

NetPerformer[®] System Reference

Getting Started



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User Interface

1.1 Configuring NetPerformer

You can configure the NetPerformer using:

- Console terminal connection with on-board Command Line Interface (CLI)
- SNMP management system using TCP/IP routing
- Text-based configuration from the console – a simplified method for configuring multiple units in the network.

This chapter addresses the console CLI method only. The other methods are detailed in later chapters of this document.

1.2 Console Terminal

When you first take the NetPerformer unit out of the box, the only configuration device you can use is a *console terminal*, since the unit does not yet have an IP address.

The console terminal can be:

- An asynchronous dumb or TTY terminal, **or**
- A PC equipped with asynchronous terminal emulation software.

The console port is *autospeed*, which means the NetPerformer sets the speed of the port as soon as it detects an active connection.

- Available console speeds are 1200, 2400, 4800, 9600, 19200, 28800, 38400, 57600 and 115200 bps
- **The equipment you connect to the console port *must* operate at one of these speeds.**

1.3 Accessing the NetPerformer Console Locally

The console port has a DB9 connector on all products except the SDM-8400. Therefore, the procedure for accessing the SDM-8400 console differs slightly from that for the other NetPerformer products.

► **To connect directly to the console terminal:**

1. In the NetPerformer product package, locate the standard TIA-232/V.24 straight through cable with a DB-9 female connector at one end and a DB-25 male connector at the other end.

NOTE: For the SDM-8400, use the cable kit supplied for console connection. This kit includes a console cable with RJ45 male connectors at both ends and a TIA-232/V24 terminal adapter, RJ45 female to DB-9 female.

2. Connect the DB-9 connector on the TIA-232/V.24 straight through cable to the NetPerformer console port, labeled **CONSOLE** or **CSL**.

NOTE: For the SDM-8400, connect the RJ-45 console cable to the RJ-45 console port, labeled **CSL**.

3. Connect the DB-25 connector on the TIA-232/V.24 straight through cable to a COM port on the console terminal or PC.

NOTE: For the SDM-8400, plug the DB-9 female side of the terminal adapter into a COM port on the console terminal or PC.

4. Power the console terminal ON and ensure that the NetPerformer unit is also ON (refer to the *Hardware Installation Guide* for your product).

NOTE: NetPerformer system startup can take several minutes to execute. The console cannot be accessed before this process is complete.

5. Press the **Enter** key on the console terminal keyboard several times, until the NetPerformer responds with a prompt for the user login (**LOGIN:**).

6. Enter the administrator login: **ADMIN**.

NOTE: No other login is available from the factory default configuration.

7. Enter the password for the **ADMIN** login.

The default password for the administrator login is **SETUP**.

When the password is entered correctly, the NetPerformer sends the product banner to the console screen:

```
LOGIN:ADMIN
PASSWORD:*****
```

```
ACCEPTED
SDM-9230 v10.1.0 (B38) Memotec Technologies, Inc. (c) 2003
Signaling Engine v10.1.0 (B38) Memotec Technologies, Inc. (c) 2003
DSP code version: 1.0.0 R06
Console connected on port CSL
Display commands, type HE
B457376>
```

The last line of this example shows the default command prompt: the burned-in serial number of the base board. **This prompt changes to the *Unit ID* as soon as you define one.** For instructions, refer to the section *Setting the Global Configuration Parameters* in the Quick Configuration module of this document series.

1.3.1 Notice Concerning HyperTerminal Connections

On some computers running Microsoft™ Windows™ the default *Emulation* setting of the HyperTerminal™ communications program can potentially cause problems for SDM-9220, SDM-9230, SDM-9230GW or SDM-8400 console operations. **To ensure trouble-free console operations on these products, we suggest that you change the *Emulation* setting from Auto detect to ANSI**, as follows:

- Access HyperTerminal using the Windows Start button and drop-down menus:
Start > Programs > Accessories > Communications > HyperTerminal
- If you have already defined the connection to the NetPerformer console port, open that connection:
File > Open > your_filename.ht
- If you have not yet defined the connection to the NetPerformer console port, create a new connection:
File > New Connection > your_filename
- Open the *Properties* window for the connection:
File > Properties
- Click on the *Settings* tab to view the current value of the *Emulation* parameter.
- Select the value **ANSI** from the list box for the *Emulation* parameter.
- Click **OK**.

1.4 Accessing a Remote NetPerformer

You can access a remote NetPerformer unit using:

- **Dial-up connection** between the console port and the console terminal (see next section)
- **Relay command**, using WAN connectivity (see [“Relay \(RE\) Command” on page 1-7](#))
- **Telnet connection**, using IP connectivity (see [“TELNET Command” on page 1-8](#)).

1.4.1 Dial-up Connection

The console port has a DB9 connector on all products except the SDM-8400. Therefore, the procedure for making a dial-up connection from the SDM-8400 console differs slightly from that for the other NetPerformer products.

► **To make a dial-up connection from the console terminal:**

1. In the NetPerformer product package, locate the standard TIA-232/V.24 straight through cable with a DB-9 female connector at one end and a DB-25 male connector at the other end.
NOTE: For the SDM-8400, use the cable kit supplied for console connection. This kit includes a console cable with RJ45 male connectors at both ends and a TIA-232/V24 terminal adapter, RJ45 female to DB-9 female.
2. Connect the DB-9 connector on the TIA-232/V.24 straight through cable to the NetPerformer console port, labeled **CONSOLE** or **CSL**.
NOTE: For the SDM-8400, connect the RJ-45 console cable to the RJ-45 console port, labeled **CSL**.
3. Connect the DB-25 connector on the TIA-232/V.24 straight through cable to a modem or PC (async terminal) for dial-up connection to the remote console terminal.
NOTE: For the SDM-8400, connect the DB-9 female side of the terminal adapter to a modem or PC for dial-up connection to the remote console.
4. Leave the console port in auto-sensing mode (the default setting).
5. Ensure that the remote NetPerformer unit is powered ON.
6. Using dial-up software installed on the local console terminal, execute the AT command **atd0** to set the modem to ignore DTR.
NOTE: This step is required since the NetPerformer cannot supply DTR to the modem when in auto-sensing mode (the default setting).
7. Dial the number of the remote modem.
8. Continue with step 5 on [page 1-4](#).

1.4.2 Relay (RE) Command

NOTE: This access method requires an active WAN connection between the local and remote sites. Refer to the section *WAN Configuration and Validation* in the *Quick Configuration* module of this document series.

► **To access a remote NetPerformer using the Relay command:**

1. Enter **RE** at the local console command prompt.
2. Enter the *Unit name* of the remote NetPerformer.
3. Press **Enter** three times to connect to the remote unit.
4. Enter a user login for the remote unit, if required.
5. Enter the password for this user login.

Once the password is accepted, the remote NetPerformer sends its product banner to the local console screen. Each line from the remote console is preceded by a plus sign (+).

```
SDM-9230>RE
RELAY
Unit name (def:) ? SDM-9360
Press ENTER three times to connect
Press CTRL/Z three times to exit
+SDM-9360 v10.1.0 (R3) Memotec Technologies, Inc. (c) 2003
+Signaling Engine v10.1.0 (R03) Memotec Technologies, Inc. (c) 2003
+DSP code version: 1.0.0 R04
+Console connected through link relay
+Display commands, type HE
+SDM-9360>
```

NOTE: The Relay command cannot be executed from the remote console to create a second hop relay to a third unit.

► **To return to the local console:**

1. Quit from the remote console: enter **QU**.
2. Press the key combination **CTRL-Z** three times.

1.4.3 TELNET Command

NOTE: This access method requires an Ethernet LAN connection using either:

- The local LAN attached to the NetPerformer at your site, *or*
- A remote LAN whose data is transmitted to the local unit through a WAN connection.

► **To access a remote NetPerformer using the TELNET command:**

1. Define an IP address on the NetPerformer unit using the LAN port *IP address #1* or *IP address #2* parameter. **These need to be configured via the console port before you can use Telnet.** Refer to the *LAN Connection and IP Networks* module of this document series.

2. Enter the following at command prompt of the local console terminal:

TELNET remote_ip_address

Where: *remote_ip_address* is the address you defined on the remote unit with the *IP address #1* or *IP address #2* parameter.

3. The user login prompt (**LOGIN:**) should appear within a few seconds. Enter the administrator login: **ADMIN**.
4. Enter the password for the **ADMIN** login: **SETUP**.

When the password is entered correctly, the product banner of the remote unit is displayed:

```
SDM-9230>TELNET 7.208.2.1
TELNET TO REMOTE
Press CTRL/Z three times to exit
LOGIN:ADMIN
PASSWORD:*****

ACCEPTED
SDM-9380 v10.1.0 (R3) Memotec Technologies, Inc. (c) 2003
Signaling Engine v10.1.0 (R03) Memotec Technologies, Inc. (c) 2003
Console connected through TELNET
Display commands, type HE
SDM-9380>
```

NOTE: Access to the NetPerformer console via a Telnet connection can be restricted to up to five addresses, or disabled altogether. For details, refer to *Restricting Telnet Access* in the *Quick Configuration* module of this document series.

► **To return to the local console:**

- Press the key combination **CTRL-Z** three times.



Using the Console

2.1 The Command Line Interface (CLI) Tree

NetPerformer console operations are controlled by a set of console commands.

For a summary of the command notation used in this chapter, refer to the section *Conventions* in the *Using this Document Series* module of this document series.

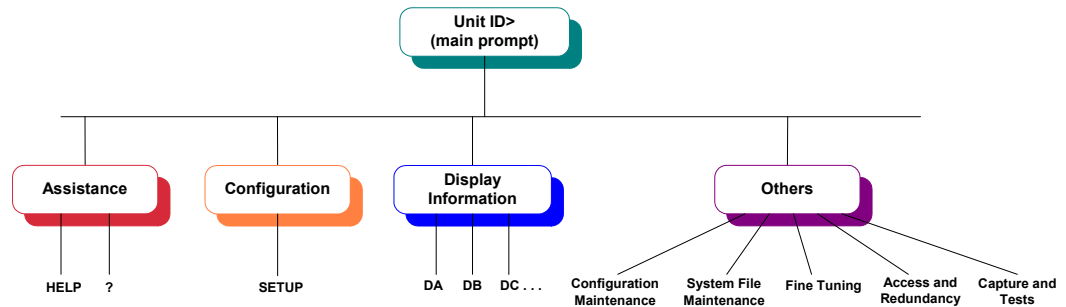


Figure 2-1: Top Levels of the CLI Tree

- **First level:** Command line prompt, which indicates the *Unit ID*
- **Second level:** Includes the following types of console commands:
 - Assistance (**HE**, **?**): for assistance in selecting a command or parameter value
 - Configuration (**SETUP**): to configure the unit
 - Display Information (**Dxyz** and others): to monitor the unit
 - Other: Configuration Maintenance, System File Maintenance, Fine Tuning, Access and Redundancy, Capture and Tests.

2.2 Executing a Command

► To view a list of available console commands:

- Execute the HELP command; enter **HE** at the command line prompt.

► To execute a console command:

1. Type the command name at the command line prompt
2. Press the **Enter** key or carriage return on your console keyboard
3. Select an *Item*, if requested (see next section)
4. Enter a valid value for each parameter listed (see [“Changing Parameter Values” on page 2-5](#)).

2.2.1 Single-line Command Entry

The SETUP command for configuring the NetPerformer unit can be entered on a single line. This method employs:

- Header names and parameter names used in text-based configuration
- The question mark (?), for obtaining information from the console as to the parameters names and values that can be entered
- The greater-than sign (>), for listing the console equivalents of text-based configuration parameters in a particular submenu.

A simple example of single-line command entry is the following, which configures serial port 1 with the PVCR protocol: SDM-9380>SE IFWAN 1 PROTOCOL PVCR

Multiple ports can be configured using a port range, e.g. **101-124** to configure all timeslots of a T1 interface at once. For details and complete examples, consult the chapter [“Single-line Command Entry” on page 6-1](#).

2.2.2 Navigating CLI Menus

Direction	Description
Downward	<p>When you enter a command, an <i>Item</i> prompt may appear. Select one of the displayed <i>Item</i> choices to go to the next lower menu level:</p> <ol style="list-style-type: none"> 1. Type your selection at the <i>Item</i> prompt 2. Press the Enter key or carriage return on your console keyboard.

Table 2-1 Navigating CLI Menus

Direction	Description
Upward	To return to the next higher menu level, press Esc . Note: This aborts the current command without affecting the configuration.

Table 2-1 Navigating CLI Menus

2.3 Changing Parameter Values

NOTE: The NetPerformer *does not* perform full form checking. **When configuring the unit, be careful to enter values that are appropriate for your application.**

To simplify entry, most parameters are displayed with a list of valid values and the default value. When you enter a command, you may be given a list of questions for selecting parameter values.

- To select the default value press the **Enter** key.
- To select another value, type it on the command line and press **Enter**. The value you type can be an abbreviation, as long as it is distinct from all other valid values.
- For a list of valid parameter values, type **?** after the parameter prompt and press the **Enter** key.
- All changes to parameter values are applied immediately to the configuration file. If you do not need to adjust all parameters within a category or menu, press the **Esc** key.

There are some exceptions to this general rule. For example, when setting a customized ring cadence on the unit you must set all parameter values, as they are interdependent.

New parameter values are automatically saved after the global *Auto save configuration delay* has expired (default 10 seconds). If you reset the NetPerformer or power off the unit within this delay, the configuration will revert to the last saved version. To avoid this, execute the Save Configuration Profile command first; enter **SP**.

2.4 Arrow, Home and End Key Functions

Use the arrow keys to simplify command entry and correct what you type:

- **↑ (Up Arrow):** At a command prompt, recalls the previous character string you entered at the console command line. At a parameter prompt, displays the previous value to the left in the selection list.
- **↓ (Down Arrow):** At a command prompt, recalls the next character string you typed at the console command line. At a parameter prompt, displays the next value to the right in the selection list.
- **← (Left Arrow):** Moves the command cursor to the next character to the left. Use this to insert or delete characters in the string.
- **→ (Right Arrow):** Moves the command cursor to the next character to the right.

Use the **<Home>** and **<End>** keys to scroll upward or downward through a list of parameters:

- **<Home>** Moves upward one parameter at a time (maximum 10 times)
- **<End>** Moves back downward one parameter at a time (until the starting point is reached).

2.5 Obtaining Parameter Information from the Console

NetPerformer software version V10.2.1 and higher offers an effective way to retrieve information about configuration parameters directly from the console.

► To obtain parameter information:

- Enter a question mark (?) after any parameter prompt.

The information that is displayed depends on the type of parameter configuration that is required, as explained in the following sections. After the information display, the parameter prompt is presented again to allow you to enter an appropriate value.

NOTE: Single-line command entry, introduced on [“Single-line Command Entry” on page 2-3](#), also employs the question mark to retrieve parameter information. For details, refer to [“Single-line Command Entry” on page 6-1](#).

2.5.1 Selection from a Set of Values

Question Mark example: selecting from a set of values

```
9360-2>SE
SETUP
Item (BRIDGE/CALLER ID/CLASS/CUSTOM/FILTER/GLOBAL/HUNT/IP/IPX/MAP/PHONE/
PORT/PU/PPPOE/PPUSER/PVC/REDUNDANCY/SCHEDULE/SLOT/USER/VLAN,
def:BRIDGE) ? GLOBAL
GLOBAL> Unit name (def:9360-2) ?
GLOBAL> Unit routing version (1-2,def:1) ?
...
GLOBAL> Watch power supplies and fans (def:NONE) ? ?
CHOICE: NONE PS  FANS BOTH

GLOBAL> Watch power supplies and fans
(Default value:NONE, Current value:NONE) ?
...
```

For parameters that require you to select a particular value from a set of values, entering a question mark after the parameter prompt will provide:

- The choice of valid values
 - In the example above, a question mark is entered after the *Watch power supplies and fans* prompt
 - The console returns:


```
CHOICE: NONE PS  FANS BOTH
```
- The default value

In this example, the console returns:

```
Default value:NONE
```

- The current value

In this example, the console returns:
Current value:NONE

NOTE: The *Default value* is the factory setup value of the parameter. The *Current value* is the same as the value presented in the initial parameter prompt after the *def:* prefix.

2.5.2 Definition Using an Alphanumeric String

**Question Mark
example:
defining an
alphanumeric
string**

```
SDM-8400>SE
SETUP
Item (BRIDGE/CALLER ID/CLASS/CUSTOM/FILTER/GLOBAL/HUNT/IP/IPX/MAP/PHONE/
PORT/PU/PPPOE/PPPUSER/PVC/REDUNDANCY/SCHEDULE/SLOT/USER/VLAN,
def:BRIDGE) ? GLOBAL
GLOBAL> Unit name (def:SDM-8400) ? ?
MINIMUM LENGTH : 0
MAXIMUM LENGTH : 16
AVAILABLE CHARACTERS : =
A/B/C/D/E/F/G/H/I/J/K/L/M/N/O/P/Q/R/S/T/U/V/W/X/Y/Z/a/b/c
/d/e/f/g/h/i/j/k/l/m/n/o/p/q/r/s/t/u/v/w/x/y/z/0/1/2/3/4/5/6/7/8/9/./,-/
/=

GLOBAL> Unit name (def:SDM-8400) ?
```

For parameters that require you to define an alphanumeric string, entering a question mark after the parameter prompt will provide:

- The minimum length required for the alphanumeric string.
 - In the example above, a question mark is entered after the *Unit name* prompt
 - The console returns: MINIMUM LENGTH : 0
- The minimum length permitted for the alphanumeric string.

In this example, the console returns: MAXIMUM LENGTH : 16
- The characters, digits and/or symbols you can use in the definition of the parameter.

In this example, the console returns:

```
AVAILABLE CHARACTERS : =
A/B/C/D/E/F/G/H/I/J/K/L/M/N/O/P/Q/R/S/T/U/V/W/X/Y/Z/a/b/c/d/e/f/g/h/i/j/
k/l/m/n/o/p/q/r/s/t/u/v/w/x/y/z/0/1/2/3/4/5/6/7/8/9/./,-/=
```

2.5.3 Parameters Requiring a Specific Value or a User-defined String

Question Mark example: for specific value or alphanumeric string

```
SDM-8400>SE
SETUP
Item (BRIDGE/CALLER ID/CLASS/CUSTOM/FILTER/GLOBAL/HUNT/IP/IPX/MAP/PHONE/
PORT/PU/PPPOE/PPUSER/PVC/REDUNDANCY/SCHEDULE/SLOT/USER/VLAN,
def:BRIDGE) ? PORT
Port number (ETH1/ETH2/CSL/1,def:1) ?
PORT 1> Protocol (def:PPP) ? PVCR
PORT 1> Interface.....DCE-V35
PORT 1> Clocking mode (def:INTERNAL) ?
...
PORT 1> Number of retransmission retries (1-1000,def:100) ?
PORT 1> Maximum number of voice channels (0-10000,def:10000) ?
PORT 1> Maximum Voice Channels If High Priority Data (0-10000,def:10000)
=
?
PORT 1> Cell Packetization (def:YES) ?
PORT 1> Filter (def:ALL) ? ?
MINIMUM LENGTH : 0
MAXIMUM LENGTH : 99
AVAILABLE CHARACTERS : ALL/NONE/0/1/2/3/4/5/6/7/8/9/,/-

PORT 1> Filter (def:ALL) ?
```

For parameters that require you to either enter a specific value or define an alphanumeric string, entering a question mark after the parameter prompt will provide:

- The minimum length required for the alphanumeric string
 - In the example above, a question mark is entered after the *Filter* prompt
 - The console returns: MINIMUM LENGTH : 0
- The minimum length permitted for the alphanumeric string

In this example, the console returns: MAXIMUM LENGTH : 99
- The specific values and the characters, digits and/or symbols you can use in the definition of the parameter

In this example, the console returns:

```
AVAILABLE CHARACTERS : ALL/NONE/0/1/2/3/4/5/6/7/8/9/,/-
```

2.5.4 Parameters Requiring a Specific Format

The NetPerformer console does not provide detailed information on formatting requirements specific to certain types of parameters which are commonly used in telecommunications.

For example, it is assumed that the user will know that an IP address has a 4-byte value in dotted decimal notation, with a maximum value of 255 for each byte.

- If you enter a question mark at a parameter prompt for an IP address, the NetPerformer console will return the minimum and maximum lengths, the

characters you can use (digits and the dot), but *not* the specific rules for building a valid IP address.

- The response will undergo form checking, however. If the parameter is improperly defined the console returns the message **Invalid value format**, as shown in the following example.

**Question Mark
example: for
an IP address**

```
SDM-8400>SE
SETUP
Item (BRIDGE/CALLER ID/CLASS/CUSTOM/FILTER/GLOBAL/HUNT/IP/IPX/MAP/PHONE/
PORT/PU/PPPOE/PPPUSER/PVC/REDUNDANCY/SCHEDULE/SLOT/USER/VLAN,
def:BRIDGE) ? GLOBAL
GLOBAL> Unit name (def:SDM-8400) ?
GLOBAL> Unit routing version (1-2,def:1) ?
...
GLOBAL> Default IP address (def:000.000.000.000) ? ?
MINIMUM LENGTH : 0
MAXIMUM LENGTH : 15
AVAILABLE CHARACTERS : 0/1/2/3/4/5/6/7/8/9/.

GLOBAL> Default IP address (def:000.000.000.000) ? 777.777.777.777
Invalid value format(000.000.000.000)

GLOBAL> Default IP address (def:000.000.000.000) ?
...
```

2.6 Exiting from the Console

► To exit from the console, use the **Quit (QU)** command:

1. Enter **QU** at the NetPerformer main command line prompt
2. Enter **YES** at the confirmation prompt.

```
SDM-9230>QU
QUIT
Exit from console, please confirm (NO/YES,def:NO) ? YES
Console disconnected !
```

- The Quit command (**QU**) disconnects the asynchronous terminal console from the NetPerformer console port without resetting the software.
- To reactivate the console, press the **Enter** key several times, until the NetPerformer responds with the user login prompt (**LOGIN:**).

3

Overview of Console Commands

3.1 About Console Commands

There are several types of console commands:

- Assistance (**HE, ?**): For assistance in selecting a command or parameter value (see [“Assistance Commands” on page 3-3](#))
- Configuration (**SETUP**): To configure the unit (see [“Configuration \(SETUP\) Command” on page 3-6](#))
- Display Information (**Dxyz** and others): To monitor the unit (see [“Display Commands” on page 3-9](#))
- Others: (see [“Other Commands” on page 3-11](#))
 - Configuration Maintenance
 - System File Maintenance
 - Fine Tuning
 - Access and Redundancy
 - Capture and Tests.

3.2 Assistance Commands

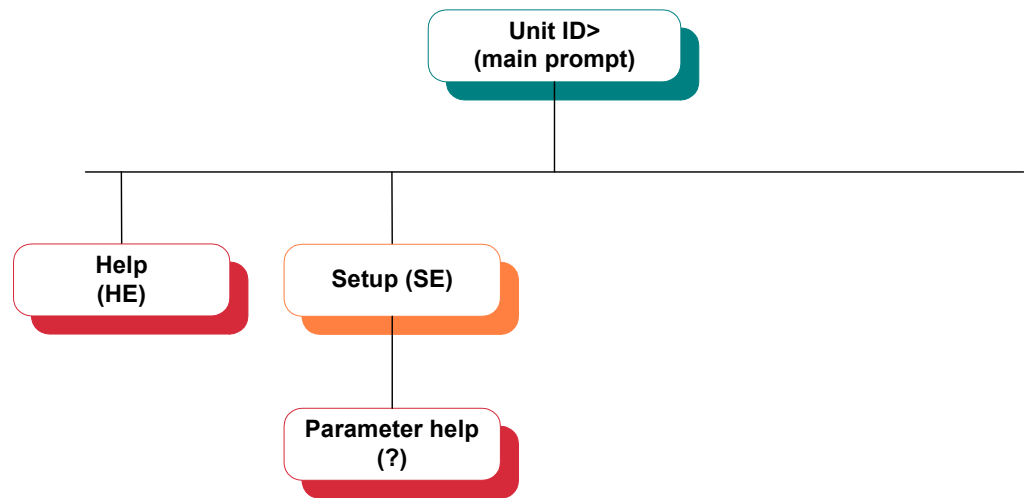


Figure 3-1: Assistance Commands in the CLI Tree

3.2.1 Help Command

The console HELP command (**HE**) provides a list of all NetPerformer console commands in alphabetical order.

- To view the list of all NetPerformer commands, enter **HE** at the console command prompt.
- To execute any of the commands that are listed, type its abbreviation and press the **Enter** key.

Here is the complete HELP command listing. Some of these commands do not appear if you have **MONITOR** access to the console. Refer to the section *Controlling Access to the NetPerformer* in the *Quick Configuration* module of this document series.

```

SDM-9230>HE
HELP
AP.....Display active PUs
ARP.....Display/Clear ARP cache
CA.....Clear software alarms
CALL.....Manual link activation
CE.....Clear ERR/DIAG LED
CHKFS.....Check File System
CL.....Capture PVCR frame length
CN.....Clear NAT entry
COPY.....Copy file
CP.....Change password
DA.....Display software alarms
DB.....Display bridge statistics
DBA.....Display bridge addresses
  
```

DC.....Display counters
DCFG.....Display config
DCS.....Display call states
DD.....Display destination table
DDLCI.....Continuous display of PVC DLCI states
DE.....Display errors
DEFRAG.....Defragment file system
DELETE.....Delete file
DHCP.....Release/renew DHCP entries
DIR.....Display file list
DHI.....Display hardware information
DJOURNAL....Display journal
DL.....Display log
DMF.....Display Map file
DN.....Display NAT table
DNS.....Display/Clear DNS cache
DP.....Display configuration parameters
DPI.....Display production information
DPORT.....Continuous display of port states
DPPP.....Continuous display of PPPoE states
DPU.....Continuous display of PU states
DPVC.....Continuous display of PVC states
DR.....Display routing table
DS.....Display states
DSVC.....Continuous display of SVC states
DT.....Display the current time
DV.....Display software version
DX.....Display cell relay connections
EC.....End capture
EL.....Erase Log file
EMF.....Erase Map file
EP.....Extended Parameters
ER.....Display Exit Record
FORMAT.....Format file system
FS.....Install factory configuration
HANG.....Manual link de-activation
HELP.....Display commands
LOAD.....Load capture from file system
LT.....Loopback test
PING.....PING remote unit
PLS.....Product license status
QU.....Terminate current session
RC.....Reset counters
RCSL.....Reverse console
RE.....Relay to remote unit
REDUNDANCY...Redundancy Command
RENAME.....Rename file
RP.....Reset port
RRM.....Reset Redundancy Mode
RU.....Reset unit
RZ.....Receive ZModem
SAVE.....Save capture to file system
SC.....Setup capture
SE.....Configure unit
SEC.....Signaling Engine channels
SEI.....Signaling Engine information
SP.....Save Current Configuration Profile

```
ST.....Set time
STARTTONE...Start test tone
STC.....Start capture
SZ.....Send ZModem
TELNET.....Telnet to a remote unit
TRACEROUTE...Trace IP Route
TYPE.....Dump file contents
UT.....Update time from time server
VC.....View capture
```

3.2.2 ? Entry

Enter a question mark at any parameter prompt for further information on the options available to you.

NOTE: As of NetPerformer V10.2.1, the display includes all valid values, the default value and current value of the parameter.

3.3 Configuration (SETUP) Command

The Setup (**SE**) command allows you to adjust the current configuration of the NetPerformer unit.

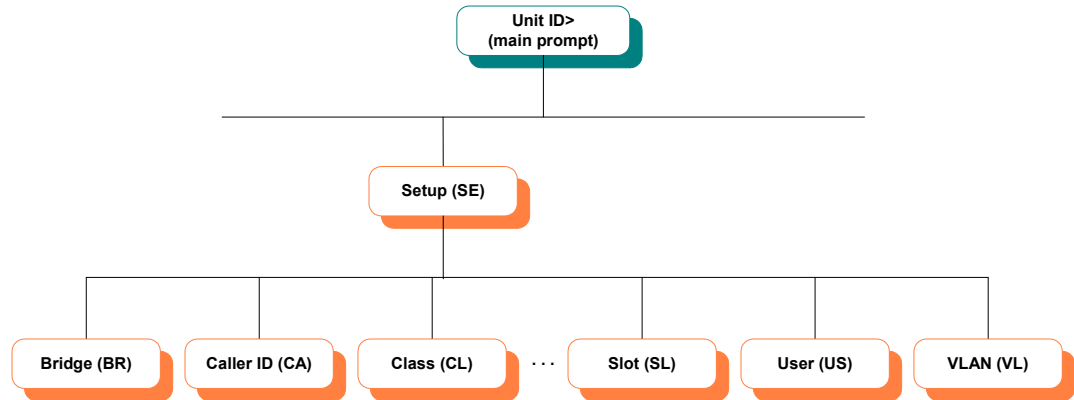


Figure 3-2: Setup Command and Submenus in the CLI Tree

NOTE: Configuration Maintenance commands are addressed separately on [“Configuration Maintenance Commands”](#) on page 3-11.

► **To execute the Setup command:**

1. Enter **SE**.
2. Enter the name of the *Item* you want to configure.

A list of configurable items is provided for you. Each item is a submenu dedicated to the configuration of one aspect of NetPerformer functionality (see next section).

3. If several components can be configured using the same *Item* selection, select one of these components.

For example, the **SETUP/PORT** menu is used to configure the Ethernet LAN, console and serial ports. To configure port 1, you must set the *Port number* to **1**.

```

SDM-9230>SE
SETUP
Item (BRIDGE/CALLER ID/CLASS/CUSTOM/FILTER/GLOBAL/HUNT/IP/IPX/MAP/PHONE/
PORT/PU/PPPOE/PPPUSER/PVC/REDUNDANCY/SCHEDULE/SLOT/USER/VLAN,
def:BRIDGE) ? PORT
Port number (ETH1/ETH2/CSL/1,def:CSL) ? 1
PORT 1> Protocol (def:PVCR) ?
...
  
```

4. A set of questions, or *parameters*, is presented next. These parameters let you select all configurable values for the *Item* you have chosen.

- Respond to each parameter prompt by entering the desired value, or press **Enter** to select the default value.
- The default value is displayed after the parameter name, and is indicated by **def:.** In the example above, the default value of the *Port number* parameter is **CSL**.
- The default value is optionally preceded by a list of valid values. In the example above, the valid values for the *Port number* parameter are given as **ETH1, ETH2, CSL** and **1**.

3.3.1 SE Command Submenus

The **SE** command submenus (or *Items*) include the following:

- **BRIDGE:** enables bridge operations and define the bridge characteristics
- **CALLER ID:** defines a set of callers authorized to access an ISDN connection
- **CLASS:** defines bandwidth weights for different priority classes
- **CUSTOM:** customizes digital signaling and ring characteristics
- **FILTER:** writes user-defined filters that reduce, manage and prioritize specific traffic types
- **GLOBAL:** sets parameters that affect the unit as a whole
- **HUNT:** (*NetPerformer base product only*) defines Hunt Forwarding for voice and SVC functions
- **IP:** controls IP routing on the NetPerformer

NOTE: The **IP** item includes another level of submenus for Global, Static, BOOTP, OSPF, TIMEP, SNMP, NAT, Telnet, FTP and DNS definitions.

- **IPX:** controls IPX routing on the NetPerformer
- **MAP:** defines Voice Mapping Table entries
- **PHONE:** creates a directory of phone numbers for link backup, Bandwidth On Demand and ISDN phones
- **PORT:** controls LAN, console and built-in serial port functions
- **PU:** defines the PUs for an SNA/SDLC application
- **PPPOE:** defines the connections using PPP over Ethernet
- **PPPUSER:** defines authentication criteria for all PPP connections
- **PVC:** defines the PVCs for a Frame Relay application
- **REDUNDANCY:** sets up a redundant series of NetPerformer units
- **SCHEDULE:** defines the time periods governing WAN link (PVCR) operating modes
- **SIP:** (*NetPerformer SIP VoIP option only*) defines SIP signaling characteristics

- **SLOT:** defines the physical ports and logical channels on a T1, E1, ISDN-BRI S/T, FXS, FXO, E&M or Dual Serial interface card
- **USER:** creates access profiles that restrict access to the NetPerformer console
- **VLAN:** *NetPerformer base product only.* To define Virtual LAN segments.

3.3.2 Configuring the Unit with the Configuration File

The configuration file, **CFG.TXT**, can be used to configure a NetPerformer unit:

- Edit the configuration file with a text editor to configure multiple components that have a similar configuration, e.g. a large number of voice channels that use the same protocol
- Download the configuration file of one NetPerformer unit to another using FTP. This saves configuration time in cases where two units perform the same network functions and require nearly identical configurations. Individual characteristics such as the *Unit name* can be specified after downloading.

For details, refer to the chapter [“Text-based Configuration” on page 5-1.](#)

3.3.3 Resetting the Configuration

The Factory Setup command (**FS**) returns all NetPerformer configuration parameters to their factory default values.

► **To execute the Factory Setup command:**

1. Enter **FS** on the console command line.
2. Enter **YES** at the confirmation prompt. The default factory setup will be installed on the NetPerformer unit.



Caution

When the **FACTORY SETUP** command is executed, it takes effect immediately; you **cannot** return to your previously defined configuration values. To make a complete inventory of your configuration parameter values **before you execute this command**, print out the results of the Display Parameters - **ALL** command (**DP/ALL**) or store your configuration using the FTP **get** command.

```
9230-2>FS
FACTORY SETUP
Default factory setup (NO/YES,def:YES) ?
Factory setup, please confirm (NO/YES,def:NO) ? YES
Default factory setup installed !
Unit restarted !
```

3.4 Display Commands

Several commands are available for displaying various aspects of the NetPerformer configuration and operations. Most but not all of these commands begin with the letter **D**. Enter a display command directly from the main console prompt.

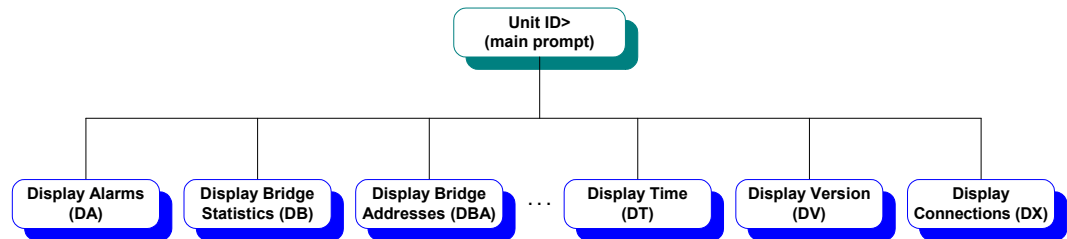


Table 3-1 Display Commands in the CLI Tree

The display commands include the following:

- **AP:** displays active PUs
- **ARP:** displays the ARP cache table
- **DA:** displays software alarms
- **DB:** displays bridge statistics
- **DBA:** displays bridge addresses
- **DC:** displays counters for BOOTP, configuration, DNS, IP, NAT, port, PVC, SVC Q922, SVC Q933, QoS, slot, SVC and TIMEP functions
- **DCFG:** displays the current configuration in text-based format
- **DCS:** displays call states
- **DD:** displays the PowerCell destination table
- **DDLCI:** displays PVC DLCI status continuously in real time
- **DE:** displays errors for BOOTP, channel, compression dictionary, group, NAT, port, PU, PVC, SVC Q922, slot, SVC and TIMEP functions
- **DHI:** displays the hardware information for this unit
- **DJOURNAL:** displays the configuration journal
- **DL:** displays the call log
- **DMF:** displays the Voice Mapping Table entries
- **DN:** displays the NAT table
- **DNS:** displays or clear the DNS cache
- **DP:** displays the current values of configuration parameters

NOTE: This command provides an *Item* prompt for selecting a particular area of the NetPerformer configuration, and reflects the structure of the **Setup (SE)** command set exactly.

- **DPI:** displays manufacturing information for this unit
- **DPORT:** displays port status continuously in real time
- **DPPPOE:** displays PPPoE connection status continuously in real time
- **DPU:** displays PU status continuously in real time
- **DPVC:** displays PVC status continuously in real time
- **DR:** displays IP or IPX routing tables
- **DS:** displays the status of global, port, PU, PVC, slot, SVC and VLAN functions
- **DSVC:** displays SVC status continuously in real time
- **DT:** displays the current time
- **DV:** displays the NetPerformer version and licensed software options installed on this unit
- **DX:** displays PowerCell connections
- **ELOG:** displays the error log
- **ER:** displays the exit record for troubleshooting purposes
- **SEC:** displays the Signaling Engine channels
- **SEI:** displays Signaling Engine information.

3.5 Other Commands

The other NetPerformer commands fall into the following categories:

- Configuration Maintenance
- System File Maintenance
- Fine Tuning
- Access and Redundancy
- Capture and Test

Enter any of these commands directly from the main console prompt.

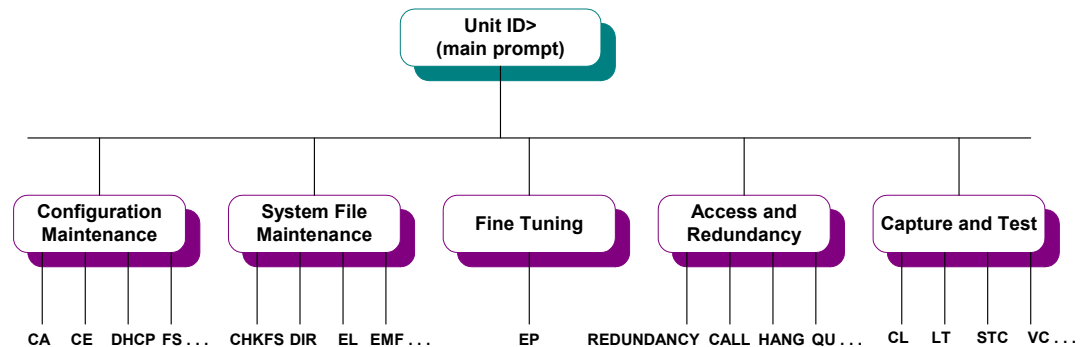


Figure 3-3: Other Command Types in the CLI Tree

3.5.1 Configuration Maintenance Commands

- **CA**: clears the software alarm log
- **CE**: turns the error LED off
- **CN**: clears one or more NAT entries
- **CP**: changes a user password
- **DHCP**: releases or renew the DHCP entries
- **FS**: installs the factory configuration (see [“Resetting the Configuration” on page 3-8](#))
- **PLS**: activates a licensed software option
- **RC**: resets the statistics counters
- **RCSL**: activates the Reverse Console function
- **RP**: resets a port
- **RU**: resets the unit
- **RZ**: receives a file using ZModem
- **SP**: saves the configuration file
- **ST**: sets the system time
- **SZ**: sends a file using ZModem

- **UT:** updates the system time using TIMEP.

3.5.2 System File Maintenance Commands

- **CHKFS:** checks the file system
- **COPY:** copies a file
- **DEFRAG:** defragments the file system
- **DELETE:** deletes a file
- **DIR:** displays the file list
- **EL:** clears the voice call log
- **EMF:** clears the Voice Mapping Table
- **FORMAT:** formats the file system
- **RENAME:** renames a file
- **TYPE:** dumps the contents of a file.

3.5.3 Fine Tuning Commands

- **EP:** fine-tunes the unit using the *Extended Parameters* set

3.5.4 Access and Redundancy Commands

- **CALL:** manually activates a WAN link
- **HANG:** manually deactivates a WAN link
- **QU:** terminates the current console session
- **RE:** relays console control to a remote unit
- **REDUNDANCY:** manually switches between NORMAL and BACKUP modes in a redundant system
- **RRM:** switches from BACKUP to NORMAL mode in a redundant system
- **TELNET:** accesses a remote unit console via Telnet.

3.5.5 Capture and Test Commands

- **CL:** analyzes the distribution of frame lengths on a PVCR port or PVC
- **EC:** stops a traffic capture manually
- **LOAD:** loads a traffic capture from the system files
- **LT:** tests end-to-end WAN connectivity
- **PING:** tests end-to-end IP connectivity
- **SAVE:** saves a traffic capture as a system file
- **SC:** sets up a traffic capture for later execution
- **STARTTONE:** starts a tone for testing voice channel operations.

- **STC:** starts a traffic capture
- **TRACEROUTE:** traces the route to an IP address
- **VC:** views the results of a traffic capture.

4

Accessing the NetPerformer with SNMP

4.1 SNMP Compatibility

All NetPerformers in your network can be configured and managed under SNMP, a standard protocol for monitoring IP gateways and networks. SNMP is a TCP-based network management protocol that runs on UDP. Through the SNMP agent, you can communicate with any other unit in the network using your standard network management system.

To configure the NetPerformer using SNMP, a connection to an Ethernet LAN is required. The SNMP console can be part of the local LAN or a remote LAN whose data is transmitted to the local unit through a WAN connection.

SNMP provides a standard means of communicating between network management stations and the SNMP agents in the network elements, allowing the NetPerformer to send and receive information about network resources. The SNMP agent on the NetPerformer takes advantage of its port addressing capability to establish separate connections between network devices.

The NetPerformer keeps statistics on the status of its network interfaces, incoming and outgoing traffic, dropped frames and error messages generated. The SNMP agent allows network managers to access these statistics through a set of variables (equivalent to console parameters) and traps (equivalent to console alarms). All configuration and management operations are a side-effect of fetching or storing to these variables and traps.

4.1.1 Management Information Base

The base for SNMP communication is the Management Information Base (MIB), which stores information about the network resources. The MIB designed for the NetPerformer is composed of two major components:

- MIB II, a standard definition that defines the data layout (length of fields, what the field is to contain, and so on)
- The NetPerformer MIB extension, which incorporates unique information about the NetPerformer and its configuration.

4.1.2 TCP/IP Stack

To handle the SNMP agent, the NetPerformer includes support of the following layers of the TCP/IP stack:

- IP (Internet Protocol), the TCP/IP standard protocol that defines the IP datagram and provides packet delivery service
- ARP (Address Resolution Protocol), the TCP/IP protocol that supports hardware broadcast across a single network
- ICMP (Internet Control Message Protocol), part of the IP protocol that handles control and error messages

- UDP (User Datagram Protocol), the TCP/IP protocol that governs the transmission of datagrams between application programs on different machines.

On the NetPerformer, the SNMP agent itself is configured with the SNMP submenu of the console **Setup IP** command (**SE/IP/SNMP**). The TCP/IP stack is configured with parameters in the *Setup Port* (**SE/PORT**) and *Setup PVC* (**SE/PVC**) menus, which are accessed through the console or the SNMP agent itself.

4.2 Accessing the SNMP Agent

Your SNMP console may be part of:

- The local LAN attached to the NetPerformer at your site, *or*
- A remote LAN whose data is transmitted to the local unit through a WAN connection.
- To reach the NetPerformer using the SNMP agent, the unit must first be configured with a unique IP address. Define an IP address on the NetPerformer unit using the Ethernet LAN port (**ETH**, **ETH1** or **ETH2**) port *IP address #1* or *IP address #2* parameter. Refer to the *LAN Connection and IP Networks* module of this document series.

Although the structure of SNMP is standard, the means of accessing it is not. Various software manufacturers have devised proprietary access procedures, and no two are exactly alike. If you are not fully familiar with the startup and logon process for your system, consult the documentation provided with your SNMP program.

In general, once you have started SNMP:

- Send the NetPerformer MIB to the SNMP program for compilation.
- Once the MIB has been compiled, select the SNMP agent for the NetPerformer.
- When you access the SNMP agent, you will find all system variables under the *private/enterprise/presticom/netperformer7/npmgmt* heading.
- These variables are grouped by function under several categories, for example, *npsystem*, *ifwan*, *iflan*, *ifvce* and *pu*. Select the category for the function you want to perform.
- A table of correspondences between SNMP categories and console submenus is provided in the next section. When you select a category, two classes are displayed: *Info* and *Table*. Select *Table* to view a list of table entries, which are subheadings for groups of objects.
- When you select a particular table entry you will see a display of the individual objects that pertain to that entry. These objects are the variables used to fetch and store information concerning the network resources. *Read/write* variables are configurable parameters. *Read-only* variables are provided for information purposes and statistical displays.

Example: If you want to enable SIP registration on the NetPerformer SIP VoIP option using SNMP, select the following sequence of variables:

```
npmgmt -npsip - npSipGlobal - npSipRegistration - enable
```


4.3 NetPerformer MIB Categories

The NetPerformer MIB is organized according to categories, which loosely correspond to the *Items* listed with the **Setup (SE)** command on the NetPerformer console (see “[SE Command Submenus](#)” on page 3-7).

MIB Category (Section)	Console SE Command Submenus	Related Modules in the NetPerformer System Reference Series
npsystem	GLOBAL	<i>Quick Configuration</i>
ifwan	PORT, SLOT	For a serial port: <i>WAN/Leased Lines, WAN/Frame Relay, WAN/Point-to-Point Protocol (PPP), Legacy Data</i> For a digital channel: <i>Digital Data</i>
iflan	PORT (ETH)	<i>LAN Connection and IP Networks</i>
ifvce	SLOT	<i>Analog Voice, Digital Voice</i>
pu	PU	<i>Legacy Data</i>
schedule	SCHEDULE	<i>Quality of Service (QoS)</i>
bridge	BRIDGE	<i>LAN Connection and IP Networks</i>
phone	PHONE	For link backup and BOD: <i>Analog Voice</i> For ISDN phones: <i>Digital Voice</i>
caller	CALLER ID	<i>Digital Voice</i>
filter	FILTER	<i>Quality of Service (QoS)</i>
class	CLASS	<i>Quality of Service (QoS)</i>
pvc	PVC	<i>WAN/Frame Relay</i>
ipx	IP/IPX/GLOBAL	<i>Digital Data</i>
ipxfilter	IP/IPX/FILTER	<i>Digital Data</i>
ipstatic	IP/STATIC	<i>LAN Connection and IP Networks</i>
npip	IP/GLOBAL	<i>LAN Connection and IP Networks</i>
ospf	IP/OSPF	<i>LAN Connection and IP Networks</i>
bootp	IP/BOOTP	<i>LAN Connection and IP Networks</i>

Table 4-1 MIB categories and Corresponding Console SE Command Submenus

MIB Category (Section)	Console SE Command Submenus	Related Modules in the NetPerformer System Reference Series
timep	IP/TIMEP	<i>LAN Connection and IP Networks</i>
nat	IP/NAT	<i>LAN Connection and IP Networks</i>
dns	IP/DNS	<i>LAN Connection and IP Networks</i>
radius	IP/RADIUS	<i>LAN Connection and IP Networks</i>
hunt	HUNT	<i>Advanced Voice Features</i>
npsip	SIP	<i>Voice over IP (VoIP) Option</i>
vlan	VLAN	<i>Virtual LAN (VLAN)</i>
user	USER	<i>Quick Configuration</i>
pppoe	PPPOE	WAN/Point-to-Point Protocol (PPP)
pppuser	PPPUSER	WAN/Point-to-Point Protocol (PPP)
ipdial	PORT	WAN/Point-to-Point Protocol (PPP)
redundancy	REDUNDANCY	Redundancy Option

Table 4-1 MIB categories and Corresponding Console SE Command Submenus

Other SNMP categories handle functions outside the scope of the console **SE** command:

- *stat*, for viewing system statistics
- *intf*, which defines the various interface types and their locations
- *slot*, which defines the slot types and the interfaces they provide
- *ipaddr*, for maintaining a list of IP addresses on the unit
- *license*, to install an optional firmware license such as SkyPerformer
- *proxy*, for supporting connections to the legacy Memotec FP product line (NetPerformer base product only).

The following submenus of the **SE** command have no equivalent in the MIB:

- **USER**, **TELNET** and **FTP**, for restricting access to the NetPerformer unit
- **MAP**, for defining a Voice Mapping Table of speed dial numbers
- **CUSTOM**, for customization of digital signaling and ring
- **SNMP**, for configuration of SNMP characteristics.



Text-based Configuration

5.1 Text Configuration File

Text-based configuration provides an alternative method for configuring the NetPerformer. Rather than storing the configuration in a binary format file, the configuration file is created in text format. The resulting text file, **CFG.TXT**, can be edited with a text editor.

Prior to version 9.2.0, the NetPerformer was configured using a binary file, where each parameter was located at a specific offset. This made the configuration efficient and easily accessible.

As the NetPerformer developed, however, the benefits of such a simple configuration scheme were outweighed by several factors. Upgrade and downgrade procedures became increasingly complex and difficult to execute in the field. Design requirements for maintaining coherency between multiple definitions of the configuration file became unwieldy. And a considerable amount of space was wasted to preserve the locations of unused profiles (for example, unused PVCs).

Text-based configuration provides an improved approach to storing the configuration information. It simplifies upgrade and downgrade operations by using a configuration file that is parsed instead of using fixed offset for each parameter. The text configuration file contains variables that are based on the variable names (or object IDs) used in the SNMP MIB. Only those parameters that are changed from the default factory configuration are saved in the file. Unused profiles such as unassigned PVCs are not included. This ensures that the file remains fairly compact.

NOTE: For security reasons, user names, passwords and NetPerformer license information (for enabling optional features) are not stored in the text configuration file.

5.1.1 Advantages for Configuration

- Text-based configuration allows for easier upgrade and downgrade of NetPerformer software versions.

Prior to V9.2.0, downgrade to a lower version was not recommended, as new parameters could not be applied to an older version and would potentially disrupt operations. In the text configuration file, any parameters that cannot be used by the lower version are simply ignored.

- This approach complements all NetPerformer configuration methods: the console, Telnet, and SNMP. The configuration file is equally accessible from all.
- Text-based configuration allows the experienced network manager to save time during the configuration process, especially when managing a large network with several NetPerformer units that require similar configurations.

A common application of text-based configuration is to simplify configuration of a large number of voice channels on a unit. Rather than carry out the tedious and repetitive task of configuring all voice parameters one voice channel at a time, the network manager can set up one channel, then cut and paste the text

configuration for the other channels.

After pasting, each channel must be uniquely identified with a channel number, using a text editor. Other adjustments may be required, depending on the application.

- All configuration changes are logged, and can be viewed at a later time (see [“Configuration Journal” on page 5-3](#)).

5.1.2 Default Configuration File

The file **CFG_RST.TXT** defines a default configuration which will be used if the Factory Setup (**FS**) command is executed. This file can contain a basic configuration with, for example, a specific IP address or a special PVC definition that would allow the NetPerformer unit to remain accessible after a factory setup. This approach minimizes the need for on-site technical expertise in case a factory setup is accidentally executed.

NOTE: Without the special configuration in **CFG_RST.TXT**, the default factory settings are loaded after the **FS** command, which could prevent remote access to the unit.

► **To create the default configuration file you can either:**

- Rename a **CFG.TXT** file with the **RENAME** command, as follows:
RENAME CFG.TXT CFG_RST.TXT
- Download file **CFG_RST.TXT** from another NetPerformer unit using the FTP **get** command.

5.1.3 Configuration Journal

A configuration log file (**JOURNAL.TXT**) is provided with NetPerformer V9.2.0 to track all changes to the configuration. Log entries contain the actual parameter changes that were made and other information regarding parameter access. Two types of records are found:

- User Change Record, which includes:
 - The user who made the change (either **ADMIN** or a user defined in the **USER** profile)
 - Source of the change (console, Telnet, SNMP, etc.)
 - The command that was entered.

A change record is also logged when the configuration is downloaded. If no configuration file is present, a log entry indicates that the default configuration has been used.

- Upgrade/Downgrade Message, which includes:
 - Time and date of the upgrade/downgrade
 - The total number of parameters that have been rejected or ignored.

In combination with configurable user profiles (available since version 9.1.0) which can restrict access to NetPerformer configuration commands, the configuration journal allows the network manager to have closer control over the NetPerformer units in the network.

5.2 Configuration File Format

NOTE: When a NetPerformer unit is updated to use a text configuration file, the file **CURRENT.CFG** is replaced by a text file containing the configuration (**CFG.TXT**). Once the legacy configuration file has been translated into its text equivalent, the original binary file is renamed to **OLD.CFG**.

5.2.1 Sections

The text configuration file is divided into *sections*.

- Each section can be associated to a *profile* of the legacy configuration format.
- Each section is identified with a text identifier. The section names are enclosed in square brackets to facilitate section identification.
- Section names are derived from the category names used in the MIB file. For example, the section that contains the global parameters is named **[npsystem]**. A complete list of section names and corresponding **SE** command submenus is provided in [Table 4-1](#).
- There is no equivalent for the console **SE/MAP** or **SE/USER** submenu in either the MIB or the text configuration file.
- Objects that can have multiple instances (such as ports) are identified with a unique suffix to the section name. For example, the section for WAN port 1 is named **[ifwan 1]** and the console port is **[ifwan CONSOLE]**.
- Sections that are not recognized by a particular NetPerformer platform are skipped, and parsing continues with the next section. A message is logged in the configuration journal for each section that was skipped. For example, if loading a configuration file from an SDM-9380 onto an SDM-9360, the section **[ifwan 3]** would be skipped.
- The first section of the text configuration file is called **[HEADER]**. It contains information about the NetPerformer platform on which the configuration was created.

HEADER example

```
...
[HEADER]
VERSION=1.0
SDM-9230 v10.1.0 (B38) Memotec Technologies, Inc. (c) 2003
Code base v10.1.0 (B38) Memotec Technologies, Inc. (c) 2003
Signaling Engine v10.1.0 (B38) Memotec Technologies, Inc. (c) 2003
DSP code version: 1.0.0 R06
  Subfile 0x0078: TMS320VC5416 code - 120/10MHz bootstrap
  Subfile 0x0001: TMS320VC5416 code - ACELP-CN
BOOTSTRAP v1.1.5 (R1) Memotec Technologies, Inc. (c) 2003
BOOT v1.2.0 (R2) Memotec Technologies, Inc. (c) 2003
Hardware Info> Processor version (PVR): 0x0081
Hardware Info> Processor revision (PVR): 0x0101
```

```
Hardware Info> Processor part number (IMMR): 0x00
Hardware Info> Processor mask number (IMMR): 0x24
Hardware Info> CPM RISC microcode revision: 0x007B
Hardware Info> Main board Id: 1
Hardware Info> Main FPGA version id: 2.0.6 option id: 0
Released Version.
THU 2003/10/16 16:00:21
...
```

5.2.2 Parameters

Each section contains all *parameters* that were usually included in the original profile of the legacy configuration file. The format of the parameters in the text file is:

ParameterName=Value

- Parameter names are derived from the variable names found in the MIB. The name of each parameter is obtained by removing the MIB category prefix from the variable name. For example, *ifwanProtocol* in the MIB is equivalent to the *Protocol* parameter in the text configuration file.
- Each parameter and its value appear on a separate line in the text configuration file.
- Only parameters that are assigned a value that is different from the default value are included in the configuration file. This minimizes the file size without compromising usability or efficiency.
- Parameters that are not recognized by a particular NetPerformer platform are skipped, and parsing continues with the next parameter. A message is logged in the configuration journal for each unknown parameter.

NOTE: Unknown parameters normally occur only when downgrading to an earlier software version.

5.2.3 User Profile Parameters

User profile information, including all logins and passwords, is not available from the text configuration file. It is encrypted and stored in a hidden file which cannot be accessed using any NetPerformer commands.

5.2.4 License Information

Licenses are used to selectively enable special NetPerformer features such as SkyPerformer. Each license is attached to one unit only.

Like the user profile, software licences are encrypted and stored in the hidden file. Therefore, the licensing information is not carried from one unit to another when copying the configuration.

5.2.5 Section and Parameter Ordering

To facilitate parsing, sections and parameters are saved in a predefined order. However, the NetPerformer can also accept parameters or sections that are out of sequence.

- This means you can manually update the configuration without being concerned about proper sequence.
- If the NetPerformer finds a section or parameter that is out of sequence, it will save the configuration in the proper order.

5.3 File Integrity

In older versions of the NetPerformer software, the binary configuration file contained a CRC check to ensure file integrity. In the text configuration file an end-of-file marker is used.

- The NetPerformer appends a dummy last section, **[END]**, at the end of the text configuration file.
- When present, this section indicates that the entire configuration file has been saved. A configuration file that does not contain both the **[HEADER]** and **[END]** sections is assumed to be incomplete.
- The NetPerformer parsing function ignores any text that appears after the **[END]** section.



Caution

When updating the text configuration file with a text editor, make sure to keep all essential configuration information before the **[END]** section.

The following example shows a text configuration file with the **[HEADER]** and **[END]** sections properly preserved.

TYPE example

```
SDM-9230>TYPE CFG.TXT
DUMP FILE CONTENTS
Display ASCII only (NO/YES,def:YES) ?

Wait for <ENTER> after each screen (NO/YES,def:YES) ? NO

[HEADER]
VERSION=1.0
SDM-9230 v10.1.0 (B38) Memotec Technologies, Inc. (c) 2003
Code base v10.1.0 (B38) Memotec Technologies, Inc. (c) 2003
Signaling Engine v10.1.0 (B38) Memotec Technologies, Inc. (c) 2003
DSP code version: 1.0.0 R06
  Subfile 0x0078: TMS320VC5416 code - 120/10MHz bootstrap
  Subfile 0x0001: TMS320VC5416 code - ACELP-CN
BOOTSTRAP v1.1.5 (R1) Memotec Technologies, Inc. (c) 2003
BOOT v1.2.0 (R2) Memotec Technologies, Inc. (c) 2003
Hardware Info> Processor version (PVR): 0x0081
Hardware Info> Processor revision (PVR): 0x0101
Hardware Info> Processor part number (IMMR): 0x00
Hardware Info> Processor mask number (IMMR): 0x24
Hardware Info> CPM RISC microcode revision: 0x007B
Hardware Info> Main board Id: 1
Hardware Info> Main FPGA version id: 2.0.6 option id: 0
Released Version.
THU 2003/10/16 16:00:21

[npsystem]
Name=SDM-9230
```

```
[ifwan 1]
Protocol=PVCR
Mode=CALL-BKUP
...
...
...
[caller 1]
IsdnNumber=4505551212

[vlan 1]
Number=101
ActiveLan2=NO
Dest1=CHICAGO-9230
Dest2=CHICAGO-9220

[END]
```

5.4 Text-based Operations

- Text-based configuration simplifies the configuration process, particularly for large networks. An example is provided on [page 5-12](#).
- As with the binary legacy configuration file, the text configuration file can be uploaded and downloaded. On uploading, the NetPerformer unit will reset once the **CFG.TXT** file has been received and validated (see [“Startup Files” on page 5-11](#)).
- The new configuration file implementation does not change how the NetPerformer handles configuration information internally. For this reason, the support of text-based configuration is transparent to SNMP.
- Upgrades are greatly facilitated by text-based configuration. During an upgrade, new parameters that are added to the unit are automatically set to their default values.

When upgrading from a version that uses a binary configuration, the original binary file is saved in file **OLD.CFG**, and the new configuration is saved in text format as **CFG.TXT**. From that point on, only the text configuration file is used. The binary version may be used later if a downgrade to a legacy version is required, otherwise it can be deleted.

- Downgrade operation is now both possible and easy to execute. Any parameter that is not recognized by the unit is simply skipped, and a message to this effect is logged in the configuration journal (see [“Configuration Journal” on page 5-3](#)).

Both the source and target unit must be running NetPerformer V9.2.0 or higher. Downgrade from NetPerformer V9.2.0 to a previous version is not recommended. The older NetPerformer versions use binary configuration files, and the text file will be lost.



Caution

The NetPerformer cannot create a binary configuration file from a text configuration file. When downgrading to an old software version that supports a binary file only, ensure that a compatible binary file (named OLD.CFG) is present in the file system of the target unit. If it isn't, the downgrade will result in a factory setup.

- For a description of monitoring and statistics functions available for text-based configuration, refer to the *Monitoring and Statistics* module of this document series.
- For a list of alarms that may occur during text-based configuration operations, refer to the *System Alarms* module of this document series.

5.4.1 Startup Files

The following files are included in the NetPerformer configuration file scheme when you first load the V9.2.0 software.

Filename	Format	Description
CFG.TXT	Text	Current configuration of the unit.
CFG_NEW.TXT	Text	Temporary file, used only when saving the configuration.
CFG_BKP.TXT	Text	The previously saved configuration.
CFG_RST.TXT	Text	File containing the minimum configuration required to preserve essential application information. It is not deleted from a factory setup (FS command).
CURRENT.CFG	Binary	Legacy configuration file; removed or renamed on startup.
BACKUP.CFG	Binary	Legacy configuration file; removed or renamed on startup.
OLD.CFG	Binary	A valid binary configuration file created from an older software version.
JOURNAL.TXT	Text	The configuration log file, created automatically when the first log entry is generated. New log information is appended to the file afterward.

Table 5-1 NetPerformer Text-based Configuration File Scheme

5.5 Text-based Configuration Example

The following screen captures show how the definition of one voice channel can be copied to all other channels on a T1 line.

- The Ethernet LAN port is defined with an IP address and subnet mask.
- A WAN connection to the remote site is defined on serial port 1, and port 2 is turned off.
- The **LINK** of the T1 interface card is defined with **ROB BIT** signaling.
- The first **CHANNEL** of the T1 interface card (channel 101) is defined to reach the remote site over *Timeslot 2* with the **ACELP-CN** protocol and **WINK START** signaling.

NOTE: For the purposes of copying the configuration section that defines channel numbers and timeslots, **you must change both the *Channel Number* and *Timeslot* parameters from their default values.** Otherwise, the [ifvce] section of the text configuration file will not include these parameters. The same is true of any parameter that is essential to your application.

Here is the initial configuration, as shown on the console screen using the Display Config Text (**DCFG**) command:

DCFG example: Initial configuration

```
SDM-9230>DCFG
DISPLAY CONFIG TEXT

Wait for <ENTER> after each screen (NO/YES,def:YES) ? NO

[HEADER]
VERSION=1.0
SDM-9230 v10.1.0 (B38) Memotec Technologies, Inc. (c) 2003
Code base v10.1.0 (B38) Memotec Technologies, Inc. (c) 2003
Signaling Engine v10.1.0 (B38) Memotec Technologies, Inc. (c) 2003
DSP code version: 1.0.0 R06
  Subfile 0x0078: TMS320VC5416 code - 120/10MHz bootstrap
  Subfile 0x0001: TMS320VC5416 code - ACELP-CN
BOOTSTRAP v1.1.4 (R2) Memotec Technologies, Inc. (c) 2003
BOOT v1.2.0 (R2) Memotec Technologies, Inc. (c) 2003
Hardware Info> Processor version (PVR): 0x0081
Hardware Info> Processor revision (PVR): 0x0101
Hardware Info> Processor part number (IMMR): 0x00
Hardware Info> Processor mask number (IMMR): 0x24
Hardware Info> CPM RISC microcode revision: 0x007B
Hardware Info> Main board Id: 1
Hardware Info> Main FPGA version id: 2.0.6 option id: 0
Released Version.
THU 2003/09/04 15:18:25
...
```

To define the other 23 channels on the T1 interface card:

- Download the file **CFG.TXT** from the NetPerformer unit using the FTP **get** command.
- Open **CFG.TXT** with a text editor.
- Copy the section named **[ifvce 101]**:

```
[ifvce 101]
Protocol=ACELP-CN
RemoteUnit=BOSTON
Timeslot=2
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES
```

- Paste this section 23 times before the section named **[END]**.



Anything pasted after the **[END]** section will be ignored.

NOTE: As an alternative, you can build double or triple copies of the **[ifvce 101]** section, which you can paste one block at a time. This will reduce the number of paste commands required.

- Edit the channel numbers in the 23 copies of the **[ifvce]** section by changing the identifier **101** in the section heading **[ifvce 101]** to the appropriate channel number.
-

NOTE: On a T1 interface card, the highest channel number is **124**.

- Edit the timeslot numbers by changing the value of the *Timeslot* parameter to the appropriate number.
-

NOTE: On a T1 interface card, the highest timeslot number is **24**. If you are using all 24 timeslots in your application, make sure to change the timeslot value back to 1 (the default timeslot value) in one of the **[ifvce]** sections. The recommend procedure is to define timeslot 1 on channel 101, timeslot 2 on channel 102, and so on.

- Save the file **CFG.TXT** with the text editor.
- Transfer the revised **CFG.TXT** configuration file back to the NetPerformer unit with the FTP **put** command.

Here is the resulting configuration, complete with a full roster of 24 T1 channels configured to communicate with the remote site:

DCFG
example: After
cut and paste
operation

```
...
[HEADER]
VERSION=1.0
SDM-9230 v10.1.0 (B38) Memotec Technologies, Inc. (c) 2003
Code base v10.1.0 (B38) Memotec Technologies, Inc. (c) 2003
Signaling Engine v10.1.0 (B38) Memotec Technologies, Inc. (c) 2003
DSP code version: 1.0.0 R06
  Subfile 0x0078: TMS320VC5416 code - 120/10MHz bootstrap
  Subfile 0x0001: TMS320VC5416 code - ACELP-CN
BOOTSTRAP v1.1.4 (R2) Memotec Technologies, Inc. (c) 2003
BOOT v1.2.0 (R2) Memotec Technologies, Inc. (c) 2003
Hardware Info> Processor version (PVR): 0x0081
Hardware Info> Processor revision (PVR): 0x0101
Hardware Info> Processor part number (IMMR): 0x00
Hardware Info> Processor mask number (IMMR): 0x24
Hardware Info> CPM RISC microcode revision: 0x007B
Hardware Info> Main board Id: 1
Hardware Info> Main FPGA version id: 2.0.6 option id: 0
Released Version.
THU 2003/09/04 15:18:25
```

```
[npsystem]
Name=SDM-9230

[iflan 1]
IpAddress=128.128.000.001
```

```
[ifwan 1]
Protocol=PVCR
Interface=DTE-V35
Clocking=EXTERNAL
RemoteUnit=CHICAGO
```

```
[ifwan 100]
Protocol=G703
Signaling=ROB BIT
T1E1Status=ENABLE
```

```
[ifvce 101]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=1
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES
```

```
[ifvce 102]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=2
Signaling=WINK START
```



```
Rate8kx1=NO
Rate8kx2=YES

[ifvce 103]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=3
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES

[ifvce 104]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=4
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES

[ifvce 105]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=5
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES

[ifvce 106]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=6
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES

[ifvce 107]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=7
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES

[ifvce 108]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=8
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES

[ifvce 109]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=9
Signaling=WINK START
Rate8kx1=NO
```

Rate8kx2=YES

```
[ifvce 110]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=10
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES
```

```
[ifvce 111]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=11
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES
```

```
[ifvce 112]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=12
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES
```

```
[ifvce 113]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=13
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES
```

```
[ifvce 114]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=14
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES
```

```
[ifvce 115]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=15
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES
```

```
[ifvce 116]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=16
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES
```

```
[ifvce 117]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=17
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES
```

```
[ifvce 118]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=18
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES
```

```
[ifvce 119]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=19
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES
```

```
[ifvce 120]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=20
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES
```

```
[ifvce 121]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=21
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES
```

```
[ifvce 122]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=22
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES
```

```
[ifvce 123]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=23
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES
```

```
[ifvce 124]
Protocol=ACELP-CN
RemoteUnit=CHICAGO
Timeslot=24
Signaling=WINK START
Rate8kx1=NO
Rate8kx2=YES

[END]
```

5.5.1 Copy and Paste Function

Almost all parameters can be configured using a *Copy and Paste* operation available directly from the console. To copy part or all of the contents of the **CFG.TXT** file from one NetPerformer unit to another:

1. Enter **DCFG** at the NetPerformer command line prompt of the source unit
2. Select the text-based configuration parameters that you wish to copy. For example:

```
[frpvc 100]
Mode=PVCR
DlciAddress=100
InfoRate=60000
RemoteUnit=MONTREAL
Retry=150
BroadcastGroup=YES
IpAddress=001.001.001.001
IpxRip=ENABLE
```

3. Execute the key sequence required for the *Copy* function on the asynchronous terminal emulation program that you use for the NetPerformer console. For example, in Procomm Plus™ enter **<Ctrl+C>** to execute the **COPY TEXT** command.
4. Open the **CFG.TXT** file on the destination unit.
5. Execute the key sequence required for the *Paste* function on the asynchronous terminal emulation program. For example, in Procomm Plus™ enter **<Shift+Insert>**.
6. Reboot the destination unit. Its configuration now matches that of the source unit.



Single-line Command Entry

6.1 Overview

NetPerformer software version V10.2.1 and higher offers an alternative to entering a command sequence one line at a time: single-line command entry. This feature employs:

- Header names and parameter names used in Text-based Configuration (refer to the chapter [“Text-based Configuration” on page 5-1](#))
- The question mark (?), for obtaining information from the console as to the parameters names and values that can be entered
- The greater-than sign (>), for listing the console equivalents of text-based configuration parameters in a particular submenu.

A simple example of single-line command entry is:

```
SDM-9380>SE IFWAN 1 PROTOCOL PVCRC
```

This command configures serial port 1 with the PVCRC protocol, and is equivalent to the following line-by-line command entry:

```
SDM-9230>SE
SETUP
Item (BRIDGE/CALLER ID/CLASS/CUSTOM/FILTER/GLOBAL/HUNT/IP/IPX/MAP/PHONE/
PORT/PU/PPPOE/PPPUSER/PVC/REDUNDANCY/SCHEDULE/SLOT/USER/VLAN,
def:BRIDGE) ? PORT
Port number (ETH1/ETH2/CSL/1,def:1) ? 1
PORT 1> Protocol (def:FR-USER) ? PVCRC
```

NOTE: Single-line command entry is not available for the **MAP** or **USER** option of the **SETUP** command, nor for the Product License Status (**PLS**) command.

6.2 Viewing Available Submenus and Parameters

If you are not familiar with Text-based Configuration naming, you can view all of the header names by entering the following at the NetPerformer main command line prompt:

```
SE ?
```

The console responds with a complete list of all submenus available under the **SE** command (SETUP).

**Single-line
command
entry: viewing
the top level
submenus**

```
SDM-9380>SE ?
CHOICE: bootp      bridge      caller      class      Dns
         filter     frpvc      hunt        iflan      ifvce
         ifwan      ifwanIpDial ipstatic    ipx        ipxfilter
         natPort    natRule    natServices natTimeouts npip
         npsys      ospfArea   ospfGlobal ospfRange  ospfVLink
         phone     pppoe     PPPUser    pu         Radius
         schedule  timep     vlan
```

```
Item (Current value:bootp)
```

NOTE: Some of these text-based configuration names have console-based alternatives that can be used in a single-line command:

- **SLOT** can be used instead of *ifwan* or *ifvce*
- **PVC** can be used instead of *frpvc*
- **GLOBAL** can be used instead of *npsys*.

In the example above, the *Item* prompt after the list of header names indicates the *Current value*. The *Current value* is *bootp*, which includes all parameters in the **IP/BOOTP** group.

- Enter a carriage return to continue with *bootp* configuration
- Enter another header name to configure a different area of the configuration
- Enter a question mark to view a list of parameters in the *bootp* group.

Continuing from the example above, entering a question mark produces the following response:

**Single-line
command
entry: viewing
the second-
level
parameters**

```
Item (Current value:bootp) ?
CHOICE: Enable      IpDestAddr1 IpDestAddr2 IpDestAddr3 IpDestAddr4
         MaxHops
```

```
Item (Current value:Enable) ?
```

The *Item* prompt after the list of parameter names indicates the *Current value*. In the example above, the *Current value* is the *Enable* parameter, which controls whether **IP/BOOTP** is enabled on the unit.

- Enter a carriage return to configure the *Enable* parameter
- Enter another parameter name to configure a different parameter of the *bootp* group
- Enter a question mark to view a list of valid values for the *Enable* parameter. This is equivalent to entering a question mark in the line-by-line command sequence (see [“Obtaining Parameter Information from the Console” on page 2-7](#)).

6.3 Viewing the Console Equivalents of Parameter Names

To view the console equivalents of all parameters included under a particular submenu (or header name), enter **SE**, the header name, followed by the greater-than sign (>) at the NetPerformer main command line prompt:

SE header >

In the example below, the console equivalents of all parameters of the *npsys* group are listed.

NOTE: Single-line command entry is case-insensitive.

**Single-line
command
entry: viewing
console
equivalents of
all parameters
in a submenu**

```
SDM-9380>SE NPSYS >
GLOBAL> Contact name (def:Memotec Technologies) ?
GLOBAL> Unit location (def:Unknown) ?
SNMP> Get community (def:PUBLIC) ?
SNMP> Set community (def:PUBLIC) ?
SNMP> Trap community (def:PUBLIC) ?
GLOBAL> Unit name (def:SDM-9380) ?
GLOBAL> Default IP address (def:000.000.000.000) ?
GLOBAL> Default IP mask (number of bits) (0-32,def:8) ?
{255.000.000.000}
GLOBAL> Default gateway (def:000.000.000.000) ?
GLOBAL> SNMP trap: IP address 1 (def:000.000.000.000) ?
GLOBAL> SNMP trap: IP address 2 (def:000.000.000.000) ?
GLOBAL> SNMP trap: IP address 3 (def:000.000.000.000) ?
GLOBAL> SNMP trap: IP address 4 (def:000.000.000.000) ?
GLOBAL> Link timeout delay (0-1000,def:0) ?
GLOBAL> Loopback (def:NO) ?
CLASS> Default class (0-8,def:1) ?
GLOBAL> Transit delay (sec) (1-20,def:4) ?
GLOBAL> Unit routing version (1-2,def:1) ?
GLOBAL> Watch power supplies and fans (def:NONE) ?
```

The display includes the name of the SETUP command submenu, the parameter name as it appears on the console, the current value of the parameter and range of values (where applicable).

To view the console equivalent of a single parameter, enter **SE**, the header name, the parameter name and a question mark on a single line after the NetPerformer command line prompt.

**Single-line
command
entry: viewing
the console
equivalent of a
single
parameter**

```
SDM-9380>SE NPSYS COMMADELAY ?  
GLOBAL> Delay generated by a comma (ms) (250-4000,inc:250,def:250) ?
```

6.4 Help on Using Single-line Command Entry

6.4.1 Help List

To view a complete list of all configuration parameters in both text-based and console versions, enter the following at the NetPerformer main command line prompt:

SE HELP

With this list you can familiarize yourself with the text-based approach to single-line command entry.

**Single-line
command
entry: Help on
the SE
command**

```
SDM-9380>SE HELP
npsys> Loopback (AcceptLoop)
npsys> Auto save configuration delay (sec) (AutoSaveDelay)
npsys> Global CIR for FR over IP (CirFrOverIp)
npsys> Delay generated by a comma (ms) (CommaDelay)
npsys> Contact name (Contact)
npsys> Country code (Country)
npsys> Default class (DefaultClass)
npsys> Default gateway (DefaultGateway)
npsys> Dial timer (sec) (DialTimer)
npsys> Digital port clock source (DigitalPortClockSource)
npsys> Local unit DLCI address (DLCI)
npsys> Enable Domain Dialing (EnableDomain)
npsys> Enable hunt forwarding (EnableHuntFwd)
npsys> Enable VTR (Voice Traffic Routing) (EnableVtr)
npsys> Exclusive access to console (ExclusiveConsole)
npsys> Extension number (no. of digits) (ExtensionNumLength)
npsys> Mode (FtpMode)
npsys> Default IP address (IpAddress)
npsys> FTP: IP address 1 (IpFtp0)
<ENTER>
npsys> FTP: IP address 2 (IpFtp1)
...
```

6.4.2 Console Prompting

Another form of help is console prompting when you enter an invalid value. For example, if you enter a value that is out of range, the console returns the message **INVALID VALUE** along with the value you entered and the valid range of values.

**Single-line
command
entry: Help
with an invalid
value**

```
SDM-9380>SE NPSYS COMMADELAY 160
[npsys 0] CommaDelay INVALID VALUE(160) MIN(250) MAX(4000)
```

A common error is to ignore specifying the index number for submenus that configure more than one connection, e.g. serial ports (*ifwan*), LAN ports on the SDM-9220 and SDM-9230 (*iflan*), PVCs (*frpvc*) and so on. In the following example, no index was

provided to indicate which serial port should be set to the PVCR Protocol. The console returns the message **UNKNOWN INDEX(0)**. The corrected form is shown on the next line.

**Single-line
command
entry: Help
when index
number is
missing**

```
SE-9380>SE IFWAN PROTOCOL PVCR
[ifwan] UNKOWN INDEX(0)
SE-9380>SE IFWAN 1 PROTOCOL PVCR
```

6.4.3 Ambiguous Entry

If you cannot remember the exact spelling of a header name, you can use an ambiguous entry to obtain help from the console.

In the example below, the user is looking for the text-based equivalent of the **SE/NAT/TIMEOUT** command (*natTimeouts*). By entering the first letter only, the console responds with a complete list of all headers that start with that letter.

**Single-line
command
entry: using an
ambiguous
entry for
console
prompting**

```
SDM-9380>SE N
CHOICE: natPort      natRule      natServices natTimeouts npip
          npsys

Ambiguous Entry (Current value:natPort) ? natTimeouts
```

6.5 Configuring a Range of Connections at Once

Single-line command entry provides an elegant and simple way to configure a contiguous range of connections. For example:

- **SDM-9380>SE FRPVC 1-300 MODE PVCR**
configures Frame Relay PVCs **1** to **300** to **PVCR** mode.
- **SDM-9380>SE FRPVC 1-300 DLCI 100+1**
configures Frame Relay PVCs **1** to **300** with a unique DLCI address. PVC **1** is assigned DLCI **100**, PVC **2** is assigned DLCI **101**, PVC **3** is assigned DLCI **102**, and so on.

The syntax of this command is:

SE *header index-1-index-n parameter startvalue+increment*

where:

- *header* is the header name
- *index-1* is the lowest-numbered index in the range of connections to be configured
- *index-n* is the highest-numbered index in the range of connections to be configured
- *startvalue* (optional) is the lowest value, which will be assigned to the connection with the lowest-numbered index
- *increment* (optional) is the amount by which the value is increased from one connection to the next.

6.6 Viewing Parameter Values that have Changed from the Default Value

Single-line command entry also provides a simple way to see what parameters in a particular area of the configuration have been changed from the factory default value.

► **To view what parameters have changed:**

- At the NetPerformer main command line prompt, enter **SE** followed by the header name.

Single-line command entry: viewing the values of parameters changed from their factory default value

```
SDM-9380>SE NPSYS  
GLOBAL> Unit name.....SDM-9380
```

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