmsrc file in your $HOME/ MagellanNMS directory:

    [<module name>] GROUP <Group name> [<userid>
    [<password>]]

Example:

    NODER2 GROUP NODER2_GRP

If the module name is omitted and the entry is located at the bottom of the file, the destination applies to all other nodes.

Example:

```
NODEY2CD GROUP NODEY2CD_GRP
GROUP UNIVERSE
OA CORENCS
```

This example indicates that you need to use connections to NODEY2CD_GRP to reach NODEY2CD. UNIVERSE is used for all other Passport nodes, and CORENCS is used for all DPN-100s. Ensure that the generic line (no module name) appears after the module-specific lines.

Note: If the user name and password are provided, connections are performed automatically.

Prefix fundamentals

Using Command Console prefixes can help you when you need to issue multiple commands to either the same device or the same components, or both. Using prefixes saves you keystrokes since prefixes are automatically added to the command entry area for use in subsequent commands. You can create static prefixes or you can enable automatic prefix mode.

Static prefixes

You can specify a prefix to use for all subsequent commands. This prefix is static, that is, the prefix remains in effect until explicitly modified or deleted.

Automatic prefix mode

You can also use automatic prefix mode to set prefixes. When you enable automatic prefix mode, the Command Console converts a previously executed command into a device-specific prefix. For example, you can issue the configuration sequence of check, save, activate, confirm, and commit without having to repeatedly input the module and subcomponent. Automatic prefixes are based on the last command issued. Therefore, prefixes can change with every command issued. An automatic prefix differs from a static prefix in that it need not be the left-most part of the command.

The table "Automatic prefix rules" (page 55) outlines the conversion rules for automatic prefixes when commands are entered in the command entry area (see the format for Command in the table) and when drag and drop techniques are used (see the format for Component in the table) and shows the resulting prefix. The caret (^) in the table indicates the position of the insertion cursor for the next command.

Table 2Automatic prefix rules

Original command or dropped component name	Resulting prefix
DPN	
Command: <module> <verb...> Component: PM/<module>	<module> ^
Command: <module> PE <pe> <verb...> Component: PM/<module> PE/<pe>	<module> PE <pe> ^
Command: <module> <pi> <verb...> Component: PM/<module> PE/<pe> PI/<pi>	<module> <pi> ^
Command: <module> <pi> <po> <verb...> Component: PM/<module> PE/<pe> PI/<pi> PO/<po>	<module> <pe> <pi> ^
Command: <module> <comp.> <d|q|?...>	<module> <comp.> ^
Other DPN commands and component names	<module> ^
Passport	
Command: <module> <verb + opts> Component: EM/<module>	<module> ^
Command: <module> <verb + opts> <subcomponents and args...> Component: EM/<module> <subcomponents...>	<module> ^ <subcomponents and args...>

Setting automatic prefixes

You can set automatic prefixes by the following methods:

- Drag and drop a component or alarm from another fault management tool onto the Command Console. This action converts the corresponding component name into a prefix in the command entry area. Drag and drop components are always converted to prefixes. Drag and drop procedures and automatic prefixes produce similar outputs.

- Select a command in the command history area and then from the Options menu, choose Recall History as Prefix (Ctrl+H keyboard shortcut). This action converts the command into a prefix in the command entry area. If no command is currently selected, the Command Console creates a prefix when a command is executed.

You can invoke automatic prefix mode by the following method:

From the Options menu, choose Set Auto-Prefix On (Ctrl+A keyboard shortcut). Each time you execute a command, the command is converted to a prefix for the next command.

Chapter 3
Operational Commands GUI

The Operational Commands graphical user interface (GUI) provides an easy-to-use graphical user interface (GUI) from which to execute commands. The Operational Commands GUI supports mulitple GUI sessions and multiple commands running concurrently.

Use the Operational Commands GUI to select and run commands on switch components from the Preside Multiservice Data Manager. Executed commands collect information from components which aid in the execution of other tasks, such as configuration or troubleshooting.

Using the Operational Commands GUI improves operator productivity by increasing consistency, hiding unnecessary details, reducing the need to type commands.

Prerequisites

The fault access agent server must be running before starting the Operational Command GUI tool.

Navigation

Operational Command GUI basic procedures

Use Operator Commands GUI basic procedures for operations such as starting and stopping, or managing the interface of the Operator Commands GUI from the Preside MDM toolset and from MDM Operator Client.

Navigation

Starting the Operational Commands GUI tool

Use this procedure to start one or two Operator Commands GUI sessions to gather information from the switch about specific components.

You can start the Operational Commands GUI from the Preside Multiservice Data Manager (MDM) Toolset, the MDM Operator Client and from the following tools:

If running Toolset	If running MDM Operator Client
• Network Viewer	• Network Viewer
• Component Information Viewer	• Component Information Viewer
• Component Status Display	• Alarm Display
• Network Status Bar	• Passport Shelf View
• Alarm Display	• MPE Shelf View
• Passport Shelf View	• Passport Nodal Provisioning
• MPE Shelf View	• MPE Nodal Provisioning
• Passport Nodal Provisioning	• MPE Telnet
• MPE Nodal Provisioning	
• MPE Telnet	

Procedure steps

1   Make a selection from the table.

If starting from Toolset or MDM Operator Client main menu, see...	If starting from another tool, see...
step 2	step 5

2   In the **Toolset** or the **MDM Operator Client** window, select **System->Utilities** -> **Operator Commands**.

The **Operator Commands GUI** window opens.

3   From the supporting tool (Network Viewer, Component Information Viewer, or Alarm Display), select the component you want to make a network connection to.

4   From the supporting tool, open the **Start Tools** menu. For details, refer to the tool's documentation.

5   From the pop-up menu, select **Utilities** -> **Operational Commands**.

The Operator Commands GUI tool opens automatically.

6   If you have not already established an authenticated connection or if you want to change the group you are currently authenticated to, select **Security**-> **Connection Management**.

The **Connection Management** dialog opens.

7   Click a **Group** in the Group panel to select a group.

8   Click a **UserId** in the User List panel to select a UserId or type your UserID in the UserID field.

9   Enter your password if the password field is not automatically populated.

10   Click **OK**.

11   Repeat steps 1 to 5 to launch a second GUI.

Running an Operational Command from the GUI

Use this procedure to select a component and execute a command on that component using the Operational Commands GUI.

Procedure steps

1   Start the Operational Commands GUI. Use "Starting the Operational Commands GUI tool" (page 59) to complete this step.

2   Establish a connection to the target component. Use "Establishing or disconnecting network connections" (page 65) to complete this step.

3   From the Operational Command GUI **Component** drop down list, select a component or type the component name in the **Component** field.

Note: The command selections vary depending on the type of component you choose.

Specify multiple component instances by entering their values after the lowest level component in the **Component** field.

A forward slash after a component name indicates that there are multiple instances of that component. Specify the instance for each of these components by doing one of the following:

- Type the number of each component instance to be polled. Use a semi-colon to separate each component instance from the next. Pressing the right arrow on the keyboard moves the cursor to the next component that requires a component number.

- Type the wild-card "*" to poll all instances of the component. The Operator Commands GUI tool makes appropriate command selections available.

4   From the Operational Command GUI **Command** drop down list, select a command.

If you have not already established an authenticated connection to the target component, the **Group Authentication** dialog opens when you launch a command.

5   On the **Group Authentication** dialog, click the down arrow next to the **Group Name** field and select a group.

6   On the **Group Authentication** dialog, click the down arrow next to **UserID** field and select a user ID.

7   On the **Group Authentication** dialog, enter your password if the password field is not automatically populated.

8   Click **OK**.

9   If the command does not require user input, the command is automatically executed and the results are displayed in the Output Area. The command is listed in the Status History area.

If the command requires user input, a command-specific dialog opens and must be completed by the user. Click **Help** for context sensitive help.

10   Execute additional commands while waiting for a previously executed command to return a result, or execute a previously executed command by clicking on a command in the Status History area.

View the results of previously executed commands by scrolling up the Output area.

Logging command output to a file

Use this procedure to specify a file that automatically saves all command responses. Depending on the macro, some command output is provided in .txt format and other command output is provided in .html format.

Procedure steps

1   On the File menu, choose Save As.

The Save dialog opens.
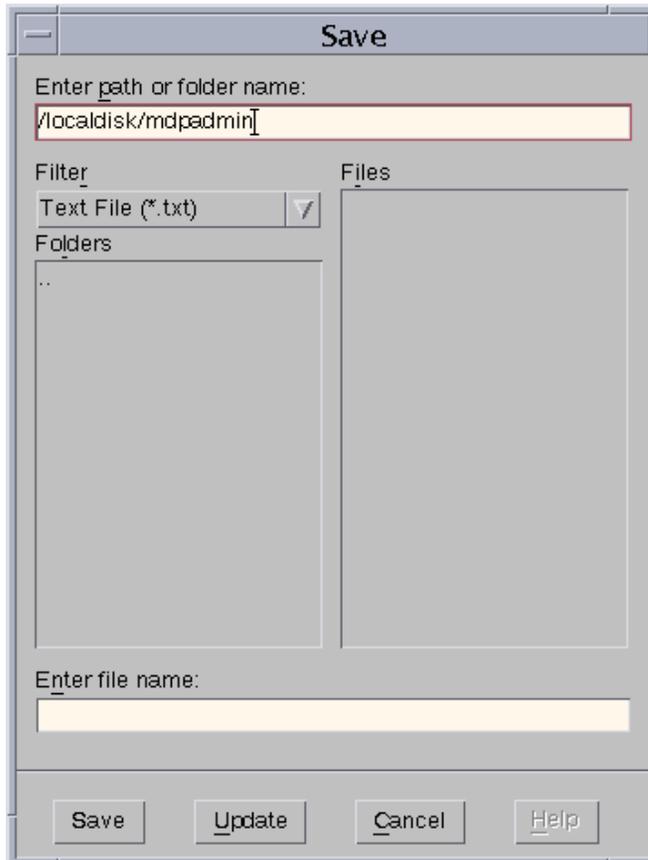
2 Specify the path and file where the logs are to be stored by selecting the appropriate entries in the Folders and Files lists. Alternatively, you can type the path name and file name in the Selection fields.

3 Select a filter type, txt or html, from the Filter drop-down.

4 If a log file currently exists and you want to append to it with the new responses, click **Update**. If you want to overwrite an existing file or start writing to a new file, click **Save**.

5 To discontinue command response logging, click **Cancel**.

Establishing or disconnecting network connections

The Operational Commands GUI can establish communications with multiple devices and components through the Connection Manager. The actual connection process is transparent.

Procedure steps

1   In the application main window, select System -> Utilities -> Operational Commands.

2   On the Security menu, choose Connection Management.

The Connection Management dialog opens. The list of available groups is displayed in the Groups panel. The currently selected group is checked. The list of current users is displayed in the User_Id panel.

Note: While you may connect to a DPN group through the Connection Manager, DPN commands are not supported in the Operational Commands GUI.
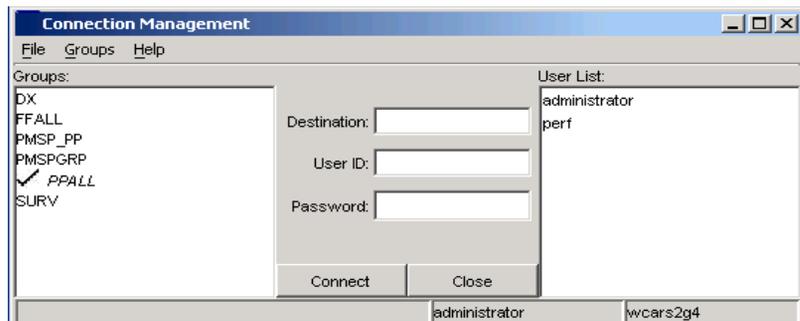
3   Click on a group listed in the **Groups** panel to make a group selection. Alternatively, type a group name in the **Destination:** field.

The selected group name is displayed in the **Destination:** field. If a connection already exists, the **Disconnect** button replaces the **Connect** button.

If connecting, see...	If disconnecting, see...
step 4	step 6

4 Type your user ID and password in the **User ID** and **Password** fields. Alternatively, click on an entry in the **User List** panel to make an entry in the **User ID** field.

Note: All User IDs entered during the current session are listed in the *User List* panel. Clicking a User ID from the *User List* panel pastes both User ID and password information in these fields.

5 Click **Connect** to establish a network connection.

When the connection is complete, the Connection Management Dialog remains open to allow you to make other connections at another time.

All components that are authenticated by this group are made available for selection from the Component drop down on the main window.

6 Click **Disconnect** to establish a network connection.

7 Click Close to close the Connection Management Dialog.

Re-executing an Operator Command

Use this procedure to re-execute an Operator Command from the Status History area.

Procedure steps

1   From the **Status History** area, right click on the row that displays the command you want to re-execute.

Component Name	Start Time	End Time
em/rome	2004-04-07 at 09:58:22 ...	2004-04-07 at 0
em/rome shelf	2004-04-07 at 09:59:45 ...	2004-04-07 at 0
em/rome	2004-04-07 at 10:00:15 ...	2004-04-07 at 1

Re-execute for em/rome
Re-execute for em/rome shelf

2   From the drop-down menu, select the **Re-execute for...**command on the component. A maximum of two re-execute commands may be listed.

The drop-down re-execute command typically applies to the component on which the command was last executed. However, if another component is currently active, that is, you have changed the component in the Component text box, and the command may be executed on the currently active component, then the drop-down lists a **Re-execute for...** command for the current component as well as the previously active component.

Exiting the Operator Commands GUI

Use this procedure to exit the Operator Commands GUI.

Procedure steps

1   From the **File** menu, select **Exit**

The open window closes and history for the session is discarded.

Operational Command GUI interface description

The Preside Multiservice Data Manager (MDM) Operational Commands GUI provides operators with the ability to select and execute a select number of commands through an easy-to-use graphical user interface (GUI).

This tool is launched from the MDM Toolset, MDM Operator Client, or from other MDM applications, and allows the operator to collect information from the switch to aid in the execution of other tasks.

The Operational Commands GUI supports multiple commands running concurrently. In some cases, the GUI prompts the operator to enter the input parameters before the command is executed.

The Operational Commands GUI consists of the following:

- "Menu bar" on page 69

- "Component selection" on page 70

- "Command selection" on page 71

- "Output area" on page 71

- "Status history area" on page 72

- "Dialog boxes" on page 73

Figure 3
Operational Commands GUI window

Component and Command selection area

Menu bar

Output area

Status history
area
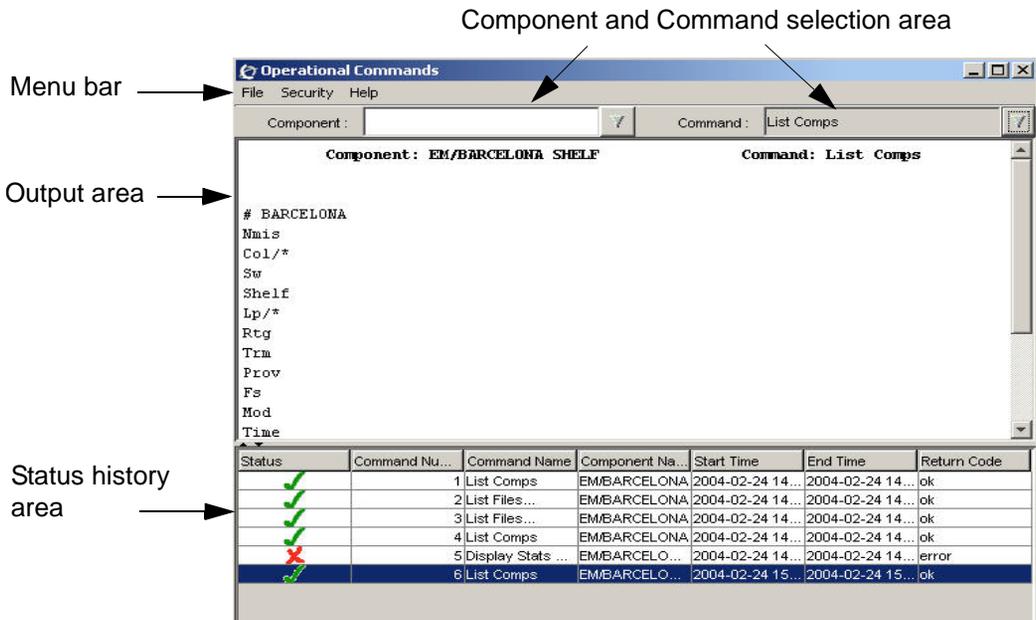
Menu bar

The menu bar at the top of the window consists of the following menus:

- "File menu"

- "Security menu"

- "Help menu"

File menu

The **File** menu contains the following commands:

Save As	Provides a command to save command output to a file. Opens the **Save As** dialog.
Exit	Provides a command to exit the Operational Command GUI tool.

Security menu

The only command that is available from the security menu is the Connection Management command. The Connection Management command opens the **Connection Management** dialog which allows you to manage connections to devices and components.

Help menu

The Help menu contains the following commands.

On Window	Provides a description of the window.
What's This?	Displays online help information for objects in the window.

Component selection

The component selection area allows the user to enter a component name or select a component from the drop down menu. Only components that are accessible for the authenticated group are available.

Table 3 lists and describes the options available from the Component selection area.

Table 3
Component drop down menu items

Command	Description
<component name>	Allows the user to type in the component name into the Component text box.
	Displays the target component.
	Allows the user to select a component from the drop-down menu. The drop-down menu lists the six most recent components typed in by the user.
GetContext	Displays the current context or the context of the previous component entered in Component text box.

Component and Command selection
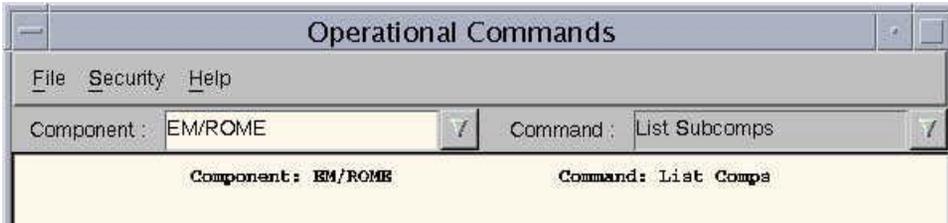
Command selection

The command selection area allows the user to select a command from the drop down menu. Only commands that can be used for the selected component are available for selection. For a list of supported commands, see "Supported command macros" (page 77).

The command drop down menu contains the following options:

Table 4
Command drop down menu items

Command	Description
<command name>	Displays the list of commands that can be executed for the component displayed in the Component text box. Note: DPN commands are not supported in the Operation Commands GUI. If a DPN component is selected, no DPN commands are listed in the selection drop down menu.

Output area

The output area displays both the operational command and the response to the command. Each command in the command response area has an associated sequence number (shown in the Status history area, under the column heading Command) for easy reference.

If a response to a command is interspersed with responses from other commands, the command text is followed by the string …continued…. The end of the response for any command is indicated by a line that contains the command number and the string Request Completed.

To save the contents of the command response area, use one of the following methods:

- **Save As** command which saves the command response area to a file

- cut and paste to extract portions of the response text

- use drag and drop techniques to select portions of text to drop onto the printer icon in the common desktop environment (CDE) Front Panel

Status history area

The Status history area displays a list of previously executed commands in a last used order. The number of commands displayed depends on the number you have configured in your user preferences file. The default is twenty five.

Each command in the Status history area is listed in the Status history table. The Status history table has the following columns:

Status	A green check mark indicates that the command was executed successfully. A red X indicates that the command was not executed.
Command Number	The sequence number the executed commands.
Command Name	The name of the command.
Component Name:	The name of the component the command was performed on.
Start Time	Specifies the time when the command began its execution.
End Time	Specifies the time when the command ended its execution.
Return Code	Indicates command execution success or error.

All commands except for connect and disconnect are added to the Status history table. Each entry has a sequence number that is used to associate a command with its response.

The list of commands in the Status history area can also be used to re-execute a previous command. This is done by double-clicking on an entry in the command history, or using the mouse select button on an entry.

Dialog boxes

The Operational Command GUI provides the following dialogs:

- "Connection Management dialog" (page 73)

- "Save dialog" (page 74)

Connection Management dialog

The Connection Management dialog allows you to select a group and user for authentication. Group authentication enables access to authorized network destinations.

This dialog has the following areas:

Menu Bar:	
File	Consists of the Exit command.
Groups	Consists of commands to connect and disconnect a group.
Help	Consists of commands to display online information in a Web browser.
Group:	Lists all previously authenticated groups. The active group is the group that is checked.
User List:	Lists all previously authenticated user IDs associated with the selected group and allows you to re-use authentication data. Click on a user ID to populate the User ID field.
Destination	Type a group name into this field rather than selecting one from the Group List.

UserID box	Type a user ID into this field rather than selecting one from the User ID List.
Password box	Type a password into this field if the field has not already been populated.
Command buttons:	
Connect	Click to connect performs authentication with the Fault Access Agent.
Close	Click to close the connection.

Connect Management dialog
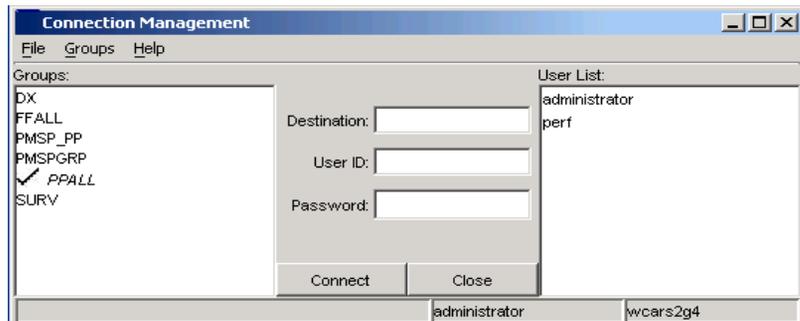
Save dialog

The Save dialog lets you specify the file for logged command output.

Folder:	
Enter path or folder name box	Specify the path to the log file.
Folder panel	Displays folders in the specified location.
File Name:	Specify the log file name.
Enter the file name box	Displays the results of the search. Click on an entry in the list to select a device.
Files panel	Displays files in the specified location.
Filter:	Selects a filter type: .txt or .html.
Command buttons:	
Save	Click to discard the contents of an existing file when logging starts and begins logging the new content.

Update	Click to append log command output to the specified file.
Cancel	Click to close the dialog without logging.
Help	Click to display online information in a Web browser.

Save dialog
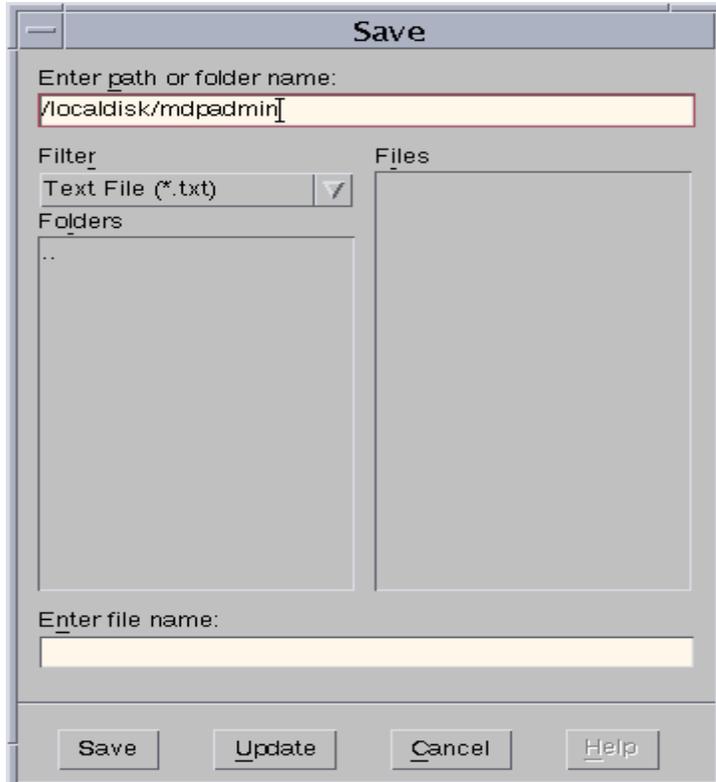
Operational Command GUI tool fundamentals

The Operational Command graphical user interface (GUI) has two architecture levels: the server level and the user interface level.

When a command is invoked from a GUI on the Preside Multiservice Data Manager (MDM) client machine by the operator, it triggers the execution of a macro on the MDM server machine. When the macro has completed, the output is displayed to the operator by way of the GUI on the MDM.

An MDM macro is a Solaris executable that is integrated with the MDM base infrastructure. Because a macro is a Solaris executable, it can be a shell script or a C++ program, and has full access to the local Solaris environment. An MDM macro can also be invoked from Command Console or from the Solaris command line.

The relationship between server and tool interfaces is shown in the following figure.

Operational Commands GUI architecture

PPT 3501 001 AA
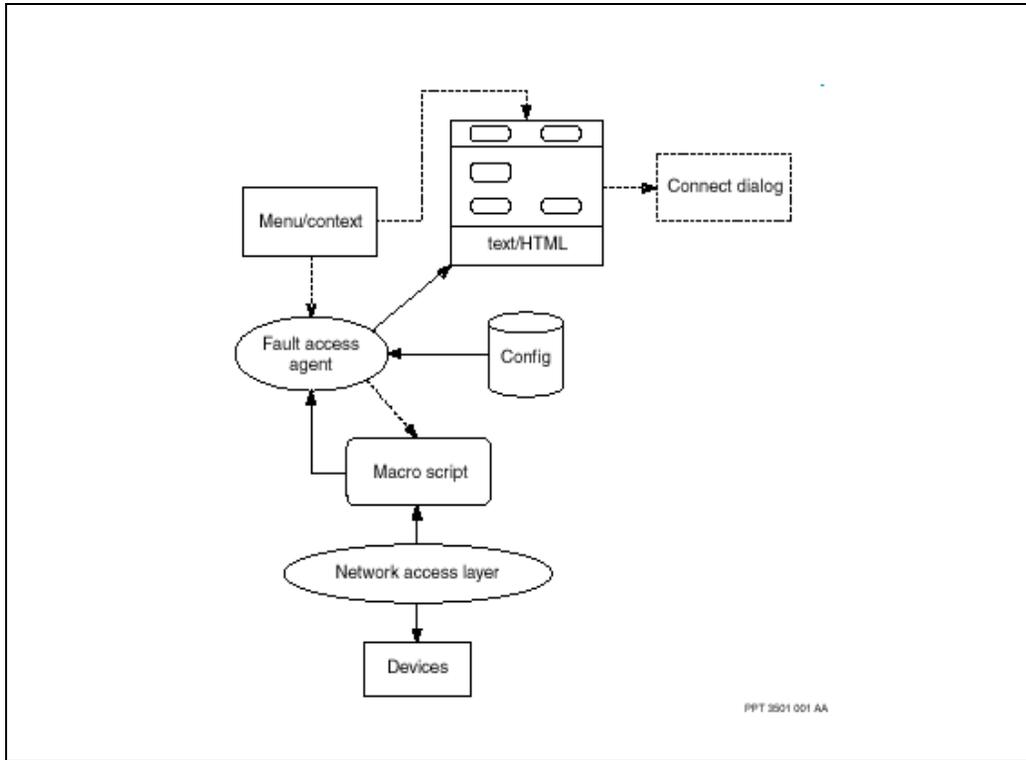
Supported command macros

The command macros in the following table are supported in the Operational Commands GUI. For a description of these command and macros, see the appropriate diagnostic commands sections in the Component Information Viewer chapter of the 241-6001-011 *Preside MDM Fault Management User Guide*.

Table 5
Supported commands and macros

Passport Commands and Macros	MPE 9500 Commands and Macros
Describe Component	Display interfaces brief
List Comps	Display interfaces terse
Display LPs	Display interfaces detail
Display LP	Display interfaces extensive
Display Cards	List configuration
Display Trunks	Display default configuration
Display Software	List system configuration
Display Provisioning	Display system default configuration
List Subcomps	List routing configuration
List Files...	Display routing default configuration
Display Connections	List policies configuration
Display Troubled Connections	Display policies default configuration
Display Stats Delta...	Display route brief
Ping IP Address	Display route terse
Trace AtmIf Circuit	Display route detail
Trace AtmIf Path	Display route extensive
Ping DPRS Node	Display hidden routes
Trace PORS Connection	Display route summary
Port Interface Test...	Display inactive routes
Module Report	Display damped routes
Card Report	Display all routes
Software Report	Display all active routes
Trunk Report	Display ospf default route
ATM Report	Display ospf route
FrameRelay Report	Display isis default route
(Sheet 1 of 2)	

Table 5
Supported commands and macros (Continued)

Passport Commands and Macros	MPE 9500 Commands and Macros
.	Display isis route
.	Clear ospf statistics
..	Clear ospf neighbor
.	Clear isis statistics
.	Clear isis neighbor
.	Clear rip statistics
.	Clear bgp neighbor
.	Display bgp/ospf database
.	Display bgp/isis database
(Sheet 2 of 2)	

Chapter 4
Remote Access

This chapter describes Remote Access, a utility that lets you access a remote host that supports the VT100 user interface either through an X.29 PAD session or a Telnet session.

This chapter contains the following:

The Remote Access tool

The Remote Access tool lets you access a remote host that supports the VT100 user interface either through an X.29 PAD session or a Telnet session.

The Remote Access main window contains a Session list that displays all active remote sessions. You can access a host by typing the remote host name or address in the text entry field, or you can use the Get context menu selection.

To start a Telnet session from the text entry field, you can type an IP address, a host name known as an IP host to the workstation, a component identifier of an SNMP device, or a host name known as a module by the Host Group Directory Server (HGDS).

To start an X.29 PAD session from the text entry field, you can type a DNA, or a host name that has been configured on the workstation as an X.25 host.

You can establish up to ten concurrent Remote Access sessions from the workstation, but you cannot set up more than one session with the same host. Each Remote Access session provides an 80-character wide by 25-line tall VT100-like window and a corresponding entry in the Session list.

See also...

Starting the Remote Access tool

1   In the application main window, select System -> Utilities -> Remote Access.

The Remote Access window opens.

Figure 4
Remote Access window
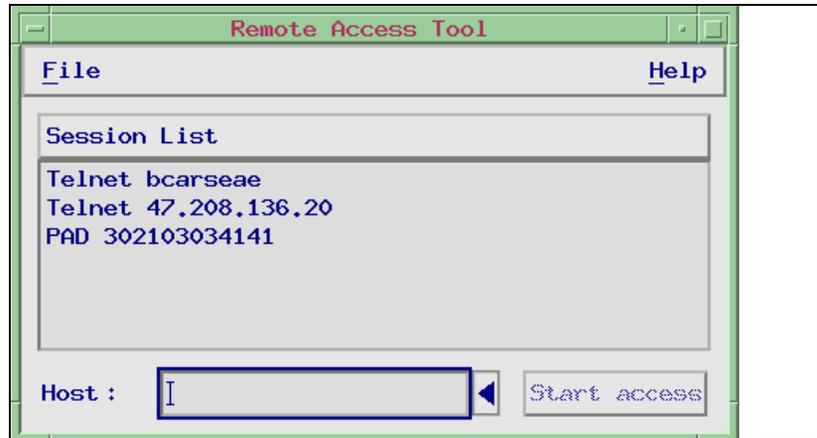
Starting a Remote Access session

Before starting a Remote Access session using the Get context (see step 3), the host name must be in context in the Component Information Viewer, or Component Status Display. Refer to the appropriate sections on Network Viewer, Component Information Viewer, or Component Status Display in 241-6001-011 *Preside MDM Fault Management User Guide* for details.

1   Start a Remote Access Telnet session:

Start a Remote Access Telnet session one of the following ways:

- Type an IP address in the data entry field and click the Start access button.

- Type a host name known as an IP host to the workstation in the data entry field and click the Start access button.

You can also make your host known by its node name by entering your node name and IP address in the /etc/hosts file or in the NIS or NIS+ system.

- In the data entry field, type the host name of the node and click the Start access button. The host name must be known to the Host Group Directory Server (HGDS).

- Type the name of an SNMP device, including the node type (for example, EM is a node type) in the data entry field and click the Start access button.

2 Start a Remote Access X.29 PAD session:

Start a Remote Access X.29 PAD session one of the following ways

- Type a DNA in the text entry field and click the Start access button.

- Type a host name that has been configured on the workstation as an X.25 host in the text entry field and click the Start access button. Use the tool x25tool from SunLink X.25 to configure the host name.

3 Start a remote access session:

   a. Choose the data selector at the right of the data entry field

   b. Choose Get context.

A Remote Access session for the host starts and the host name is displayed in the Session list in the main window of the Remote Access tool. Each remote session has a separate window.

See also...

- "The Session list" (page 84)

- "Host text entry field and Get context menu" (page 85)

- "Start access button" (page 85)

- "Receiving an error" (page 86)

- "Receiving a confirmation" (page 86)

The Session list

Each Remote Access session has a corresponding entry in the Session list. The session list shows the remote sessions that are in progress.

A popup menu is available once you select a session in the Session list. The popup menu contains the following commands:

- Show session - brings the selected session to the top of the display. It may or may not have been iconified. You can also double-click on a session in the Session list to bring it to the top of the display.

- Stop session - terminates the selected Remote Access session. The entry is removed from the Session list.

See also...

- "Receiving a confirmation" (page 86)

- "Stopping a Remote Access session" (page 86)

Host text entry field and Get context menu

You can access a host using the host text entry field and the Get context menu selection.

Accessing a host using the host text entry field
1   Type the remote host name or address in the Host text entry field.

2   Click the Start access button.

The host name is retrieved from the host text entry field.

Accessing a host using the data selector
1   From the data selector, choose Get context.

The host name is retrieved from the context server.

See also...

- "The Session list" (page 84)

- "Starting a Remote Access session" (page 83)

Start access button

Start a remote session using the name or address in the Host text entry field.

Starting a remote session
1   Click the Start access button.

A VT100-like window opens with the remote session.

If the Host text entry field is empty, the workstation will beep.

See also...

- "Host text entry field and Get context menu" (page 85)

- "Starting a Remote Access session" (page 83)

Receiving an error

When 10 remote access sessions are already open and you attempt to open a new one, an error dialog opens informing you that the maximum number of sessions are already open.

When a remote access session is already open to a host and you attempt to open a new session to the same host, an error dialog opens informing you that a session is already open to that host.

Closing the error dialog

1   Click the **OK** button.

The request to open a new session is cancelled.

Receiving a confirmation

When you request the stopping of a remote access session, a confirmation dialog opens requesting you to confirm.

When some remote access sessions are open and you select *Exit* from the File menu, a confirmation dialog opens warning you that the open sessions will be terminated and requesting you to confirm.

Confirming to stop a remote access session

1   If you want to continue your request, click the **Yes** button.

If you want to cancel your request, click the **No** button.

See also...

Stopping a Remote Access session

When you exit the Remote Access tool, all active sessions close. If you want to terminate a remote session without quitting the tool, follow this procedure.

1   Select the session to be terminated in the Session List.

2   Choose Stop session.

3   Click the **Yes** button to confirm.

The session is removed from the screen and the session no longer is displayed in the Session List.

Another way to stop a Remote Access session is to close the session's Xterm or UNIX window. When the session's window is closed, the session is removed from the Session List on the Remote Access tool. For example, one way to exit from the session window is to type exit and press Return. Once the session window closes, the session is removed from the Session List.

Stopping the Remote Access tool

To stop the Remote Access tool, from the File menu, select Exit or press Ctrl+E. Any open Remote Access sessions are terminated.

Using the keyboard

The Remote Access tool provides the following command shortcuts:

• Ctrl+E exits the Remote Access tool.

See also...

• "Mnemonics" (page 87)

Mnemonics

Some characters in menus and menu items have an underscore. These are mnemonics that you can use instead of using the mouse.

You can use the following keys in combination with the mnemonics:

• Meta key. For example, Meta-F X opens the File menu and exits Remote Access.

• F10 key. For example, F10 F X opens the File menu and exits Remote Access.

See also...

• "Using the keyboard" (page 87)

Chapter 5
Online Documentation

This section describes the Preside Multiservice Data Manager (MDM) Online Documentation. This section contains the following topics:

- "About Online Documentation" (page 89)

- "Troubleshooting Online Documentation" (page 91)

About Online Documentation

Preside Multiservice Data Manager (MDM) Online Documentation is an online documentation and help facility supplied with the MDM software. This facility provides online help information using a Java-enabled browser and provides platform independence as a distributed application.

Using the Online Documentation, you can access the complete set of MDM technical publications. A navigation frame assists you to navigate through the available documentation.

You can also access context-sensitive help information for MDM software applications. This context-sensitive information includes help information for application windows and dialogs, alarms, and software configuration.

Setting the NMSWEBBROWSER variable

If the Netscape application is not installed in the directory /usr/dt/appconfig/ netscape, change the environment variable NMSWEBBROWSER to the actual path.

1   Close all Preside Multiservice Data Manager (MDM) tools and associated help windows.

2   To determine the Netscape path, type the following command:

```
which netscape
```

The path to Netscape is indicated.

3   Set the NMSWEBBROWSER environment variable.

```
setenv NMSWEBBROWSER <Netscape path>
```

where:

<Netscape path> is the path to the directory in which Netscape is installed. Use the Netscape path indicated in step 2.

Or, set the environment variable in file /opt/MagellanNMS/bin/nmscsh and then source the modified file.

```
source /opt/MagellanNMS/bin/nmscsh
```

Starting Online Documentation

1   Start the Preside Multiservice Data Manager (MDM) toolset:

```
/opt/MagellanNMS/bin/nmstool &
```

The application main window opens.

2   You can start Online Documentation by either of the following methods:

a.   From the MDM or Operator Client window, select System -> Utilities -> Online Documentation.

b.   From within an MDM tool, select a Help item from the Help menu.

A Web browser opens with the requested tool information.

Getting help

Most Preside Multiservice Data Manager (MDM) tools provide a Help menu to view online help about the tool in context. The Help menu provides the following types of help information.

• "Help on Context" (page 90)

• "Help on Window" (page 91)

Help on Context

MDM context-sensitive help lets you view online help related to MDM tools.

To start context-sensitive help, from the Help menu, select Help on Context. When the cursor changes to a question mark, select any object in the window. After you make a selection, the help information associated with that object displays in the Online Documentation window.

Help on Window

This menu item displays a brief description of the currently selected window.

Troubleshooting Online Documentation

The following procedure is intended to troubleshoot the main cause of online documentation failure.

No help information displays in Online Documentation

If the required software for Online Documentation is installed but help information does not display in the Netscape window, use the following procedure.

1   Ensure that the Tomcat application is running by using the ps command.

```
ps -ef | grep java
```

If Tomcat is running, you should see a process similar to the following:

```
root 16016     1  0 16:09:58 ?          0:16
/opt/nortel/3rd_party/java/current_jre/bin/java -
Djava.endorsed.dirs=...
```

2   If Tomcat is not running, launch Tomcat by typing

```
/etc/init.d/jtomcatctl404 stop
```

If Tomcat is already running, restart Tomcat by typing

```
/etc/init.d/jtomcatctl404 stop
```

```
/etc/init.d/jtomcatctl404 start
```

No user-defined alarm help displays in Online Documentation

If you add or modify alarm help information in the Online Documentation and this information does not display, use the following procedure.

1   Ensure the directory /opt/MagellanNMS/data/alarms/UserAlarms exists and contains files and ensure that the files and directories have adequate read permissions.

2   Log on as root and restart Tomcat.

```
/etc/init.d/jtomcatctl404 stop

/etc/init.d/jtomcatctl404 start
```

3   Restart MDM.

```
/opt/MagellanNMS/bin/nmstool
```

Mnemonics

In the menus of the Preside Multiservice Data Manager (MDM) tools, some characters have an underscore. These are mnemonics that you can use instead of using the mouse to open a menu and select a menu item.

You can use the following keys in combination with the mnemonics:

- Meta key
  For example, Meta-H W opens the Help menu and selects On Window.

- F10 key
  For example, F10 H W opens the Help menu and selects On Window

Chapter 6
Memory Utilization tool

This chapter describes Memory Utilization, a utility that provides you with the amount of virtual memory available on the workstation. This chapter contains the following:

The Memory Utilization tool

The Memory Utilization tool displays information about the amount of virtual memory available on the workstation. It displays the percentage of virtual memory currently in use on the Preside Multiservice Data Manager (MDM) workstation in a bar graph.

The Memory Utilization display shows the virtual memory used and the amount still available on the workstation. This information is displayed in megabytes.

The horizontal bar graph shows the percentage of memory used. On a color monitor, the bar changes color as follows:

- green indicates an acceptable amount of free memory

- red indicates a low amount of free memory (less than 10% of memory is available)

When the low memory threshold is crossed, a log appears in the System Log Display and a message is displayed on the console.

The bar graph is updated regularly to display the current memory.

See also...

- "About virtual memory" (page 94)

- "File menu" (page 95)

- "Configuring Memory Utilization" (page 95)

- "Using the keyboard" (page 96)

About virtual memory

Virtual memory is the memory that all applications on the workstation have available to them. The amount of virtual memory is determined by the amount of swap space configured on the workstation. When the available virtual memory is exhausted, no more processes can be run, while existing processes may encounter problems.

Memory utilization is important because Preside Multiservice Data Manager (MDM) tools only function properly if there is sufficient memory available. If problems are encountered that are believed to be related to insufficient memory, this tool can be used to monitor memory usage and to guide in making procedures for tool usage that avoid memory exhaustion. Alternatively, a consistently low amount of available memory may indicate that additional workstation virtual memory is required.

Refer to 241-6001-101 *Preside MDM Engineering Guide* for details on workstation engineering.

Starting Memory Utilization

1 In the application main window, select System -> Utilities -> Memory Utilization.

The Virtual Memory Utilization window opens.

If the Memory Utilization tool cannot get the memory information when you launch it, you will be asked to restart the tool.

Figure 5
Memory Utilization tool
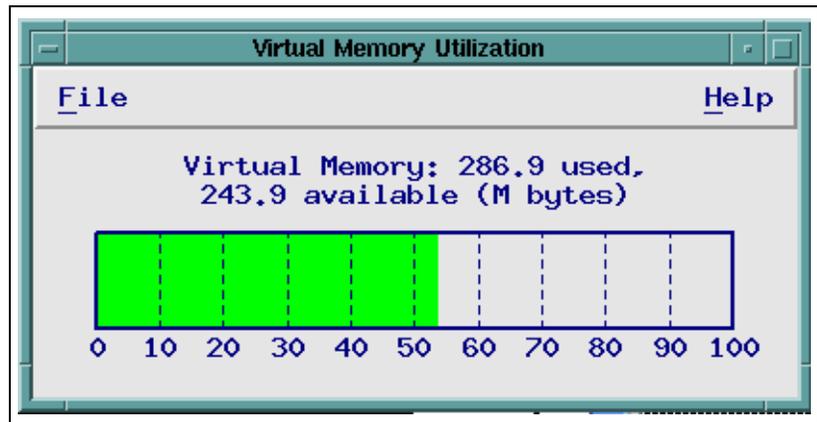
File menu

The File menu contains the following command:

• Exit stops the Memory Utilization tool.

Configuring Memory Utilization

The low memory threshold, acceptable amount of memory color, and low amount of memory color can be set by command line options or X Toolkit resources. The options related to color can only be seen when the tool is run on a color monitor.

To set the threshold to mark the transition between an acceptable and a low amount of memory, enter the following command:

```
-t <number_between_0_and_100>
```

The appropriate value for the threshold is very dependant on the workstation configuration, the mix of Preside Multiservice Data Manager (MDM) tools being used, and on the amount of information (network size, service data size,

alarm rate) being processed. The threshold value is best arrived at by monitoring memory utilization and determining when a low memory condition occurs. The default value is 90.

Enter the following command to set the bar color when the amount of memory used is less than the low memory threshold percentage:

```
-ok <color>
```

Enter the following command to set the bar color when the amount of memory used is greater than or equal to the low memory threshold percentage:

```
-low <color>
```

Example

The default tool parameters can be set by starting the tool as follows:

```
/opt/MagellanNMS/bin/mem -virtual -t 90 -ok
     forestgreen -low red
```

Using the keyboard

The Memory Utilization tool provides the following command shortcut:

• Ctrl+E exits the Memory Utilization tool.

See also...

• "Mnemonics" (page 96)

Mnemonics

Some characters in menus and menu items have an underscore. These are mnemonics that you can use instead of using the mouse. You can use the following keys in combination with the mnemonics:

• Meta key. For example, Meta-F X opens the File menu and exits Memory Utilization.

• F10 key. For example, F10 F X opens the File menu and exits Memory Utilization.

See also...

• "Using the keyboard" (page 96)

Chapter 7
Network Model Shared Memory Utilization tool

This chapter describes Network Model Shared Memory Utilization, a utility that provides you with the amount of shared memory available on the workstation. This chapter contains the following:

The Network Model Shared Memory Utilization tool

The Network Model Shared Memory Utilization tool displays information about the amount of shared memory available on the workstation for the network model. It displays the percentage of shared memory currently in use on the Preside Multiservice Data Manager (MDM) workstation in a bar graph. Use this tool to monitor the shared memory when a new network model is loaded.

The Network Model Shared Memory Utilization display shows the network model shared memory used and the amount still available on the workstation. This information is displayed in megabytes.

The horizontal bar graph shows the percentage of shared memory used. On a color monitor, the bar changes color as follows:

- green indicates an acceptable amount of free memory

- red indicates a low amount of free memory (less than 10% of memory is available)

When the low memory threshold is crossed, a log appears in the System Log Display and a message is displayed on the console.

The bar graph is updated regularly to display the current memory, especially while a new network model is being loaded.

See also...

- "About shared memory" (page 98)

- "File menu" (page 100)

- "Configuring Network Model Shared Memory Utilization" (page 100)

- "Using the keyboard" (page 101)

For more information on network models, refer to 241-6001-015 *Preside MDM Network Model Administrator Guide*. For more information on how to increase the amount of shared memory, refer to 241-6001-303 *Preside MDM Administrator Guide*.

About shared memory

Shared memory is the memory that is used to store the active Surveillance Network Model. When the Network Model Coordinator (NMC) is started, it reserves as large an amount of shared memory as it can (or as much as indicated by its -s command line argument). This memory is shared by the active model and the applications that use it, such as the Network Model Server, CSD, and Component Provisioning.

A consistently low amount of available shared memory may indicate that additional workstation memory is required. Contact your system administrator, or refer to 241-6001-101 *Preside MDM Engineering Guide* and 241-6001-303 *Preside MDM Administrator Guide*.

Note: Increasing the amount of physical memory (RAM) on a workstation does not increase the amount of shared memory (although it will likely increase performance). The workstation's kernel must be reconfigured to make use of the added memory.

Starting Network Model Shared Memory Utilization

The Network Model Shared Memory Utilization tool must be started before a network model is loaded.

When the Network Model Coordinator (NMC) is started, it uses the value of the shared memory segment size defined during the Preside Multiservice Data Manager (MDM) configuration and reserves as big a piece of shared memory as it can. Alternatively, NMC supports a -s option that lets you specify the amount of shared memory (in Megabytes) that you want to allocate. The memory is shared by the active model and the applications that use it. A consistently low amount of available shared memory may indicate that more shared memory is required.

1   In the application main window, select System -> Utilities -> Network Model Shared Memory Utilization.

   The NM Shared Memory Utilization window opens.

2   Several conditions may impact the display on the NM Shared Memory Utilization window.

   These conditions are displayed in Table 1.

Table 6

If...	Then...	Reason: The...
the text above the bar graph indicates an error and asks you to restart the tool	restart the tool	shared memory segment is not present or was lost while the tool was opened.
the text above the bar graph displays that no shared memory is in use by MDM.	there is nothing to view; restart the tool if the NMC is started	shared memory segment is not currently in use by MDM

Table 6

If...	Then...	Reason: The...
the text above the bar graph says that the system cannot get shared memory information and asks you to restart the tool.	restart the tool	tool was unable to get shared memory information
the tool is taking long to open	wait: the tool will open once the model is loaded	tool was started while the model was loading

Figure 6
NM Shared Memory Utilization tool
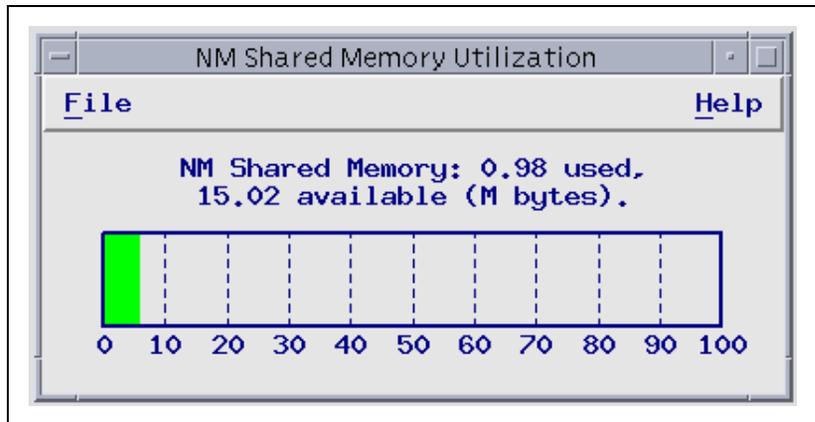
File menu

The File menu contains the following command:

• Exit stops the Network Model Shared Memory Utilization tool.

Configuring Network Model Shared Memory Utilization

The low memory threshold, acceptable amount of memory color, and low amount of memory color can be set by command line options or X Toolkit resources. The options related to color can only be seen when the tool is run on a color monitor.

To set the threshold to mark the transition between an acceptable and a low amount of memory, enter the following command:

```
-t <number_between_0_and_100>
```

The appropriate value for the threshold is very dependant on the workstation configuration, the mix of Preside Multiservice Data Manager (MDM) tools being used, and on the amount of information (network size, service data size, alarm rate) being processed. The threshold value is best arrived at by monitoring memory utilization and determining when a low memory condition occurs. The default value is 90.

Enter the following command to set the bar color when the amount of memory used is less than the low memory threshold percentage:

```
-ok <color>
```

Enter the following command to set the bar color when the amount of memory used is greater than or equal to the low memory threshold percentage.

```
-low <color>
```

Example

The default tool parameters could be set by starting the tool as follows:

```
/opt/MagellanNMS/bin/mem -shared -t 90 -ok forestgreen
        -low red
```

Using the keyboard

The Network Model Shared Memory Utilization tool provides the following command shortcut:

• Ctrl+E exits the Network Model Shared Memory Utilization tool.

See also...

• "Mnemonics" (page 101)

Mnemonics

Some characters in menus and menu items have an underscore. These are mnemonics that you can use instead of using the mouse.

You can use the following keys in combination with the mnemonics:

- Meta key. For example, Meta-F X opens the File menu and exits Network Model Shared Memory Utilization.

- F10 key. For example, F10 F X opens the File menu and exits Network Model Shared Memory Utilization.

See also...

- "Using the keyboard" (page 101)

Chapter 8
Customer Data Tool

This chapter describes the Customer Data Tool, a utility that provides access to the customer database(s). This chapter contains the following:

The Customer Data Tool

The Customer Data Tool provides access to a customer database. Each customer database is composed of records that contain information for a particular component. This information can be anything, but typically consists of phone numbers, contacts, and circuit numbers for a particular piece of hardware or DNA. For example, the customer data for a port might contain the name and address of the current end user of that port.

The Customer Data Tool allows you to add, change, query, delete, and view customer information. This tool has many uses. For example, it can be used to quickly access customer information in the event of a problem or to identify all customers on a particular piece of hardware.

See also...

- "Starting the Customer Data tool" (page 104)

- "Data organization" (page 105)

- "Customer Data Tool main window" (page 107)

- "Working with other MDM tools" (page 120)

- "Setting up the Customer Data Tool" (page 120)

- "Keyboard shortcuts" (page 134)

For information on the Embedded Programming Interface (EPI) Customer Database interface, see 241-6001-211 *Preside MDM Embedded Programming Interface Reference Guide*. The Customer Database tool is also available for the Component Information Viewer and the Alarm Display tools in the Preside Multiservice Data Manager (MDM) fault management toolset. For more information, see the Component Information Viewer and the Alarm Display chapters in 241-6001-011 *Preside MDM Fault Management User Guide*

Starting the Customer Data tool

You can start the Customer Data tool from the Preside Multiservice Data Manager (MDM) window. Or, if your workstation has Hewlett Packard (HP) OpenView software installed, you can start the Customer Data tool from the HP OpenView Desktop for MDM.

When you start Customer Data, the tool locates all available customer databases. If one database is found, then you can access that database directly. If more than one databases is found, the tool displays a list of databases from which you can make a selection. Alternatively, you can type a database name and its server hostname in the dialog entry fields.

See also...

- "Selecting a database" (page 108)

Starting from the main window

1   On the application main window, select System -> Utilities -> Customer Data.

The Customer Data window opens.

Starting from the HP OpenView Desktop

There are various methods for starting the Customer Data tool from the HP OpenView Desktop. Use one of the following procedures.

Starting the Customer Data tool from the HP OpenView Desktop

1   From the HP OpenView Desktop Misc (Miscellaneous)) menu, choose Customer Database.

Starting the Customer Data tool from the Events Categories window

1   In the Events Categories dialog, choose Nortel Passport Events.

The browser window opens.

2   From the Nortel Passport Events Browser Action menu, choose Additional Actions.

The Additional Actions on Nortel Passport Events window opens.

3   In the Additional Actions on Nortel Passport Events window list box, choose Customer Database.

Starting the Customer Data tool from the Start Tool menu

1   Open the Start Tool submenu:

Open the Start Tool submenu using one of the following methods:

- In the Alarm Display window, place the cursor over an alarm and press the mouse menu button to display the pop-up Alarm Menu.

- In the Component Information Viewer window, place the cursor over an area that shows the events and press the mouse menu button to display the pop-up menu.

2   From the pop-up menu, choose Start Tool.

The Start Tool submenu opens.

3   From the Start Tool submenu, choose Customer Data.

Data organization

Each customer data record in the database has two parts: component name and component data.

Component name This is the name of the component under which the customer data is stored. Component names are unique upper case strings. You must enter a component name in the Component field whenever you retrieve, add, change, or delete a customer data record. The following table "Component names" (page 106) contains examples of component names:

Table 7
Component names

Component type	Component name
DNA	DNA X01234567890123
Port	PM R34 PE 7 PI 7 PO 1
Module	PM R34
NCS OA	PM R34 OA DPNOA
NCS application	PM R34 OA DPNOA APPL APPNAME

Note: Component names may also be entered in the Display mode (with '/' between the category/value pairs as in PM/R34 PE/7 PI/7 PO/1.

Component data This area consists of four parts: date, source, customer data, and related component.

- Date specifies a date in YYYYMMDD (year-month-day) format. Records created or modified by the Customer Data Tool contain the date when they were last modified.

- Source is a three-letter code indicating where the customer data record originated or was last updated. MDM appears in this field if the records were created or modified by the Customer Data Tool. This field cannot be edited.

- Customer Data contains up to 1300 characters of free-format customer data (for example, circuit numbers, names, phone numbers).

- Related Component is another component that is related to the customer data record. It is recommended that the Related Component field be filled in if DNAs are added from the Preside Multiservice Data Manager

(MDM). You can use the Related Component field to retrieve the related component or to retrieve all keys of all components that are the same as the related component.

See also...

- "Manipulating customer data" (page 107)

Manipulating customer data

The Component, Customer Data, and Related Component areas may contain essentially any value. Component names and related component names are always in upper case. Keeping these values consistent, in both format and meaning, ensures that this tool provides consistent results when retrieving or searching for data. Data in the Component area is always changed to upper case. Templates are a good way to ensure that data is consistent.

Customer Data Tool main window

For information on items in the Customer Data Tool main window, see the following:

- "File menu" (page 107)

- "Options menu" (page 108)

- "Component field" (page 109)

- "Customer Data area" (page 114)

- "Search area" (page 115)

- "Messages field" (page 120)

File menu

The File menu contains the following command:

- Exit exits the Customer Data Tool.

To exit the Customer Data Tool, select Exit or type Ctrl+E.

Options menu

The Options menu contains the following commands:

- Turn Auto Update On determines whether the tool will automatically attempt to retrieve customer data for component names that are put into context from other workstation tools. If auto update is not active, a component name put into context may be retrieved by selecting Get context from the Component area menu. Selecting this menu item toggles the auto update to active, and the menu item Turn Auto Update Off appears in place of this menu item.

- Turn Auto Update Off toggles the auto update to non-active. The menu item Turn Auto Update On appears in place of this menu item.

- Select database lets you select the customer database that the tool accesses.

See also...

- "Selecting a database" (page 108)
- "Component field" (page 109)
- "Customer Data area" (page 114)
- "Related Component field" (page 115)

Selecting a database

The Customer Data Tool lets you specify the database that you want to use. You can do this when the tool is started, or at any time during a session.

1 From the Options menu, select Select database.

   The Customer Databases dialog opens, and a list of available databases is displayed. If no databases are available, the tool displays an appropriate message and waits, periodically checking for databases to become available.

2 Select a database, or enter the database name and supporting server hostname in the entry fields.

3 Click Use Database.

   The database name appears in the title bar and a message appears in the Messages area indicating the database that you have chosen.

   To cancel the database selection, click Cancel.

If no database servers exist, contact your system administrator for assistance.

Component field

The Component field is used to indicate a component name. The Component field contains the following command buttons:

• Retrieve attempts to recover the customer data record for the component specified in the Component field. The Customer Data Tool performs a hierarchical search. If a record exists, it is displayed. If a match is not found with the specified name, the tool continues the search in the following manner:

— using the component name in display and canonical format

— using the immediate parent of the component in both display and canonical formats

— using the parent's parent and so on until a match is found or until there are no more parents

Example
If you specify the component EM NODER16 LP 2 DS1 0 and no match is found, the Customer Data Tool continues to look for matches by using the following:

— EM/NODER16 LP/2 DS1/0

— EM NODER16 LP 2 and EM/NODER16 LP/2

— EM NODER16 and EM/NODER16

Rather than selecting Retrieve from the popup menu, you can enter a string in the component field and press the Return key.

The Customer Data Tool stops at the first match found, if any. This way, if customer data applies to all ports, for example, this data is stored on the common processor component without having to duplicate it on every port. If no match is found, the tool displays an error message in the Messages area.

- Add creates a customer data record for the component specified in the Component field. The Date and Source fields are automatically filled in with the current date and source of the record. Records cannot be added if they already exist in the database. (This menu item is not available if the tool was started with the Read Only option.)

- Replace supersedes the contents of the component specified in the Component field with the data in the Customer Data area. Records cannot be replaced if they do not already exist in the database. (This menu item is not available if the tool was started with the Read Only option.)

- Delete erases the record for the component specified in the Component field. An error message is displayed if the component does not exist in the database. (This menu item is not available if the tool was started with the Read Only option.)

The Component field also provides a pop-up menu that contains the following commands:

- Retrieve attempts to recover the customer data record for the component specified in the Component field. The Customer Data Tool performs a hierarchical search. If a record exists, it is displayed. If a match is not found with the specified name, the tool continues the search in the following manner:

  — using the component name in display and canonical format

  — using the immediate parent of the component in both display and canonical formats

  — using the parent's parent and so on until a match is found or until there are no more parents

  Example
  If you specify the component EM NODER16 LP 2 DS1 0 and no match is found, the Customer Data Tool continues to look for matches by using the following:

— EM/NODER16 LP/2 DS1/0

— EM NODER16 LP 2 and EM/NODER16 LP/2

— EM NODER16 and EM/NODER16

Rather than selecting Retrieve from the popup menu, you can enter a string in the component field and press the Return key.

The Customer Data Tool stops at the first match found, if any.   This way, if customer data applies to all ports, for example, this data is stored on the common processor component without having to duplicate it on every port. If no match is found, the tool displays an error message in the Messages area.

- Add creates a customer data record for the component specified in the Component field. The Date and Source fields are automatically filled in with the current date and source of the record. Records cannot be added if they already exist in the database. (This menu item is not available if the tool was started with the Read Only option.)

- Replace supersedes the contents of the component specified in the Component field with the data in the Customer Data area. Records cannot be replaced if they do not already exist in the database. (This menu item is not available if the tool was started with the Read Only option.)

- Delete erases the record for the component specified in the Component field. An error message is displayed if the component does not exist in the database. (This menu item is not available if the tool was started with the Read Only option.)

- Copy to Related Component Area copies the text in the Component field to the Related Component field.

- Get Context gets the last component name put into context by any and workstation network element tool.

- Put Context places the name in the Component field into context.

- Cut cuts the currently selected text into the cut buffer.

- Copy copies the currently selected text into the cut buffer.

- Paste pastes the contents of the cut buffer into the text at the current cursor position.

- Delete erases the currently selected text without saving it in the cut buffer.

- Select All selects all text.

- Deselect All cancels the current selection.

See also...

- "Data organization" (page 105)

- "Creating a template for customer data" (page 112)

- "Using a template for customer data" (page 112)

- "Adding customer data" (page 113)

- "Changing customer data" (page 113)

- "Deleting a component" (page 114)

- "Working with other MDM tools" (page 120)

Creating a template for customer data

You can create one data record and use it as a template for all new data records you add to the database. This is not a menu option, but rather a set of steps.

1 Enter the name of the template in the Component field.

2 Add the template information in the Customer Data area.

For example, Name, Location, Phone, and Company.

3 From the Component field pop-up menu, choose the Add button.

The template is added to the database.

Using a template for customer data

1 Enter the name of the template in the Item field in the Search area.

2 From the Item field pop-up menu, choose Search Component Names.

The template name and information appears in the window.

3 Change the name of the component and add the appropriate customer data.

4 From the Component field pop-up menu, choose the Add button.

Note: If you have not changed the name of the component, an error message appears in the Messages area indicating that the component already exists.

Click on the template name in the Search area to display the template in the window.

See also...

• "Search area" (page 115)

Adding customer data
You can add customer data for any component in the network. Customer data is stored in a database on the workstation. Every record is referenced by a unique component name.

1 Enter the component name in the Component field.

2 Enter the new customer data in the Customer Data area.

3 Enter the related component in the Related Component field.

  The related component should be the PE or port for the given DNA.

4 From the Component field pop-up menu, choose the Add button.

  A message appears in the Messages area indicating that the component has been added. If the component already exists in the database, an error message appears.

Changing customer data
You can modify or replace customer data for any component.

1 Enter the component name in the Component field.

2 From the Component field pop-up menu, choose Retrieve.

  The customer data is displayed in the Customer Data area. If the record is not found, a message appears in the Messages area indicating that the component could not be found.

3 Edit the data.

4 From the Component field pop-up menu, choose the Replace button.

  A message appears in the Messages area indicating that the data has been replaced.

Deleting a component

You can delete customer data from any component in the database.

1 Enter the component name in the Component field.

2 From the Component field pop-up menu, choose the Delete button.

A message appears in the Messages area confirming the deletion. An error is displayed if the record is not found or the database record cannot be deleted.

Customer Data area

The Customer area contains the following two fields:

• Date/Source

• Related Component

Note: The Customer Data area accepts a maximum of 1300 characters of text. If you try to save data that exceeds 1300 characters, you will receive a warning message telling that you cannot save your entry.

Date/Source field

The Date/Source field contains component information. The Date/Source field provides a pop-up menu that contains the following commands:

• Cut cuts the currently selected text into the cut buffer.

• Copy copies the currently selected text into the cut buffer.

• Paste pastes the contents of the cut buffer into the text at the current cursor position.

• Delete erases the currently selected text without saving it in the cut buffer.

• Select All selects all text.

• Deselect All cancels the current selection.

See also...

• "Data organization" (page 105)

Related Component field

The Related Component field is used to indicate a related component. The Related Component field provides a pop-up menu that contains the following commands:

- Copy to Search Area copies the text in the Related Component field to the Item field in the Search area.

- Copy to Component Name Area copies the text in the Related Component field to the Component field.

- Put Context places the name of the related component into context.

- Cut cuts the currently selected text into the cut buffer.

- Copy copies the currently selected text into the cut buffer.

- Paste pastes the contents of the cut buffer into the text at the current cursor position.

- Delete erases the currently selected text without saving it in the cut buffer.

- Select All selects all text.

- Deselect All cancels the current selection.

See also...

- "Data organization" (page 105)

- "Search area" (page 115)

Search area

The search operation scans the entire customer database and returns component names of all the records that contain an expression you specify in the Search area Item field. The component names of all matched components are listed in the Items Matched area. The tool returns a maximum of 5000 records on any search. If there are more than 5000 records, the search stops after the first 5000 records.

You can specify one of three search fields:

- Component name field

- Customer data field (the default)

• Related component field

Note: The dual format and hierarchical searching described for the Retrieve operation do not apply for the Search operation.

Use the Item field in the Search area for search strings. Items that match the specified search string are displayed in the search area of the main window. The Item field provides a pop-up menu that contains the following commands:

• Search Data searches the customer data fields of all records. You can also press Return in the Item field to invoke this operation.

• Search Component Names searches the component name fields of all records.

• Search Related Component searches the related component fields of all records.

• Cut cuts the currently selected text into the cut buffer.

• Copy copies the currently selected text into the cut buffer.

• Paste pastes the contents of the cut buffer into the text at the current cursor position.

• Delete erases the currently selected text without saving it in the cut buffer.

• Select All selects all text.

• Deselect All cancels the current selection.

Searching for customer data

1 Enter the expression to search for in the Item field of the Search area.

2 To search using Search data, the default search option, press the return key.

To search using another search option, choose a search option from the Item field pop-up menu, choose one of the three search options

The components that match the search appear in the Items Matched area.

See also...

- "Using special symbols" (page 117)

- "Searching examples" (page 118)

- "Items matched field" (page 119)

Using special symbols

You can use certain symbols to achieve more specific results when performing a search. For more information, consult the "Regular Expression" section of the ed manual page. Type man ed from a UNIX access window for details. See the table "Special symbols" (page 117).

Note: Customer data searches are case-sensitive.

Table 8
Special symbols

Character	Matches	Example
	Any occurrence of the specified string	ITI Find ITI anywhere in the text. - 'ITI line' will match - 'New ITI line' will match - 'Previously ITI' will match
^	Start of text	^ITI Find ITI at the start of the text. - 'ITI lines' will match - 'New ITI line' will NOT match - 'Previously ITI' will NOT match
$	End of text	ITI$ Find 'ITI' at the end of text - 'ITI line' will NOT match - 'New ITI line' will NOT match - 'Previously ITI' will match ^ITI line$ Combined start and end - this will match ONLY the supplied text - nothing longer, nothing shorter.
(Sheet 1 of 2)		

Table 8 (Continued)
Special symbols

Character	Matches	Example
[characters]	One of the characters within [ ]	[XE]123456789 Find X or E followed by 123456789. X123456789[0-46] Find X123456789 followed by a 0, 1, 2, 3, 4, or 6. [Cc]ustomer Find customer, with or without a capital "C"
expression*	Zero or more occurrences of the previous expression	X123456[0-5]* Find X123456 followed by zero or more occurrences of the digits between 0 to 5.
.*	Displays all records in the database	
(Sheet 2 of 2)		

Searching examples

The following examples show how you can use the search utility to retrieve data.

Example

Find all records that contain the word Critical in the Customer Data area.

Enter Critical in the Item field. From the Item field pop-up menu, choose Search Data (or press Return). The component names of all records that match the expression are placed in the Items Matched area.

Example

Find the customer data for a particular DNA.

Enter the DNA component name (for example, DNA X0123456789) in the Component field and press Return.

Example

Find the customer data for a port.

Enter the port component name (for example, PM R34 PE 7 PI 7 PO 1) in the Component field and press the Return key. If the port has no associated data, the tool looks for data in its parents (PI, then PE, then PM).

Example
Find all DNAs on a port.

Enter the port key in the Item field. From the Item field pop-up menu, choose Search Related Components. All components with the same port as the related component appear in the Items Matched area.

Example
Find all DNAs that begin with X1234.

Enter X1234 in the Item field. From the Item field pop-up menu, choose Search Data.

Example
Find all components with service ITI.

Enter ^ITI in the Item field. From the Item field pop-up menu, select Search Data. This example works only if the first line in each customer data record is the service type.

Items matched field
The Items Matched area contains the component names of records that were matched by the last search operation. The Items Matched area pop-up menu contains the following commands:

- Retrieve retrieves the customer data for the selected record.

- Copy to Related Component Area copies the component name in the Items Matched area to the Related Component field.

- Copy copies the currently selected text into the cut buffer.

See also...

- "Retrieving information from the Items Matched area" (page 120)

Retrieving information from the Items Matched area

To retrieve customer data for an item listed in the Items Matched area, select the item. Then, from the pop-up menu, choose Retrieve.

Messages field

The Messages field displays information on the current status of the application. The Messages field pop-up menu contains the following commands:

- Copy copies the currently selected text into the cut buffer.

- Select All selects all text in the Messages area.

- Deselect All cancels the current selection in the Messages area.

Working with other MDM tools

The Customer Data Tool can work cooperatively with other Preside Multiservice Data Manager (MDM) tools that have the ability to put a component name into context. These tools include Component Provisioning, Network Viewer, Component Information Viewer, Component Status Display, Alarm Display, Network Status Bar, and GMDR Administration tool. This can be done by selecting a component in one of the tools and selecting Put context from the Component field pop-up menu. If the Customer Data Tool has Turn Auto Update set to ON (from the Options menu) when a component is put into context in another tool, that component automatically appears in the Customer Data Tool. Otherwise, the user can select Get Context from the Customer Data Tool to retrieve this information. For more information on context, the 241-6001-012 *Preside MDM Configuration Management for DPN User Guide*.

Setting up the Customer Data Tool

The figure "Customer data from external sources" (page 127) gives an example setup of two Preside Multiservice Data Manager (MDM) workstations accessing the same customer data server.

Figure 7
Customer Data setup
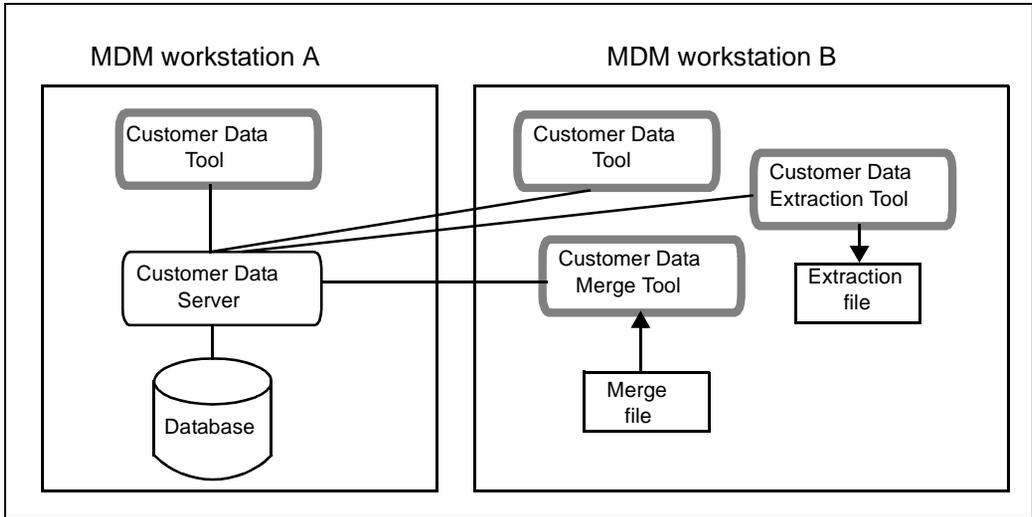
Administrators can perform the following tasks in order to make the Customer Data Tool available to other users.

Creating databases

One or more customer databases must be created. Optionally, you can base the number of databases required on the number of Customer Data time streams the network is using. It is recommended that there be one database for every time stream. The Customer Data time stream corresponds to the number of service data time streams you have. Service data time streams are discussed in 241-6001-304 *Preside MDM Configuration Management for DPN Administration*.

These databases must be given unique names and the names should convey meaning to the users of this tool.

Creating a database and providing access to the database is done by creating a Customer Database Server process for the database. Refer to "Creating a new database" (page 124) for more information.

Populating databases from external sources

Once a database has been created, it may be necessary to populate the database using data from a source external to the Preside Multiservice Data Manager (MDM).

You can incorporate data from other sources into the customer database provided the data is in the proper format. See the table "External data format" (page 132) for a description of this format.

When a data file has been generated, the Customer Database Merge program is used to add (or merge) the data into the customer database. This program is described in "Combining external data into the customer database" (page 126).

Note: Alternatively, you can programmatically populate and query a database using the Embedded Programming Interface described in 241-6001-211 *Preside MDM Embedded Programming Interface Reference Guide*.

Automatic restarting

Once a database has been created (and possibly populated) it should be configured so that it can be automatically accessed after a workstation has been restarted or software has been upgraded.

This is done by adding a Preside Multiservice Data Manager (MDM) Server Manager entry for each customer database server that you want to have started. For details, see the 241-6001-303 *Preside MDM Administrator Guide* for more information.

LAN-wide access

By default, the customer database is only accessible by its clients if the customer data server process is on the same workstation as the clients or if the workstation running the clients is LAN selected to the workstation running the server process. This is acceptable as long as all services (such as X.25 access or customer databases) that a workstation user wants to access are on the same host (either the local one or the LAN selected one). However, if they want to access, for example, X.25 on one host and a customer data server on another, then a LAN-level Multi-nodal Name Server (MNS) must be used. Refer to the 241-6001-303 *Preside MDM Administrator Guide* for more

information on the MNS. Note that if the database servers are identified using the Select Database dialog's entry fields, or if the database is running on the local workstation, there is no need to deploy a Level 2 MNSD for this purpose.

Extracting or deleting records from a database

An administrator should backup a database periodically so that it can be recovered in the event of a problem. Also, they may want to remove all records from the database that are from a specific source and then add new records from that source. The Customer Data Extraction program extracts records from a customer database and places them into a file. This file can then be used for customized processing.

Customer Data Server

The Customer Data Server is the sole manager of customer data on the Preside Multiservice Data Manager (MDM). Each server provides LAN-wide, concurrent customer data access for one customer database. The server provides service to the Customer Data Tool and the Customer Data Extraction and Merge programs. Refer to the 241-6001-303 *Preside MDM Administrator Guide* for more information on the multi-nodal name server (MNS).

The server is managed by the system administrator from a UNIX access window. Customer database servers can be configured to:

• Automatically restart using the MDM Server Manager (SVM).

• Be LAN-wide accessible using the LAN Service Selector or the Multi-nodal Name Service (MNS) or both.

The Customer Data Server program is started as follows:

```
/opt/MagellanNMS/bin/cdbserver database_name
      [-create] [-h] &S
```

Where:

```
database_name
```

is the database name that the server is to manage.

```
-create
```

creates a new database (optional).

> -h

is Help. It prints command usage information.

> &

places the server in background mode.

> *Note:* When issuing a UNIX command in the background mode (using the & symbol), you must press Return twice to display the UNIX prompt again.

Creating a new database

A database cannot be populated until it has been created and managed by a customer data server. To create a new database and to provide access to it, start the Customer Data Server with the create option specified. The server starts, creates the database, and then waits for clients. If the specified database already exists, an error is displayed. This process must be done once for each new database.

Examples

The following example creates an empty database called Cust_Data in the current directory.

> **/opt/MagellanNMS/bin/cdbserver Cust_Data -create &**

The response is:

```
cdbserver: Database 'Cust_Data' successfully created.
cdbserver: Database 'Cust_Data' successfully accessed.
```

This database is recognized by the cdbserver clients as the file Cust_Data.

If the database already exists, the following is displayed:

```
cdbserver: Error - database 'Cust_Data' already
      exists.
```

The following example creates an empty database called Customer_Data in a directory called /home/databases.

> **/opt/MagellanNMS/bin/cdbserver /home/databases/
>   Customer_Data -create &**

This database is recognized by the cdbserver clients as the file
Customer_Data.

Database information

The customer database is stored on disk with the name specified in the -create
option with the .db extension.

In order to minimize the time required to access records in the database, the
database is stored as a sparse file. This means that there can be places in the
file that contain no information and make the file appear larger than it actually
is. This occurs if you use the ls -l command to check the size of the file.
Therefore, to determine the actual size of the file, use the du -s command.
This returns the correct size of the database in kilobytes.

For example, to display the size of my_database type:

```
du -s my_database.db
```

The response is:

```
36 my_database.db
```

This means the file is 36 kilobytes or approximately 36846 (36*1024) bytes.

> *Note:* The size indicated by ls -l and du -s commands generally differs
> more for larger databases.

The database generally does not shrink in size, even after records have been
deleted. As a result, it is necessary to recreate the database in order to reclaim
disk space and to increase efficiency. This is done by using the cdbextract
command. Refer to "Compress the database" (page 131) for more
information.

The database cannot be copied or archived (for example, using cp or tar) like
a regular file. In order to copy or archive the database, it must have its
contents extracted into a file using cdbextract. The extracted file can then be
copied or archived.

Accessing an existing customer database

To provide access to an existing database that does not currently have a
customer data server, run a cdbserver process for the database with no options
specified. This is the usual method for starting a cdbserver process.

The cdbserver process is started as follows:

```
/opt/MagellanNMS/bin/cdbserver database_name &
```

Example

The following example provides access to an existing database called Feb_01_CustData in directory /usr/db.

```
/opt/MagellanNMS/bin/cdbserver /usr/db/
        Feb_01_CustData &
```

The response is:

```
cdbserver: Database '/usr/db/Feb_01_CustData'
successfully accessed.
```

Combining external data into the customer database

Customer data can be added or merged from external databases using Customer Database Merge. This program takes a Preside Multiservice Data Manager (MDM) database name and customer data file as input and merges the external data into the database. See the figure "Customer data from external sources" (page 127).

Note: Alternatively, you can programmatically populate and query a database using the Embedded Programming Interface as described in 241-6001-211 *Preside MDM Embedded Programming Interface Reference Guide*

Figure 8
Customer data from external sources
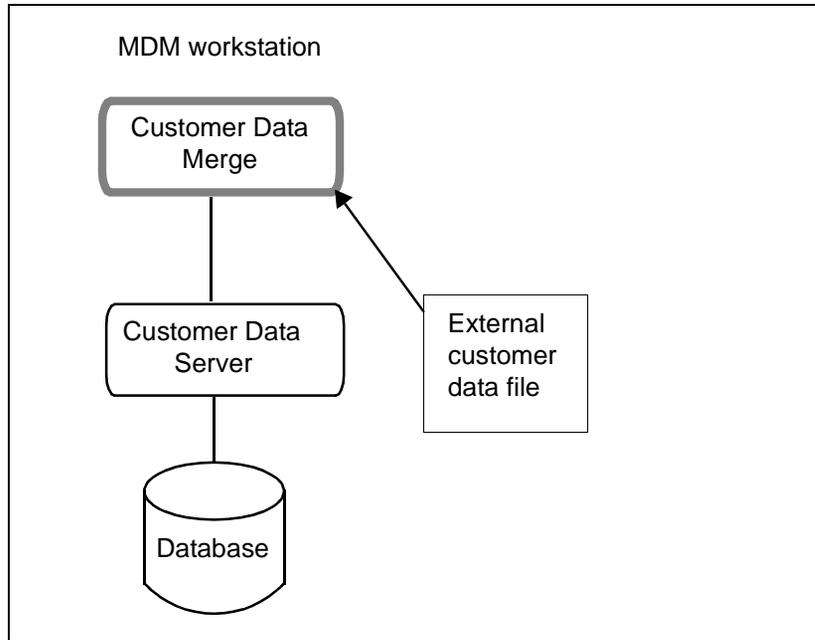
Enter the cdbmerge program as follows:

```
/opt/MagellanNMS/bin/cdbmerge database_name
      merge_file [-replace] [-setsource] [-h]
```

Where:

```
database_name
```

is the name of the customer database. The name must be 1 to 32 characters long.

```
merge_file
```

is the name of a file containing external customer data to be merged.

```
-replace
```

replaces a record if the record being merged already exists in the database. If this option is not specified, then an existing database record will not be replaced (optional).

```
-setsource
```

sets the source field of all records in the merge_file to MDM.

```
-h
```

is Help. It prints command usage information.

Example

The following example adds data from customer data file ext_customerdata to database new_database.

```
/opt/MagellanNMS/bin/cdbmerge new_database
        ext_customerdata
```

The response is:

```
NOTE: cdbmerge - Starting merge of file
'ext_customerdata' into database 'new_database'.

Records merged ...
100 200 300 400 500 600 700 800 900 1000

NOTE: cdbmerge -Merge completed.
1322 records added to database.
0 errors.
```

Example

The following example merges customer data file ext_customerdata into existing database existing_database and replaces any duplicate records with records from the merge file. The -setsource option sets the source fields of all records to MDM.

```
/opt/MagellanNMS/bin/cdbmerge existing_database
        ext_customerdata -replace -setsource
```

Updating the customer database

1   Create a new customer database.

2   Load any other external data into the database.

3   Extract all data from the old database and load it into the new database by specifying the -replace option.

Extracting or deleting data from the database

Data records may be extracted, and optionally deleted from the Preside Multiservice Data Manager (MDM) database using the cdbextract program. This program searches the database for the requested records and writes them to a file or, by default, to standard output. The records are written out in the same format as is accepted by the cdbmerge program. The records are erased, after having been extracted, if the -delete option is specified.

Note: Alternatively, you can programmatically populate and query a database using the Embedded Programming Interface as described in 241-6001-211 *Preside MDM Embedded Programming Interface Reference Guide*

Enter the cdbextract program as follows:

```
/opt/MagellanNMS/bin/cdbextract database_name
        [-file output_file] [-delete]
        [-source (NMS|XXX)] [-comp (compid)]
        [-related (related_compid)] [-h]
```

Where:

```
database_name
```

is the name of the customer database. The name must be 1 to 32 characters long.

```
-file output_file
```

is the name of the file in which the extracted records are to be stored. The default is standard out (optional). If the output is not required, specify /dev/null as the output_file.

```
-delete
```

erases the records after the records have been extracted. The default is do not delete (optional).

```
-source
```

is the source type of the records to be extracted, to a maximum of three characters. As a default, all records are extracted (optional).

```
-comp
```

is the component ID to be searched for. Only records with a component_name field matching the specified component ID are written to the file specified by the -file option. The specified component ID must be an exact match to the packet module name without any trailing blanks or extra spaces.

```
-related
```

is the related component ID to be searched for. Only records with a component_name field matching the specified related component ID are written to the file specified by the -file option. The specified related component ID must be an exact match to the packet module name without any trailing blanks or extra spaces.

```
-h
```

is Help. It prints command usage information.

Example

The following example extracts all the records from the database and places them in a file called all_records.

```
/opt/MagellanNMS/bin/cdbextract new_database -file
     all_records
```

Example

The following example extracts all records belonging to component names starting with PM R55. These records are placed in a file called R55.comp.

```
/opt/MagellanNMS/bin/cdbextract new_database -file
     R55.comp -comp "PM R55"
```

Example

The following example extracts all records with related components that belong to PM R55. These records are placed in a file called R55.asso.

```
/opt/MagellanNMS/bin/cdbextract new_database -file
     R55.comp -associate "PM R55"
```

Note: To extract all records belonging to packet module PM R55, combine Examples 4 and 5. You can also run cdbmerge on files R55.comp and R55.asso with the options -replace and -setsource, which will change the source fields in PM R55 to MDM.

Backup customer database

If you want to archive or duplicate the current customer data, extract all the customer data into a file and store the file on tape or disk.

Updating data from a particular source

If data has been merged (using cdbmerge) into the database from a particular source and you want to update that data from the source again to keep the two files synchronized, perform the following:

- If a backup does not already exist, backup the database by extracting all the data and placing it in a file.

- From the existing database, extract and delete all the data from a specified source and place it in a file.

- Merge the new data into the existing database.

Example

In the following example, data in the cust_data database with a source type of ext is deleted and placed in a file called old_ext_records. Then the new source data in the new_ext_records file is merged into the cust_data database.

```
cdbextract cust_data -source ext -delete -file
    old_ext_records

cdbmerge cust_data new_ext_records
```

Compress the database

If many merge or delete operations have been done to the database, it is possible to reclaim disk space and increase efficiency by recreating the database. This is done by extracting all the data, deleting the database, and then recreating and merging the extracted data.

External customer data format

External customer data can be added to the Preside Multiservice Data Manager (MDM) database provided it is in the proper format. All external customer data is case sensitive and any multiple blanks between characters or at the end of a line are removed. The table "External data format" (page 132) describes the external data format required by the cdbmerge program.

Table 9
External data format

Field name	Size (chars)	Description
Source	3	The source of this record. Possible values are MDM or any three character customer-specified value. This field is used to identify the source of records when extracting or updating records in the database.
Semicolon	1	Field delimiter
Date	8	Date in YYYYMMDD format. This may be any date, but it is suggested that it be the activation date of the component or the last modified date.
Semicolon	1	Field delimiter
Component	65	The component name in the network model format. This will be the key for this record in the MDM database. Examples: DNA: DNA X01234567931123 Port: PM R34 PE 7 PI 7 PO 1 Module: PM R34 NCS OA: PM R34 OA DPNOA NCS application: PM R34 OA DPNOA APPL APPNAME
Semicolon	1	Field delimiter
Related component	46	(only used for DNAs) The component with which the DNA is related (for example, a Port or PE) The name is up to the port level only (that is, a DNA for an SNA LU has the component name of the LU up to the Port only).
Semicolon	1	Field delimiter
Data length	4	The number of characters of customer data in the Customer Data area.
Semicolon	1	Field delimiter
(Sheet 1 of 2)		

Table 9 (Continued)
External data format

Field name	Size (chars)	Description
Customer data	up to 1300	The customer data, which is ASCII text containing newlines (ASCII 10), spaces (ASCII 32), and printable characters (ASCII 33-126). Characters other than these are not recognized by the Customer Data Tool and should not be included in the customer data. NULL characters (ASCII 0) cannot be included.
Newline character	1	A newline is located at the end of the record. It is not part of the customer data and is not included in the customer data length.
(Sheet 2 of 2)		

Example

The figure "External data file format" (page 133) shows the proper format of the external data file. This file is suitable for merging with customer data. If the records are not in the proper format, an error message appears when you try to merge the file.

Note: The top two lines of this example are not included in the data file, but have been added to show field positioning. The values in the component and related component fields are forced to upper case by the cdbmerge utility.

Figure 9
External data file format

```
00000000011111111112222222222333333333344444444445555555555666666
66667777777777
12345678901234567890123456789012345678901234567890123456789012345
67890123456789
NMS;19930731;PM R34 PE 4 PI 4 PO 1                         ;
                            ;0069;X25
Customer: A&L Trust Co.
Contact: Fred Smith
Phone: 744-3434 x2344
NMS;19930731;DNA X404443444505431                          ;
PM R34 PE 3 PI 2 PO 2                ;0062;X25
Customer: ABC Plumbing
Contact: John Jones
Phone: 836-9876
```

Deployment considerations

The customer database potentially requires a large amount of disk space on the Preside Multiservice Data Manager (MDM). The amount of disk space is proportional to the number of components, particularly DNAs and ports, for which customer data is to be stored. In general, it is suggested that one copy of customer data be stored on a workstation server and that it be shared across a LAN.

The Network Reporting System (NRS) requires that the customer database file be on a disk that is accessible by each workstation running reports that include customer data. NRS does not use the customer data server.

Keyboard shortcuts

The Customer Data Tool provides the following command shortcuts:

- Ctrl+E exits the Customer Data Tool.

- Ctrl+X cuts selected text.

- Ctrl+C copies selected text.

- Ctrl+V pastes selected text.

See also...

- "Mnemonics" (page 134)

Mnemonics

Some characters in menus and menu items have an underscore. These are mnemonics that you can use instead of using the mouse.

You can use the following keys in combination with the mnemonics:

- Meta key. For example, Meta-F X opens the File menu and exits Customer Data.

- F10 key. For example, F10 F X opens the File menu and exits Customer Data.

See also...

- "Keyboard shortcuts" (page 134)

Index

S

T

U

V

X

Preside Multiservice Data Manager

Workstation Utilities

User Guide

R15.1

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NETWORKS**