IBM Management Processor

IBM

Command Line Interface for Linux

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Note: Before using this information and the product it supports, be sure to read the general information in Appendix B, "Notices," on page 41.

Contents

Chapter 1. Installation

This Reference Guide provides the information that is needed to:

- Install and invoke the IBM® Management Processor Command Line Interface for Linux

- Use line commands for remote system management

You can access the latest information about product updates on the IBM Web site, http://www.ibm.com/pc/support/.

The IBM Management Processor Command Line Interface for Linux is referred to throughout this book by the acronym, CLI.

Before using the command line interface

The CLI, version 1.0, is an *out-of-band* management tool for the IBM management processor. This means that another system is required to run the tool while connecting remotely to the management processor through an Ethernet or RS485 connection. Also, the command line interface will work only in a specific Linux environment.

Supported management processor configurations

The CLI connects to and manages remotely these supported IBM servers:

- xSeries 220 with the IBM Remote Supervisor Adapter

    The CLI transmits and receives command data with the adapter through the Ethernet connection on the Remote Supervisor Adapter using TCP/IP. Additional systems are managed either through an Ethernet connection or through a daisy chained RS485 connection to an Ethernet connected system.

- xSeries 330

    The CLI supports the management features of the onboard management processor through the RS485 interconnect network. To do so, the RS485 connection must link the xSeries330 to a supported xSeries server with an installed IBM Remote Supervisor Adapter (which acts as a gateway for the CLI). The server supports the addition of an IBM Remote Supervisor Adapter option. This option allows you to connect the CLI to the system through the Ethernet port of the IBM Remote Supervisor Adapter.

- xSeries 370

    The xSeries 370 is equivalent, featurewise, to the xSeries 220. However, DHCP and DNS configurations are not supported on this model. The command **getfuelgauge** is supported only on this system.

Before using the CLI on these systems, you must install and cable the IBM Remote Supervisor Adapters and onboard management processors. Please read and understand the instructions provided in the *IBM Remote Supervisor Adapter Installation and User's Guides* and the appropriate xSeries *User's References*.

Supported systems for the command line interface program

You must install the CLI as an out-of-band management tool on a system other than the systems being managed. Other requirements include:

- Redhat 7.1 as the operating system
- Network enabled environment (TCP/IP over LAN)

When using the CLI in the supported Linux environments, be sure to follow the user references provided with the specific type and version of the operating systems

Installing the command line interface

After uncompressing the downloaded file, installation of the tool uses the Linux rpm file distribution method. The installation process occurs only once for each host system.

To install the command line interface:

1. Download the compressed installation package from the IBM website to an accessible directory or to one that can be mounted locally.
2. Decompress the file with the command:

   ```
   tar -xvf MPCLI.tar
   ```

   The unpacking command creates an mpcli folder, which contains the files readme.txt and mpcli-1.0-03.i386.rpm.
3. From the prompt, change to the mpcli folder and install the CLI by typing

   ```
   rpm -ivh --nodeps mpcli-1.0-03.i386.rpm
   ```

   The installation routine creates an IBMmpcli folder inside the /opt folder off of the root. Inside the IBMmpcli folder are the subfolders bin, java, classes and sample scripts.

Invoking the command line interface

To invoke the command line interface on the host system, change the directory to the IBMmpcli/bin folder and type (case sensitive):

```
./MPCLI.bsh
```

This process can be used at any time as long as the interface remains installed on the host system. A successful installation and invocation results in the prompt changing to:

```
mp>
```

At the command line, type exit to exit the command line interface program.

Uninstalling the command line interface

If the installation was not successful or you wish to remove the CLI, remove the program by typing:

```
rpm -e mpcli
```

Chapter 2. Using the command line interface

This section contains commands for the Command Line Interface (CLI).

When using the CLI, you can query and set commands on a connected management processor. After establishing a connection, the command line interface stays in a command prompt mode, accepting input from the command line. Each line of input is interpreted as a command invoked against the target management processor. The service processor remains open to further commands until receiving the appropriate logoff or restart command from the user.

General guidelines for using the CLI

Each command issued to the management processor through the CLI must obey the general guidelines to function correctly. Each command follows the structure:

```
command -option parameter
```

Where,

1. All commands sent through the command line interface are interpreted as **case sensitive** with all commands in lower case.

2. Options are delimited with a minus ("-") character with additional spaces ignored for example:

   ```
   getwatchdog -loader
   ```

3. Parameters containing spaces must be enclosed in quotation marks, for example: **snmp -contactname "Joe Smith"**. Without the quotation marks the contact name variable would be set to Joe, instead of Joe Smith. String parameters accept mixed-case variables.

4. The parameter type for a string value of *ipaddress* is in the dotted decimal format. IP address sections with less than three digits do not use a 0 to fill the third digit (i.e. 96.24.125.225, instead of 096.024.125.255).

5. The parameter type for a string value of *boolean* is expressed as either **true** or **false**.

The following commands affect the output and function of the CLI, but do not directly affect the management processor. Note that these commands do not include any command options.

Table 1. CLI application-specific commands

Command	Parameter	Description
exit	none	Issuing this command closes the connection or connections to a management processor or processors and exits the CLI program.
outputfile	string	Issuing this command directs the output of the subsequent commands to a specified output file. The string value of the parameter is a relative path and filename. To terminate the output reissue the outputfile command.

Table 1. CLI application-specific commands

Command	Parameter	Description
commandfile	string	Issuing this command captures the subsequent commands to a specified output file. The string value of the parameter is a relative path and filename. See "Creating a script using the CLI" on page 39 for more information.
inputfile	string	Issuing this command directs the CLI to read commands from the specified input file (or script). The string value of the parameter is a relative path and filename. For more information on using scripts, see "Appendix A. Using scripts in the command line interface," on page 37.
resetoutput	none	Issuing this command redirects the output to the CLI command prompt window. Use this command to change the output from a file path back to the CLI command prompt.
help	none	Issuing this command displays the available help commands.
help-cli	none	Issuing this command displays the CLI application-specific commands and the logon commands.
help-cmd	none or string	Issuing this command displays all commands if no parameter is supplied. If a command is typed as the parameter string, options for that command are displayed.

Logging on to a management processor with the CLI

Use the following commands to initiate contact with the target management processor. Once invoked, the management processor remains open to further commands until the connection is broken.

Notes:

1. The first logon must connect to a management processor through the out-of-band Ethernet connection. Subsequent logons may use the RS485 interconnect network, if connected to the first management processor.

2. Multiple logons to other management processors are allowed. However, all commands issued affect the most recently accessed management processor until another management processor is accessed or the logoff command is issued.

Logging on through the out-of-band Ethernet connection

To begin a remote management session to a management processor through the IBM Remote Supervior Adapter Ethernet port, type the command:

```
logonip -hostname string -userid string -password string
```

where,

- *string* for -hostname is in a DNS or *ipaddress* format

- *string* for -userid is the user ID with administrative privileges
- *string* for -password is the accompanying password

Logging on through the RS485 interconnect network

To use the CLI through the RS485 interconnect network, do the following:

1. Logon to a management processor that supports logging on through the out-of-band Ethernet port. Make sure that the target system is connected to this management processor with an RS485 connection.

2. Detect the systems using the RS485 interconnect network with the command:

   `logonrs485 -query`

   The command generates a list of service processors that share the RS485 bus with the present system.

3. Logon to the target system with the command:

   `logonrs485 -index` *integer* `-userid` *string* `-password` *string*

   or

   `logonrs485 -name` *string* `-userid` *string* `-password` *string*

   where,

   - *integer* for -index is the identification number of the target system the -query command returned
   - *string* for -name is the defined name of the management processor
   - *string* for -userid is the user ID with administrative privileges
   - *string* for -password is the accompanying password

   The options -index and -name specify which management processor to logon to; use only one of these options for each logon.

Logging off

To end a management session with the target system, type the command:

`logoff`

The logoff command closes the session with the target system and terminates the connection. If multiple sessions are initiated through the CLI, the previous session is active after the current session is terminated.

CLI commands

The listed CLI commands follow the rules as noted in the "General guidelines for using the CLI" on page 3. An exception to the rules is the stackable option command. Where listed, a command "stacks" options (places dash delimited options in series) on a single command line. Information is returned in the order received on the command line and is displayed on a separate line.

Each command section briefly explains the use of the command, notes an example, and includes a table detailing the options and parameters for each command.

The following types of commands to the management processor are available through the command line interface:

- "Voltages"
- "Temperatures" on page 8
- "System components" on page 10
- "Vital Product Data (VPD)" on page 11
- "System state and statistics" on page 13
- "Watchdog timers" on page 13
- "Management processor (MP) event log" on page 15
- "System power control" on page 15
- "Restarting the MP" on page 17
- "PXE configuration" on page 17
- "SNMP Configuration" on page 17
- "PPP configuration" on page 20
- "Ethernet network hardware configuration" on page 21
- "Static IP configuration" on page 23
- "DHCP configuration" on page 24
- "DNS configuration" on page 24
- "COM port software and hardware configuration" on page 25
- "MP identification" on page 28
- "MP internal clock" on page 28
- "Alert triggers" on page 29
- "Alert dial-out configuration (global remote alert settings)" on page 32
- "Alert dial-out entry configuration (remote alert recipients)" on page 33
- "Dial-in configuration" on page 34
- "Fuel gauge" on page 35

Voltages

Voltages are maintained by the management processor. Querying the voltages returns read-only values in volts. Voltage queries are divided into two commands: present voltage measurements and voltage thresholds. This command is stackable.

Example:

```
getvoltages -vrm 1 -systemboard N5V
```

queries the first voltage regulator module and the systemboard record for -5 volts (parameter for a negavtive voltage must use an N instead of a minus sign), returning the values

```
2.5
```

```
-4.8
```

Table 2. Voltage commands

Command	Option	Parameter	Description
getvoltages			This command queries the present voltages through the management processor. If no option is added, every voltage for which access exists is queried.
	-vrm	integer	This option queries the current voltage of a voltage regulator module (VRM). If no parameters are added, the current voltages of all VRMs are returned.
	-systemboard	string	This option queries the current value of the system board voltage. If no parameters are added, the current value of all system board voltages are returned. The following strings are valid parameters. The N denotes a negative value. The query returns the value for the system voltage identified. • 5V • 3V • 12V • N12V • N5V • 2.5V • 1.5V
	-sbvolts		This option returns the supported system board voltages.
getvoltagethresholds			This command queries the voltage thresholds. If no option is added, every voltage threshold for which access exists is queried.

Table 2. Voltage commands

Command	Option	Parameter	Description
	-systemboard	string	This option queries the value of the system board voltage threshold. If no parameters are added, the thresholds of all system board voltages are returned. The following strings are valid parameters. The N denotes a negative value. The query returns the value for the system voltage thresholds identified. • 5V • 3V • 12V • N12V • N5V • 2.5V • 1.5V

Temperatures

This command reads the temperatures monitored by the management processor, and returns the values as currently monitored temperatures. Temperature queries are divided into two commands: current temperature values and temperature thresholds. These commands are stackable.

Example:

```
gettemperaturethresholds -cpu 2 -planarcenter
```

queries the second processor (on the systemboard) and the center card temperature thresholds and returns the values (in Celsius degrees)

78

59

Table 3. Temperature commands

Command	Option	Parameter	Description
gettemperatures			This command queries the current temperatures. If no option is added, every temperature for which access exists is queried.
	-cpu	integer	This option queries the temperature of a CPU. If no parameters are specified, current temperatures of all CPUs are returned.

Table 3. Temperature commands

Command	Option	Parameter	Description
	-dasd	integer	This option queries the temperature of the DASD. If no parameters are specified, current temperatures of all DASD units are returned.
	-planarcenter		This option queries the temperature of the center card.
	-systemambient		This option queries the ambient system temperature.
	-managementprocessor		This option queries the temperature of the management processor.
	-ps	integer	This option queries the temperature of a power supply. If a parameter is not specified, current temperatures of all power supply units are returned.
	-planarcpu		This option queries the CPU area ambient temperature.
	-planarpci		This option queries the PCI area ambient temperature.
	-planario		This option queries the I/O area ambient temperature.
gettemperaturethresholds			This command queries the temperature thresholds. If no option is added, every temperature threshold that exists is queried.
	-cpu	integer	This option queries the temperature threshold of a CPU. If no parameters are specified, current temperature thresholds of all CPUs are returned.
	-dasd		This option queries the temperature threshold of all DASD units.
	-center		This option queries the temperature threshold of the center card.
	-ambient		This option queries the ambient system temperature threshold.
	-managementprocessor		This option queries the temperature threshold of the management processor.

System components

This group of commands represents measurable generic hardware components in a system. These components consist of fans, DIMMs (memory), power supplies, DASD, and CPUs. Each command is stackable.

An example of the fans command:

```
getfan -speeds 1
```

queries the first fan and returns the value (as a percentage of the maximum RPM)

```
98
```

An example of a stacked power supply command:

```
getps -max -inst
```

returns the values of the maximum number of power supplies supported by the system and the number of power supplies actually installed (2 supported, 1 installed)

```
2
```

```
1
```

Table 4. System hardware component commands

Command	Option	Parameter	Description
getfan			This command must use one or more of the options listed in this table to return any stored values.
	-speeds	integer	This option queries the current fan speed as a percentage of the maximum RPM. If no option is added, the speeds of all fans for which access exists are returned.
	-num		This option returns the maximum number of fans supported by the system.
	-inst		This option returns the number of fans installed on the system.
	-run		This option returns a list of operational fans.
getdimm			This command must use one or more of the options listed in this table to return any stored values.
	-max		This option returns the maximum number of DIMMs supported by the system.
	-inst		This option returns the number of DIMMs installed in the system.
	-memory		This option returns the total amount of RAM (megabytes).
getps			This command must use one or more of the options listed in this table to return any stored values.

Table 4. System hardware component commands

Command	Option	Parameter	Description
	-max		This option returns the maximum number of power supplies supported by the system.
	-inst		This option returns the number of power supplies installed on the system.
getdasd			This option returns the maximum number of SCSI buses supported by the system.
	-buscount		This option returns the maximum number of SCSI buses supported by the system.
	-scsiid	integer	This option returns the location of DASD byIDs on the specified SCSI bus.
getcpu			This command must use one or more of the options listed in this table to return any stored values.
	-maxcpu		This option returns the maximum number of CPUs supported by the system.
	-installed		This option returns the number of CPUs installed in the system.
	-speed		This option returns the speed, in MHz, of the CPUs installed in the system.
	-maxvrm		This option returns the number of VRMs installed in the system.

Vital Product Data (VPD)

This command reads the values of the Vital Product Data (VPD) stored on the target system. This command is used in conjunction with the listed options for specific components within the VPD. Each option returns values as specified in your specific system hardware manual or firmware update. This command is stackable.

Example:

```
getvpd -mphardware
```

queries the management processor for the hardware revision level of the management processor and returns the value

```
MP Revision level 4.2
```

Table 5. Vital Product Data commands

Command	Option	Parameter	Description
getvpd			This command must use one or more of the options listed in this table to return any stored values.
	-postbios		This option returns the VPD information of the system BIOS POST.

Table 5. Vital Product Data commands

Command	Option	Parameter	Description
	-planarbackplane		This option returns the VPD information of the backplane installed in the system.
	-planariocard		This option returns the VPD information of the I/O adapter installed in the system.
	-planarfrontpanel		This option returns the VPD information of the system front panel.
	-planarmemorycard		This option returns the VPD information of the memory card installed in the system.
	-planarcpu		This option returns the VPD information of the system board microprocessor.
	-mphardware		This option returns the VPD information of the management processor hardware.
	-mprom		This option returns the VPD information of the ROM on the management processor.
	-mpboot		This option returns the VPD information of the boot code of the management processor.
	-mpdevicedriver		This option returns the VPD information of the management processor device driver.
	-dasd		This option returns the VPD information of the hard drives installed in the system.
	-cpu		This option returns the VPD information of the microprocessors installed on the system board.
	-ps		This option returns the VPD information of the power supplies installed in the system.
	-poweriobackplane		This option returns the VPD information of the system hot-swap power backplane.
	-vrm		This option returns the VPD information of the voltage regulator monitor (VRMs) installed in the system.

System state and statistics

System statistics are maintained by the management processor. Querying the system statistics returns read-only values. This command is stackable.

Example:

```
getsysstat -state -restart -uptime
```

queries the management processor for statistics on the current state of the system, how many times the system has been restarted, and the number of hours the system has been running. The management processor returns the values

```
OS is running
```

```
3
```

```
1016
```

Table 6. System statistics commands

Command	Option	Parameter	Description
getsysstat			This command queries the system statistics of the system of the target management processor and returns all available data.
	-state		This option returns the values of the system state. Valid values are: • In POST • Off/Unknown • Stopped • Booting • OS is running
	-power		This option returns the value (on or off) of the system power.
	-restart		This option returns the number of times the system has been restarted.
	-uptime		This option returns, in hours, how long the system has been powered on.
	-uuid		This option returns the system UUID.

Watchdog timers

Four watchdog timers are read and set through the command line interface. Returned values for all time-out queries are returned in seconds. These two commands are stackable.

The example:

```
getwatchdog -post -loader
```

returns the values as

```
4
```

```
10
```

Table 7. Watchdog timer commands

Command	Option	Parameter	Description
getwatchdog			This command must use one or more of the options listed in this table to return any stored values.
	-loader		This option returns the amount of time, in intervals, the management processor allows for the operating system (OS) to load. Each interval equals 30 seconds. For example, if the option returns a value of 10, this value equals 5 minutes (300 seconds).
	-os		This option returns the time-out value (in seconds) for the heartbeat between the device driver and the management processor.
	-post		This option returns the amount of time, in intervals, the management processor allows for POST to complete. Each interval equals 30 seconds. For example, if the option returns a value of 10, this value equals 5 minutes (300 seconds).
	-shutdown		This option returns the value of the amount of time (in seconds) the management processor allows for the operating system (OS) to shutdown.
setwatchdog			This command must use one or more of the options listed in this table to set any values.
	-loader	integer	This option sets the amount of time, in intervals, the management processor allows for the operating system (OS) to load. Each interval equals 30 seconds. For example, if the option returns a value of 10, this value equals 5 minutes (300 seconds).
	-os	integer	This option sets the time-out value (in seconds) for the heartbeat between the device driver and the management processor.
	-post	integer	This option sets the amount of time, in intervals, the management processor allows for POST to complete. Each interval equals 30 seconds. For example, if the option returns a value of 10, this value equals 5 minutes (300 seconds).
	-shutdown	integer	This option sets the value of the amount of time (in seconds) the management processor allows for the operating system (OS) to shutdown.

Management processor (MP) event log

Entries in the MP event log are either read or cleared through the command line interface. When a query is sent to the event log, events are listed in the order of last in and first out (LIFO).

Example:

`getmplog -next`

queries the MP event log for the next event log entry and returns the value

`MP lost connection! 11/01/01 14:30`

Table 8. MP event log commands

Command	Option	Parameter	Description
getmplog			This command must use one or more of the options listed in this table to return any log entries.
	-first		This option returns the first event log entry.
	-next		This option returns the next event log entry.
	-all		This option deletes all event log entries in LIFO order.
clearmplog			This command removes all entries from the target MP event log.

System power control

The command line interface provides remote power management to the system where the target management processor is located. The setpowerontime is the only system power control command that is stackable.

Example (if the management processor clock reads 15:00 11/01/2001):

`setpowerontime -time 16:00 -date 11/08/2001`

sets the power-on clock to turn the system on in one hour and one week from now.

Table 9. System power control commands

Command	Option	Parameter	Description
poweroff			This command must use one or more of the options listed in this table to provide system power management.
	-now		Issuing this command powers off the system immediately.
	-shutdown		Issuing this command powers off the system after the operating system shutdown timer has expired.

Table 9. System power control commands

Command	Option	Parameter	Description
restart			This command must use one of the options listed in this table to provide system power management.
	-now		Issuing this command performs a soft reset of the system immediately.
	-shutdown		Issuing this command performs a soft rest of the system after the operating system shutdown timer has expired.
getpowerontime			This command returns the current power-on time in the format of xx:xx mm/dd/yyyy (time and date).
setpowerontime			This command must use one or more of the options listed in this table to define date and time for the system to power on.
	-now		Issuing this command powers up the system immediately.
	-delay	integer	Issuing this command powers up the system in the specified number of minutes (1 to 35791) after the command is sent.
	-date	mm/dd/yyyy	This option powers up the system on the month, day, and year specified. The date is referenced by the internal clock of the management processor.
	-time	integer	This option powers up the system at the specified time. The parameter is the 24-hour clock format (xx:xx). Time is referenced by the internal clock of the management processor.
	-clear		This command clears the current date and time for the system to power on.

Restarting the MP

This command restarts the target management processor. This command also disconnects the management processor from the CLI. If another session with a different management processor was begun before this session, the CLI returns to that session.

Table 10. Restarting the management processor command

Command	Option	Parameter	Description
restartmp			Issuing this command restarts the target management processor, terminating the communication link to the management processor.

PXE configuration

These two commands read or set the PXE boot flag on the target system. The set command either enables or disables the PXE boot path.

Example:

```
setpxe -enabled false
```

disables the 18h interrupt (PXE bootstrap) allowing the target system to boot locally.

Table 11. PXE configuration commands

Command	Option	Parameter	Description
getpxe			This command returns the PXE boot flag value in the BIOS code of the target system.
setpxe	-enabled	boolean	This command sets option sets (true) or clears (false) the PXE boot flag in the BIOS code of the target system. The option -enabled must be used with the command.

SNMP Configuration

These two commands read and configure the SNMP interface of the management processor. For more information on management processor SNMP configuration, consult your *IBM Remote Supervisor Adapter Installation and User's Guides* and appropriate xSeries *User's References*.

Example:

```
getsnmp -communityname 1
```

queries the SNMP configuration on the management processor for a given community and returns the name of the community,

```
public
```

For the command setsnmp, use either the -ipaddress option or the -hostname option when defining the address (hostname or IP address) specific community location. There are three user-defined communities, with each community containing three user-defined locations (IP address or hostname).

Example:

```
setsnmp -hostname 2,2,avenger
```

defines the hostname ("avenger") for the second location of the second SNMP community.

Community 1	location 1	
	location 2	
	location 3	
Community 2	location 1	
	location 2	avenger
	location 3	
Community 3	location 1	
	location 2	
	location 3	

Table 12. SNMP configuration commands

Command	Option	Parameter	Description
getsnmp			This command queries the SNMP configuration. If no option is added, the command returns the common portions of the SNMP configuration (agent enabled, traps enabled, contact name, and contact location).
	-contactlocation		This option returns the parameter defining the system contact location.
	-contactname		This option returns the parameter defining the system contact name.
	-traps		This option returns the SNMP trap status.
	-agent		This option returns the SNMP agent status.
	-communityname	integer	This option returns the community name associated with the specified community. There are three user-defined communities available.

Table 12. SNMP configuration commands

Command	Option	Parameter	Description
	-ipaddress	integer, integer	This option returns the hostname associated with the community. First integer is the associated community and the second is associated with the hostname within the given community.
setsnmp			This command must use one or more of the options listed in this table to provide SNMP configuration.
	-contactlocation	string	This parameter defines the system location.
	-contactname	string	This parameter defines the system contact name.
	-traps	boolean	This option enables (true) or disables (false) the SNMP traps sent by the management processor.
	-agent	boolean	This option enables (true) or disables (false) the management processor SNMP agent.
	-communityname	integer, string	This option defines the specified community name.
	-ipaddress	integer, integer, ipaddress	This option defines the IP address of a specified location within a specifed SNMP community. The first parameter sets the community, the second parameter defines the lcoation with the specified community. The ipaddress parameter sets the IP address associated with this location of the specified community.
	-hostname	integer, integer, string	This option defines the hostname of a specified location within a specifed SNMP community. The first parameter sets the community, the second parameter defines the lcoation with the specified community. The ipaddress parameter sets the hostname associated with this location of the specified community.

PPP configuration

This command is supported only on the xSeries 220. The command line interface reads and enables the configuration of the PPP interface to the management processor. These commands are stackable. For more information on management processor PPP configuration, consult your *IBM Remote Supervisor Adapter Installation and User's Guides* and appropriate xSeries *User's References*.

Example:

```
getppp -serverip -subnet -protocol
```

queries the PPP configuration table of the management processor and returns the values

```
99.56.120.108
```

```
255.255.240.01
```

```
2
```

Table 13. PPP configuration commands

Command	Option	Parameter	Description
getppp			This command must use one or more of the options listed in this table to report PPP configuration.
	-enabled		This option returns a boolean value of the enablement status of the PPP configuration.
	-remoteip		This option returns an *ipaddress* value assigned to the client side of the network connection.
	-serverip		This option returns an *ipaddress* value assigned to the management processor.
	-subnet		This option returns an *ipaddress* value assigned as the subnet mask.
	-protocol		This option returns one of the following integer values: 1 - representing " • PPP" • 2 - representing "CHAP" • 3 - representing "CHAP then PAP"
setppp			This command must use one or more of the options listed in this table to provide PPP configuration.
	-enabled	boolean	This option enables (true) or disables (false) the PPP configuration.
	-remoteip	ipaddress	The parameter is an *ipaddress* value assigned to the client side of the network connection.

Table 13. PPP configuration commands

Command	Option	Parameter	Description
	-serverip	ipaddress	The parameter is an *ipaddress* value assigned to the management processor side of the network connection.
	-subnet	ipaddress	The parameter is an *ipaddress* value assigned as the subnet mask.
	-protocol	integer	The parameter of this option sets the PPP protocol. Integer value: • 1 - represents "PPP" • 2 - represents "CHAP" • 3 - represents "CHAP then PAP"

Ethernet network hardware configuration

The network hardware configuration commands of the command line interface either read or enable attributes of the network hardware configuration of the management processor. For more information on management processor network hardware configuration, consult your *IBM Remote Supervisor Adapter Installation and User's Guides* and appropriate xSeries *User's References*.

Example:

```
setnethw -interface 1 -enabled true
```

sends the command to the management processor to enable the Ethernet network interface.

Table 14. Ethernet network hardware configuration commands

Command	Option	Parameter	Description
getnethw	-interface	1	This command queries the network hardware configuration for the specified interface. This command must use the -interface option with the parameter of 1 before any other option.
	-all		This option returns data on all getnethw options.
	-enabled		This option returns the boolean status of the network hardware configuration interface. True equals enabled, false quals disabled.
	-datarate		This option returns the parameters indicating the status of the data rate flag. Valid string values are: • AUTO • 10M • 100M

Table 14. Ethernet network hardware configuration commands

Command	Option	Parameter	Description
	-duplex		This option returns the parameters indicating the status of the duplex mode flag. Valid string values are: • AUTO • FULL • HALF
	-adminmac		This option returns the xx xx xx xx xx xx value assigned to the locally administered MAC address.
	-mtu		This option returns the maximum transmission unit (MTU) for the target network segment.
	-burnedmac		This option reports the MAC address burned into ROM portion of the Ethernet port of the IBM Remote Supervisor Adapter.
setnethw	-interface	1	This command defines the network hardware configuration index entry based upon the integer provided. This command must use the -interface option with the parameter of 1 before any other option.
	-enabled	boolean	The parameter of this option enables (true) or disables (false) the network hardware configuration interface.
	-datarate	string	The parameter of this option indicates a specified flag for data rate. Valid string values are: • AUTO • 10M • 100M
	-duplex	string	The parameter of this option indicates a specified flag for the duplex mode. Valid strings are: • AUTO • FULL • HALF
	-adminmac	string	The parameter of this option is formatted as an xx xx xx xx xx xx value assigned to the locally administered MAC address.
	-mtu	integer	The parameter of this option defines the maximum transmission unit (MTU) for the target network segment.

Static IP configuration

The static IP configuration commands allow read and write access to the IP configuration of the management processor. For more information on management processor static IP configuration, consult your *IBM Remote Supervisor Adapter Installation and User's Guides* and appropriate xSeries *User's References*.

Example:

```
getip
```

queries the IP configuration and returns the values

```
IP Configuration:

Hostname: Public

Gateway IP address: 94.56.77.122

Host IP address: 94.57.78.123

Subnet mask: 255.255.240.10
```

Table 15. Static IP configuration commands

Command	Option	Parameter	Description
getip			This command queries the static IP configuration. If no option is added, the command returns the static IP configuration of the primary interface.
setip	-interface	1	This command defines the static IP configuration index entry based upon the integer provided. This command must use the -interface option with the parameter of 1 before any other option.
	-hostname	string	This option defines the hostname for the management processor.
	-ipaddress	ipaddress	The parameter of this option is an *ipaddress* value assigned to the IP address of the management processor.
	-gateway	ipaddress	The parameter of this option is an *ipaddress* value assigned to the gateway (router) used by the management processor.
	-subnet	string	The parameter of this option is an *ipaddress* value assigned as the subnet mask.

DHCP configuration

The DHCP configuration commands allow read and write access to the DHCP configuration interface of the management processor. For more information on management processor DHCP configuration, consult your *IBM Remote Supervisor Adapter Installation and User's Guides* and appropriate xSeries *User's References*.

Table 16. DHCP configuration commands

Command	Option	Parameter	Description
getdhcp			This command reports the DHCP configuration.
setdhcp	-enabled	boolean	This command enables (true) or disables (false) DHCP. The -enabled option must be used with this command.

DNS configuration

The DNS configuration commands configure the DNS client of the management processor. The mapping option allows you to map a static IP address to a hostname without having a DNS server present.

The -mapping option sets up to four static DNS address names.

DNS map 1	IP address	DNS name
DNS map 2	IP address	DNS name
DNS map 3	IP address	DNS name
DNS map 4	IP address	DNS name

Example:

```
setdns -mapping 3,"",""
```

clears the third static mapping by specifying blank parameters.

Example:

```
setdns -mapping 2,33.12.125.89,sparky
```

enters the DNS name "sparky" into the second DNS map with the IP address of 33.12.125.89.

Table 17. DNS configuration commands

Command	Option	Parameter	Description
getdns			This command reports DNS configuration. If no option is specified, all DNS client configurations are returned.
	-enabled		This option reports the status of the DNS client.

Table 17. DNS configuration commands

Command	Option	Parameter	Description
	-server	integer	This option reports the parameter value assigned as the IP address of the specified DNS server.
	-mapping	integer	This option reports the IP address and hostname of the specified static mapping
setdns			This command must use one or more of the options listed in this table to provide DNS client configuration.
	-enabled	boolean	The parameter of this option enables (true) or disables (false) the DNS client.
	-server	integer, ipaddress	The parameters of this option define an *ipaddress* value to a specified DNS server. The integer values are: • 1 - as Primary server • 2 - as Secondaryserver • 3 - as Tertiaryserver
	-mapping	integer, IP address, string	The parameters of this option configures the static mapping of an IP address to a specified hostname. See examples.

COM port software and hardware configuration

The COM port configuration (serial) commands allow read and write access to both hardware and software configurations of a COM port. For more information on management processor COM port configurations, consult your *IBM Remote Supervisor Adapter Installation and User's Guides* and appropriate xSeries *User's References*.

An example of COM port software configuration:

```
setcomsw -session true -own true
```

configures the COM port software to enable the session and to set the ownership of the COM port to the management processor upon restart.

An example of COM port hardware configuration:

```
setcomhw -port 1 -initstring "AT OT #2"
```

configures the first physical COM port and loads the initial carrier string to the host with the string command, "AT OT #2."

Table 18. COM port configuration commands

Command	Option	Parameter	Description
getcomsw			This command queries the COM port software configuration. If no option is added, the command returns the configuration of the primary COM port.

Table 18. COM port configuration commands

Command	Option	Parameter	Description
	-dialinenabled		This option returns the boolean value for dial-in enablement. True equals enabled.
	-own		This option returns the boolean value for COM port ownership. True equals management processor owns the COM port.
	-sessionon		This option returns the boolean value for a current COM port session. True equals on.
	-tamperdelay		This option reports the number of seconds which must elapse between successive logons.
setcomsw			This command must use one or more of the options listed in this table to set attributes of the COM port configuration.
	-dialinenabled	boolean	This option enables (true) or disables (false) dial-in access through the COM port.
	-own	boolean	This option allows the management processor to accept (true) or reject (false) ownership of the shared COM port. Consult your xSeries *User's References* for more information.
	-sessionon	boolean	This option turns on (true) or off (false) the communication session on the selected COM port.
	-tamperdelay	integer	The parameters of this option defines the number of seconds which must elapse between successive logons.
getcomhw			This command queries the COM port hardware configuration. If no option is added, the command returns the configuration of the primary COM port.
	-port	integer	This option queries the COM port configuration index entry based upon the integer provided.
setcomhw	-port	integer	This option sets the COM port configuration index entry based upon the integer provided. This command must use the -port option before any other option.
	-baudrate	integer	This option defines baudrate for the COM port.

Table 18. COM port configuration commands

Command	Option	Parameter	Description
	-parity	string	This option defines the parity configuration on the COM port. Valid string values are: • none • odd • even • mark • space
	-stopbits	integer	This option defines the stop bit value of 0, 1, or 2.
	-initstring	string	This option defines the initialization string to the attached modem.
	-enabled	boolean	This option describes the enablement status of the COM port.
	-calleridstring	string	This option defines the identification associated with a discovered phone number.
	-returnfactorydefault	string	This option defines a control string that returns the attached modem to the factory default settings.
	-escapeguardtime	integer	The parameter of this option sets a time delay prior to and after the sending of a modem escape string.
	-escapestring	string	The parameter of this option sets an escape code value for the COM port.
	-dialprefix	string	This options defines the area code section of the modem dialing configuration.
	-dialpostfix	string	This option defines the phone number section of the modem dialing configuration.
	-autoanswer	string	This option sets the value for an auto answer string. The generic value is ATS0=1.
	-autoanswerstop	string	This option sets the value for an auto answer stop string. The generic value is ATS0=0.
	-querystring	string	This option sets the value for a modem query string. The generic value is AT.
	-hangupstring	string	This option defines the modem string used to exit communication within the attached modem.

MP identification

The MP identification commands allow read and write access to management processor identification strings.

Example:

```
setmpid -text "MP Redroom#12"
```

sets the ID tag of the target management processor to "MP Redroom#12."

Table 19. MP identification commands

Command	Option	Parameter	Description
getmpid			This command reports the identification strings stored in the management processor ID table. If no option is specified, all options are reported.
	-numeric		This option reports the numeric ID string of the management processor.
	-text		This option reports the text ID string of the management processor.
	-assettag		This option reports the asset tag of the management processor.
setmpid			This command must use one or more of the options listed in this table to set IDs in the management processor.
	-numeric	integer	This option sets the numeric ID string of the management processor.
	-text	string	This option sets the text ID string of the management processor.
	-assettag	string	This option sets the asset tag of the management processor.

MP internal clock

The MP internal clock commands allow read and write access to the internal clock on the management processor. Please note that time is interpreted relative to the current time on your management processor. On systems where a GMT offset is supported, the MP clock is converted to GMT using the offset.

Table 20. MP internal clock configuration commands

Command	Option	Parameter	Description
getmpclock			This command displays the time and date as recorded on the management processor. If no option is specified, all options are reported.

Table 20. MP internal clock configuration commands

Command	Option	Parameter	Description
	-timeanddate		This option displays the current time of the internal clock on the management processor, using the 24-hour clock format and the calendar format of mm/dd/yyyy.
	-dst		This option reports the use of daylight savings time.
	-gmtoffset		This option reports the offset, in hours, from Greenwich Mean Time (integer range of -12 to +12).
setmpclock			This command must use one or more of the options listed in this table to set internal clock data on the management processor.
	-date	integer	The parameter of this option for standard month, day and year is mm/dd/yyyy.
	-time	integer	The parameter of this option uses a 24-hour clock format of xx:xx.
	-dst	boolean	The parameter of this option enables or disables daylight savings time.
	-gmtoffset	integer	The parameter of this option records the offset, in hours, from Greenwich Mean Time (integer range of -12 to +12).

Alert triggers

The alert trigger commands read, enable or disable supported dial-out triggers monitored by the management processor. The second table lists all available parameter triggers. For more information on management processor alert triggers, consult your *IBM Remote Supervisor Adapter User's Guides* and appropriate xSeries *User's References*.

Table 21. Alert triggers commands

Command	Option	Parameter	Description
getalerttriggers			This command must use one of the options listed in this table to query internal dial-out triggers.
	-enabled		This option reports all the events that are currently enabled.
	-disabled		This option reports all the events that are currently disabled.
	-possible		This option reports the superset of events that are registered with any management processor.

Table 21. Alert triggers commands

Command	Option	Parameter	Description
	-supported		This option reports all the events that are supported by the target management processor.
setalerttriggers			This command must use one or more of the options listed in this table to set internal dial-out triggers.
	-enabled	see next table	This option enables an alert or set of alerts. See Table 22 for a complete list of alert trigger parameters.
	-disabled	see next table	This option disables an alert or set of alerts. See Table 22 for a complete list of alert trigger parameters.

Table 22. Alert trigger parameters

Parameter	Description
all	This parameter enables (true) or disables (false) the triggering of alerts for all dial-out events.
critical.all	This parameter enables (true) or disables (false) the triggering of alerts forof alerts for all critical events.
critical.temp	This parameter enables (true) or disables (false) the triggering of alerts for a critical temperature event.
critical.voltage	This parameter enables (true) or disables (false) the triggering of alerts for a critical voltage event.
critical.tamper	This parameter enables (true) or disables (false) the triggering of alerts for a critical tampering event.
critical.multiple_fan	This parameter enables (true) or disables (false) the triggering of alerts for a critical multiple fan failure event.
critpower_supply	This parameter enables (true) or disables (false) the triggering of alerts for a critical power failure event.
critical.dasd	This parameter enables (true) or disables (false) the triggering of alerts for a critical hard drive event.
critical.vrm	This parameter enables (true) or disables (false) the triggering of alerts for a critical voltage regulator module (VRM) failure event.
noncritical.all	This parameter enables (true) or disables (false) the triggering of alerts for all non critical events.
noncritical.rps	This parameter enables (true) or disables (false) the triggering of alerts for a non-critical redundant power supply (RPS) event.
noncritical.single_fan	This parameter enables (true) or disables (false) the triggering of alerts for a non-critical event of alerts for a single fan failure.
noncritical.temperature	This parameter enables (true) or disables (false) the triggering of alerts for a non-critical temperature event.
noncritical.voltage	This parameter enables (true) or disables (false) the triggering of alerts for a non-critical voltage event.

Table 22. Alert trigger parameters

Parameter	Description
noncritical.expansion_device	This parameter enables (true) or disables (false) the triggering of alerts for a non-critical secondary device event.
system.all	This parameter enables (true) or disables (false) the triggering of alerts for all system level events.
system.post	This parameter enables (true) or disables (false) the triggering of alerts for the POST watchdog timer expiration event.
system.os	This parameter enables (true) or disables (false) the triggering of alerts for the operating system heartbeat timer expiration event.
system.application	This parameter enables (true) or disables (false) the triggering of alerts for an application generated alert as passed to the management processor.
system.power_off	This parameter enables (true) or disables (false) the triggering of an alert when the system is powered off.
system.power_on	This parameter enables (true) or disables (false) the triggering of an alert when the system is powered on.
system.boot	This parameter enables (true) or disables (false) the triggering of an alert when the system fails to boot.
system.loader	This parameter enables (true) or disables (false) the triggering of an alert when the operating system loader time-out expires.
system.pfa	This option enables (true) or disables (false) the triggering of an alert received through a Predictive Failure Alert® (PFA) event.

Alert dial-out configuration (global remote alert settings)

The alert dial-out configuration commands allow read and write access to entries in the common dial-out configuration, excluding trigger events. The commands are stackable.

Example:

```
getalertcommon -smtpserver -sendlog
```

queries the dial-out configuration on the management processor and returns the value of the SMTP IP address and whether or not the log is sent as an email attachment,

```
95.110.10.36
```

```
false
```

Table 23. Alert dial-out configuration commands

Command	Option	Parameter	Description
getalertcommon			This command queries the status of all common dial-out alerts. If no option is specified, all options are reported.
	-entrydelay		This option reports the polling delay, in seconds, between entries sent by the management processor.
	-retrydelay		This option reports the delay, in seconds, before the management processor attempts to resend an alert.
	-retrylimit		This option reports the number of cycles a management processor attempts through the dial-out entry table before failing.
	-smtpserver		This option reports the SMTP server IP address.
	-sendlog		This option reports the boolean value of the log to be sent as an email attachment.
setalertcommon			This command must use one or more of the options listed in this table to set common alert entries.
	-entrydelay	integer	This option sets the delay, in seconds, between entries reported by the management processor.
	-retrydelay	integer	This option sets the delay, in seconds, before the management processor attempts to poll the entry table.
	-retrylimit	integer	This option sets the number of cycles a management processor attempts through the dial-out entry table before failing.

Table 23. Alert dial-out configuration commands

Command	Option	Parameter	Description
	-stopsending		This option cancels all pending notifications and clears the queue.

Alert dial-out entry configuration (remote alert recipients)

The alert dial-out entry configuration commands allow read and write access to profiles of recipients of the remote alerts. The setalertentry is stackable but must have the -index option listed first. For more information on remote alert recipients, consult your *IBM Remote Supervisor Adapter Installation and User's Guides* and appropriate xSeries *User's References*

Example:

```
setalertentry -index 1 -critcaleventsonly true -number "1-919-555-1212"
```

sets alert entry number one to send only critical events and to dial out the number, "1-919-555-1212," when the event occurs.

Table 24. Alert dial-out entry configuration commands

Command	Option	Parameter	Description
getalertentry	-index	integer	This command queries the configuration of a specified dial-out alert entry. This command must include the -index option. Parameter range is 1-12.
setalertentry	-index	integer	This command specifies which entry to update and must be used with one or more of the options listed in this table to set alert entries. This command must use the -index option before any other option. Parameter range is 1-12.
	-enabled	boolean	This option enables (true) or disables (false) the specified entry without clearing the configuration.
	-delete		This option deletes the entry specified by the -index option.
	-criticaleventsonly	boolean	This parameter enables or disables sending only critical events.
	-description	string	This option defines a descriptive string associated with the specific entry.

Table 24. Alert dial-out entry configuration commands

Command	Option	Parameter	Description
	-type	string	The parameter of this optin specifies the connection type to the dial-out configuration. Valid parameters are: • snmp.ppp • snmp.lan • director.lan • director.modem • pager.numeric • pager.alphanumeric • email.lan • email.ppp
	-number	string	This option defines the phone number for the management processor to dial-out to as associated with the specified entry.
	-ipaddress	string	This option defines an IP address for the management processor if required by the specified dial-out entry.
	-pin	string	This option defines a Personal Identification Number (PIN) code if required by the specified dial-out entry.
	-emailaddress	string	This option defines an e-mail address if required by the specified dial-out entry.
	-pppid	string	This option defines a PPP login ID if required by the specified dial-out entry
	-ppppassword	string	This option defines a PPP password if required by the specified dial-out entry

Dial-in configuration

The dial-in configuration commands allow read and write access to the dial-in (serial port) configurations on the management processor.

Table 25. Dial-in configuration commands

Command	Option	Parameter	Description
getdialinentry	-index	integer	This command displays configured dial-in entries. The -index option must be used with this command.

Table 25. Dial-in configuration commands

Command	Option	Parameter	Description
setdialinentry	-index	integer	The -index option must be used with this command and one or more of the options listed in this table to set alert entries. The parameter specifies which entry to update.
	-id	string	This option sets the login ID.
	-password	string	This option sets the login password.
	-dialback	boolean	This option enables (true) or disables (false) the dial-back feature for the specified entry.
	-number	string	This option defines the phone number for the management processor to dial back as associated with the specified entry.
	-readonly	boolean	This option enables (true) or disables (false) write permission on the specified dial-in entry.

Fuel gauge

This command is supported only on xSeries 370 servers. The Fuel Gauge command monitors the power availability of a server. This information is read-only. The command is stackable.

Example:

```
getfuelgauge -available -failed -lowfuelstate
```

queries the server for the number of available power supplies, failed power supplies, and asks if the server is in a low fuel state. The server returns the values,

```
2
```

```
0
```

```
No
```

Table 26. Fuel Gauge monitor commands

Command	Option	Parameter	Description
getfuelgauge			This command returns values for all options if no option is used.
	-available		This option returns the number of available power supplies.
	-failed		This option returns the number of failed power supplies.
	-status		This option returns a bit mask value for the fuel gauge status. 0 equals off, 1 equals on.
	-voltagefault		This option returns a bit mask value for a voltage fault. 0 equals off, 1 equals on.

Table 26. Fuel Gauge monitor commands

Command	Option	Parameter	Description
	-maximumcurrent		This option returns the maximum amount of current, in Watts, as drawn by the system.
	-averagecurrent		This option returns the average amount of current, in Watts, as drawn by the system.
	-redundancystatus		The system acknowledges a rendundancy status with this option.
	-lowfuelthreshold		This option returns the low fuel threshold as measured in Watts.
	-powersupplycapacity		This option returns the total number of power supplies the system can hold.
	-powersupplyrequired		This option returns the number of power supplies required to provide power redundancy.
	-maxpower		This option returns the maximum available power (in Watts) available to the system.
	-lowfuelstate		The system acknowledges a low fuel state with this option.
	-overcurrentstate		The system acknowledges drawn current exceeds 100% capacity of operational power supplies in the system with this option.
	-monitorredundancy		The management processor responds to the query of monitoring redundancy in the system with this option.

Appendix A. Using scripts in the command line interface

You can use scripts instead of manually typing out each command (with accompanying options and parameters) to accomplish a specific task. An example of a script is one used to login into a service processor. The login script replaces the repeated manual typing of the hostname, user ID, and password.

Using scripts

The command for using a script with the CLI is **inputfile**. To run a script:

1. Have a script ready, remembering the name and file path.

2. Invoke the command line interface if you have not done so. See "Invoking the command line interface" on page 2 for more information.

3. From the command line interface prompt (mp>), type:

   `inputfile path_with_filename`

   where path_with_filename might look like ./scripts/logon.script

The command line interface reads the script parsing each line as a separate instruction to the interface. If the interface encounters an error or unknown command, the interface continues on to the next command until the script is completely parsed.

After the script is finished, the interface returns to the command prompt, unless the last command in the script was the exit command.

Using the sample scripts

When the command line interface was installed on the host system, a directory called Sample Scripts was created. Inside this directory are four scripts.

Using a text editor, you can add, delete, or further modify the commands in these sample scripts. Basically, the script is nothing more than a flat ASCII file without binary data attachments. Remember while creating a script that each command must be on a separate line. Some commands allow for stacking multiple options on the same command line. Check the description of the specific command for more information.

The scripts perform these tasks:

- **log.script**. This script reads the Management Processor error log and outputs the data to a mplog.txt file.

  `outputfile /mplog.txt`

  `getmpid`

  `getmpclock`

  `getmplog -first`

  `getmplog -all`

  `resetoutput`

- **enetcfg.script**. This script configures the Ethernet connection on the target management processor. The script logs all the actions to an enetcfgresults.txt file, configures the Ethernet interface, and restarts the management processor to initialize all the changes.

```
outputfile /enetcfgresults.txt

getmpid

getmpclock

setnethw -interface 1 -enabled false

setdhcp -enabled false

setnethw -interface 1 -linetype "ENET" -enabled true

setip -interface 1 -hostname X

setip -interface 1 -ipaddress 9.67.37.00

setip -interface 1 -subnet 255.255.255.128

setnethw -interface 1 -datarate "AUTO"

setnethw -interface 1 -duplex "AUTO"

setnethw -interface 1 -adminmac 00 00 00 00 00 00

setnethw -interface 1 -gateway 9.67.37.1

setnethw -interface 1 -enabled true

resetoutput

restartmp
```

- **snmpcfg.script**. This script configures the SNMP agent on the target management processor. The script logs all the actions to an snmpcfgresults.txt file, configures the SNMP community, and restarts the management processor to initialize all the changes.

```
outputfile /snmpcfgresults.txt

getmpid

getmpclock

setsnmp -agent false

setsnmp -contactname Technician

setsnmp -contactlocation "S.P. Lab"

setsnmp -communityname 0,Public

setsnmp -ipaddress 1,1,9.37.113.211

setsnmp -ipaddress 1,2,0.0.0.0

setsnmp -ipaddress 1,3,0.0.0.0

setsnmp -communityname 0,0

setsnmp -ipaddress 2,1,0.0.0.0

setsnmp -ipaddress 2,2,0.0.0.0

setsnmp -ipaddress 2,3,0.0.0.0

setsnmp -communityname 0,0

setsnmp -ipaddress 3,1,0.0.0.0

setsnmp -ipaddress 3,2,0.0.0.0

setsnmp -ipaddress 3,3,0.0.0.0

setsnmp -agent true

resetoutput

restartmp
```

- **vpd.script**. This script executes all of the VPD options. The script logs all the actions to a vpd.txt file and retrieves data from all the VPD options. After the last VPD command is parsed, output is shifted back to the command line interface window.

```
outputfile /vpd.txt
```

```
getmpid
getmpclock
getvpd -postbios
getvpd -planariobackplane
getvpd -planariocard
getvpd -planarfrontpanel
getvpd -planarmemorycard
getvpd -planarcpu
getvpd -mphardware
getvpd -mprom
getvpd -mpboot
getvpd -mpdevicedriver
getvpd -dasd
getvpd -cpu
getvpd -ps
getvpd -powerbackplane
getvpd -vrm
resetoutput
```

Creating a script using the CLI

In the section, "General guidelines for using the CLI" on page 3, **commandfile** is mentioned as a command line interface specific command. Using this command before you enter commands manually, a file is generated recording the commands in the order you enter them. You can open the file and snip portions or sections from that file to create your own customized scripts.

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Index

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