IBM BladeCenter
Management Module
BladeCenter T Management Module
Advanced Management Module
BladeCenter T Advanced Management Module

Command-Line Interface Reference Guide

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Note: Before using this information and the product it supports, read the general information in Appendix A, “Getting help and technical assistance,” on page 163 and Appendix B, “Notices,” on page 165.

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This edition applies to version 1.25 of management-module firmware and to all subsequent releases and modifications until otherwise indicated in new editions.

Contents

Chapter 1. Introduction

The IBM® BladeCenter® management-module command-line interface (CLI) provides direct access to BladeCenter management functions as an alternative to using the Web-based user interface. Using the command-line interface, you can issue commands to control the power and configuration of the management module and other components that are in a BladeCenter unit.

All IBM BladeCenter units are referred to throughout this document as the BladeCenter unit. All management modules are referred to throughout this document as the management module. Unless otherwise noted, all commands can be run on all management module and BladeCenter unit types.

The command-line interface also provides access to the text-console command prompt on each blade server through a serial over LAN (SOL) connection. See the *IBM BladeCenter Serial Over LAN Setup Guide* for information about SOL and setup instructions.

You access the management-module CLI by establishing a Telnet connection to the IP address of the management module or through a Secure Shell (SSH) connection. You can initiate connections from the client computer using standard remote communication software; no special programs are required. Users are authenticated by the management module before they can issue commands. You enter commands one at a time; however, you can use command scripting to enter multiple commands. The interface does not support keyboard shortcuts, except for the special key sequence (pressing “Esc” then “(”) that terminates an SOL session.

The most recent versions of all BladeCenter documentation are available from http://www.ibm.com/bladecenter/.

Before you begin

Hardware and software required for the command-line interface are as follows:

Hardware:

No special hardware is required to use the management-module command-line interface.

To use the SOL feature, an Ethernet I/O module that supports SOL must be installed in I/O-module bay 1. You can use the console command to control a blade server through SOL only on blade server types that support SOL functionality and have an integrated system management processor firmware level of version 1.00 or later. See the *IBM BladeCenter Serial Over LAN Setup Guide* for information.

Firmware:

Make sure you are using the latest versions of device drivers, firmware, and BIOS code for your blade server, management module, and other BladeCenter components. Go to http://www.ibm.com/bladecenter/ for the latest information about upgrading the device drivers, firmware, and BIOS code for BladeCenter components. The latest instructions are in the documentation that comes with the updates.

The management-module CLI is supported by BladeCenter management-module firmware level version 1.08 or later. All versions of BladeCenter T management-module firmware support the command-line interface. The SOL feature has additional firmware requirements. See the *IBM BladeCenter Serial Over LAN Setup Guide* for information.

Chapter 2. Using the command-line interface

The IBM management-module command-line interface (CLI) provides a convenient method for entering commands that manage and monitor BladeCenter components. This chapter contains the following information about using the command-line interface:

See Chapter 3, "Command reference," on page 19 for detailed information about commands that are used to monitor and control BladeCenter components. Command-line interface error messages are in Chapter 4, "Error messages," on page 141. See the *IBM BladeCenter Serial Over LAN Setup Guide* for SOL setup instructions and the documentation for your operating system for information about commands you can enter through an SOL connection.

Command-line interface guidelines

All commands have the following basic structure:

```
command -option parameter
```

Some commands do not require options and some command options do not require parameters. You can add multiple options to a command on one line to avoid repeating the same command. Options that display a value and options that set a value must not be used together in the same command. Some examples of valid command option syntax are:

- *command*
- *command -option_set*
- *command -option_set parameter*
- *command -option1_set parameter -option2_set parameter*

For example, `telnetcfg -t 360`.

The information for each option is returned in the order in which it was entered and is displayed on separate lines.

Observe the following general guidelines when using the command-line interface:

- Case sensitivity

  All commands, command options, and pre-defined command option parameters are case sensitive.

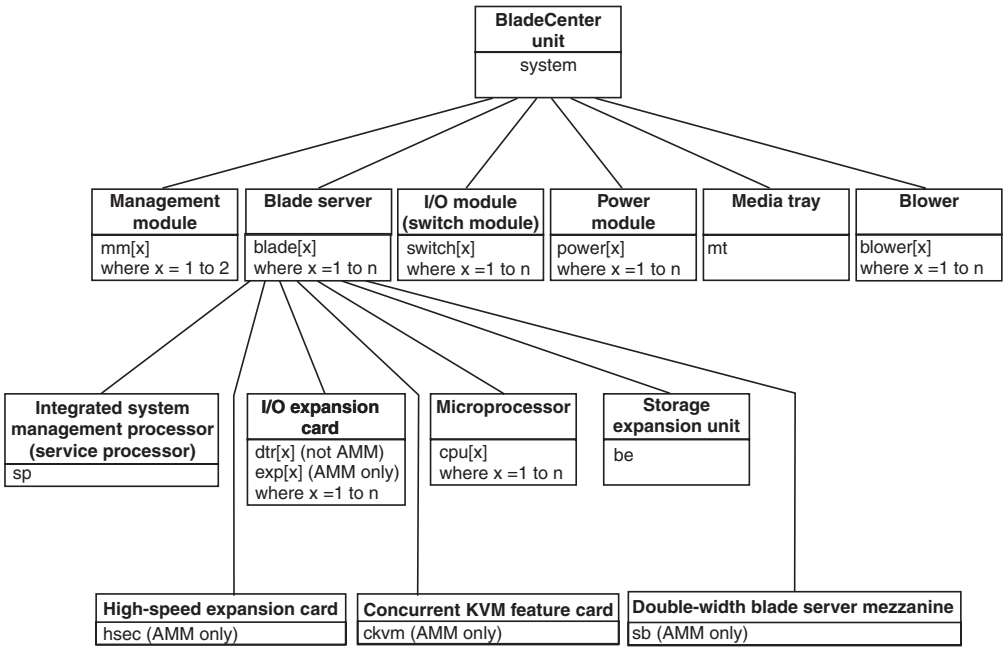
  Note: If you receive a `Command not found` error, make sure that you are typing the commands in the correct case; they are case sensitive. For a list of valid commands, type `help` or `?`.

- Data types

  The ip_address data type uses a predefined formatted string of *xxx.xxx.xxx.xxx*, where *xxx* is a number from 0 to 255
- Delimiters
  - Options are delimited with a minus sign.
  - In a command that requires parameters, a single space is expected between the option and the parameter. Any additional spaces are ignored.
- Output format
  - Failed commands generate failure messages.
  - Successful commands are indicated by the message `OK`, or by the display of command results.
- Strings
  - Strings containing spaces should be enclosed in quotation marks, such as in `snmp -cn "John B. Doe"`.
  - String parameters can be mixed case.
- The `help` command lists all commands and a brief description of each command. You can also issue the help command by typing `?`. Adding the `-h` parameter to any command displays its syntax.
- You can use the up arrow and down arrow keys in the command-line interface to access the last eight commands that were entered.

Selecting the command target

You can use the command-line interface to target commands to the management module or to other devices installed in the BladeCenter unit. The command-line prompt indicates the persistent command environment: the environment where commands are entered unless otherwise redirected. When a command-line interface session is started, the persistent command environment is “system”; this indicates that commands are being directed to the BladeCenter unit. Command targets are specified hierarchically, as shown in the following illustration.



You can change the persistent command environment for the remainder of a command-line interface session by using the `env` command (see “env (environment) command” on page 20). When you list the target as a command attribute using the `-T` option, you change the target environment for the command that you are entering, temporarily overriding the persistent command environment. Target environments can be specified using the full path name, or using a partial path name based on the persistent command environment. Full path names always begin with “system”. The levels in a path name are divided using a colon “:”.

For example:

- Use the `-T system:mm[1]` option to redirect a command to the management module in bay 1.
- Use the `-T system:switch[1]` option to redirect a command to the I/O (switch) module in I/O (switch) module bay 1.
- Use the `-T sp` option to redirect a command to the integrated system management processor (service processor) of the blade server in blade bay 3, when the persistent command environment is set to the blade server in blade bay 3.

Most management-module commands must be directed to the primary management module. If only one management module is installed in the BladeCenter unit, it will always act as the primary management module. Either management module can function as the primary management module; however, only one management module can be primary at one time. You can determine which management module is acting as the primary management module using the `list` command (see “list (system physical configuration) command” on page 27).

Commands and user authority

Some commands in the command-line interface can only be successfully executed by users who are assigned a required level of authority. Users with “Supervisor” command authority can successfully execute all commands. Commands that display information do not require any special command authority; however, users can be assigned restricted read-only access, as follows:

- Users with “Operator” command authority can successfully execute all commands that display information.
- Users with “Chassis Operator” custom command authority can successfully execute commands that display information about the common BladeCenter unit components.
- Users with “Blade Operator” custom command authority can successfully execute commands that display information about the blade servers.
- Users with “Switch Operator” custom command authority can successfully execute commands that display information about the I/O modules.

Table 1 on page 6 shows the command-line interface commands and their required authority levels. To use the table, observe the following guidelines:

- The commands listed in this table only apply to the command variants that set values or cause an action: display variants of the commands do not require any special command authority.
- When only one command authority at a time is required to execute a command, this is indicated by a “•” entry in a table row.
- When a command has several rows associated with it, each row indicates one of the valid user command authorities needed to successfully execute the

command. For example, the `clearlog` command is available to users with the "Supervisor" command authority or to users with the "Chassis Log Administration" command authority.

- When a combination of two or more command authorities at a time is required to execute a command, this is indicated by multiple "◇" entries in a table row. The user must be assigned both of these command authorities to successfully execute the command. For example, one available authority combination for the `power -on -c` command is the "Blade Server Remote Presence" command authority and the "Blade Administration" command authority.

Important: Command authority definitions might change between firmware versions. Make sure that the command authority level set for each user is correct after updating management-module firmware.

Notes:

1. LDAP authority levels are not supported by the management-module Web interface.
2. To use the LDAP authority levels, you must make sure that the version of LDAP security used by the management module is set to v2 (enhanced role-based security model). See "ldapcfg command (advanced management module only)" on page 59 for information.

Table 1. Command authority relationships

	Authority											LDAP Authority				
Command	**Supervisor**	**Chassis User**	**Account Management Blade Server Remote Presence**	**Chassis Administration**	**Blade Administration**	**Blade Remote Presence**	**I/O Module Administration**	**Chassis Log Administration**	**Chassis Configuration**	**Blade Configuration**	**I/O Module Configuration**	**Blade Remote Presence View Video**	**Blade Remote Presence KVM**	**Blade Remote Presence Remote Drive Read**	**Blade Remote Presence Remote Drive Read or Write**	**Remote Presence Supervisor**
alarm -c, -r, -s	•															
									•							
										•						
											•					
alarm -q -g	•															
			•													
					•											

Table 1. Command authority relationships (continued)

Command	Authority											LDAP Authority				
	Supervisor	Chassis User	Account Management Blade Server Remote Presence	Chassis Administration	Blade Administration	Blade Remote Presence	I/O Module Administration	Chassis Log Administration	Chassis Configuration	Blade Configuration	I/O Module Configuration	Blade Remote Presence View Video	Blade Remote Presence KVM	Blade Remote Presence Remote Drive Read	Blade Remote Presence Remote Drive Read or Write	Remote Presence Supervisor
alertentries	•															
									•							
boot	•															
					•											
boot -c	•															
			◇		◇											
boot -p	•															
					•											
bootseq	•															
										•						
clear	•															
				◇					◇							
							◇				◇					
clearlog	•															
								•								
clock	•															
									•							
console	•															
			•													
dns	•															
									•							
fuelg	•															
									•							

Table 1. Command authority relationships (continued)

Command	Authority											LDAP Authority				
	Supervisor	Chassis User	Account Management Blade Server Remote Presence	Chassis Administration	Blade Administration	Blade Remote Presence	I/O Module Administration	Chassis Log Administration	Chassis Configuration	Blade Configuration	I/O Module Configuration	Blade Remote Presence View Video	Blade Remote Presence KVM	Blade Remote Presence Remote Drive Read	Blade Remote Presence Remote Drive Read or Write	Remote Presence Supervisor
identify	•															
									•							
										•						
ifconfig	•															
									•							
										•						
											•					
kvm	•															
						•										
ldapcfg	•															
									•							
mt	•															
						•										
nat	•															
											•					
ntp	•															
									•							
portcfg	•															
									•							
ports	•															
									•							
power -on, -off, -cycle	•															
					•											
							•									

Table 1. Command authority relationships (continued)

Command	Authority											LDAP Authority				
	Supervisor	Chassis User	Account Management Blade Server Remote Presence	Chassis Administration	Blade Administration	Blade Remote Presence	I/O Module Administration	Chassis Log Administration	Chassis Configuration	Blade Configuration	I/O Module Configuration	Blade Remote Presence View Video	Blade Remote Presence KVM	Blade Remote Presence Remote Drive Read	Blade Remote Presence Remote Drive Read or Write	Remote Presence Supervisor
power -on -c, -cycle -c	•															
			◇		◇											
read	•															
									•							
reset (blade server or ISMP)	•															
					•											
reset (I/O module)	•															
							•									
reset (management module)	•															
				•												
reset -c (blade server or ISMP)	•															
			◇		◇											
reset -clr, -dg, -ddg, -sft (blade server)	•															
					•											
reset -exd, -full, -std (I/O module)	•															
							•									
reset -f (management module)	•															
				•												
service	•															
									•							
shutdown	•															
					•											

Table 1. Command authority relationships (continued)

Command	Authority											LDAP Authority				
	Supervisor	Chassis User	Account Management Blade Server Remote Presence	Chassis Administration	Blade Administration	Blade Remote Presence	I/O Module Administration	Chassis Log Administration	Chassis Configuration	Blade Configuration	I/O Module Configuration	Blade Remote Presence View Video	Blade Remote Presence KVM	Blade Remote Presence Remote Drive Read	Blade Remote Presence Remote Drive Read or Write	Remote Presence Supervisor
slp	•															
									•							
smtp	•															
									•							
snmp	•															
									•							
sol	•															
									•							
										•						
sshcfg	•															
									•							
tcpcmdmode	•															
									•							
telnetcfg	•															
									•							
tftp -c	•															
									•							
update (see Note 1)	•															
				•												
					•											
							•									
uplink	•															
									•							
users	•															
		•														

Table 1. Command authority relationships (continued)

Command	Authority											LDAP Authority				
	Supervisor	Chassis User	Account Management Blade Server Remote Presence	Chassis Administration	Blade Administration	Blade Remote Presence	I/O Module Administration	Chassis Log Administration	Chassis Configuration	Blade Configuration	I/O Module Configuration	Blade Remote Presence View Video	Blade Remote Presence KVM	Blade Remote Presence Remote Drive Read	Blade Remote Presence Remote Drive Read or Write	Remote Presence Supervisor
write	•															
									•							

Notes:

1. Firmware operations for the Server Connectivity Module for IBM BladeCenter require the Chassis Administration role.

Cabling the management module

You must connect a client computer to the management module to configure and manage operation of the BladeCenter unit. All management modules support a remote management and console (Ethernet) connection. The advanced management module also supports connection through the serial management port.

You can manage the BladeCenter unit by using by using the command-line interface that you access through Telnet or through the serial management port (advanced management module only). You can also use the graphical user interface that is provided by the management-module Web interface to manage the BladeCenter unit and blade servers that support KVM. Management connections to blade servers that do not support KVM are made using an SOL session through the management-module command-line interface. To connect to the management-module command-line interface, you need the following equipment and information:

- A computer with Ethernet or serial connection capability. To facilitate connections at multiple locations, you can use a notebook computer.
- The management-module MAC address (listed on the label on the management module).
- For networked connection to the management module, you need the following equipment:
  - A standard Ethernet cable
  - A local Ethernet network port (facility connection)

- For direct connection of a computer to the management-module remote management and console (Ethernet) connector, an Ethernet crossover cable. The advanced management module can use either a standard Ethernet cable or an Ethernet crossover cable to make this connection.
- For serial connection of a computer to the advanced management-module serial connector, you need a serial cable. See the *Installation Guide* for your management module for cabling information and instructions.

For information about accessing the management-module Web interface, see the *BladeCenter Management Module User's Guide*.

The following sections describe how to cable to the management module to perform initial configuration of the BladeCenter unit. See the *Installation Guide* for your management module for specific cabling instructions.

Networked connection

Connect one end of a Category 5 or higher Ethernet cable to the remote management and console (Ethernet) connector on the management module. Connect the other end of the Ethernet cable to the facility network.

Direct connection

Connect one end of a Category 5 or higher Ethernet cable (advanced management module only) or a Category 5 or higher Ethernet crossover cable (management module and advanced management module) to the remote management and console (Ethernet) connector on the management module. Connect the other end of the cable to the Ethernet connector on the client computer.

Note: The advanced management module can perform an automatic media dependent interface (MDI) crossover, eliminating the need for crossover cables or cross-wired (MDIX) ports. You might need to use a crossover cable to connect to the advanced management module if the network interface card in the client computer is very old.

Serial connection (advanced management module only)

Connect one end of a serial cable to the serial connector on the management module. Connect the other end of the serial cable to the serial connector on the client computer. See the *Installation Guide* for your management module for cabling information and instructions.

Starting the command-line interface

Access the management-module command-line interface from a client computer by establishing a Telnet connection to the IP address of the management module or by establishing a Secure Shell (SSH) connection. For the advanced management module, you can also access the command-line interface using a serial connection. You can establish up to 20 separate Telnet, serial, or SSH sessions to the BladeCenter management module, giving you the ability to have 20 command-line interface sessions active at the same time.

Although a remote network administrator can access the management-module command-line interface through Telnet, this method does not provide a secure connection. As a secure alternative to using Telnet to access the command-line interface, use a serial or SSH connection. SSH ensures that all data that is sent over the network is encrypted and secure.

The following SSH clients are available. While some SSH clients have been tested, support or non-support of any particular SSH client is not implied.

- The SSH clients distributed with operating systems such as Linux®, AIX®, and UNIX® (see your operating-system documentation for information). The SSH client of Red Hat Linux 8.0 Professional was used to test the command-line interface.
- The SSH client of cygwin (see http://www.cygwin.com for information)
- Putty (see http://www.chiark.greenend.org.uk/~sgtatham/putty for information)

The following table shows the types of encryption algorithms that are supported, based on the client software version that is being used.

Algorithm	SSH version 1.5 clients	SSH version 2.0 clients
Public key exchange	SSH 1-key exchange algorithm	Diffie-Hellman-group 1-sha-1
Host key type	RSA (1024-bit)	DSA (1024-bit)
Bulk cipher algorithms	3-des	3-des-cbc or blowfish-cbc
MAC algorithms	32-bit crc	Hmac-sha1

The following sections describe how to connect to the management module to perform initial configuration of the BladeCenter unit. The management module has the following default settings:

- IP address: 192.168.70.125
- Subnet: 255.255.255.0
- User ID: USERID (all capital letters)
- Password: PASSW0RD (note the number zero, not the letter O, in PASSW0RD)

The computer that you are connecting to the management module must be configured to operate on the same subnet as the BladeCenter management module. If the IP address of the management module is outside of your local domain, you must change the Internet protocol properties on the computer that you are connecting.

Telnet connection

To log on to the management module using Telnet, complete the following steps:

1. From a command-line prompt on the network-management workstation, type `telnet 192.168.70.125`, and press Enter. The IP address 192.168.70.125 is the default IP address of the management module; if a new IP address has been assigned to the management module, use that one instead.
2. At the login prompt, type the management-module user ID. At the password prompt, type the management-module password. The user ID and password are case sensitive and are the same as those that are used for management-module Web access. The default management-module user name is USERID and the default password is PASSW0RD (note the number zero, not the letter O, in PASSW0RD).

   The CLI command prompt is displayed. You can now enter commands for the management module.

Serial connection

After connecting a serial cable from the management module to the client computer, complete the following steps:

1. Open a terminal session on the client computer, and make sure that the serial port settings for the client computer match the settings for the serial port on the management module. The default management-module serial port settings are as follows:
   - Baud rate (BPS): 57600
   - Data bits: 8
   - Parity: no parity
   - Stop bits: 1
   - Flow control: none
2. If any of the serial port settings for the client computer were changed, reset the management module (see the *Management Module Installation Guide* for instructions).
3. At the login prompt, type the management-module user ID. At the password prompt, type the management-module password. The user ID and password are case sensitive and are the same as those that are used for management-module Web access. The default management-module user name is USERID and the default password is PASSW0RD (note the number zero, not the letter O, in PASSW0RD).

   The CLI command prompt is displayed. You can now enter commands for the management module.

Secure Shell (SSH) connection

To log on to the management module using SSH, complete the following steps:

1. Make sure that the SSH service on the network-management workstation is enabled. See your operating-system documentation for instructions.
2. Make sure that the SSH server on the BladeCenter management module is enabled. See the *BladeCenter Management Module User's Guide* for instructions.
3. Start an SSH session to the management module using the SSH client of your choice. For example, if you are using the cygwin client, from a command-line prompt on the network-management workstation, type `ssh 192.168.70.125`, and press Enter. The IP address 192.168.70.125 is the default IP address of the management module; if a new IP address has been assigned to the management module, use that one instead.
4. Type the management-module user ID when prompted. At the password prompt, type the management-module password. The user ID and password are case sensitive and are the same as those that are used for management-module Web access. The default management-module user name is USERID and the default password is PASSW0RD (note the number zero, not the letter O, in PASSW0RD).

   The CLI command prompt is displayed. You can now enter commands for the management module.

BladeCenter unit configuration

The BladeCenter unit automatically detects the modules and blade servers that are installed and stores the vital product data (VPD). When the BladeCenter unit is started, the management module automatically configures the remote management port of the management module, so that you can configure and manage BladeCenter components. You configure and manage BladeCenter components remotely using the management-module command-line interface (CLI) or the management-module Web interface.

To communicate with network resources and with the I/O modules in the BladeCenter unit, you must configure IP addresses for the management module and I/O modules. Management-module IP addresses can be configured using the Web interface or command-line interface. There are several ways to configure the I/O modules: through the management-module Web interface, or through an external I/O-module port enabled through the management module, using a Telnet interface, serial connection (advanced management module only), or a Web browser. See the documentation that comes with each I/O module for information and instructions.

To communicate with the blade servers for functions such as deploying an operating system or application program over a network, you must also configure at least one external (in-band) port on an Ethernet switch module in I/O-module bay 1 or 2.

Note: If a pass-thru module is installed in I/O-module bay 1 or 2 (instead of an Ethernet I/O module), you will need to configure the network switch that the pass-thru module is connected to; see the documentation that comes with the network switch for instructions.

Configuring the management module

You configure only the primary (active) management module. The redundant management module, if present, receives the configuration and status information automatically from the primary management module when necessary. The configuration information in this section applies to the primary management module, which might be the only management module in the BladeCenter unit.

If the management module that you installed is a replacement for the only management module in the BladeCenter unit, and you saved the configuration file before replacing the management module, you can apply the saved configuration file to the replacement management module. See “read command (advanced management module only)” on page 74 for information about applying a saved configuration file. Other management modules must have their configurations restored using the management-module Web interface (see the *BladeCenter Management Module User’s Guide* for information).

For the primary management module to communicate, you must configure the IP addresses for the following internal and external ports:

- The external Ethernet (remote management) port (eth0) of the management module. The initial automatic management module configuration enables a remote console to connect to the management module to configure the port completely and to configure the rest of the BladeCenter unit.
- The internal Ethernet port (eth1) on the management module for communication with the I/O modules. Internal Ethernet ports for the advanced management module cannot be configured.

After you connect the primary management module to the network, the Ethernet port connection is configured in one of the following ways. Either of these actions enables the Ethernet connection on the primary management module.

- If you have an accessible, active, and configured dynamic host configuration protocol (DHCP) server on the network, IP address, gateway address, subnet mask, and DNS server IP address are set automatically. The host name is set to the management-module MAC address by default, and the domain server cannot change it.
- If the DHCP server does not respond within 3 minutes after the port is connected, the management module uses the factory-defined static IP address and default subnet address.

Important: You can not connect to the management module using the factory-defined static IP address and default subnet address until after this 3-minute period passes.

Note: If the IP configuration is assigned by the DHCP server, the network administrator can use the MAC address of the management-module network interface to find out what IP address is assigned.

To configure the management-module internal and external Ethernet ports, complete the following steps:

1. Connect to the management-module command-line interface (see “Starting the command-line interface” on page 12 for more information).
2. Configure the external Ethernet interface (eth0), using the ifconfig command (see “ifconfig command (advanced management module only)” on page 54 for instructions).
3. For management modules other than the advanced management module, configure the internal Ethernet interface (eth1), using the ifconfig command (see “ifconfig command (advanced management module only)” on page 54 for instructions).

   Notes:

   a. The internal Ethernet management port on each I/O module provides for communication with the management module. You configure this port by configuring the IP address for the I/O module (see the *BladeCenter Management Module User’s Guide* and the *User’s Guide* for your I/O module type for information and instructions). Some types of I/O modules, such as the pass-thru module, have no management port. See the documentation that comes with each I/O module to determine what else you must configure in the I/O module.

   b. For I/O module communication with a remote management station, such as the IBM Director server, through the management-module external Ethernet port, the I/O module internal network interface and the management-module internal and external interfaces must be on the same subnet.

   c. To communicate with the blade servers for functions such as deploying an operating system or application program, you also will need to configure at least one external (in-band) port on an Ethernet I/O module.

Starting an SOL session

Note: Serial over LAN (SOL) must be enabled for both the BladeCenter unit and the blade server before you can start an SOL session with the blade server. See “sol (serial over LAN) command” on page 83 and the *BladeCenter Serial over LAN Setup Guide* for information about setting up and enabling SOL.

After you start a Telnet or SSH session to the BladeCenter management module, you can start an SOL session to any individual blade server that supports SOL. Since you can start up to 20 separate Web interface, Telnet, serial (advanced management module only), or SSH sessions to the BladeCenter management module, this gives you the ability to have simultaneous SOL sessions active for each blade server installed in the BladeCenter unit.

Start an SOL session using the `console` command, from the command line, indicating the target blade server. For example, to start an SOL connection to the blade server in blade bay 6, type

```
console -T system:blade[6]
```

Note: A blade server assembly that occupies more than one blade bay is identified by the lowest bay number that it occupies.

Once an SOL session is started, all commands are sent to the blade server specified by the `console` command until the SOL session is ended, regardless of the persistent command target that was in effect before the SOL session.

See “sol (serial over LAN) command” on page 83 and the *IBM BladeCenter Serial over LAN Setup Guide* for information about configuring a blade server for SOL. See your operating-system documentation for information about SOL commands that you can enter using the command-line interface.

Ending an SOL session

To end an SOL session, press Esc followed by an open parenthesis:

Esc (

When the SOL session ends, the command-line interface will return to the persistent command target that was in effect before the SOL session. If you want to end the Telnet or SSH command-line session, type `exit`.

Note: Exiting an SOL session does not stop the flow of serial data.

Chapter 3. Command reference

This section contains command function, usage information, and examples. It is divided into the following subsections:

  - boot command
  - bootseq command (advanced management module only)
  - fuelg command (management modules other than the advanced management module)
  - fuelg command (advanced management module only)
  - power command
  - reset command
  - shutdown command (advanced management module only)
- “Session commands” on page 132
  - console command
  - exit command
  - kvm (keyboard, video, mouse) command (advanced management module only)
  - mt (media tray) command (advanced management module only)
- “System management commands (for BladeCenter T only)” on page 135
  - alarm command
  - led command (advanced management module only)

Adding a `-h`, `-help`, or `?` option to a command displays syntax help for that command. For example, to display help for the environment command, type one of the following commands:

- `env -h`
- `env -help`
- `env ?`

You can target a command to a device other than the one that is set as the default by adding a `-T` option to a command. See “Selecting the command target” on page 4 for information.

Built-in commands

Use these commands to perform top-level functions within the command-line interface:

- env (environment) command
- help command
- history command
- list (system physical configuration) command

env (environment) command

This command sets the persistent environment for commands that are entered during the remainder of the current session. The persistent command environment is indicated by the command prompt. When you start the command-line interface, the persistent command environment is the BladeCenter unit, denoted as “system” by the command prompt. You can target a single command to an environment other than the one that is set as the default by adding a `-T` option to the command that includes a valid target destination (see “Selecting the command target” on page 4 for information). Target environments can be specified using the full path name, or using a partial path name based on the persistent command environment. Full path names always begin with “system”. The levels in a path name are divided using a colon “:”.

The following table lists BladeCenter components and the command paths that are supported as targets by the env command.

Component	Target path
BladeCenter unit	system
Management module	system:mm[*x*]
Blade server	system:blade[*x*]
Blade server integrated system management processor (BMC or service processor)	system:blade[*x*]:sp
Blade server I/O-expansion card	system:blade[*x*]:exp[*y*] (advanced management modules only) system:blade[*x*]:dtr[*y*] (management modules other than the advanced management module)
Blade server microprocessor	system:blade[*x*]:cpu[*y*]
Blade server storage expansion unit	system:blade[*x*]:be[*y*] (advanced management modules only) system:blade[*x*]:be (management modules other than the advanced management module)
Blade server high-speed expansion card (advanced management module only)	system:blade[*x*]:hsec
Blade server mezzanine for double-width form factor (advanced management module only)	system:blade[*x*]:sb
I/O module	system:switch[*x*]
Power module	system:power[*x*]
Blower	system:blower[*x*]
Media tray	system:mt[*x*] (advanced management modules only) system:mt (management modules other than the advanced management module)

Table 2. env (environment) command

Function	What it does	Command	Valid targets
Set BladeCenter unit as command target	Sets the BladeCenter unit as the persistent target for commands during the current session. This is the persistent command environment you are in at the beginning of each command-line interface session, indicated by the `system>` prompt.	env env -T system	The env command can be directed to any installed device.
Set management module as command target	Sets the management module as the persistent target for commands during the current session.	env -T system:mm[*x*] where *x* is the bay (1 or 2) that identifies the management module.	The env command can be directed to any installed device, in this case `-T system:mm[x]` where *x* is the management-module bay number.

Table 2. env (environment) command (continued)

Function	What it does	Command	Valid targets
Set blade server as command target	Sets the specified blade server as the persistent target for commands during the current session.	env -T system:blade[*x*] where *x* is the blade bay that identifies the blade server. A blade server that occupies more than one blade bay is identified by the lowest bay number that it occupies.	The env command can be directed to any installed device, in this case `-T system:blade[x]` where *x* is the blade bay that identifies the blade server.
Set blade server sub-component as command target	Sets the specified sub-component on the specified blade server as the persistent target for commands during the current session. Valid sub-components are: • Integrated system management processor (BMC or service processor) • I/O-expansion card • Microprocessor • Storage expansion unit • High-speed expansion card (advanced management module only) • Mezzanine assembly for double-width form factor blade servers (advanced management module only)	env -T system:blade[*x*]:*comp* where *x* is the blade bay that identifies the blade server on which the sub-component is installed. A blade server that occupies more than one blade bay is identified by the lowest bay number that it occupies. where *comp* is the sub-component: • “sp” for BMC or service processor • “exp[*x*]” for I/O-expansion card (where *x* identifies the expansion card) (advanced management module only) • “dtr[*x*]” for I/O-expansion card (where *x* identifies the expansion card) (management modules other than the advanced management module) • “cpu[*x*]” for microprocessor (where *x* identifies the microprocessor) • “be[*x*]” for storage expansion unit (where *x* identifies the expansion unit) • “hsec” for high-speed expansion card (advanced management module only) • “sb” for mezzanine assembly for double-width form factor blade servers (advanced management module only)	The env command can be directed to any installed device, in this case `-T system:blade[x]:sp` where *x* is the blade bay that identifies the blade server on which the integrated system management processor is installed.

Table 2. env (environment) command (continued)

Function	What it does	Command	Valid targets
Set I/O (switch) module as command target	Sets the specified I/O (switch) module as the persistent target for commands during the current session.	env -T system:switch[*x*] where *x* is the I/O (switch) module bay where the I/O (switch) module is installed.	The env command can be directed to any installed device, in this case `-T system:switch[x]` where *x* is the I/O (switch) module bay where the I/O (switch) module is installed.
Set power module as command target	Sets the specified power module as the persistent target for commands during the current session.	env -T system:power[*x*] where *x* is the power module bay where the power module is installed.	The env command can be directed to any installed device, in this case `-T system:power[x]` where *x* is the power module bay where the power module is installed.
Set blower as command target	Sets the specified blower as the persistent target for commands during the current session.	env -T system:blower[*x*] where *x* is the blower bay where the blower is installed.	The env command can be directed to any installed device, in this case `-T system:blower[x]` where *x* is the blower bay where the blower is installed.
Set media tray as command target	Sets the media tray as the persistent target for commands during the current session.	For advanced management modules: env -T system:mt[*x*] where *x* is the media-tray bay where the media tray is installed (advanced management modules only). For management modules other than the advanced management module: env -T system:mt	The env command can be directed to any installed device, in this case `-T system:mt[x]` (for advanced management modules) `-T system:mt` (management modules other than the advanced management module) where *x* is the media tray bay where the media tray is installed (advanced management modules only).

Example:
To set the persistent target of commands to the service processor on the blade server in blade bay 5, while the BladeCenter unit is set as the default command target, at the system> prompt, type

```
env -T system:blade[5]:sp
```

The following example shows the information that is returned:

```
system> env -T system:blade[5]:sp
OK
system:blade[5]:sp>
```

To set the persistent target of commands to the service processor on the blade server in blade bay 5, while the BladeCenter unit is set as the default command target, at the system> prompt, you can also type

```
env -T blade[5]:sp
```

The following example shows the information that is returned:

```
system> env -T blade[5]:sp
OK
system:blade[5]:sp>
```

To issue the reset command on the blade server in blade bay 5, while the management module is set as the default command target, at the system:mm[*x*]> prompt, type

```
reset -T system:blade[5]
```

help command

This command displays a list of all commands that are available in the command-line interface with a brief description of each command. You can also issue the help command by typing ?. Adding a -h, -help, or ? option to a command displays syntax help for the command.

Table 3. help command

Function	What it does	Command	Valid targets
Help	Displays a list of commands and a brief description of each command.	help	Any installed device.
		?	Any installed device.

Example:
To display a list of commands, while management module 1 is set as the default command target, at the system:mm[1]> prompt, type

```
help
```

The following example shows the information that is returned:

```
system:mm[1]> help
           ?- Display commands
       alarm- Manage Telco System Management alarm(s)
alertentries- View/edit remote alert recipients
        boot- Boot target
     bootseq- View/edit the blade boot sequence settings
       clear- Clear the config
    clearlog- Clear the event log
       clock- View/edit date, time, GMT offset, and dst setting
     console- Start SOL session to a blade
```

```
   dhcpinfo- View DHCP server assigned settings
 displaylog- Display event log entries
  displaysd- Display service data
        dns- View/edit DNS config
        env- Set persistent command target
       exit- Log off
      fuelg- Power management
     health- View system health status
       help- Display command list
    history- Display command history
   identify- Control target location LED
   ifconfig- View/edit network interface config
       info- Display identity and config of target
        kvm- Controls the kvm owner
    ldapcfg- View/edit LDAP config
led- Leds for Telco H/W components
       list- Display installed targets
         mt- Controls the media tray owner
        nat- Display and configure NAT
    portcfg- Serial port configuration
      ports- Port configuration
      power- Control target power
       read- Restore configuration from chassis
      reset- Reset target
    service- Enable debugging by service personnel
   shutdown- Shutdown target
        slp- View/edit SLP parameters
       smtp- View/edit SMTP config
       snmp- View/edit SNMP config
        ntp- View/edit NTP config
        sol- View SOL status and view/edit SOL config
     sshcfg- View/edit SSH config
 tcpcmdmode- View/edit TCP command mode config
  telnetcfg- View/edit telnet config
       tftp- Creates an empty file
     update- Update firmware from TFTP server
     uplink- View/edit failover on network uplink loss config
      users- View/edit user login profiles
      write- Save configuration to chassis
Type "<command> -h" for individual command syntax help.
       [ ] is used for indexing (by bay number)
       < > denotes a variable
       { } denotes optional arguments
        |  denotes choice
system:mm[1]>
```

To obtain help about the `env` command, type one of the following commands:

- `env -h`
- `env -help`
- `env ?`

history command

This command displays the last eight commands that were entered, allowing the user to choose and re-enter one of these commands. You choose the command to re-enter from the displayed list by typing an exclamation point (!) followed immediately by the numeric designation the command is assigned in the list. You can also recall one of the past eight previously entered commands using the up-arrow and down-arrow keys.

Table 4. history command

Function	What it does	Command	Valid targets
Command history	Displays the last eight commands that were entered.	history	Any installed device.
Re-enter previous command using numeric designation	Re-enters a numerically-specified command from the command history.	!*x* where *x* is the number of the command (0 - 7) to re-enter from the command history list.	Any installed device.

Example:
To display a list of the last eight commands entered, while management module 1 is set as the default command target, at the `system:mm[1]>` prompt, type

```
history
```

To re-enter the command designated by “2” in the command history, type

```
!2
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> history
 0 dns
 1 dns -on
 2 dns
 3 dns -i1 192.168.70.29
 4 dns
 5 dns -i1 192.168.70.29 -on
 6 dns
 7 history
system:mm[1]> !2
Enabled
-i1 192.168.70.29
-i2 0.0.0.0
-i3 0.0.0.0
system:mm[1]>
```

list (system physical configuration) command

This command displays a list of devices present within the command target. It can be used to determine how many management modules are installed in the BladeCenter unit and which management module is set as primary.

Table 5. list (system physical configuration) command

Function	What it does	Command	Valid targets
View command target	Displays the current command target. If a management-module bay is the current command target, it will be identified as primary or redundant.	list	Any installed device.
View system configuration tree	Displays the tree structure of devices present in the BladeCenter unit, starting at the command target level. If management-module bays are part of the tree, they will be identified as primary or redundant.	list -l *depth* where *depth* is “all” or “a” for full tree display, starting at the command target level. Specifying a *depth* of “1” displays the current command target. Specifying a *depth* of “2” displays the content of the current command target plus one level below it.	Any installed device.

Example:
To display a list of devices installed in the BladeCenter unit, while the BladeCenter unit is set as the persistent command environment, at the `system>` prompt, type

```
list -l a
```

(This is the command syntax that can be used to determine the primary management module.)

The following example shows the information that is returned when the command is run on an advanced management module:

```
system> list -l a
system
        mm[1]    primary
        power[4]
        blower[1]
        blower[2]
        blade[1]
                sp
                exp[1]
        blade[5]
                sp
        blade[6]
                sp
        blade[7]
                sp
        blade[8]
                sp
        mt
system>
```

Common commands

Use these commands to monitor and control operation of BladeCenter components using the command-line interface:

- health command
- identify (location LED) command
- info (configuration information) command
- update (update firmware) command

health command

This command displays the current health status of the command target. It can also be used to display the alerts that are active for the command target. You can only specify one command target each time you run the health command.

Table 6. health command

Function	What it does	Command	Valid targets

Display health status	Displays the current health status of the command target. Return values are different for the BladeCenter and BladeCenter T configurations.
	• Possible return values for the BladeCenter configuration are:
	– ok
	– warning
	– critical
	• Possible return values for the BladeCenter T configurations are:
	– ok
	– minor
	– major
	– critical
		health	`-T system`
			`-T system:mm[`*x*`]`
			`-T system:blade[`*x*`]`
			`-T system:switch[`*x*`]`
			`-T system:power[`*x*`]`
			`-T system:blower[`*x*`]`
			where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.

Display health status for tree	Displays the current health status of the tree structure of devices present in the BladeCenter unit, starting at the command target level. If management-module bays are part of the tree, they will be identified as primary or redundant. Return values are different for the BladeCenter and BladeCenter T configurations.
	• Possible return values for the BladeCenter configuration are:
	– ok
	– warning
	– critical
	• Possible return values for the BladeCenter T configurations are:
	– ok
	– minor
	– major
	– critical
		health -l *depth*
		where *depth* is “2”, “all”, or “a” for full tree display, starting at the command target level.
		Specifying a *depth* of “1” displays health status of the current command target.
			`-T system`
			`-T system:mm[`*x*`]`
			`-T system:blade[`*x*`]`
			`-T system:switch[`*x*`]`
			`-T system:power[`*x*`]`
			`-T system:blower[`*x*`]`
			where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.

Table 6. health command (continued)

Function	What it does	Command	Valid targets

Display health status and alerts	Displays the current health status and active alerts for the command target. Return values are different for the BladeCenter and BladeCenter T configurations.
	• Possible return values for the health status of the BladeCenter configuration are:
	– ok
	– warning
	– critical
	• Possible return values for the health status of the BladeCenter T configurations are:
	– ok
	– minor
	– major
	– critical
	• Active alert information provides short text descriptions of alerts that are active for each monitored component.
	
	The total amount of information returned from the `health -f` command is limited to 1024 bytes.
		health -f	`-T system`
			`-T system:mm[`*x*`]`
			`-T system:blade[`*x*`]`
			`-T system:switch[`*x*`]`
			`-T system:power[`*x*`]`
			`-T system:blower[`*x*`]`
			
			where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.

Example:
To display the overall health status of the BladeCenter T unit, while the BladeCenter T unit is set as the default command target, at the `system>` prompt, type

```
health
```

To display the health status of all components installed in the BladeCenter T unit, that are valid command targets, while the BladeCenter T unit is set as the default command target, at the `system>` prompt, type

```
health -l a
```

To display the health status of the blade server installed in blade bay 5, while the BladeCenter T unit is set as the default command target, at the `system>` prompt, type

```
health -T system:blade[5]
```

To display the health status and alerts for all components installed in the BladeCenter T unit, that are valid command targets, while the BladeCenter T unit is set as the default command target, at the `system>` prompt, type

```
health -l a -f
```

The following example shows the information that is returned from these commands:

```
system> health
system:major
system> health -l a
system:major
   mm[1]:ok
```

```
    blade[1]:ok
    blade[3]:ok
    blade[5]:minor
    power[1]:ok
    power[2]:minor
    blower[1]:ok
    blower[2]:ok
    blower[3]:ok
    blower[4]:ok
    switch[1]:major
system> health -T system:blade[5]
blade[5]:minor
health -l a -f
system:major
    blade[5]:minor
        5V over voltage
        CPU1 temperature warning
    power[2]:minor
        5V over voltage
    switch[1]:major
        temperature fault
system>
```

identify (location LED) command

This command controls operation of the location LED in a blade server or in the BladeCenter unit. It can also be used to display the state of a location LED.

Table 7. identify (location LED) command

Function	What it does	Command	Valid targets

Display location LED state	Displays the current state of the location LED in the command target.
	
	Possible LED states are:
	• off
	• on
	• blink
		identify	`-T system`
			`-T system:blade[`*x*`]`
			
			where *x* is the blade bay number.

Set location LED state	Sets the state of the location LED in the command target.	identify -s *state*
		
		where *state* is “on”, “off”, or “blink”.
		
		Command use restricted (see “Commands and user authority” on page 5).
			`-T system`
			`-T system:blade[`*x*`]`
			
			where *x* is the blade bay number.

Turn on BladeCenter unit location LED for specified period of time	Turns on the location LED in the BladeCenter unit for a specified period of time before turning it off automatically.	identify -s on -d *time* where *time* is the number of seconds the location LED will remain lit. Command use restricted (see “Commands and user authority” on page 5).	`-T system`

Example:
To display the status of the location LED in the blade server in blade bay 4, while the BladeCenter unit is set as the persistent command environment, at the `system>` prompt, type

```
identify -T system:blade[4]
```

To light the location LED in the blade server in blade bay 4, while the BladeCenter unit is set as the persistent command environment, at the `system>` prompt, type

```
identify -s on -T system:blade[4]
```

The following example shows the information that is returned from a series of identify commands:

```
system> identify -T system:blade[4]
-s off
system> identify -s on -T system:blade[4]
OK
system> identify -T system:blade[4]
-s on
system>
```

info (configuration information) command

This command displays information about BladeCenter components and their configuration.

Table 8. info (configuration information) command

Function	What it does	Command	Valid targets

Display component information	Displays identification and configuration information for the command target.	info
		
		Note: Only one target at a time can be viewed with the info command.
			`-T system:mm[x]`
			`-T system:blade[x]`
			`-T system:blade[x] :exp[x]` (for advanced management modules)
			`-T system:blade[x] :dtr[x]` (for management modules other than the advanced management module)
			`-T system:blade[x]:sp`
			`-T system:blade[x]:be[y]` (for advanced management modules)
			`-T system:blade[x]:be` (management modules other than the advanced management module)
			`-T system:blade[x]:sb` (for advanced management modules)
			`-T system:blade[x]: cpu[x]`
			`-T system:blade[x]:hsec` (for advanced management modules)
			`-T system:switch[x]`
			`-T system:power[x]`
			
			(continued on next page)

Table 8. info (configuration information) command (continued)

Function	What it does	Command	Valid targets
Display component information **(continued)**			`-T system:mt[x]` (for advanced management modules) `-T system:mt` (management modules other than the advanced management module) where: • *x* is the management-module bay number, blade server bay number, I/O (switch) module bay number, microprocessor number, power module bay number, daughter-card number, or media-tray bay number (advanced management modules only). • *y* is the blade expansion unit number (advanced management modules only).

Notes:

1. The command targets `-T system:blade[x]:exp[x]` and `-T system:blade[x]:dtr[x]` are shown with a line break before the `:exp[x]` or `:dtr[x]`. When these command targets are entered, the entire entry must all be on one line.
2. This command returns vital product data (VPD) information that is unique for each command target. For some targets, additional VPD information is available when using the advanced management module.

Example:
To view the information about a management module other than an advanced management module in management-module bay 1, while this management module is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
info
```

The following example shows the information that might be returned from the info command:

```
system:mm[1]> info
UUID: 0000 0000 0000 0000 0000 0000 0000 0000
Manuf ID: SLRM
Mach type/model: Management Module
Mach serial number: n/a
```

```
Manuf date: 4102
Part no.: 02R1606
FRU no.: 59P6622
FRU serial no.: J1P702A511F
Main application
   Build ID:       DVETXX-
   File name:      CNETMNUS.PKT
   Rel date:       05-27-04
   Rev:            16
Boot ROM
   Build ID:       BRBR14-
   File name:      CNETBRUS.PKT
   Rel date:       09-12-02
   Rev:            16
Remote control
   Build ID:       BRRG14-
   File name:      CNETRGUS.PKT
   Rel date:       09-12-02
   Rev:            16
system:mm[1]>
```

update (update firmware) command

This command updates firmware using a Trivial File Transfer Protocol (TFTP) server and displays information about firmware installed in BladeCenter components.

Table 9. update (update firmware) command

Function	What it does	Command	Valid targets

Display update command help	Displays information about using the update command.	update	`-T system:mm[x]`
			`-T system:blade[x]:sp`
			`-T system:switch[x]`
			where *x* is the primary management-module, blade server bay number, or I/O (switch) module bay number.

Display firmware attributes	Displays attributes of the firmware installed in the command target. Return values are:
	• Firmware type
	• Build ID
	• Filename
	• Release date
	• Revision level
		update -a	`-T system:mm[x]`
			`-T system:blade[x]:sp`
			`-T system:switch[x]`
			where *x* is the primary management-module, blade server bay number, or I/O (switch) module bay number.

Table 9. update (update firmware) command (continued)

Function	What it does	Command	Valid targets

Update firmware	Update firmware for the command target.
	Important: Command authority definitions might change between firmware versions. Make sure that the command authority level set for each user is correct after updating management-module firmware.
		update -i *ip_address* -l *filelocation*
		
		where:
		• *ip_address* is the IP address of TFTP server.
		• *filelocation* is the location of the firmware update file.
		
		Command use restricted (see "Commands and user authority" on page 5).
			`-T system:mm[x]`
			`-T system:blade[x]:sp`
			`-T system:switch[x]`
			
			where *x* is the primary management-module, blade server bay number, or I/O (switch) module bay number.

Update firmware (verbose)	Update firmware for the command target, showing details of the firmware download and flash operations. The detailed information is not shown until the update is complete, which might take several minutes.
	Important: Command authority definitions might change between firmware versions. Make sure that the command authority level set for each user is correct after updating management-module firmware.
		update -i *ip_address* -l *filelocation* -v
		
		where:
		• *ip_address* is the IP address of TFTP server.
		• *filelocation* is the location of the firmware update file.
		
		Command use restricted (see "Commands and user authority" on page 5).
			`-T system:mm[x]`
			`-T system:blade[x]:sp`
			`-T system:switch[x]`
			
			where *x* is the primary management-module, blade server bay number, or I/O (switch) module bay number.

Example:
To update the firmware and display update details for the management module in management-module bay 1, while this management module is set as the persistent command environment, type the following command at the `system:mm[1]>` prompt. For this example, the IP address of the TFTP server is 192.168.70.120 and the firmware file containing the update is named dev_mm.pkt.

```
update -v -i 192.168.70.120 -l dev_mm.pkt
```

To display information about firmware installed in the management module in management-module bay 1, while this management module is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
update -a
```

To update the service-processor firmware in the blade server in blade bay 8 (not using verbose mode), while the management module in management-module bay 1 is set as the persistent command environment, type the following command at the `system:mm[1]>` prompt. For this example, the IP address of the TFTP server is 192.168.70.120 and the firmware file containing the update is named h8.pkt.

```
update -i 192.168.70.120 -l h8.pkt -T system:blade[8]:sp
```

The following example shows the information that is returned from these three update commands:

```
system:mm[1]> update -v -i 192.168.70.120 -l dev_mm.pkt
TFTP file upload successful 1517829.
Starting flash packet preparation.
Flash preparation - packet percent complete 24.
```

```
Flash preparation - packet percent complete 48.
Flash preparation - packet percent complete 72.
Flash preparation - packet percent complete 96.
Flash preparation - packet percent complete 100.
Flash operation phase starting.
Flashing - packet percent complete 34.
Flashing - packet percent complete 38.
Flashing - packet percent complete 50.
Flashing - packet percent complete 55.
Flashing - packet percent complete 80.
Flashing - packet percent complete 90.
Flash operation complete. The new firmware will become active after the next
reset of the MM.
OK
system:mm[1]> update -a
Bay 1 Name 1
Firmware type: Main application
Build ID: BRETKD+
Filename: CNETMNUS.PKT
Released: 11-17-03
Revision: 16
Firmware type: Boot ROM
Build ID: BRBR1B+
Filename: CNETBRUS.PKT
Released: 10-27-03
Revision: 16
Firmware type: Remote control
Build ID: BRRG1B+
Filename: CNETRGUS.PKT
Released: 10-27-03
Revision: 16
OK
system:mm[1]> update -i 192.168.70.120 -l h8.pkt -T system:blade[8]:sp
OK
system:mm[1]>
```

Configuration commands

Use these commands to view and configure network settings and Ethernet interfaces:

- alertentries command
- clear command (management modules other than the advanced management module)
- clear command (advanced management module only)
- clock command (advanced management module only)
- dhcpinfo command
- displaysd command (advanced management module only)
- dns command
- ifconfig command (management modules other than the advanced management module)
- ifconfig command (advanced management module only)
- ldapcfg command (advanced management module only)
- nat command (advanced management module only)
- ntp (network time protocol) command (advanced management module only)
- portcfg command (advanced management module only)
- ports command (advanced management module only)
- service command (advanced management module only)
- slp command (advanced management module only)
- smtp command
- snmp command
- sol (serial over LAN) command
- sshcfg command (advanced management module only)
- tcpcmdmode command (management modules other than the advanced management module)
- tcpcmdmode command (advanced management module only)
- telnetcfg (Telnet configuration) command
- tftp command (advanced management module only)
- uplink (management module failover) command (management modules other than the advanced management module)
- uplink (management module failover) command (advanced management module only)
- users command (management modules other than the advanced management module)
- users command (advanced management module only)

alertentries command

This command manages the recipients of alerts generated by the primary management module.

Table 10. alertentries command

Function	What it does	Command	Valid targets
Display alert properties for all recipients	Displays alert properties for all management-module alert recipients. Returned values for each alert recipient are: • recipient name • notification method (E-Mail over LAN/Director comp./SNMP over LAN) • type of alerts received (Receives critical alerts only/Receives all alerts/Disabled)	alertentries	`-T system:mm[x]` where *x* is the primary management-module bay number.
Display alert properties for alert recipients	Displays alert properties for the specified management-module alert recipient profile. Returned values are: • -status *alert_recipient_status* (on/off) • -n *alert_recipient_name* • -f *alert_type* (critical/none) • -t *notification_method* (email/director/snmp) • -e *email_address* (used for e-mail notifications) • -i *static_IP_addr/hostname* (used for IBM Director notifications)	alertentries -*recip_number* where *recip_number* is a number from 1 to 12 that corresponds to the recipient number assigned in the “Display alert properties for all recipients” list.	`-T system:mm[x]` where *x* is the primary management-module bay number.
Delete alert recipient	Delete the specified alert recipient.	alertentries -*recip_number* -del where *recip_number* is a number from 1 to 12 that corresponds to the recipient number assigned in the “Display alert properties for all recipients” list. It is possible to delete an empty alert recipient. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 10. alertentries command (continued)

Function	What it does	Command	Valid targets
Create alert recipient	Create the specified alert recipient. All fields must be specified when creating an alert recipient.	alertentries -*recip_number* -n *recip_name* -status *alert_status* -f *filter_type* -t *notification_method* -e *email_addr* -i *ip_addr/hostname* where: • *recip_number* is a number from 1 to 12 that corresponds to an unused recipient number in the “Display alert properties for all recipients” list. • *recip_name* is a alphanumeric string up to 31 characters in length containing any character, including spaces, except for angle brackets (< and >). If the string includes spaces it must be enclosed in double-quotes. • *alert_status* is on or off for receipt of alerts. • *filter_type* filters the alert types received: critical (receive critical alerts only) or none (receive all alerts). • *notification_method* is email, director (IBM Director) or snmp. – For e-mail, you must specify an e-mail address (-e argument). – For director, you must specify an IP address (-i argument). – If snmp is selected, the -e and -i arguments are not needed. • *email_addr* is a valid e-mail address string up to 63 characters in length. *(continued on next page)*	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 10. alertentries command (continued)

Function	What it does	Command	Valid targets
Create alert recipient *(continued)*		• *ip_addr/hostname* is a valid static IP address or an alphanumeric hostname string for the recipient that is up to 49 characters in length that can include periods (.), hyphens (-), and underscores (_). Command use restricted (see "Commands and user authority" on page 5).	
Set alert recipient name	Sets a name for the specified alert recipient.	alertentries -*recip_number* -n *recip_name* where: • *recip_number* is a number from 1 to 12 that corresponds to the recipient number assigned in the "Display alert properties for all recipients" list. • *recip_name* is a alphanumeric string up to 31 characters in length that can include any character, including spaces, except for angle brackets (< and >). If the name includes spaces it must be enclosed in double-quotes. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[`*x*`]` where *x* is the primary management-module bay number.
Set alert recipient status	Sets status for the specified alert recipient. The status determines if a recipient will receive alarm notifications.	alertentries -*recip_number* -status *alert_status* where: • *recip_number* is a number from 1 to 12 that corresponds to the recipient number assigned in the "Display alert properties for all recipients" list. • *alert_status* is on or off. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[`*x*`]` where *x* is the primary management-module bay number.

Table 10. alertentries command (continued)

Function	What it does	Command	Valid targets
Set alert types received	Filters the types of alert that are received by the specified alert recipient.	alertentries -*recip_number* -f *filter_type* where: • *recip_number* is a number from 1 to 12 that corresponds to the recipient number assigned in the "Display alert properties for all recipients" list. • *alert_type* filters the alert types received: critical (receive critical alerts only) or none (receive all alerts). Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Set alert notification method	Sets the alert notification method for the specified alert recipient.	alertentries -*recip_number* -t *notification_method* where: • *recip_number* is a number from 1 to 12 that corresponds to the recipient number assigned in the "Display alert properties for all recipients" list. • *notification_method* is email, director (IBM Director) or snmp. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Set alert recipient e-mail address	Sets the e-mail address for the specified alert recipient. This e-mail address is used to send alerts to the recipient via e-mail. The e-mail address can be set only if the alert notification method (-t option) is set to email. The -t and -e options can be combined within the same command.	alertentries -*recip_number* -e *email_addr* where: • *recip_number* is a number from 1 to 12 that corresponds to the recipient number assigned in the "Display alert properties for all recipients" list. • *email_addr* is a valid e-mail address string up to 63 characters in length. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.

Table 10. alertentries command (continued)

Function	What it does	Command	Valid targets
Set alert recipient IP address or hostname	Sets the IP address or hostname used to send alert notifications to the specified alert recipient using IBM Director. The IP address or hostname used to send alert notifications can be set only if the alert notification method (-t option) is set to director (IBM Director). The -t and -i options can be combined within the same command.	alertentries -*recip_number* -i *ip_addr/hostname* where: • *recip_number* is a number from 1 to 12 that corresponds to the recipient number assigned in the "Display alert properties for all recipients" list. • *ip_addr/hostname* is a valid static IP address or an alphanumeric hostname string up to 49 characters in length that can include periods (.), hyphens (-), and underscores (_). Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Example:
To view the configuration for alert recipient 1, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
alertentries -1
```

To configure alert recipient 2 to receive only critical alert notifications by e-mail, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
alertentries -2 -n test2 -status on -f critical -t email -e test2@us.ibm.com
```

To configure alert recipient 3 to receive all alert notifications through IBM Director, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
alertentries -3 -n test3 -status on -f none -t director -i 192.168.70.140
```

To configure alert recipient 4 to receive all alert notifications through SNMP, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
alertentries -4 -n test4 -status on -f none -t snmp
```

The following example shows the information that is returned from these commands:

```
system:mm[1]> alertentries -1
-status on
-n test1
-f critical
-t email
-e test1@us.ibm.com
system:mm[1]> alertentries -2 -n test2 -status on -f critical -t email
-e test2@us.ibm.com
```

```
OK
system:mm[1]> alertentries -3 -n test3 -status on -f none -t director
-i 192.168.70.140
OK
system:mm[1]> alertentries -4 -n test4 -status on -f none -t snmp
OK
system:mm[1]>
```

clear command (management modules other than the advanced management module)

Note: The clear command operates differently for the advanced management module and for other management module types. The following command description is for management modules other than the advanced management module. See “clear command (advanced management module only)” on page 44 for command syntax for the advanced management module.

This command restores the primary management module configuration or an I/O (switch) module configuration to the default settings. The command must always include the `-config` option.

Table 11. clear command (management modules other than the advanced management module)

Function	What it does	Command	Valid targets
Restore default configuration of primary management module	Restores the default configuration of the primary management module; then, resets the management module. No results are returned from this command because it resets the management module. When you restore the management-module configuration, the Ethernet configuration method is set to a value of dthens. After the management module resets, this causes the management module to try dhcp configuration and then default to the static IP configuration, which might cause the management module to remain offline for longer than normal. See the “ifconfig command (advanced management module only)” on page 54 for information.	clear -config Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[`*x*`]` where *x* is the primary management-module bay number.
Restore default configuration of I/O (switch) module	Restores the configuration of the specified I/O (switch) module to the default settings.	clear -config Command use restricted (see “Commands and user authority” on page 5).	`-T system:switch[`*x*`]` where *x* is the I/O (switch) module bay number.

Example:
To restore the primary management-module configuration to default settings, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
clear -config
```

No results are returned from this command. After the management module resets, you will need to start a new command-line session.

clear command (advanced management module only)

Note: The clear command operates differently for the advanced management module and for other management module types. The following command description is for the advanced management module. See “clear command (management modules other than the advanced management module)” on page 43 for command syntax for management modules other than the advanced management module.

This command restores the primary management module configuration or an I/O (switch) module configuration to the default settings. The command must always include the `-cnfg` or `-config` option.

Table 12. clear command (advanced management module only)

Function	What it does	Command	Valid targets
Restore default configuration of primary management module and keep logs	Restores the default configuration of the primary management module, retaining log information; then, resets the management module. No results are returned from this command because it resets the management module. When you restore the management-module configuration, the Ethernet configuration method is set to a value of dthens. After the management module resets, this causes the management module to try dhcp configuration and then default to the static IP configuration, which might cause the management module to remain offline for longer than normal. See the “ifconfig command (advanced management module only)” on page 54 for information.	clear -cnfg Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[`*x*`]` where *x* is the primary management-module bay number.
Restore default configuration of I/O (switch) module	Restores the configuration of the specified I/O (switch) module to the default settings.	clear -cnfg Command use restricted (see “Commands and user authority” on page 5).	`-T system:switch[`*x*`]` where *x* is the I/O (switch) module bay number.

Example:
To restore the primary management-module configuration to default settings and

retain log information, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
clear -cnfg
```

No results are returned from this command. After the management module resets, you will need to start a new command-line session.

clock command (advanced management module only)

This command configures and displays the advanced management-module clock settings.

Table 13. clock command

Function	What it does	Command	Valid targets
Display advanced management module clock information	Displays the following information for the advanced management module clock: • current date and time • GMT (Greenwich-Mean Time) offset • daylight-savings time setting	clock	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set advanced management module date	Sets the date for the advanced management module clock.	clock -d *date* where *date* is the current calendar date in mm/dd/yyyy format. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set advanced management module time	Sets the time for the advanced management module clock.	clock -t *time* where *time* is the current time in 24-hour hh:mm:ss format. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set advanced management module clock GMT offset	Sets the time for the advanced management module clock.	clock -g *offset* where *offset* is a value between +12 and -12, in hours. For some time zones that use daylight-savings time (GMT +10, +2, -5, -6, -7, -8, -9), a special value for the -dst option must be specified to identify the correct daylight-savings time scheme to use in that time zone. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 13. clock command (continued)

Function	What it does	Command	Valid targets
Set advanced management module clock daylight-savings time mode	Sets the daylight-savings time mode for the advanced management module clock.	clock -dst *dst_mode* where *dst_mode* is one of the following: • off • uc (United States and Canada) • others Command use restricted (see “Commands and user authority” on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.

Example:
To set the management-module for operation in the US Eastern time zone in compliance with new daylight-savings time rules, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
clock -g +5 -dst uc
```

To display the clock information for the primary management module, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
clock
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> clock -g +5 -dst uc
OK
system:mm[1]> clock
10/17/2006 02:27:11 GMT+5:00 dst uc
system:mm[1]>
```

dhcpinfo command

This command displays the IP configuration that is assigned to the primary management module by the DHCP server.

Note: The `dhcpinfo` command does not apply to eth1, which always uses a static IP configuration.

Table 14. dhcpinfo command

Function	What it does	Command	Valid targets
Display Ethernet channel 0 DHCP configuration	If the IP configuration for eth0 is assigned by a DHCP server, the configuration that is assigned by the DHCP server and DHCP server information is displayed. If the IP configuration for eth0 is *not* assigned by a DHCP server, an error message is displayed. Possible configuration values returned are: • -server *dhcp_ip_address* • -n *hostname* • -i ip_address • -g *gateway_address* • -s *subnet_mask* • -d *domainname* • -dns1 *primary _dns_ip_address* • -dns2 *secondary _dns_ip_address* • -dns3 *tertiary _dns_ip_1address*	dhcpinfo -eth0	`-T system:mm[`*x*`]` where *x* is the primary management-module bay number.

Example:
To display the DHCP server assigned network settings for Ethernet channel 0, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
dhcpinfo -eth0
```

The following example shows the information that is returned:

```
system:mm[1]> dhcpinfo -eth0
-server 192.168.70.29
-n MM00096BCA0C80
-i 192.168.70.183
-g 192.168.70.29
-s 255.255.255.0
-d linux-sp.raleigh.ibm.com
-dns1 192.168.70.29
-dns2 0.0.0.0
-dns3 0.0.0.0
system:mm[1]>
```

displaysd command (advanced management module only)

This command captures and displays service information. Service information for the management modules includes BladeCenter VPD, the management-module event log, connection status, and self-test results. If multiple user interface sessions issue the displaysd command, the commands will be processed in the order that they are received. Some types of service information are displayed for only the primary management module.

Table 15. displaysd command

Function	What it does	Command	Valid targets
Capture and display service information	Capture and display service information on screen.	displaysd	`-T system`
Display management module connection and self-test status	Displays connection status and latest self-test results for all installed management modules.	displaysd -mmstat	`-T system`

Example:
To capture and display service information, while the chassis is set as the persistent command environment, at the `system>` prompt, type

```
displaysd
```

The following example shows the information that is returned:

```
system> displaysd
SPAPP Capture Available
Time: 10/04/2005 21:47:43
UUID: Not Available
•
•
•
system>
```

Note: If a large amount of service information is available, display could exceed the capacity of your command-prompt window, resulting in loss of information displayed at the start of the data set. If this happens, you will need to clear the management-module event log to reduce the amount of information being captured.

dns command

This command configures and displays the management-module DNS settings.

Table 16. dns command

Function	What it does	Command	Valid targets
Display DNS configuration of management module	Displays the current DNS configuration of the management module. Possible return values are: • enabled • disabled • -i1 *first ip_address* • -i2 *second ip_address* • -i3 *third ip_address*	dns	`-T system:mm[`*x*`]` where *x* is the primary management-module bay number.

Table 16. dns command (continued)

Function	What it does	Command	Valid targets
DNS - enable	Enables the management-module DNS configuration.	dns -on Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
DNS - disable	Disables the management-module DNS configuration.	dns -off Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
DNS first IP address - set	Checks syntax and sets the first IP address.	dns -i1 *ip_address* where *ip_address* is the first IP address. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
DNS second IP address - set	Checks syntax and sets the second IP address.	dns -i2 *ip_address* where *ip_address* is the second IP address. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
DNS third IP address - set	Checks syntax and sets the third IP address.	dns -i3 *ip_address* where *ip_address* is the third IP address. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.

Example:
To set the first IP address of the management-module DNS server to 192.168.70.29 and enable DNS on the primary management module, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
dns -i1 192.168.70.29 -on
```

To display the DNS status of the primary management module, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
dns
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> dns -i1 192.168.70.29 -on
Changes to the network settings will take effect after the next reset of the MM.
system:mm[1]> dns
Enabled
-i1 192.168.70.29
-i2 0.0.0.0
```

```
-i3 0.0.0.0
system:mm[1]>
```

ifconfig command (management modules other than the advanced management module)

Note: The ifconfig command operates differently for the advanced management module and for other management module types. The following command description is for management modules other than the advanced management module. See “ifconfig command (advanced management module only)” on page 54 for command syntax for the advanced management module.

This command configures and displays the network interface settings for the management-module Ethernet interface and the blade server integrated system management processors.

Table 17. ifconfig command (management modules other than the advanced management module)

Function	What it does	Command	Valid targets
Display Ethernet channel 0 configuration	Displays the current configuration of Ethernet channel 0. Possible return values are: • enabled • disabled • -i *static_ip_address* • -g *gateway_address* • -s *subnet_mask* • -n *hostname* • -c *config_method* • -r *data_rate* • -d *duplex_mode* • -m *mtu* • -l *locally_administered_mac_addr* • -b *burnedin_mac_address*	ifconfig -eth0	`-T system:mm[`*x*`]` where *x* is the primary management-module bay number.
Set Ethernet channel 0 static IP address	Checks syntax and sets the static IP address for Ethernet channel 0.	ifconfig -eth0 -i *ip_address* where *ip_address* is the static IP address for Ethernet channel 0. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[`*x*`]` where *x* is the primary management-module bay number.
Set Ethernet channel 0 gateway IP address	Checks syntax and sets the gateway IP address for Ethernet channel 0.	ifconfig -eth0 -g *ip_address* where *ip_address* is the gateway IP address for Ethernet channel 0. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[`*x*`]` where *x* is the primary management-module bay number.

Table 17. ifconfig command (management modules other than the advanced management module) (continued)

Function	What it does	Command	Valid targets
Set Ethernet channel 0 subnet mask	Checks syntax and sets the subnet mask for Ethernet channel 0.	ifconfig -eth0 -s *sub_mask* where *sub_mask* is the subnet mask for Ethernet channel 0. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set Ethernet channel 0 hostname	Checks syntax and sets the host name for Ethernet channel 0.	ifconfig -eth0 -n *hostname* where *hostname* is the host name for Ethernet channel 0. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set Ethernet channel 0 configuration method	Checks syntax and sets the configuration method for Ethernet channel 0. A value of dthens will try the dhcp configuration and default to the static IP configuration if dhcp is unsuccessful.	ifconfig -eth0 -c *config_method* where *config_method* is dhcp, static, or dthens. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set Ethernet channel 0 data rate	Checks syntax and sets the data rate for Ethernet channel 0.	ifconfig -eth0 -r *data_rate* where *data_rate* is auto, 10, or 100. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set Ethernet channel 0 duplex mode	Checks syntax and sets the duplex mode for Ethernet channel 0.	ifconfig -eth0 -d *duplex_mode* where *duplex_mode* is auto, half, or full. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set Ethernet channel 0 MTU	Checks syntax and sets the MTU (maximum transmission unit) for Ethernet channel 0.	ifconfig -eth0 -m *mtu* where *mtu* is between 60 and 1500, inclusive. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 17. ifconfig command (management modules other than the advanced management module) (continued)

Function	What it does	Command	Valid targets
Set Ethernet channel 0 static MAC address (locally administered)	Checks syntax and sets the locally administered MAC address to the specified MAC address for Ethernet channel 0.	ifconfig -eth0 -l *address* where *address* is the locally administered MAC address for Ethernet channel 0. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Display Ethernet channel 1 configuration	Displays the current configuration of Ethernet channel 1. Possible return values are: • enabled • disabled • -i *static_ip_address* • -g *gateway_address* • -s *subnet_mask* • -r *data_rate* • -d *duplex_mode* • -m *mtu* • -l *locally_administered_mac_addr* • -b *burnedin_mac_address*	ifconfig -eth1	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set Ethernet channel 1 static IP address	Checks syntax and sets the static IP address for Ethernet channel 1.	ifconfig -eth1 -i *ip_address* where *ip_address* is the static IP address for Ethernet channel 1. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set Ethernet channel 1 gateway IP address	Checks syntax and sets the gateway IP address for Ethernet channel 1.	ifconfig -eth1 -g *ip_address* where *ip_address* is the gateway IP address for Ethernet channel 1. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set Ethernet channel 1 subnet mask	Checks syntax and sets the subnet mask for Ethernet channel 1.	ifconfig -eth1 -s *sub_mask* where *sub_mask* is the subnet mask for Ethernet channel 1. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 17. ifconfig command (management modules other than the advanced management module) (continued)

Function	What it does	Command	Valid targets
Set Ethernet channel 1 static MAC address (locally administered)	Checks syntax and sets the locally administered MAC address to the specified MAC address for Ethernet channel 1.	ifconfig -eth1 -l *address* where *address* is the locally administered MAC address for Ethernet channel 1. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Enable Ethernet channel 1	Enables Ethernet channel 1.	ifconfig -eth1 -up Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Disable Ethernet channel 1	Disables Ethernet channel 1.	ifconfig -eth1 -down Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Set starting IP address for blade server integrated system management processor	Sets the starting point of the integrated system management processor IP addresses for blade servers that are installed in the BladeCenter unit.	ifconfig -i *ip_address* where *ip_address* is the starting IP address for all blade servers that are installed in the BladeCenter unit. Command use restricted (see "Commands and user authority" on page 5).	-T system:blade[1]:sp

Example:

To display the configuration for Ethernet channel 0, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
ifconfig -eth0
```

To set the static IP address for Ethernet channel 0 to 192.168.70.133, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
ifconfig -eth0 -i 192.168.70.133 -c static
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> ifconfig -eth0
Enabled
-i 10.10.10.10
-g 0.0.0.0
-s 255.255.255.0
-n MM00096BCA0C80
-c Try DHCP server.  If it fails, use static IP config.
-r Auto
-d Auto
```

```
-m 1500
-l 00:00:00:00:00:00
-b 00:09:6B:CA:0C:80
system:mm[1]> ifconfig -eth0 -i 192.168.70.133 -c static
Changes to the network settings will take effect after the next reset of the MM.
system:mm[1]>
```

ifconfig command (advanced management module only)

Note: The ifconfig command operates differently for the advanced management module and for other management module types. The following command description is for the advanced management module. See “ifconfig command (management modules other than the advanced management module)” on page 50 for command syntax for management modules other than the advanced management module.

This command configures and displays the network interface settings for the management-module Ethernet interface, I/O-module Ethernet interface, and the blade server integrated system management processors and installed options.

Table 18. ifconfig command (advanced management module only)

Function	What it does	Command	Valid targets
Display management module Ethernet channel 0 configuration	Displays the current configuration of Ethernet channel 0 for the management module. Possible return values are: • enabled • disabled • -i *static_ip_address* • -g *gateway_address* • -s *subnet_mask* • -n *hostname* • -c *config_method* • -r *data_rate* • -d *duplex_mode* • -m *mtu* • -l *locally_administered_mac_addr* • -b *burnedin_mac_address*	ifconfig -eth0	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set management module Ethernet channel 0 static IP address	Checks syntax and sets the static IP address for Ethernet channel 0 for the management module.	ifconfig -eth0 -i *ip_address* where *ip_address* is the static IP address for Ethernet channel 0. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set management module Ethernet channel 0 gateway IP address	Checks syntax and sets the gateway IP address for Ethernet channel 0 for the management module.	ifconfig -eth0 -g *ip_address* where *ip_address* is the gateway IP address for Ethernet channel 0. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 18. ifconfig command (advanced management module only) (continued)

Function	What it does	Command	Valid targets
Set management module Ethernet channel 0 subnet mask	Checks syntax and sets the subnet mask for Ethernet channel 0 for the management module.	ifconfig -eth0 -s *sub_mask* where *sub_mask* is the subnet mask for Ethernet channel 0. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set management module Ethernet channel 0 hostname	Checks syntax and sets the host name for Ethernet channel 0 for the management module.	ifconfig -eth0 -n *hostname* where *hostname* is the host name for Ethernet channel 0. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set management module Ethernet channel 0 configuration method	Checks syntax and sets the configuration method for Ethernet channel 0 for the management module. A value of dthens will try the dhcp configuration and default to the static IP configuration if dhcp is unsuccessful.	ifconfig -eth0 -c *config_method* where *config_method* is dhcp, static, or dthens. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set management module Ethernet channel 0 data rate	Checks syntax and sets the data rate for Ethernet channel 0 for the management module.	ifconfig -eth0 -r *data_rate* where *data_rate* is auto, 10, or 100. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set management module Ethernet channel 0 duplex mode	Checks syntax and sets the duplex mode for Ethernet channel 0 for the management module.	ifconfig -eth0 -d *duplex_mode* where *duplex_mode* is auto, half, or full. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set management module Ethernet channel 0 MTU	Checks syntax and sets the MTU (maximum transmission unit) for Ethernet channel 0 for the management module.	ifconfig -eth0 -m *mtu* where *mtu* is between 60 and 1500, inclusive. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 18. ifconfig command (advanced management module only) (continued)

Function	What it does	Command	Valid targets
Set management module Ethernet channel 0 static MAC address (locally administered)	Checks syntax and sets the locally administered MAC address to the specified MAC address for Ethernet channel 0 for the management module.	ifconfig -eth0 -l *address* where *address* is the locally administered MAC address for Ethernet channel 0. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Enable management module Ethernet channel 0	Enables the Ethernet channel 0 interface for the management module.	ifconfig -eth0 -up Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Disable management module Ethernet channel 0	Disables the Ethernet channel 0 interface for the management module.	ifconfig -eth0 -down Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Display starting IP address for blade server integrated system management processor	Displays the starting point of the integrated system management processor IP addresses for blade servers that are installed in the BladeCenter unit.	ifconfig	`-T system:blade[x]:sp` where *x* is the blade server bay number.
Set starting IP address for blade server integrated system management processor	Sets the starting point of the integrated system management processor IP addresses for blade servers that are installed in the BladeCenter unit. **Note:** This command has similar function to the ifconfig -bsmp *ip_address* command.	ifconfig -i *ip_address* where *ip_address* is the IP address of the specified blade server. The IP addresses for all other blade servers that are installed in the BladeCenter unit will be calculated based on this address. Command use restricted (see "Commands and user authority" on page 5).	`-T system:blade[x]:sp` where *x* is the blade server bay number.
Set starting IP address for blade server integrated system management processor	Sets the starting point of the integrated system management processor IP addresses for blade servers that are installed in the BladeCenter unit. **Note:** This command has similar function to the ifconfig -i *ip_address* command.	ifconfig -bsmp *ip_address* where *ip_address* is the starting IP address for all blade servers installed in the BladeCenter unit. Command use restricted (see "Commands and user authority" on page 5).	`-T system`
Display network settings for BladeCenter unit	Displays network settings for the BladeCenter unit. Valid return values are: • -bsmp *base_bsmp_ip_address* • -v *VLAN-id*	ifconfig	`-T system`

Table 18. ifconfig command (advanced management module only) (continued)

Function	What it does	Command	Valid targets
VLAN ID for BladeCenter unit	Checks syntax and sets the VLAN ID for the BladeCenter unit.	ifconfig -v *VLAN-id* where *VLAN-id* is from 1 to 4095, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	`-T system`
Display network settings for I/O module	Displays network settings for the specified I/O module. Valid return values are: • I/O-module type • -c *config_method* • -i *ip_address* • -s *subnet_mask* • -g *gateway_address* • -em *ext_mgt_status* • -ep *ext_port_status*	ifconfig	`-T system:switch[x]` where *x* is the I/O-module bay number.
Set starting IP address for I/O module	Sets the IP addresses for the specified I/O module.	ifconfig -i *ip_address* where *ip_address* is the IP address of the specified I/O module. Command use restricted (see "Commands and user authority" on page 5).	`-T system:switch[x]` where *x* is the I/O-module bay number.
Set I/O-module gateway IP address	Checks syntax and sets the gateway IP address for the specified I/O module.	ifconfig -g *ip_address* where *ip_address* is the gateway IP address for the I/O module. Command use restricted (see "Commands and user authority" on page 5).	`-T system:switch[x]` where *x* is the I/O-module bay number.
Set I/O-module subnet mask	Checks syntax and sets the subnet mask for the specified I/O module.	ifconfig -s *sub_mask* where *sub_mask* is the subnet mask for the I/O module. Command use restricted (see "Commands and user authority" on page 5).	`-T system:switch[x]` where *x* is the I/O-module bay number.
Enable external management for I/O module	Enables external management on all ports for the specified I/O module.	ifconfig -em enabled Command use restricted (see "Commands and user authority" on page 5).	`-T system:switch[x]` where *x* is the I/O-module bay number.

Table 18. ifconfig command (advanced management module only) (continued)

Function	What it does	Command	Valid targets
Disable external management for I/O module	Disables external management on all ports for the specified I/O module.	ifconfig -em disabled Command use restricted (see "Commands and user authority" on page 5).	-T system:switch[*x*] where *x* is the I/O-module bay number.
Enable external ports for I/O module	Enables external ports for the specified I/O module.	ifconfig -ep enabled Command use restricted (see "Commands and user authority" on page 5).	-T system:switch[*x*] where *x* is the I/O-module bay number.
Disable external ports for I/O module	Disables external ports for the specified I/O module.	ifconfig -ep disabled Command use restricted (see "Commands and user authority" on page 5).	-T system:switch[*x*] where *x* is the I/O-module bay number.

Example:

To display the configuration for Ethernet channel 0, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
ifconfig -eth0
```

To set the static IP address for Ethernet channel 0 to 192.168.70.133, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
ifconfig -eth0 -i 192.168.70.133 -c static
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> ifconfig -eth0
Enabled
-i 10.10.10.10
-g 0.0.0.0
-s 255.255.255.0
-n MM00096BCA0C80
-c Try DHCP server.  If it fails, use static IP config.
-r Auto
-d Auto
-m 1500
-l 00:00:00:00:00:00
-b 00:09:6B:CA:0C:80
system:mm[1]> ifconfig -eth0 -i 192.168.70.133 -c static
Changes to the network settings will take effect after the next reset of the MM.
system:mm[1]>
```

ldapcfg command (advanced management module only)

This command sets and displays the LDAP configuration settings for the advanced management module.

Table 19. ldapcfg command

Function	What it does	Command	Valid targets
Display LDAP settings	Displays the LDAP settings for the management module. Returned values are: • -v *version* • -t *name*	ldapcfg	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set LDAP security version	Sets version of LDAP security used by the management module.	ldapcfg -v *version* where *version* is: • v1 for old user permission model • v2 for the enhanced role-based security model Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set LDAP name	Sets the LDAP name for the management module.	ldapcfg -t *name* where *name* is an alphanumeric string up to 63 characters in length containing any character except for angle brackets (< and >) and spaces. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Example:

To set the management module LDAP security version to v1, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
ldapcfg -v v1
```

To display the management module LDAP settings, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
ldapcfg
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> ldapcfg -v v1
OK
system:mm[1]> ldapcfg
-v v1
-t AMM_one
system:mm[1]>
```

nat command (advanced management module only)

This command sets and displays the network protocol settings for the specified I/O module.

Notes:

1. If the nat command is directed to an I/O module that does not support the network address table (NAT), the "NAT configuration is not supported on this IO module" message is returned.
2. When setting values for an empty row in the network address table, all options must be specified together using a single command.

Table 20. nat command

Function	What it does	Command	Valid targets
Display I/O-module network protocol settings	Displays the network port settings for the specified I/O module. Returned values include those in Table 21 on page 62.	nat	`-T system:switch[x]` where *x* is the I/O-module bay number.
Reset I/O-module network protocol settings	Resets all network port settings for the specified I/O module to the default values. Default values are in Table 21 on page 62. You must activate any changes to the network protocol settings before they take effect.	nat -reset Command use restricted (see "Commands and user authority" on page 5).	`-T system:switch[x]` where *x* is the I/O-module bay number.
Activate I/O-module network protocol settings	Activates all network port settings for the specified I/O module, putting them into effect.	nat -activate Command use restricted (see "Commands and user authority" on page 5).	`-T system:switch[x]` where *x* is the I/O-module bay number.
Set protocol name for row in I/O-module NAT table	Sets a protocol name for the specified row in the NAT table for the specified I/O module.	nat -*index* -pn *protocol_name* where: • *index* is a number from 1 to 10 that corresponds to a row in the NAT table. • *protocol_name* is FTP, HTTP, HTTPS, NTP, Radius, SSH, SNMP, SNMP-Trap, SYSLOGD, TACACS+, TELNET, or TFTP. Command use restricted (see "Commands and user authority" on page 5).	`-T system:switch[x]` where *x* is the I/O-module bay number.

Table 20. nat command (continued)

Function	What it does	Command	Valid targets
Set protocol ID for row in NAT table	Sets a protocol ID for the specified row in the NAT table for the specified I/O module.	nat -*index* -pi *protocol_id* where: • *index* is a number from 1 to 10 that corresponds to a row in the NAT table. • *protocol_id* is tcp or udp. Command use restricted (see "Commands and user authority" on page 5).	`-T system:switch[x]` where *x* is the I/O-module bay number.
Set internal port number for row in NAT table	Sets the internal port number for the specified row in the NAT table for the specified I/O module.	nat -*index* -ip *port_number* where: • *index* is a number from 1 to 10 that corresponds to a row in the NAT table. • *port_number* is between 1 and 65534, inclusive. Command use restricted (see "Commands and user authority" on page 5).	`-T system:switch[x]` where *x* is the I/O-module bay number.
Set external port number for row in NAT table	Sets the external port number for the specified row in the NAT table for the specified I/O module.	nat -*index* -ep *port_number* where: • *index* is a number from 1 to 10 that corresponds to a row in the NAT table. • *port_number* is between 1000 and 65534, inclusive. Command use restricted (see "Commands and user authority" on page 5).	`-T system:switch[x]` where *x* is the I/O-module bay number.
Set state for row in NAT table	Enables or disables the specified row in the NAT table for the specified I/O module.	nat -*index* -en *state* where: • *index* is a number from 1 to 10 that corresponds to a row in the NAT table. • *state* is enabled or disabled. Command use restricted (see "Commands and user authority" on page 5).	`-T system:switch[x]` where *x* is the I/O-module bay number.

Table 21. Default NAT table values for nat command

Index	Protocol Name	Protocol ID	Internal Port	External Port	State
1	http	tcp	80	1080	enabled
2	telnet	tcp	23	1023	enabled
3	https	tcp	43	1043	enabled
4	ssh	tcp	22	1022	enabled
5	snmp	udp	161	1161	enabled
6 through 10	unset				

Example:

To display network protocol settings for the I/O module in I/O-module bay 3, while I/O-module bay 3 is set as the persistent command environment, at the `system:switch[3]>` prompt, type

```
nat
```

The following example shows the information that is returned from this command:

```
system:switch[3]> nat
Index   Protocol Name   Protocol ID   Internal Port   External Port   Enabled
1       http            tcp           80              1080            enabled
2       telnet          tcp           23              1023            enabled
3       https           tcp           43              1043            enabled
4       ssh             tcp           22              1022            enabled
5       snmp            udp           161             1161            enabled
system:switch[3]>
```

ntp (network time protocol) command (advanced management module only)

This command configures and displays the management-module network time protocol (NTP) settings

Table 22. ntp command

Function	What it does	Command	Valid targets
Display management module NTP settings	Displays the NTP settings for the specified I/O module. Possible return values are: • -en enabled/disabled • -i *ipaddress/hostname* • -f *update_frequency* • -v3en enabled/disabled • -v3 *key_info*	ntp	`-T system:mm[x]` where *x* is the primary management-module bay number.
NTP - enable	Enables NTP for the management-module.	ntp -en enabled Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
NTP - disable	Disables NTP for the management-module.	ntp -en disabled Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 22. ntp command (continued)

Function	What it does	Command	Valid targets
NTP server IP address or hostname - set	Checks syntax and sets the IP address or hostname of the NTP server.	ntp -i *ipaddress/hostname* where *ipaddress/hostname* is the IP address or hostname of the NTP server. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
NTP update frequency - set	Sets how often the management module clock is automatically updated by the NTP server.	ntp -f *time* where *time* is the NTP update frequency, in minutes with a maximum value of 45000. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
NTP - enable V3 authentication	Enables V3 authentication between the management-module and the NTP server. **Note:** The NTP server authentication key must be set, using the ntp -v3 command option, before enabling V3 authentication.	ntp -v3en enabled Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
NTP - disable V3 authentication	Disables V3 authentication between the management-module and the NTP server.	ntp -v3en disabled Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
NTP server authentication key - set	Sets the v3 authentication key that the management module uses to access the NTP server. The authentication key contains the following values: • Key index: An NTP server can be configured with one or more key entries. The key index specifies which key the server expects the client to authenticate with. • Key type: The advanced management module supports only the MD5 key type. • Key: The key is an 8-character ASCII string.	ntp -v3 *key_index key_type key* where: • *key_index* is from 1 to 65535, inclusive. If you enter a value outside this range, an error will be displayed. • *key_type* is M (MD5). • *key* is a 8-character ASCII string. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
NTP clock- synchronize	Synchronizes the management-module clock with the NTP server. (You must configure a valid NTP server before you can synchronize.)	ntp -synch Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.

Example:

To display NTP settings for the management module, while management module 2 is set as the persistent command environment, at the `system:mm[2]>` prompt, type

```
ntp
```

The following example shows the information that is returned from this command:

```
system:mm[2]> ntp
-en enabled
-i timeserver
-f 5
-v3en disabled
-v3
system:mm[2]>
```

portcfg command (advanced management module only)

This command configures and displays the settings for the advanced management-module serial port.

Table 23. portcfg command

Function	What it does	Command	Valid targets
Display management-module serial port configuration	Displays the current configuration of the management-module serial port. Possible return values are: • -b *baud_rate* • -p *parity* • -s *stop_bits*	portcfg -com1	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set management-module serial port baud rate	Checks syntax and sets the baud (communications) rate of the management-module serial port.	portcfg -com1 -b *baud_rate* where *baud_rate* is 2400, 4800, 9600, 19200, 38400, or 57600. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set management-module serial port parity	Checks syntax and sets the parity of the management-module serial port.	portcfg -com1 -p *parity* where *parity* is none, odd, even, mark, or space. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set management-module serial port stop bits	Checks syntax and sets the number of stop bits for the management-module serial port.	portcfg -com1 -s *stop_bits* where *stop_bits* is 1 or 2. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Example:

To display the configuration for the management-module serial port, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
portcfg -com1
```

To set the baud rate for the management-module serial port to 9600, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
portcfg -com1 -b 9600
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> portcfg -com1
-b 2400
-p odd
-s 1
system:mm[1]> portcfg -com1 -b 9600
OK
system:mm[1]>
```

ports command (advanced management module only)

This command sets and displays the network port configuration settings for the advanced management module.

Table 24. ports command

Function	What it does	Command	Valid targets
Display network port settings	Displays the network port settings for the management module. Returned values are: • -ftpp *FTP_port_num* • -ftpdp *FTP_data_port_num* • -httpp *HTTP_port_num* • -httpsp *HTTPS_port_num* • -kvmp *KVM_port_num* • -rdp *rem_dsk_port_num* • -rdocp *rem_dsk_on_chp_port_num* • -smashsp *secSMASH_SSH_prt_num* • -smashtp *SMASH_telnet_port_num* • -snmpap *SNMP_agent_port_num* • -snmptp *SNMP_traps_port_num* • -sshp *SSH_port_num* • -telnetp *Telnet_port_num* • -tftpp *TFTP_port_num* • -ftpe *FTP_state* • -httpse *HTTPS_port_state* • -ntpe *NTP_state* • -smashse *sec_SMASH_SSH_state* • -smashte *SMASH_telnet_state* • -snmp1ae *SNMPv1_agent_state* • -snmp3ae *SNMPv3_agent_state* • -snmpte *SNMP_traps_state* • -sshe *SSH_port_state* • -tcme *TCP_cmd_mode_state* • -telnete *Telnet_port_state-* • -tftpe *TFTP_state* • -ftpt *FTP_timeout* • -tcmt *TCP_cmd_mode_timeout* • -telnett *Telnet_port_timeout*	ports	`-T system:mm[x]` where *x* is the primary management-module bay number.
Reset network port settings	Resets all network port settings for the management module to the default values. Default values are: • -ftpp: 21 • -ftpdp: 20 • -httpp: 80 • -httpsp: 443 • -kvmp: 3900 • -rdp: 1044 • -rdocp: 1045 • -snmpap: 161 • -snmptp: 162 • -sshp: 22 • -telnetp: 23 • -tftpp: 69	ports -reset Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 24. ports command (continued)

Function	What it does	Command	Valid targets
Set FTP port number	Sets the port number for the management module FTP port.	ports -ftpp *FTP_port_num* where *FTP_port_num* is from 1 to 65535, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set FTP data port number	Sets the port number for the management module FTP data port.	ports -ftpdp *FTP_data_port_num* where *FTP_data_port_num* is from 1 to 65535, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set HTTP port number	Sets the port number for the management module HTTP port.	ports -httpp *HTTP_port_num* where *HTTP_port_num* is from 1 to 65535, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set HTTPS port number	Sets the port number for the management module HTTPS port.	ports -httpsp *HTTPS_port_num* where *HTTPS_port_num* is from 1 to 65535, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 24. ports command (continued)

Function	What it does	Command	Valid targets
Set KVM port number	Sets the port number for the management module KVM port.	ports -kvmp *KVM_port_num* where *KVM_port_num* is from 1 to 65535, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set remote disk port number	Sets the port number for the management module remote disk port.	ports -rdp *rem_dsk_port_num* where *rem_dsk_port_num* is from 1 to 65535, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set remote disk on chip port number	Sets the port number for the management module remote disk on chip port.	ports -rdocp *rem_dsk_on_chp_port_num* where *rem_dsk_on_chp_port_num* is from 1 to 65535, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set secure SMASH over SSH port number	Sets the port number for the management module secure SMASH command-line processor over SSH port.	ports -smashsp *secSMASH_SSH_prt_num* where *secSMASH_SSH_prt_num* is from 1 to 65535, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 24. ports command (continued)

Function	What it does	Command	Valid targets
Set SMASH Telnet port number	Sets the port number for the management module SMASH command-line processor over Telnet port.	ports -smashtp *SMASH_telnet_port_num* where *SMASH_telnet_port_num* is from 1 to 65535, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set SNMP agent port number	Sets the port number for the management module SNMP agent port.	ports -snmpap *SNMP_agent_port_num* where *SNMP_agent_port_num* is from 1 to 65535, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set SNMP traps port number	Sets the port number for the management module SNMP traps port.	ports -snmptp *SNMP_traps_port_num* where *SNMP_traps_port_num* is from 1 to 65535, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set SSH port number	Sets the port number for the management module SSH port.	ports -sshp *SSH_port_num* where *SSH_port_num* is from 1 to 65535, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 24. ports command (continued)

Function	What it does	Command	Valid targets
Set Telnet port number	Sets the port number for the management module Telnet port.	ports -telnetp *Telnet_port_num* where *Telnet_port_num* is from 1 to 65535, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Set TFTP port number	Sets the port number for the management module TFTP port.	ports -tftpp *TFTP_port_num* where *TFTP_port_num* is from 1 to 65535, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Enable FTP	Enables FTP for the management module.	ports -ftpe on Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Disable FTP	Disables FTP for the management module.	ports -ftpe off Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Enable HTTPS port	Enables the management module HTTPS port.	ports -httpse on Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Disable HTTPS port	Disables the management module HTTPS port.	ports -httpse off Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Enable NTP	Enables NTP for the management module.	ports -ntpe on Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Disable NTP	Disables NTP for the management module.	ports -ntpe off Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.

Table 24. ports command (continued)

Function	What it does	Command	Valid targets
Enable secure SMASH over SSH	Enables the secure SMASH command-line processor over SSH for the management module.	ports -smashse on Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Disable secure SMASH over SSH	Disables the secure SMASH command-line processor over SSH for the management module.	ports -smashse off Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Enable SMASH over Telnet	Enables SMASH command-line processor over Telnet for the management module.	ports -smashte on Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Disable SMASH over Telnet	Disables SMASH command-line processor over Telnet for the management module.	ports -smashte off Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Enable SNMPv1 agent	Enables the SNMPv1 agent for the management module.	ports -snmp1ae on Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Disable SNMPv1 agent	Disables the SNMPv1 agent for the management module.	ports -snmp1ae off Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Enable SNMPv3 agent	Enables the SNMPv3 agent for the management module.	ports -snmp3ae on Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Disable SNMPv3 agent	Disables the SNMPv3 agent for the management module.	ports -snmp3ae off Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Enable SNMP traps	Enables the SNMP traps for the management module.	ports -snmpte on Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Disable SNMP traps	Disables the SNMP traps for the management module.	ports -snmpte off Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Enable SSH port	Enables the management module SSH port.	ports -sshe on Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.

Table 24. ports command (continued)

Function	What it does	Command	Valid targets
Disable SSH port	Disables the management module SSH port.	ports -sshe off Command use restricted (see “Commands and user authority” on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Enable TCP command mode	Enables the TCP command mode for the management module.	ports -tcme on Command use restricted (see “Commands and user authority” on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Disable TCP command mode	Disables the TCP command mode for the management module.	ports -tcme off Command use restricted (see “Commands and user authority” on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Enable Telnet port	Enables the management module Telnet port.	ports -telnete on Command use restricted (see “Commands and user authority” on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Disable Telnet port	Disables the management module Telnet port.	ports -telnete off Command use restricted (see “Commands and user authority” on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Enable TFTP	Enables TFTP for the management module.	ports -tftpe on Command use restricted (see “Commands and user authority” on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Disable TFTP	Disables TFTP for the management module.	ports -tftpe off Command use restricted (see “Commands and user authority” on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Set FTP timeout	Sets the FTP timeout value for the management module.	ports -ftpt *timeout* where *timeout* is from 0 seconds (no timeout) to 4294295967 seconds, inclusive. Command use restricted (see “Commands and user authority” on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Set TCP command-mode timeout	Sets the TCP command-mode timeout value for the management module.	ports -tcmt *timeout* where *timeout* is from 0 seconds (no timeout) to 4294295967 seconds, inclusive. Command use restricted (see “Commands and user authority” on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.

Table 24. ports command (continued)

Function	What it does	Command	Valid targets
Set Telnet port timeout	Sets the Telnet port timeout value for the management module.	ports -telnett *timeout* where *timeout* is from 0 seconds (no timeout) to 4294295967 seconds, inclusive. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Example:

To disable FTP for the management module, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
ports -ftpe off
```

To display the management module network port settings, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
ports
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> ports -ftpe off
These configuration changes will become active after the next reset of the MM.
system:mm[1]> ports
-ftpp 21
-ftpdp 20
-httpp 80
-httpsp 443
-kvmp 3900
-rdp 1044
-rdocp 1045
-smashsp 50022
-smashtp 50023
-snmpap 161
-snmptp 162
-sshp 22
-telnetp 23
-tftpp 69
-ftpe off
-httpse off
-ntpe off
-smashse off
-smashte off
-ftpp 21
-snmp1ae on
-snmp3ae on
-snmpte on
-sshe off
-tcme on
-telnete on
```

```
-tftpe off
-ftpt 60
-tcmt 0
-telnett 10000
system:mm[1]>
```

read command (advanced management module only)

This command restores the management-module configuration that was previously saved to the BladeCenter unit chassis using the write command (advanced management module only).

Table 25. read command

Function	What it does	Command	Valid targets
Restore management-module configuration	Restores the management-module configuration from an image that was previously saved to the BladeCenter unit chassis.	read -config chassis Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Enable automatic management-module configuration	Enables automatic configuration of the management module, based on settings stored in the BladeCenter unit chassis, when the management module is installed.	read -auto on Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Disable automatic management-module configuration	Disables automatic configuration of the management module, based on settings stored in the BladeCenter unit chassis, when the management module is installed.	read -auto off Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.

Example:

To restore the management-module configuration from an image previously saved to the BladeCenter unit chassis, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
read -config chassis
```

The following example shows the information that is returned from this command:

```
system:mm[1]> read -config chassis
OK
Configuration restore from the chassis was successful
Restart the MM for the new settings to take effect
system:mm[1]>
```

service command (advanced management module only)

This command configures and displays the management-module service setting.

Table 26. service command

Function	What it does	Command	Valid targets
Display service setting	Displays the service setting for technician debug (enable or disable).	service	-T system:mm[*x*] where *x* is the primary management-module bay number.

Table 26. service command (continued)

Function	What it does	Command	Valid targets
Enable technician debug	Configure service setting to enable technician debug of the advanced management module.	service -enable Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Disable technician debug	Configure service setting to disable (default setting) technician debug of the advanced management module.	service -disable Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.

Example:

To enable technician debug of the advanced management module, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
service -enable
```

To display the service setting of the advanced management module, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
service
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> service -enable
OK
system:mm[1]> service
Service by support personnel: Enabled
system:mm[1]>
```

slp command (advanced management module only)

This command sets and displays the service location protocol (SLP) settings for the management module.

Table 27. slp command

Function	What it does	Command	Valid targets
Display management-module SLP settings	Displays the SLP settings for the primary management module. Returned values are: • -t *address_type* • -i *multicast_addr*	slp	-T system:mm[*x*] where *x* is the primary management-module bay number.
Set management-module SLP address type	Sets the SLP address type for the primary management module.	slp -t *address_type* where *address_type* is multicast or broadcast. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.

Table 27. slp command (continued)

Function	What it does	Command	Valid targets
Set management-module SLP multicast address	Sets the SLP multicast address for the primary management module.	slp -i *multicast_addr* where *multicast_addr* is the multicast IP address. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.

Example:

To set the SLP address type of the advanced management module to multicast, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
slp -t multicast
```

To display the SLP settings of the advanced management module, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
slp
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> slp -t multicast
OK
system:mm[1]> slp
-t multicast
-i 255.255.255.255
system:mm[1]>
```

smtp command

This command configures and displays the management-module SMTP settings.

Table 28. smtp command

Function	What it does	Command	Valid targets
Display SMTP server host name or IP address	Displays the SMTP server host name or IP address.	smtp	-T system:mm[*x*] where *x* is the primary management-module bay number.
Server host name or IP address - set	Checks syntax and sets the server host name or IP address.	smtp -s *hostname/ip_address* where *hostname/ip_address* is the host name or IP address of the server. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.

Example:

To set the SMTP server host name to us.ibm.com, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
smtp -s us.ibm.com
```

To display the SMTP configuration, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
smtp
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> smtp -s us.ibm.com
OK
system:mm[1]> smtp
-s us.ibm.com
system:mm[1]>
```

snmp command

This command configures and displays the management-module SNMP settings.

Table 29. snmp command

Function	What it does	Command	Valid targets
Display SNMP configuration of management module	Displays the current SNMP configuration of the management module. Possible return values are: • -a enabled/disabled • -t enabled/disabled • -c1 *community1_name* • -c1i1 *community1_ipaddr1_or_hstname* • -c1i2 *community1_ipaddr2_or_hstname* • -c1i3 *community1_ipaddr3_or_hstname* • -c2 *community2_name* • -c2i1 *community2_ipaddr1_or_hstname* • -c2i2 *community2_ipaddr2_or_hstname* • -c2i3 *community2_ipaddr3_or_hstname* • -c3 *community3_name* • -c3i1 *community3_ipaddr1_or_hstname* • -c3i2 *community3_ipaddr2_or_hstname* • -c3i3 *community3_ipaddr3_or_hstname* • -cn *contact_name* • -l *location*	snmp	`-T system:mm[x]` where *x* is the primary management-module bay number.
SNMPv1 agent - enable	Enables the management-module SNMPv1 agent. **Note:** SNMPv1 community setup required (see the `snmp -cx` commands, starting on page 78, for information).	snmp -a -on Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 29. snmp command (continued)

Function	What it does	Command	Valid targets
SNMPv1 agent - disable	Disables the management-module SNMPv1 agent.	snmp -a -off Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
SNMPv3 agent - enable	Enables the management-module SNMPv3 agent. **Note:** SNMPv3 user setup required (see the users command, on page 97, for information).	snmp -a3 -on Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
SNMPv3 agent - disable	Disables the management-module SNMPv3 agent.	snmp -a3 -off Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
SNMP traps - enable	Enables the management-module SNMP traps.	snmp -t -on Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
SNMP traps - disable	Disables the management-module SNMP traps.	snmp -t -off Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
SNMP community 1 name - set	Sets the name of community 1.	snmp -c1 *name* where *name* is a descriptive name of community 1. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
SNMP community 1 first host name or IP address - set	Checks syntax and sets the first host name or IP address of community 1.	snmp -c1i1 *hostname/ip_address* where *hostname/ip_address* is the first host name or IP address of community 1. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.

Table 29. snmp command (continued)

Function	What it does	Command	Valid targets
SNMP community 1 second host name or IP address - set	Checks syntax and sets the second host name or IP address of community 1.	snmp -c1i2 *hostname/ip_address* where *hostname/ip_address* is the second host name or IP address of community 1. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
SNMP community 1 third host name or IP address - set	Checks syntax and sets the third host name or IP address of community 1.	snmp -c1i3 *hostname/ip_address* where *hostname/ip_address* is the third host name or IP address of community 1. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
SNMPv3 community 1 view type - set	Sets the SNMPv3 view type for community 1.	snmp -ca1 *type* where *type* is get, set, or trap. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
SNMP community 2 name - set	Sets the name of community 2.	snmp -c2 *name* where *name* is a descriptive name of community 2. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
SNMP community 2 first host name or IP address - set	Checks syntax and sets the first host name or IP address of community 2.	snmp -c2i1 *hostname/ip_address* where *hostname/ip_address* is the first host name or IP address of community 2. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.

Table 29. snmp command (continued)

Function	What it does	Command	Valid targets
SNMP community 2 second host name or IP address - set	Checks syntax and sets the second host name or IP address of community 2.	snmp -c2i2 *hostname/ip_address* where *hostname/ip_address* is the second host name or IP address of community 2. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
SNMP community 2 third host name or IP address - set	Checks syntax and sets the third host name or IP address of community 2.	snmp -c2i3 *hostname/ip_address* where *hostname/ip_address* is the third host name or IP address of community 2. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
SNMPv3 community 2 view type - set	Sets the SNMPv3 view type for community 2.	snmp -ca2 *type* where *type* is get, set, or trap. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
SNMP community 3 name - set	Sets the name of community 3.	snmp -c3 *name* where *name* is a descriptive name of community 3. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
SNMP community 3 first host name or IP address - set	Checks syntax and sets the first host name or IP address of community 3.	snmp -c3i1 *hostname/ip_address* where *hostname/ip_address* is the first host name or IP address of community 3. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 29. snmp command (continued)

Function	What it does	Command	Valid targets
SNMP community 3 second host name or IP address - set	Checks syntax and sets the second host name or IP address of community 3.	snmp -c3i2 *hostname/ip_address* where *hostname/ip_address* is the second host name or IP address of community 3. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
SNMP community 3 third host name or IP address - set	Checks syntax and sets the third host name or IP address of community 3.	snmp -c3i3 *hostname/ip_address* where *hostname/ip_address* is the third host name or IP address of community 3. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
SNMPv3 community 3 view type - set	Sets the SNMPv3 view type for community 3.	snmp -ca3 *type* where *type* is get, set, or trap. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
SNMP contact name - set	Sets the contact name.	snmp -cn *contact_name* Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
SNMP location - set	Sets the location.	snmp -l *hostname/ip_address* Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Example:
To view the SNMP configuration, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
snmp
```

To enable the SNMP agent and SNMP traps, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
snmp -a -on -t -on
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> snmp
```

```
-a Disabled
-t Disabled
-l No Location Configured
-cn No Contact Configured
-c1 com1
-c1i1 1.2.3.4
-c1i2
-c1i3
-c2 com2
-c2i1 1.2.3.4
-c2i2
-c2i3
-c3
-c3i1
-c3i2
-c3i3
system:mm[1]> snmp -a -on -t -on
Changes to the network settings will take effect after the next reset of the MM.
system:mm[1]>
```

sol (serial over LAN) command

This command configures SOL functions and indicates SOL status.

Table 30. sol (serial over LAN) command

Function	What it does	Command	Valid targets

Display SOL status	Displays the SOL status for the targeted device:
	• When the command target is the primary management module, it displays the following values:
	– -status *on/off* (global SOL status)
	– -c *retry_count*
	– -e *CLI_key_sequence*
	– -i *retry_interval*
	– -r *reset_blade_key_seq*
	– -s *send_threshold*
	– -t *accumulate_timeout*
	– -v *VLAN_id*
	Note: For the advanced management module, the *VLAN_id* is identified as "VLAN ID". For management modules other than the advanced management module, the *VLAN_id* is identified by the "-v" value that is returned.
	• When the command target is a blade server, it displays the following:
	– -status *on/off* (SOL status for the blade server)
	– Status of any SOL sessions for that blade server:
	- There is no SOL session opening for that blade.
	- There is an SOL session opening for that blade.
	- There is an SOL session opening and it is connected to a telnet session.
		sol	`-T system:mm[x]`
			`-T system:blade[x]`
			where *x* is the primary management-module or blade server bay number.

SOL retry interval - set	Sets the SOL retry interval to the input value.	sol -i *value* where *value* is from 10 ms to 2550 ms, inclusive, in 10 ms increments. If you enter a value less than 10 ms, the retry interval will be set to 10 ms. If you enter a value greater than 2550 ms, the retry interval will be set to 2550 ms. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 30. sol (serial over LAN) command (continued)

Function	What it does	Command	Valid targets
SOL retry count - set	Sets the SOL retry count to the input value.	sol -c *value* where *value* is from 0 to 7, inclusive. If you enter a value of 0, no retries will be attempted. If you enter a value greater than 7, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
SOL send threshold - set	Sets the SOL send threshold to the input value. Setting the threshold value to 1 causes the blade server integrated system management processor to send an SOL packet as soon as the first character is received.	sol -s *value* where *value* is from 1 to 251, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
SOL accumulate timeout - set	Sets the SOL accumulate timeout to the input value.	sol -t *value* where *value* is from 5 ms to 1275 ms, inclusive. If you enter a value less than 5 ms, the accumulate timeout will be set to 5 ms. If you enter a value greater than 1275 ms, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
SOL enable - global	Enables SOL globally for the BladeCenter unit. The global SOL enable command does not affect the SOL session status for each blade server.	sol -status on Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
SOL enable - blade server	Enables SOL for the specified blade server.	sol -status on Command use restricted (see "Commands and user authority" on page 5).	`-T system:blade[x]` where *x* is the blade server bay number.
SOL disable - global	Disables SOL globally for the BladeCenter unit. The global SOL disable command does not affect the SOL session status for each blade server.	sol -status off Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
SOL disable - blade server	Disables SOL for the specified blade server.	sol -status off Command use restricted (see "Commands and user authority" on page 5).	`-T system:blade[x]` where *x* is the blade server bay number.

Table 30. sol (serial over LAN) command (continued)

Function	What it does	Command	Valid targets
SOL VLAN ID - set *(This command is not available for the advanced management module. For the advanced management module, the SOL VLAN ID is set using the "ifconfig command (advanced management module only)" on page 54.)*	Sets the SOL VLAN ID to the input value.	sol -v *value* where *value* is from 1 to 4095, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
CLI key sequence - set	Sets the key sequence that is used to enter the CLI while a Telnet session in SOL mode.	sol -e *value* where *value* is the key sequence. In this sequence, a ^ (the carat symbol) indicates a Ctrl that maps to control-key sequences; for example: • ^[(the carat symbol followed by a left bracket) means Esc • ^M (the carat symbol followed by a capitol M) means carriage return. Refer to an ASCII-to-key conversion table for a complete listing of control-key sequences. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 30. sol (serial over LAN) command (continued)

Function	What it does	Command	Valid targets
Reset blade server key sequence - set	Sets the key sequence that will reset a blade server while a Telnet session in SOL mode.	sol -r *value* where *value* is the key sequence. In this sequence, a ^ (the carat symbol) indicates a Ctrl that maps to control-key sequences; for example: • ^[(the carat symbol followed by a left bracket) means Esc • ^M (the carat symbol followed by a capitol M) means carriage return. Refer to an ASCII-to-key conversion table for a complete listing of control-key sequences. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Example:

To set the SOL accumulate timeout to 25 ms, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
sol -t 25
```

To set the reset blade server key sequence to Esc R Esc r Esc R, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
sol -r ^[R^[r^[R
```

To display the SOL settings, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
sol
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> sol -t 25
OK
system:mm[1]> sol
-status on
-c 0
-e ^[(
-i 250
-r ^[R^[r^[R
-s 250
-t 25
-v 4095
system:mm[1]>
```

sshcfg command (advanced management module only)

This command sets and displays the SSH v1 status of the management module. (SSH v2 is always enabled.)

Table 31. sshcfg command

Function	What it does	Command	Valid targets
Display SSH v1 status	Displays the SSH v1 status of the management module.	sshcfg	`-T system:mm[x]` where *x* is the primary management-module bay number.
Enable SSH v1	Enables SSH v1 for the management module.	sshcfg -v1 on Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Disable SSH v1	Disables SSH v1 for the management module.	sshcfg -v1 off Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Example:

To enable SSH v1, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
sshcfg -v1 on
```

To display SSH v1 status, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
sshcfg
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> sshcfg -v1 on
OK
system:mm[1]> sshcfg
-v1 on
system:mm[1]>
```

tcpcmdmode command (management modules other than the advanced management module)

Note: The tcpcmdmode command operates differently for the advanced management module and for other management module types. The following command description is for management modules other than the advanced management module. See "tcpcmdmode command (advanced management module only)" on page 89 for command syntax for the advanced management module.

This command displays and changes the timeout of the TCP command-mode sessions that are used by *IBM Director* software for out-of-band communication with the management module. This command is also used to enable or disable the TCP command-mode sessions.

Table 32. tcpcmdmode command (management modules other than the advanced management module)

Function	What it does	Command	Valid targets
Display TCP command-mode session status and timeout	Displays the TCP command-mode session status (on or off) and timeout.	tcpcmdmode	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set TCP command-mode session timeout	Sets the TCP command-mode session timeout value.	tcpcmdmode -t *timeout* where *timeout* is from 0 seconds (no timeout) to 4294967295 seconds, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Enable TCP command-mode sessions	Enables TCP command-mode sessions that are used by *IBM Director* software for out-of-band communication with the management module.	tcpcmdmode -status on Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Disable TCP command-mode sessions	Disables TCP command-mode sessions that are used by *IBM Director* software for out-of-band communication with the management module.	tcpcmdmode -status off Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Example:
To enable a TCP command-mode session for the primary management module, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
tcpcmdmode -status on
```

To set the TCP command-mode session timeout for the primary management module to 6 minutes, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
tcpcmdmode -t 360
```

To display the TCP command-mode session status and timeout for the primary management module, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
tcpcmdmode
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> tcpcmdmode -status on
OK
system:mm[1]> tcpcmdmode -t 360
OK
system:mm[1]> tcpcmdmode
-status on
-t 360
```

```
system:mm[1]>
```

tcpcmdmode command (advanced management module only)

Note: The tcpcmdmode command operates differently for the advanced management module and for other management module types. The following command description is for the advanced management module. See “tcpcmdmode command (management modules other than the advanced management module)” on page 87 for command syntax for management modules other than the advanced management module.

This command displays and changes the timeout of the TCP command-mode sessions that are used by *IBM Director* software for out-of-band communication with the management module. This command is also used to enable or disable the TCP command-mode sessions.

Table 33. tcpcmdmode command (advanced management module only)

Function	What it does	Command	Valid targets
Display TCP command-mode session status and timeout	Displays the TCP command-mode session status (maximum number of sessions) and timeout.	tcpcmdmode	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set TCP command-mode session timeout	Sets the TCP command-mode session timeout value.	tcpcmdmode -t *timeout* where *timeout* is from 0 seconds (no timeout) to 4294967295 seconds, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Disable TCP command-mode sessions	Disables TCP command-mode sessions that are used by *IBM Director* software for out-of-band communication with the management module.	tcpcmdmode -status 0 Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Enable and set number of TCP command-mode sessions	Enables TCP command-mode and sets the maximum number of sessions that can be used by *IBM Director* software for out-of-band communication with the management module.	tcpcmdmode -status *number_sessions* where *number_sessions* is from 1 to 5, inclusive. (A value of 0 disables TCP command-mode sessions.) If you enter a value outside this range, an error will be displayed. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Example:
To enable a maximum of three TCP command-mode sessions for the primary

management module, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
tcpcmdmode -status 3
```

To set the TCP command-mode session timeout for the primary management module to 6 minutes, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
tcpcmdmode -t 360
```

To display the TCP command-mode session status and timeout for the primary management module, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
tcpcmdmode
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> tcpcmdmode -status 3
OK
system:mm[1]> tcpcmdmode -t 360
OK
system:mm[1]> tcpcmdmode
-status 3 connection
-t 360
system:mm[1]>
```

telnetcfg (Telnet configuration) command

This command displays and configures the command-line session parameters of the primary management module.

Table 34. telnetcfg (Telnet configuration) command

Function	What it does	Command	Valid targets
Display command-line session configuration	Displays the command-line session configuration of the primary management module.	telnetcfg	-T system:mm[*x*] where *x* is the primary management-module bay number.
Display command-line session timeout (management modules other than the advanced management module)	Displays the command-line session timeout value, in seconds, of the primary management module.	telnetcfg -t	-T system:mm[*x*] where *x* is the primary management-module bay number.
Set command-line session timeout for primary management module	Sets the command-line session timeout value for the primary management module.	telnetcfg -t *timeout* where *timeout* is from 0 seconds (no timeout) to 4294967295 seconds, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see “Commands and user authority” on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.

Example:
To set the command-line session timeout for the primary management module to 6 minutes, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
telnetcfg -t 360
```

To display the command-line session configuration for the primary management module, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
telnetcfg
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> telnetcfg -t 360
OK
system:mm[1]> telnetcfg
-t 360
system:mm[1]>
```

tftp command (advanced management module only)

This command creates a placeholder file in the advanced management module that will be used as a file-upload destination.

Table 35. tftp command

Function	What it does	Command	Valid targets
Create placeholder file	Creates a placeholder file in the advanced management module that will be used as a file-upload destination for tftp transfers.	tftp -c *filename* where *filename* is less than 256 characters in length containing any character except for the percent sign (%), forward-slash (/), or double-quote ("). Command use restricted (see “Commands and user authority” on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.

Example:
To create a placeholder file named firmware.pkt in the management module, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
tftp -c firmware.pkt
```

The following example shows the information that is returned from this command:

```
system:mm[1]> tftp -c firmware.pkt
OK
system:mm[1]>
```

uplink (management module failover) command (management modules other than the advanced management module)

Note: The uplink command operates differently for the advanced management module and for other management module types. The following command description is for management modules other than the advanced management module. See “uplink (management module failover) command (advanced management module only)” on page 93 for command syntax for the advanced management module.

This command displays and configures the management-module uplink failover feature. If the physical external network interface of the primary management module fails, this feature forces a failover to the redundant management module, if one is installed.

Table 36. uplink command (management modules other than the advanced management module)

Function	What it does	Command	Valid targets
Display uplink failover status	Displays the management-module uplink failover status (enabled or disabled) and the failover delay.	uplink	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set physical network uplink failover delay	Sets the amount of time between detection of a management-module physical uplink failure and failover to the redundant management module.	uplink -del *delay* where *delay* is from 1 to 255 minutes, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Enable physical uplink failover	Enables failover to the redundant management module if the external physical network interface of the primary management module fails.	uplink -on Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Disable physical uplink failover	Disables failover to the redundant management module if the external physical network interface of the primary management module fails.	uplink -off Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Example:
To enable failover to the redundant management module if the external network interface of the primary management module fails, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
uplink -on
```

To set the uplink failover delay to 3 minutes, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
uplink -del 3
```

To display the uplink failover configuration, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
uplink
```

The following example shows the information that is returned from these three commands:

```
system:mm[1]> uplink -on
OK
system:mm[1]> uplink -del 3
Uplink delay set to 3 minute(s).
OK
system:mm[1]> uplink
Failover on network uplink loss is enabled.
Uplink delay: 3 minute(s)
system:mm[1]>
```

uplink (management module failover) command (advanced management module only)

Note: The uplink command operates differently for the advanced management module and for other management module types. The following command description is for the advanced management module. See “uplink (management module failover) command (management modules other than the advanced management module)” on page 92 for command syntax for management modules other than the advanced management module.

This command displays and configures the management-module uplink failover feature. If the external network interface of the primary management module fails, this feature forces a failover to the redundant management module, if one is installed.

Table 37. uplink command (advanced management module only)

Function	What it does	Command	Valid targets
Display uplink failover status	Displays the management-module uplink failover status (enabled or disabled) and the failover delay.	uplink	-T system:mm[*x*] where *x* is the primary management-module bay number.
Set physical network uplink failover delay	Sets the amount of time between detection of a management-module physical uplink failure and failover to the redundant management module.	uplink -dp *delay* where *delay* is from 1 to 255 minutes, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see “Commands and user authority” on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Enable physical uplink failover	Enables failover to the redundant management module if the external physical network interface of the primary management module fails.	uplink -ep enabled Command use restricted (see “Commands and user authority” on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.

Table 37. uplink command (advanced management module only) (continued)

Function	What it does	Command	Valid targets
Disable physical uplink failover	Disables failover to the redundant management module if the external physical network interface of the primary management module fails.	uplink -ep disabled Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Set physical network uplink failover delay	Sets the amount of time between detection of a management-module physical uplink failure and failover to the redundant management module.	uplink -dp *delay* where *delay* is from 1 to 255 minutes, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Enable physical uplink failover	Enables failover to the redundant management module if the external physical network interface of the primary management module fails.	uplink -ep enabled Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Disable physical uplink failover	Disables failover to the redundant management module if the external physical network interface of the primary management module fails.	uplink -ep disabled Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Set logical network uplink failover delay	Sets the amount of time between detection of a management-module logical uplink failure and failover to the redundant management module.	uplink -dl *delay* where *delay* is from 1 to 255 minutes, inclusive. If you enter a value outside this range, an error will be displayed. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Enable logical uplink failover	Enables failover to the redundant management module if the external logical network interface of the primary management module fails. You must enter a non-zero IP address of a device that the management module can access to check its logical network link before you can enable logical uplink failover.	uplink -el enabled Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.
Disable logical uplink failover	Disables failover to the redundant management module if the external logical network interface of the primary management module fails.	uplink -el disabled Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] where *x* is the primary management-module bay number.

Table 37. uplink command (advanced management module only) (continued)

Function	What it does	Command	Valid targets
Set IP address to check logical network uplink	Sets the IP address of the device that the management module accesses to check its logical network link.	uplink -ip *ip_address* where *ip_address* is a valid IP. You must enter a non-zero IP address before you can enable logical uplink failover. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Example:
To enable failover to the redundant management module if the external physical network interface of the primary management module fails, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
uplink -ep enabled
```

To set the physical uplink failover delay to 3 minutes, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
uplink -dp 3
```

To display the uplink failover configuration, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
uplink
```

The following example shows the information that is returned from these three commands:

```
system:mm[1]> uplink -ep enabled
OK
system:mm[1]> uplink -dp 3
OK
system:mm[1]> uplink
Failover on network uplink loss is enabled for physical detection
Uplink delay for physical detection: 3 minute(s)

Failover on network uplink loss is disabled for logical detection
Uplink delay for logical detection: 30 minute(s)
Destination IP for MM to check its logical link: 0.0.0.0
system:mm[1]>
```

users command (management modules other than the advanced management module)

Note: The users command operates differently for the advanced management module and for other management module types. The following command description is for management modules other than the advanced management module. See “users command (advanced management module only)” on page 105 for command syntax for the advanced management module.

This command displays and configures user accounts, also called user profiles, of the primary management module.

Important: Command authority definitions might change between firmware versions. Make sure that the command authority level set for each user is correct after updating management-module firmware.

Table 38. users (management-module users) command (management modules other than the advanced management module)

Function	What it does	Command	Valid targets
Display all user profiles	Displays all 12 management-module user profiles. Returned values are: • User name • Authority level	users	`-T system:mm[x]` where *x* is the primary management-module bay number.
Display single user profile	Displays the specified management-module user profile. Returned values are: • User name • Authority level • Context name • Authentication protocol • Privacy protocol • Access type • Hostname/IP address	users -*user_number* where *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the “Display all user profiles” list.	`-T system:mm[x]` where *x* is the primary management-module bay number.
Delete user profile	Delete the specified management-module user profile.	users -*user_number* -clear where *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the “Display all user profiles” list. It is possible to delete an empty user profile. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 38. users (management-module users) command (management modules other than the advanced management module) (continued)

Function	What it does	Command	Valid targets
Create user profile	Create the specified management-module user profile. All fields must be specified when creating a user profile for the BladeCenter T management module. For management modules other than those installed in a BladeCenter T unit, only the following user-profile fields are required: • -*user_number* • -n *user_name* • -a *user_authority* • -p *user_password*	users -*user_number* -n *user_name* -p *user_password* -a *user_authority* -cn *context_name* -ap *auth_protocol* -pp *privacy_protocol* -ppw *privacy_pwd* -at *access_type* -i *ip_addr/hostname* where: • *user_number* is a number from 1 to 12 that corresponds to an unused user number in the "Display all user profiles" list. • *user_name* is a alphanumeric string up to 15 characters in length that can include periods (.) and underscores (_). Each of the 12 user names must be unique. • *user_password* can be blank or an alphanumeric string up to 15 characters in length that can include periods (.) and underscores (_), and must include at least one alphabetic and one non-alphabetic character. • *user_authority* is one of the following: – operator (read-only) – rbs (see "Set user authority level" on page 100 for more information) *(continued on next page)*	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 38. users (management-module users) command (management modules other than the advanced management module) (continued)

Function	What it does	Command	Valid targets
Create user profile *(continued)*		• *context_name* is a string for SNMPv3 context that is up to 31 characters in length. Each of the 12 context names must be unique. • *auth_protocol* is an SNMPv3 authentication protocol of sha, md5, or blank (no entry) for none. • *privacy_protocol* is an SNMPv3 privacy protocol of des or blank (no entry) for none. If the privacy protocol is set to none, no -ppw command option (privacy password) is required. • *privacy_pwd* is an SNMPv3 privacy password string of up to 31 characters in length. If the privacy protocol is set to none, the -ppw command option does not need to be used unless a privacy password is required. • *access_type* is an SNMPv3 access type of read, write, or traps. • *ip_addr/hostname* is a valid SNMPv3 static IP address or an alphanumeric hostname string up to 63 characters in length. Command use restricted (see “Commands and user authority” on page 5).	

Table 38. users (management-module users) command (management modules other than the advanced management module) (continued)

Function	What it does	Command	Valid targets
Set user name	Sets a user name in the specified management-module user profile.	users -*user_number* -n *user_name* where: • *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the “Display all user profiles” list. • *user_name* is a alphanumeric string up to 15 characters in length that can include periods (.) and underscores (_). Each of the 12 user names must be unique. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set user password	Sets a user password in the specified management-module user profile.	users -*user_number* -p *user_password* where: • *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the “Display all user profiles” list. • *user_password* can be blank or an alphanumeric string up to 15 characters in length that can include periods (.) and underscores (_), and must include at least one alphabetic and one non-alphabetic character. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 38. users (management-module users) command (management modules other than the advanced management module) (continued)

Function	What it does	Command	Valid targets
Set user authority level	Sets a user authority level in the specified management-module user profile.	users -*user_number* -a *user_authority* where: • *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the "Display all user profiles" list. • *user_authority* is one of the following: – operator (read-only) – rbs (custom) The custom authority level parameter is specified using the following syntax: `rbs:levels:devices` where the *levels* are one or more of the following authority levels, separated by a vertical bar (|): • super (Supervisor) • cam (Chassis User Account Management) • clm (Chassis Log Management) • co (Chassis Operator) • cc (Chassis Configuration) • ca (Chassis Administration) • bo (Blade Operator) • brp (Blade Remote Present) • bc (Blade Configuration) • ba (Blade Administration) • so (I/O Module Operator) • sc (I/O Module Configuration) • sa (I/O Module Administration) *(continued on next page)*	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 38. users (management-module users) command (management modules other than the advanced management module) (continued)

Function	What it does	Command	Valid targets
Set user authority level *(continued)*		where the *devices* are one or more of the following devices, separated by a vertical bar (|). Ranges of devices are separated by a dash (-). • c*n* (Chassis *n*, where *n* is a valid chassis number. Use c1 for single-chassis environments.) • b*n* (Blade *n*, where *n* is a valid blade bay number in the chassis) • s*n* (I/O module *n*, where *n* is a valid I/O module bay number in the chassis) Command use restricted (see "Commands and user authority" on page 5).	
Set SNMPv3 user context name	Sets an SNMPv3 context name in the specified management-module user profile. The context name defines the context the SNMPv3 user is working in. A context name can be shared by multiple users.	users -*user_number* -cn *context_name* where: • *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the "Display all user profiles" list. • *context_name* is a string up to 31 characters in length. Each of the 12 context names must be unique. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 38. users (management-module users) command (management modules other than the advanced management module) (continued)

Function	What it does	Command	Valid targets
Set SNMPv3 user authentication protocol	Sets the SNMPv3 authentication protocol to be used for the specified management-module user profile.	users -*user_number* -ap *auth_protocol* where: • *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the "Display all user profiles" list. • *auth_protocol* is sha, md5, or blank (no entry) for none. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set SNMPv3 user privacy protocol	Sets the SNMPv3 privacy protocol to be used for the specified management-module user profile. If the privacy protocol is set to none, no -ppw command option (privacy password) is required.	users -*user_number* -pp *privacy_protocol* where: • *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the "Display all user profiles" list. • *privacy_protocol* is des or blank (no entry) for none. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set privacy password for SNMPv3 user	Sets an SNMPv3 privacy password in the specified management-module user profile.	users -*user_number* -ppw *privacy_pwd* where: • *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the "Display all user profiles" list. • *privacy_pwd* is a string up to 31 characters in length. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 38. users (management-module users) command (management modules other than the advanced management module) (continued)

Function	What it does	Command	Valid targets
Set access type for SNMPv3 user	Sets an SNMPv3 access type for the specified management-module user profile. This command supports the following access types: • read: the user can query Management Information Base (MIB) objects and receive traps. • write: the user can query and set MIB objects and receive traps. • traps: the user can only receive traps.	users -*user_number* -at *access_type* where: • *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the "Display all user profiles" list. • *access_type* is read, write, or traps. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set IP address or hostname for SNMPv3 trap receiver	Sets the IP address or hostname that will receive SNMPv3 traps for the specified management-module user profile.	users -*user_number* -i *ip_addr/hostname* where: • *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the "Display all user profiles" list. • *ip_addr/hostname* is a valid static IP address or an alphanumeric hostname string up to 63 characters in length. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Example:
To create user number 3 with a user name of user3 who has supervisor rights to all BladeCenter components, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
users -3 -n user3 -p passw0rd -a rbs:super:c1|b1-b14|s1-s4 -cn joe -ap md5 -pp des
-ppw passw0rd -at read -I 192.168.70.129
```

Note: The entry beginning with `users -3 -n...` is shown with a line break after `-pp des`. When this command is entered, the entire entry must all be on one line.

To set the command authority for an existing user number 4 to Blade Operator for blade 1, blade 2, and blade 3 and Chassis Log Management, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
users -4 -rbs:bo|clm:b1-b3|c1
```

To display all users, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
users
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> users -3 -n user3 -p passw0rd -a rbs:super:c1|b1-b14|s1-s4
-cn joe -ap md5 -pp des -ppw passw0rd -at read -I 192.168.70.129
OK
system:mm[1]> users -4 -rbs:bo|clm:b1-b3|c1
OK
system:mm[1]> users
1. USERID
   Role:supervisor
   Blades:1|2|3|4|5|6|7|8|9|10|11|12|13|14
   Chassis:1
   Switches:1|2|3|4
2. <not used>
3. user3
   Role:supervisor
   Blades:1|2|3|4|5|6|7|8|9|10|11|12|13|14
   Chassis:1
   Switches:1|2|3|4
4. user4
   Role:blade operator|chassis log management
   Blades:1|2|3
   Chassis:1
   Switches:N/A
5. <not used>
6. <not used>
7. <not used>
8. <not used>
9. <not used>
10. <not used>
11. <not used>
12. <not used>
system:mm[1]>
```

Note: The entry beginning with `users -3 -n...` is shown with a line break after `-a rbs:super:c1|b1-b14|s1-s4`. When this command is entered, the entire entry must all be on one line.

users command (advanced management module only)

Note: The users command operates differently for the advanced management module and for other management module types. The following command description is for the advanced management module. See “users command (management modules other than the advanced management module)” on page 96 for command syntax for management modules other than the advanced management module.

This command displays and configures user accounts, also called user profiles, of the primary management module.

Important: Command authority definitions might change between firmware versions. Make sure that the command authority level set for each user is correct after updating management-module firmware.

Table 39. users (management-module users) command (advanced management module only)

Function	What it does	Command	Valid targets
Display all user profiles	Displays all 12 management-module user profiles. Returned values are: • User name • Authority level	users	`-T system:mm[x]` where *x* is the primary management-module bay number.
Display active users	Displays all users that are currently logged in to the management module. Returned values are: • User name • User IP address • Connection type (SNMPv1, SNMPv3, SSH, TCP command mode, Telnet, Web)	users -curr	`-T system:mm[x]` where *x* is the primary management-module bay number.
Display single user profile	Displays the specified management-module user profile. Returned values are: • User name • Authority level • Context name • Authentication protocol • Privacy protocol • Access type • Hostname/IP address	users -*user_number* where *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the “Display all user profiles” list.	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 39. users (management-module users) command (advanced management module only) (continued)

Function	What it does	Command	Valid targets
Delete user profile	Delete the specified management-module user profile.	users -*user_number* -clear where *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the "Display all user profiles" list. It is possible to delete an empty user profile. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 39. users (management-module users) command (advanced management module only) (continued)

Function	What it does	Command	Valid targets
Create user profile	Create the specified management-module user profile. All fields must be specified when creating a user profile for the BladeCenter T management module. For management modules other than those installed in a BladeCenter T unit, only the following user-profile fields are required: • -*user_number* • -n *user_name* • -a *user_authority* • -p *user_password*	users -*user_number* -n *user_name* -p *user_password* -a *user_authority* -cn *context_name* -ap *auth_protocol* -pp *privacy_protocol* -ppw *privacy_pwd* -at *access_type* -i *ip_addr/hostname* where: • *user_number* is a number from 1 to 12 that corresponds to an unused user number in the “Display all user profiles” list. • *user_name* is a alphanumeric string up to 15 characters in length that can include periods (.) and underscores (_). Each of the 12 user names must be unique. • *user_password* can be blank or an alphanumeric string up to 15 characters in length that can include periods (.) and underscores (_), and must include at least one alphabetic and one non-alphabetic character. • *user_authority* is one of the following: – operator (read-only) – rbs (see “Set user authority level” on page 109 for more information) Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[`*x*`]` where *x* is the primary management-module bay number.

Table 39. users (management-module users) command (advanced management module only) (continued)

Function	What it does	Command	Valid targets
Set user name	Sets a user name in the specified management-module user profile.	users -*user_number* -n *user_name* where: • *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the “Display all user profiles” list. • *user_name* is a alphanumeric string up to 15 characters in length that can include periods (.) and underscores (_). Each of the 12 user names must be unique. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set user password	Sets a user password in the specified management-module user profile.	users -*user_number* -p *user_password* where: • *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the “Display all user profiles” list. • *user_password* can be blank or an alphanumeric string up to 15 characters in length that can include periods (.) and underscores (_), and must include at least one alphabetic and one non-alphabetic character. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 39. users (management-module users) command (advanced management module only) (continued)

Function	What it does	Command	Valid targets
Set user authority level	Sets a user authority level in the specified management-module user profile.	users -*user_number* -a *user_authority* where: • *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the "Display all user profiles" list. • *user_authority* is one of the following: – operator (read-only) – rbs (custom) The custom authority level parameter is specified using the following syntax: `rbs:levels:devices` where the *levels* are one or more of the following authority levels, separated by a vertical bar (|): • super (Supervisor) • cam (Chassis User Account Management) • clm (Chassis Log Management) • co (Chassis Operator) • cc (Chassis Configuration) • ca (Chassis Administration) • bo (Blade Operator) • brp (Blade Remote Present) • bc (Blade Configuration) • ba (Blade Administration) • so (I/O Module Operator) • sc (I/O Module Configuration) • sa (I/O Module Administration) *(continued on next page)*	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 39. users (management-module users) command (advanced management module only) (continued)

Function	What it does	Command	Valid targets
Set user authority level *(continued)*		the *levels* can also include one or more of the following authority levels when using LDAP. **Notes:** 1. The LDAP authority levels are not supported by the management-module Web interface. 2. To use the LDAP authority levels, make sure that the version of LDAP security used by the management module is set to v2 (enhanced role-based security model). See "ldapcfg command (advanced management module only)" on page 59 for information. • brpv (Blade Remote Presence View Video) • brpk (Blade Remote Presence KVM) • brpr (Blade Remote Presence Remote Drive Read) • crpru (Blade Remote Presence Remote Drive Read or Write) • rps (Remote Presence Supervisor) where the *devices* are one or more of the following devices, separated by a vertical bar (|). Ranges of devices are separated by a dash (-). • c*n* (Chassis *n*, where *n* is a valid chassis number. Use c1 for single-chassis environments.) • b*n* (Blade *n*, where *n* is a valid blade bay number in the chassis) • s*n* (I/O module *n*, where *n* is a valid I/O module bay number in the chassis) Command use restricted (see "Commands and user authority" on page 5).	

Table 39. users (management-module users) command (advanced management module only) (continued)

Function	What it does	Command	Valid targets
Set SNMPv3 user context name	Sets an SNMPv3 context name in the specified management-module user profile. The context name defines the context the SNMPv3 user is working in. A context name can be shared by multiple users.	users -*user_number* -cn *context_name* where: • *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the "Display all user profiles" list. • *context_name* is a string up to 31 characters in length. Each of the 12 context names must be unique. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set SNMPv3 user authentication protocol	Sets the SNMPv3 authentication protocol to be used for the specified management-module user profile.	users -*user_number* -ap *auth_protocol* where: • *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the "Display all user profiles" list. • *auth_protocol* is sha, md5, or blank (no entry) for none. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set SNMPv3 user privacy protocol	Sets the SNMPv3 privacy protocol to be used for the specified management-module user profile. If the privacy protocol is set to none, no -ppw command option (privacy password) is required.	users -*user_number* -pp *privacy_protocol* where: • *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the "Display all user profiles" list. • *privacy_protocol* is des or blank (no entry) for none. Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Table 39. users (management-module users) command (advanced management module only) (continued)

Function	What it does	Command	Valid targets
Set privacy password for SNMPv3 user	Sets an SNMPv3 privacy password in the specified management-module user profile.	users -*user_number* -ppw *privacy_pwd* where: • *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the “Display all user profiles” list. • *privacy_pwd* is a string up to 31 characters in length. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set access type for SNMPv3 user	Sets an SNMPv3 access type for the specified management-module user profile. This command supports the following access types: • get: the user can query Management Information Base (MIB) objects and receive traps. • set: the user can query and set MIB objects and receive traps. • trap: the user can only receive traps.	users -*user_number* -at *access_type* where: • *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the “Display all user profiles” list. • *access_type* is get, set, or trap. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Set IP address or hostname for SNMPv3 trap receiver	Sets the IP address or hostname that will receive SNMPv3 traps for the specified management-module user profile.	users -*user_number* -i *ip_addr/hostname* where: • *user_number* is a number from 1 to 12 that corresponds to the user number assigned in the “Display all user profiles” list. • *ip_addr/hostname* is a valid static IP address or an alphanumeric hostname string up to 63 characters in length. Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Example:
To create user number 3 with a user name of user3 who has supervisor rights to all BladeCenter components, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
users -3 -n user3 -p passw0rd -a rbs:super:c1|b1-b14|s1-s4 -cn joe -ap md5 -pp des
-ppw passw0rd -at get -I 192.168.70.129
```

Note: The entry beginning with `users -3 -n...` is shown with a line break after `-pp des`. When this command is entered, the entire entry must all be on one line.

To set the command authority for an existing user number 4 to Blade Operator for blade 1, blade 2, and blade 3 and Chassis Log Management, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
users -4 -rbs:bo|clm:b1-b3|c1
```

To display all users, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
users
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> users -3 -n user3 -p passw0rd -a rbs:super:c1|b1-b14|s1-s4
-cn joe -ap md5 -pp des -ppw passw0rd -at get -I 192.168.70.129
OK
system:mm[1]> users -4 -rbs:bo|clm:b1-b3|c1
OK
system:mm[1]> users
1. USERID
   Role:supervisor
   Blades:1|2|3|4|5|6|7|8|9|10|11|12|13|14
   Chassis:1
   Switches:1|2|3|4
2. <not used>
3. user3
   Role:supervisor
   Blades:1|2|3|4|5|6|7|8|9|10|11|12|13|14
   Chassis:1
   Switches:1|2|3|4
4. user4
   Role:blade operator|chassis log management
   Blades:1|2|3
   Chassis:1
   Switches:N/A
5. <not used>
6. <not used>
7. <not used>
8. <not used>
9. <not used>
10. <not used>
11. <not used>
12. <not used>
system:mm[1]>
```

Note: The entry beginning with `users -3 -n...` is shown with a line break after `-a rbs:super:c1|b1-b14|s1-s4`. When this command is entered, the entire entry must all be on one line.

write command (advanced management module only)

This command saves the management-module configuration to the chassis of the BladeCenter unit.

Table 40. write command

Function	What it does	Command	Valid targets
Save management-module configuration *(BladeCenter H units only)*	Saves an image of the management-module configuration to the BladeCenter unit chassis.	write -config chassis Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Save management-module configuration *(BladeCenter units other than BladeCenter H units)*	Saves an image of the management-module configuration to the BladeCenter unit chassis. You must specify if the image is compressed or uncompressed (legacy).	write -config chassis -format *format* where *format* is compressed or legacy (uncompressed). Command use restricted (see "Commands and user authority" on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Example:

To save the management-module configuration to an image on the BladeCenter chassis, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
write -config chassis
```

The following example shows the information that is returned from this command:

```
system:mm[1]> write -config chassis
OK
Configuration settings were successfully saved to the chassis
system:mm[1]>
```

Event-log commands

Use these commands to view and clear primary management-module event log entries:

- clearlog command
- displaylog command

clearlog command

This command clears the management-module event log.

Table 41. clearlog (clear management-module event log) command

Function	What it does	Command	Valid targets
Clear management-module event log	Clears the management-module event log and displays a message confirming that the event log was cleared.	clearlog Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.

Example:
To clear the management-module event log, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
clearlog
```

The following example shows the information that is returned:

```
system:mm[1]> clearlog
OK
system:mm[1]>
```

displaylog command

This command displays management-module event log entries.

Table 42. displaylog (display management-module event log) command

Function	What it does	Command	Valid targets
Display management-module event log entries	Displays five entries from the management-module event log. The first time the command is executed, the five most recent log entries are displayed. Each subsequent time the command is issued, the next five entries in the log display.	displaylog	`-T system:mm[x]` where *x* is the primary management-module bay number.
Display management-module event log entries (reset counter)	Resets the counter and displays the first five entries in the management-module event log.	displaylog -f	`-T system:mm[x]` where *x* is the primary management-module bay number.
Display all management-module event log entries (advanced management module only)	Displays all entries in the advanced management module event log.	displaylog -a	`-T system:mm[x]` where *x* is the primary management-module bay number.

Example: To display the first five primary management-module event log entries, while management module 1 is set as the persistent command environment, at the system:mm[1]> prompt, type

```
displaylog -f
```

To display the next five management-module event log entries, type (a second time)

```
displaylog
```

To display the next five management-module event log entries, type

```
displaylog
```

The following example shows the information that is returned from these three commands:

```
system:mm[1]> displaylog -f
1       I       SERVPROC        10/27/03        19:45:57        Remote
Login Successful. Login ID:''USERID' CLI authenticated from
192.168.70.231 (Telnet).'
2       E       SERVPROC        10/27/03        19:42:58        Failure
reading I2C device. Check devices on bus 4.
3       E       SERVPROC        10/27/03        19:42:58        Failure
reading I2C device. Check devices on bus 3.
4       E       SERVPROC        10/27/03        19:42:58        Failure
reading I2C device. Check devices on bus 2.
5       I       SERVPROC        10/27/03        19:41:54        Remote
Login Successful. Login ID:''USERID' from WEB browser at
IP@=192.168.70.231'
system:mm[1]> displaylog
6       E       SERVPROC        10/27/03        19:41:53        Blower 2
Fault Multiple blower failures
7       E       SERVPROC        10/27/03        19:41:53        Blower 1
Fault Single blower failure
8       I       SERVPROC        10/27/03        19:41:48
Ethernet[1] Link Established at 100Mb, Full Duplex.
9       I       SERVPROC        10/27/03        19:41:48
Ethernet[1] configured to do 100Mb/Full Duplex.
10      I       SERVPROC        10/27/03        19:41:48
Ethernet[1] MAC Address currently being used: 0x00-09-6B-CA-0C-81
system:mm[1]> displaylog
11      I       SERVPROC        10/27/03        19:41:48
Ethernet[0] Link Established at 100Mb, Full Duplex.
12      I       SERVPROC        10/27/03        19:41:48
Ethernet[0] configured to do Auto Speed/Auto Duplex.
13      I       SERVPROC        10/27/03        19:41:48
Ethernet[0] MAC Address currently being used: 0x00-09-6B-CA-0C-80
14      I       SERVPROC        10/27/03        19:41:48
Management Module Network Initialization Complete.
15      I       SERVPROC        10/27/03        19:41:46        ENET[1]
IP-Cfg:HstName=MM00096BCA0C81, IP@=192.168.70.126 ,GW@=0.0.0.0,
NetMsk=255.255.255.0
system:mm[1]>
```

The following example shows the information that is returned if the displaylog command is run after the event log is cleared:

```
system:mm[1]> displaylog -f
```

```
1       I       SERVPROC        10/27/03        19:53:02        System
log cleared.
(There are no more entries in the event log.)
system:mm[1]>
```

Power-control commands

Use these commands to control operation of the BladeCenter unit, blade servers, and I/O (switch) modules:

- boot command
- bootseq command (advanced management module only)
- fuelg command (management modules other than the advanced management module)
- fuelg command (advanced management module only)
- power command
- reset command
- shutdown command (advanced management module only)

boot command

This command resets blade servers with several different restart options.

Table 43. boot command

Function	What it does	Command	Valid targets
Reset blade server	Performs an immediate reset and restart of the specified blade server. This command will start a blade server that is turned off.	boot Command use restricted (see "Commands and user authority" on page 5).	`-T system:blade[`*x*`]` where *x* is the blade server bay number.
Reset blade server to command console	Resets the specified blade server, causing it to open a command console with an SOL session when it restarts. This command will start a blade server that is turned off.	boot -c Command use restricted (see "Commands and user authority" on page 5).	`-T system:blade[`*x*`]` where *x* is the blade server bay number.
Power cycle	Cycles power for the specified blade server. If the blade server is off, it will turn on. If the blade server is on, it will turn off and then turn on.	boot -p powercycle Command use restricted (see "Commands and user authority" on page 5).	`-T system:blade[`*x*`]` where *x* is the blade server bay number.
Reset blade server	Performs an immediate reset and restart of the specified blade server. This command will start a blade server that is turned off.	boot -p reset Command use restricted (see "Commands and user authority" on page 5).	`-T system:blade[`*x*`]` where *x* is the blade server bay number.

Example:
To boot the blade server in blade bay 3, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
boot -T system:blade[3]
```

The following example shows the information that is returned:

```
system:mm[1]>  boot -T system:blade[3]
```

```
OK
system:mm[1]>
```

bootseq command (advanced management module only)

This commandsets and displays the boot sequence settings for blade servers installed in the BladeCenter unit.

Table 44. bootseq command

Function	What it does	Command	Valid targets
Display blade server boot sequence	Displays the boot sequence of the specified blade server. Possible return values are: • floppy (diskette drive) • iscsi (iSCSI) • iscsicrt (iSCSI critical) • nw (network) • nodev (no device) • hd0 (hard disk drive 0) • hd1 (hard disk drive 1) • hd2 (hard disk drive 2 • hd3 (hard disk drive 3) • hd4 (hard disk drive 4) • cd (CD-ROM drive)	bootseq	`-T system:blade[`*x*`]` where *x* is the blade server bay number.

Table 44. bootseq command (continued)

Function	What it does	Command	Valid targets
Set boot sequence for blade server	Sets the boot sequence of the specified blade server.	bootseq *devicelist* where *devicelist* has one or more of the following boot devices specified, in order of preference: • "floppy" for the diskette drive (non-POWER-based blade servers only) • "iscsi" for iSCSI • "iscsicrt" for iSCSI critical • "nw" for network • "nodev" for no device • "hd0" for hard disk drive 0 • "hd1" for hard disk drive 1 • "hd2" for hard disk drive 2 • "hd3" for hard disk drive 3 • "hd4" for hard disk drive 4 • "cd" for the CD-ROM drive A boot sequence of up to four boot devices can be specified. If less than four devices are specified, the remaining items in the sequence are set to nodev. Command use restricted (see "Commands and user authority" on page 5).	`-T system:blade[x]` where *x* is the blade server bay number.

Table 44. bootseq command (continued)

Function	What it does	Command	Valid targets
Set boot sequence for all blade servers	Sets the same boot sequence for all blade servers installed in the BladeCenter unit.	bootseq -all *devicelist* where *devicelist* has one or more of the following boot devices specified, in order of preference: • "floppy" for the diskette drive (non-POWER-based blade servers only) • "iscsi" for iSCSI • "iscsicrt" for iSCSI critical • "nw" for network • "nodev" for no device • "hd0" for hard disk drive 0 • "hd1" for hard disk drive 1 • "hd2" for hard disk drive 2 • "hd3" for hard disk drive 3 • "hd4" for hard disk drive 4 • "cd" for the CD-ROM drive A boot sequence of up to four boot devices can be specified. If less than four devices are specified, the remaining items in the sequence are set to nodev. Command use restricted (see "Commands and user authority" on page 5).	-T system:blade[*x*] where *x* is the blade server bay number.

Example:
To set a boot sequence of diskette drive, CD-ROM drive, and hard disk drive 0 for the blade server in blade bay 3, while the blade server in blade bay 3 is set as the persistent command environment, at the system:blade[3]> prompt, type

```
bootseq floppy cd hd0
```

To display the boot sequence for the blade server in blade bay 3, while the blade server in blade bay 3 is set as the persistent command environment, at the system:blade[3]> prompt, type

```
bootseq
```

The following example shows the information that is returned from these two commands:

```
system:blade[3]>  bootseq floppy cd hd0
OK
system:blade[3]>  bootseq
```

```
floppy
cd
hd0
nodev
system:blade[3]>
```

fuelg command (management modules other than the advanced management module)

Note: The fuelg command operates differently for the advanced management module and for other management module types. The following command description is for management modules other than the advanced management module. See “fuelg command (advanced management module only)” on page 124 for command syntax for the advanced management module.

This command displays power domain information, listing the power modules that are installed in the BladeCenter unit and information about how the power in each domain is used. This command also configures the power domain policies for oversubscription and quiet mode.

Table 45. fuelg command (management modules other than the advanced management module)

Function	What it does	Command	Valid targets
Display power domain status overview	Displays health status and total power usage information for all power domains	fuelg	`-T system`
Display detailed power domain status	Displays detailed status and usage information for the specified power domains	fuelg *domain* where *domain* is “pd1” for power domain 1 and “pd2” for power domain 2. If no *domain* is specified, a status overview for all power domains displays.	`-T system`

Table 45. fuelg command (management modules other than the advanced management module) (continued)

Function	What it does	Command	Valid targets
Set power domain redundancy loss policy	Sets how the BladeCenter unit responds to a condition that could cause a loss of redundant power.	fuelg *domain* -os *policy* where: • *domain* is “pd1” for power domain 1 and “pd2” for power domain 2. If no *domain* is specified, the *policy* is applied to all power domains. • *policy* of: – “none” (default) allows loss of redundancy. – “nonrecov” prevents components from turning on that will cause loss of power redundancy. – “recov” power throttles components to maintain power redundancy and prevents components from turning on that will cause loss of power redundancy. Command use restricted (see “Commands and user authority” on page 5).	`-T system`
Thermal event response (quiet mode)	Sets how the BladeCenter unit blowers respond to thermal events.	fuelg -qm *setting* where the quiet-mode *setting* of: • “off” (default) allows blowers to increase speed to provide additional cooling. • “on” keeps blowers at a fixed speed and power throttles BladeCenter components to reduce power consumption (only for BladeCenter components that support power throttling). Command use restricted (see “Commands and user authority” on page 5).	`-T system`

Example:
To view a power domain status overview, while the BladeCenter unit is set as the persistent command environment, at the `system>` prompt, type

```
fuelg
```

To reduce fan noise during thermal events for all power domains, while the BladeCenter unit is set as the persistent command environment with a management module other than an advanced management module, at the system> prompt, type

```
fuelg -qm on
```

To view the detailed power domain status for power domain 1, while the BladeCenter unit is set as the persistent command environment, at the system> prompt, type

```
fuelg pd1
```

The following example shows the information that is returned when the fuelg command is run on a management module other than an advanced management module.

```
system>  fuelg
Note: All power values are displayed in Watts.

Power Domain 1
--------------
Status: Power domain status is good.
Modules:
 Bay 1:   2000
 Bay 2:   2000
Power Budget:  3200
Reserved Power:  400
Remaining Power:  2800
Power in Use:  400

Power Domain 2
--------------
Status: Power domain status is good.
Modules:
 Bay 3: 1800
 Bay 4: 1800
Power Budget:  2880
Reserved Power:  0
Remaining Power:  2880
Power in Use:  0

-qm off
system>  fuelg -qm on
OK
system>  fuelg pd1
                             Power  -- Allocated Power --
Bay(s)  Module               State  Current   Max    Min
======  ===================  =====  =======  =====  =====
Chassis Components
        Midplane              On         10     10     10
no media tray
Blowers
     1  Blower 1 (NP)         On        120    120    120
     2  Blower 2 (NP)         On        120    120    120
Management Modules
     1  WMN315619689          On         25     25     25
     2  Backup MM (NP)                   25     25     25
I/O Modules
     1  I/O Module 2 (NP)                45     45     45
```

```
     2  I/O Module 2 (NP)                45     45     45

Domain totals:
  Allocated Power                       390    390    390

Note: (T) means "throttled", (U) means "unable to power up",
      * means "the blade may throttle", (NP) means "the module is not
      present", (D) means "discovering", (C) means "comm error", SB
      means "Standby"

-os none
system>
```

fuelg command (advanced management module only)

Notes:

1. The fuelg command operates differently for the advanced management module and for other management module types. The following command description is for the advanced management module. See “fuelg command (management modules other than the advanced management module)” on page 121 for command syntax for management modules other than the advanced management module.
2. For scripting purposes, the -qm and -os fuelg options for management modules other than the advanced management module are supported by the advanced management module.

This command displays power domain information, listing the power modules that are installed in the BladeCenter unit and information about how the power in each domain is used. This command also configures the power domain policies for power redundancy loss and limiting fan noise during thermal events.

Table 46. fuelg command (advanced management module only)

Function	What it does	Command	Valid targets
Display power domain status overview	Displays health status and total power usage information for all power domains	fuelg	`-T system`
Display detailed power domain status	Displays detailed status and usage information for the specified power domains	fuelg *domain* where *domain* is “pd1” for power domain 1 and “pd2” for power domain 2. If no *domain* is specified, a status overview for all power domains displays.	`-T system`

Table 46. fuelg command (advanced management module only) (continued)

Function	What it does	Command	Valid targets
Set power domain redundancy loss policy	Sets how the BladeCenter unit responds to a condition that could cause a loss of redundant power.	fuelg *domain* -pm *policy* where: • *domain* is “pd1” for power domain 1 and “pd2” for power domain 2. If no *domain* is specified, the *policy* is applied to all power domains. • *policy* of: – “nonred” (default) allows loss of redundancy. – “redwoperf” prevents components from turning on that will cause loss of power redundancy. – “redwperf” power throttles components to maintain power redundancy and prevents components from turning on that will cause loss of power redundancy. Command use restricted (see “Commands and user authority” on page 5).	`-T system`
Thermal event response (acoustic mode)	Sets how the BladeCenter unit blowers respond to thermal events.	fuelg -am *setting* where the acoustic-mode *setting* of: • “off” (default) allows blowers to increase speed to provide additional cooling. • “on” keeps blowers at a fixed speed and power throttles BladeCenter components to reduce power consumption (only for BladeCenter components that support power throttling). Command use restricted (see “Commands and user authority” on page 5).	`-T system`

Example:
To view a power domain status overview, while the BladeCenter unit is set as the persistent command environment, at the `system>` prompt, type

```
fuelg
```

To reduce fan noise during thermal events for all power domains, while the BladeCenter unit is set as the persistent command environment with an advanced management module, at the system> prompt, type

```
fuelg -am on
```

To view the detailed power domain status for power domain 1, while the BladeCenter unit is set as the persistent command environment, at the system> prompt, type

```
fuelg pd1
```

The following example shows the information that is returned when the fuelg command is run on an advanced management module.

```
system>  fuelg
Note: All power values are displayed in Watts.

Power Domain 1
--------------
Status: Power domain status is good.
Modules:
 Bay 1:   2880
 Bay 2:   2880
Power Management Policy: Non-redundant
Power in Use:  920
Total Power:  3520
Allocated Power (Max):  1280
Remaining Power:  2240

Power Domain 2
--------------
Status: Power domain status is good.
Modules:
 Bay 3:   2880
 Bay 4:   2880
Power Management Policy: Non-redundant
Power in Use:  920
Total Power:  3520
Allocated Power (Max):  1280
Remaining Power:  2240

-am off
system>  fuelg -am on
OK
system>  fuelg pd1
                            Power  -- Allocated Power --
Bay(s)  Module              State  Current   Max    Min
======  ==================  =====  =======  =====  =====
Chassis Components
        Midplane             On         10     10     10
        Media Tray           On         10     10     10
Fan Packs
     1  Fan Pack 1           On         30     30     30
     2  Fan Pack 2           On         30     30     30
     3  Fan Pack 3           On         30     30     30
     4  Fan Pack 4           On         30     30     30
Management Modules
     1  WMN315619689         On         25     25     25
```

```
     2  Standby MM (NP)                  25     25     25
I/O Modules
     1  I/O Module 2 (NP)                45     45     45
     2  I/O Module 2 (NP)                45     45     45
Blade Servers
     1  Blade_one             SB         30    110     80
           (0%,0%)
     2  Blade_two             SB         30    215    122
           (0%,0%,0%,0%)

Domain totals:
  Allocated Power                       390    390    390

Note: (T) means "throttled", (U) means "unable to power up",
      * means "the blade may throttle", (NP) means "the module is not
      present", (D) means "discovering", (C) means "comm error", (SB)
      means "Standby"

-pm none
system>
```

power command

This command turns on and turns off blade servers and I/O (switch) modules.

Table 47. power command

Function	What it does	Command	Valid targets

Power on	Turns on the specified blade server or I/O (switch) module.	power -on
		
		Command use restricted (see “Commands and user authority” on page 5).
			`-T system:blade[x]`
			`-T system:switch[x]`
			
			where *x* is the blade server or I/O (switch) module bay number.

Power on to command console	Opens a command console with an SOL session when the specified blade server is turned on.	power -on -c Command use restricted (see “Commands and user authority” on page 5).	`-T system:blade[x]` where *x* is the blade server bay number.

Power off	Turns off the specified blade server or I/O (switch) module.	power -off
		
		Command use restricted (see “Commands and user authority” on page 5).
			`-T system:blade[x]`
			`-T system:switch[x]`
			
			where *x* is the blade server or I/O (switch) module bay number.

Power cycle	Cycles power for the specified blade server or I/O (switch) module. If the blade server or I/O (switch) module is off, it will turn on. If the blade server or I/O (switch) module is on, it will turn off and then turn on.	power -cycle
		
		Command use restricted (see “Commands and user authority” on page 5).
			`-T system:blade[x]`
			`-T system:switch[x]`
			
			where *x* is the blade server or I/O (switch) module bay number.

Power cycle to command console	Cycles power for the specified blade server. If the blade server is off, it opens a command console with an SOL session when it is turned on. If the blade server is on, it will turn off and then turn on.	power -cycle -c Command use restricted (see “Commands and user authority” on page 5).	`-T system:blade[x]` where *x* is the blade server bay number.

Table 47. power command (continued)

Function	What it does	Command	Valid targets

Display power state	Displays the current power state for the specified blade server or I/O (switch) module. Possible return values are on and off.	power -state	`-T system:blade[`*x*`]`
			`-T system:switch[`*x*`]`
			
			where *x* is the blade server or I/O (switch) module bay number.

Display POST status for I/O (switch) module	Displays the POST status for the specified I/O (switch) module. If the command is run while POST is in progress, it returns the level of POST that is currently in process. If the command is run after POST is complete, it displays one of the following return values: • The `POST results could not be read.` message displays if there was an internal error during POST. • The `POST results not complete: hex_code` message displays if POST results are not available after POST completes. • If POST returns valid results, one of the following messages displays: – *hex_code*`: Base internal function failure detected.` – *hex_code*`: Internal interface failure detected.` – *hex_code*`: External interface failure detected.` – *hex_code*`: Module completed POST successfully.` – *hex_code*`: Cannot decode POST result code.` • The `Invalid POST results.` message displays if none of the above conditions is true. Where *hex_code* is a hexadecimal code. See the documentation that comes with your I/O module for information. **Note:** This command option is not supported for serial concentrator I/O (switch) modules.	power -state -post	`-T system:switch[`*x*`]` where *x* is the I/O (switch) module bay number.

Example:

To display the power state for the blade server in blade bay 5, while this blade server is set as the persistent command environment, at the `system:blade[5]>` prompt, type

```
power -state
```

To turn on the blade server in blade bay 5, while this blade server is set as the persistent command environment, at the `system:blade[5]>` prompt, type

```
power -on
```

To display the power state for the blade server in blade bay 5 again, while this blade server is set as the persistent command environment, at the `system:blade[5]>` prompt, type

```
power -state
```

The following example shows the information that is returned from these three commands:

```
system:blade[5]> power -state
Off
system:blade[5]> power -on
OK
system:blade[5]> power -state
On
system:blade[5]>
```

reset command

This command resets blade servers, blade server integrated system management processors (service processors), I/O (switch) modules, or the primary management module.

Table 48. reset command

Function	What it does	Command	Valid targets

Reset	Performs an immediate reset and restart of the specified device.	reset
		
		Command use restricted (see “Commands and user authority” on page 5).
			`-T system:blade[x]`
			`-T system:switch[x]`
			`-T system:blade[x]:sp`
			`-T system:mm[x]`
			
			where *x* is the blade server, I/O (switch) module, or primary management-module bay number.

Reset blade server to command console	Opens a command console with an SOL session when the specified blade server is reset.	reset -c Command use restricted (see “Commands and user authority” on page 5).	`-T system:blade[x]` where *x* is the blade server bay number.
Reset management module with failover	Resets the primary management module, enabling failover if a redundant management module is present. An error message is displayed if you try to enable failover when a redundant management module is not installed.	reset -f Command use restricted (see “Commands and user authority” on page 5).	`-T system:mm[x]` where *x* is the primary management-module bay number.
Reset I/O (switch) module with standard diagnostics	Performs an immediate reset and restart of the specified device, running standard diagnostics on the I/O (switch) module after it restarts. Running the `reset -std` command gives the same result as running the `reset` command on a I/O (switch) module.	reset -std Command use restricted (see “Commands and user authority” on page 5).	`-T system:switch[x]` where *x* is the I/O (switch) module bay number.

Table 48. reset command (continued)

Function	What it does	Command	Valid targets
Reset I/O (switch) module with extended diagnostics	Performs an immediate reset and restart of the specified device, running extended diagnostics on the I/O (switch) module after it restarts.	reset -exd Command use restricted (see "Commands and user authority" on page 5).	`-T system:switch[x]` where *x* is the I/O (switch) module bay number.
Reset I/O (switch) module with full diagnostics	Performs an immediate reset and restart of the specified device, running full diagnostics on the I/O (switch) module after it restarts.	reset -full Command use restricted (see "Commands and user authority" on page 5).	`-T system:switch[x]` where *x* is the I/O (switch) module bay number.
Restart blade server with NMI	Command results depend on the blade server model that is specified: • For a JS20 blade server, the command performs an immediate reset and restart of the specified blade server with non-maskable interrupt (NMI). • For all other blade servers, the command performs an immediate reset and restart of the specified blade server.	reset -sft Command use restricted (see "Commands and user authority" on page 5).	`-T system:blade[x]` where *x* is the blade server bay number.
Restart blade server and clear NVRAM	Command results depend on the blade server model that is specified: • For a JS20 blade server, the command performs an immediate reset and restart of the specified JS20 blade server and clears all settings stored in non-volatile memory (NVRAM). • For all other blade servers, the command performs an immediate reset and restart of the specified blade server.	reset -clr Command use restricted (see "Commands and user authority" on page 5).	`-T system:blade[x]` where *x* is the blade server bay number.
Restart blade server and run diagnostics	Command results depend on the blade server model that is specified: • For a JS20 blade server, the command performs an immediate reset and restart of the specified JS20 blade server and runs diagnostics. • For all other blade servers, the command performs an immediate reset and restart of the specified blade server.	reset -dg Command use restricted (see "Commands and user authority" on page 5).	`-T system:blade[x]` where *x* is the blade server bay number.

Table 48. reset command (continued)

Function	What it does	Command	Valid targets
Restart blade server and run diagnostics using default boot sequence	Command results depend on the blade server model that is specified: • For a JS20 blade server, the command performs an immediate reset and restart of the specified JS20 blade server and runs diagnostics using the default boot sequence configured for the blade server. • For all other blade servers, the command performs an immediate reset and restart of the specified blade server.	reset -ddg Command use restricted (see "Commands and user authority" on page 5).	`-T system:blade[x]` where *x* is the blade server bay number.

Example:
To reset the service processor on the blade server in blade bay 5, while the BladeCenter unit is set as the persistent command environment, at the `system>` prompt, type

```
reset
```

The following example shows the information that is returned:

```
system> reset -T blade[5]:sp
OK
system>
```

shutdown command (advanced management module only)

This command forces a blade server to shut down.

Table 49. shutdown command

Function	What it does	Command	Valid targets
Shutdown blade server	Forces a shutdown for the specified blade server.	shutdown -f Command use restricted (see "Commands and user authority" on page 5).	`-T system:blade[x]` where *x* is the blade server bay number.

Example:

To force a shutdown for the blade server in blade bay 5, while this blade server is set as the persistent command environment, at the `system:blade[5]>` prompt, type

```
shutdown -f
```

The following example shows the information that is returned from this command:

```
system:blade[5]> shutdown -f
OK
system:blade[5]>
```

Session commands

Use these commands to start an SOL connection to the command console of a specific blade server or to end a command console session:

- console command
- exit command
- kvm (keyboard, video, mouse) command (advanced management module only)
- mt (media tray) command (advanced management module only)

console command

This command sets up a serial over LAN connection to the command console of a blade server.

To end an SOL session, press Esc followed by an open parenthesis:

Esc (

Table 50. console command

Function	What it does	Command	Valid targets
Create SOL session with blade server	Creates an SOL connection to the specified blade server.	console Command use restricted (see "Commands and user authority" on page 5).	`-T system:blade[x]` where *x* is the blade server bay number.
Create override SOL session with blade server	Creates an SOL connection to the specified blade server, with the override option enabled. This enables you to end an existing SOL session to that blade server and start a new one.	console -o Command use restricted (see "Commands and user authority" on page 5).	`-T system:blade[x]` where *x* is the blade server bay number.

Example:
To start an SOL connection to the blade server in blade bay 14, while this blade server is set as the persistent command environment, at the `system:mm[x]>` prompt, type

```
sol -T system:blade[14]
```

exit command

This command exits the command-line interface, terminating the current session.

Table 51. exit command

Function	What it does	Command	Valid targets
Exit	Terminates the current command-line interface session.	exit	Any installed device.

Example:
To terminate the current command-line interface session, type

```
exit
```

kvm (keyboard, video, mouse) command (advanced management module only)

This command sets and displays the blade server that is in control of the BladeCenter unit shared KVM.

Table 52. kvm command

Function	What it does	Command	Valid targets
Display KVM owner	Displays the number of the blade server that has KVM ownership. A blade server that occupies more than one blade bay is identified by the lowest bay number that it occupies. A return value of 0 indicates that no owner is set.	kvm Command use restricted (see “Commands and user authority” on page 5).	`-T system`
Set KVM owner	Sets a blade server as the KVM owner.	kvm -b *blade_server* where *blade_server* is the blade bay that identifies the blade server. A blade server that occupies more than one blade bay is identified by the lowest bay number that it occupies. A setting of “0” sets no owner. Command use restricted (see “Commands and user authority” on page 5).	`-T system`

Example:

To set the KVM owner to the blade server in blade bay 1, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
kvm -T system -b 1
```

To display the KVM owner, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
kvm -T system
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> kvm -T system -b 1
OK
system:mm[1]> kvm -T system
-b 1
system:mm[1]>
```

mt (media tray) command (advanced management module only)

This command sets and displays the blade server that is in control of the BladeCenter unit shared media tray.

Table 53. mt command

Function	What it does	Command	Valid targets
Display media tray owner	Displays the number of the blade server that has media tray ownership. A blade server that occupies more than one blade bay is identified by the lowest bay number that it occupies. A return value of 0 indicates that no owner is set.	mt	`-T system`
Set media tray owner	Sets a blade server as the media tray owner.	mt -b *blade_server* where *blade_server* is the blade bay that identifies the blade server. A blade server that occupies more than one blade bay is identified by the lowest bay number that it occupies. A setting of “0” sets no owner. Command use restricted (see “Commands and user authority” on page 5).	`-T system`

Example:

To set the media tray owner to the blade server in blade bay 1, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
mt -T system -b 1
```

To display the media tray owner, while management module 1 is set as the persistent command environment, at the `system:mm[1]>` prompt, type

```
mt -T system
```

The following example shows the information that is returned from these two commands:

```
system:mm[1]> mt -T system -b 1
OK
system:mm[1]> mt -T system
-b 1
system:mm[1]>
```

System management commands (for BladeCenter T only)

Use these commands to manage alarms for monitored parameters of the BladeCenter T unit:

- alarm command
- led command (advanced management module only)

alarm command

This command displays alarm information, acknowledges alarms, and clears alarms for the specified command target.

Table 54. alarm command

Function	What it does	Command	Valid targets

Display all alarms	Display all alerts generated by the target component. When directed to the BladeCenter unit, the command returns a summary of alarms for all BladeCenter components. When directed to a component installed in the BladeCenter unit, the command returns a detailed alarm listing for that component.
	
	Detailed alarm listings include an alarm key that can be used to acknowledge or clear an alarm.
		alarm	`-T system`
			`-T system:mm[x]`
			`-T system:blade[x]`
			`-T system:switch[x]`
			`-T system:power[x]`
			`-T system:blower[x]`
			
			where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.

Display power alarms	Display all power related alerts generated by the target component. When directed to the BladeCenter unit, the command returns a summary of alarms for all BladeCenter components. When directed to a component installed in the BladeCenter unit, the command returns a detailed alarm listing for that component.
	
	Detailed alarm listings include an alarm key that can be used to acknowledge or clear an alarm.
		alarm -p	`-T system`
			`-T system:mm[x]`
			`-T system:blade[x]`
			`-T system:switch[x]`
			`-T system:power[x]`
			`-T system:blower[x]`
			
			where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.

Display alarm information (specified by alarm generator ID)	Display information for alarm specified by the generator ID.	alarm -q -g *value*
		
		where *value* is the generator ID.
		
		Command use restricted (see “Commands and user authority” on page 5).
			`-T system:mm[x]`
			`-T system:blade[x]`
			`-T system:switch[x]`
			`-T system:power[x]`
			`-T system:blower[x]`
			
			where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.

Table 54. alarm command (continued)

Function	What it does	Command	Valid targets

Display alarm information (specified by alarm ID)	Display information for alarm specified by the alarm ID.	alarm -q -a *value*
		
		where *value* is the alarm ID.
			`-T system:mm[x]`
			`-T system:blade[x]`
			`-T system:switch[x]`
			`-T system:power[x]`
			`-T system:blower[x]`
			
			where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.

Display detailed alarm information (specified by generator information)	Display detailed information for alarm specified by the alarm generator information. Information returned includes the alarm description that is shown by the management-module Web interface and other information such as the alarm severity, power source, software indicator, and an alarm key.	alarm -q -o *value*
		
		where *value* is the generator information.
			`-T system:mm[x]`
			`-T system:blade[x]`
			`-T system:switch[x]`
			`-T system:power[x]`
			`-T system:blower[x]`
			
			where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.

Display alarm information (specified by complete alarm key)	Display information for alarm specified by the complete alarm key.	alarm -q -k *m:g:o:a*
		
		where *m:g:o:a* is the complete alarm key:
		• *m* is the module ID
		• *g* is the generator ID
		• *o* is the generator information
		• *a* is the alarm ID
			`-T system:mm[x]`
			`-T system:blade[x]`
			`-T system:switch[x]`
			`-T system:power[x]`
			`-T system:blower[x]`
			
			where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.

Acknowledge alarm (specified by alarm generator ID)	Acknowledge the alarm specified by the generator ID.	alarm -r -g *value*
		
		where *value* is the generator ID.
		
		Command use restricted (see “Commands and user authority” on page 5).
			`-T system:mm[x]`
			`-T system:blade[x]`
			`-T system:switch[x]`
			`-T system:power[x]`
			`-T system:blower[x]`
			
			where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.

Table 54. alarm command (continued)

Function	What it does	Command	Valid targets
Acknowledge alarm (specified by generator information)	Acknowledge the alarm specified by the generator information.	alarm -r -o *value* where *value* is the generator information. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] -T system:blade[*x*] -T system:switch[*x*] -T system:power[*x*] -T system:blower[*x*] where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.
Acknowledge alarm (specified by alarm ID)	Acknowledge the alarm specified by the alarm ID.	alarm -r -a *value* where *value* is the alarm ID. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] -T system:blade[*x*] -T system:switch[*x*] -T system:power[*x*] -T system:blower[*x*] where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.
Acknowledge alarm (specified by complete alarm key)	Acknowledge the alarm specified by the complete alarm key.	alarm -r -k *m:g:o:a* where *m:g:o:a* is the complete alarm key: • *m* is the module ID • *g* is the generator ID • *o* is the generator information • *a* is the alarm ID Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] -T system:blade[*x*] -T system:switch[*x*] -T system:power[*x*] -T system:blower[*x*] where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.
Clear alarm (specified by alarm generator ID)	Clear the alarm specified by the generator ID.	alarm -c -g *value* where *value* is the generator ID. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] -T system:blade[*x*] -T system:switch[*x*] -T system:power[*x*] -T system:blower[*x*] where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.

Table 54. alarm command (continued)

Function	What it does	Command	Valid targets
Clear alarm (specified by generator information)	Clear the alarm specified by the generator information.	alarm -c -o *value* where *value* is the generator information. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] -T system:blade[*x*] -T system:switch[*x*] -T system:power[*x*] -T system:blower[*x*] where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.
Clear alarm (specified by alarm ID)	Clear the alarm specified by the alarm ID.	alarm -c -a *value* where *value* is the alarm ID. Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] -T system:blade[*x*] -T system:switch[*x*] -T system:power[*x*] -T system:blower[*x*] where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.
Clear alarm (specified by complete alarm key)	Clear the alarm specified by the complete alarm key.	alarm -c -k *m:g:o:a* where *m:g:o:a* is the complete alarm key: • *m* is the module ID • *g* is the generator ID • *o* is the generator information • *a* is the alarm ID Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] -T system:blade[*x*] -T system:switch[*x*] -T system:power[*x*] -T system:blower[*x*] where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.
Set alarm	Set an alarm for the specified target, including severity level and description.	alarm -s -l *level desc* where • *level* is the severity level: – CRT (critical) – MJR (major) – MNR (minor) • *desc* is a short text description of the alarm Command use restricted (see "Commands and user authority" on page 5).	-T system:mm[*x*] -T system:blade[*x*] -T system:switch[*x*] -T system:power[*x*] -T system:blower[*x*] where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.

Example:
To display the alarm status for the BladeCenter T unit, while the BladeCenter T unit is set as the persistent command environment, at the system> prompt, type

```
alarm
```

To display the power alarm status for the BladeCenter T unit, while the BladeCenter T unit is set as the persistent command environment, at the system> prompt, type

```
alarm -p
```

To display detailed power alarm status for the power module in power bay 2, while the BladeCenter T unit is set as the persistent command environment, at the system> prompt, type

```
alarm -T system:power[2]
```

The following example shows the information that is returned from a series of alarm commands. This example assumes that the blade server in blade bay 3 has a major over-temperature fault and that the power module in power bay 2 has a critical fault.

```
system> alarm
Alarms Summary List
Module    Severity    Power    S/W
power[2]  CRT         Yes      No
blade[3]  MJR         No       No
system> alarm -p
Alarms Summary List
Module    Severity    Power    S/W
power[2]  CRT         Yes      No
system> alarm -T system:power[2]
Alarms Detailed List
Severity    Power    S/W    Description        Key
CRT         Yes      No     Under Voltage      2:1:3:2
system> alarm -c -k 2:1:3:2 -T system:power[2]
Alarm Cleared
system> alarm -T system:power[2]
No Active Alarms
system> alarm
Alarms Summary List
Module    Severity    Power    S/W
blade[3]  MJR         No       No
system> alarm -T system:blade[3]
Alarms Detailed List
Severity    Power    S/W    Description        Key
MJR         No       No     Over temperature   3:3:1:3
system> alarm -s -l CRT
OK
system> alarm -s -l MNR -p Investigate Watts -T system:blade[2]
OK
system> alarm -s -l CRT -p Under Voltage -T system:blade[2]
Failed. AlarmID is being used
system>
```

led command (advanced management module only)

This command displays the LED states for the specified command target, if this command target supports the LED.

Table 55. led command

Function	What it does	Command	Valid targets

Display fault LED state	Displays the state of the fault LED for the specified command target. Possible return values are:
	• The state of the requested LED is ON.
	• The state of the requested LED is OFF.
		led -e	`-T system`
			`-T system:mm[`*x*`]`
			`-T system:blade[`*x*`]`
			`-T system:switch[`*x*`]`
			`-T system:power[`*x*`]`
			`-T system:blower[`*x*`]`
			where *x* is the primary management-module, blade server, I/O (switch) module, power module, or blower bay number.

Display safe-to-remove LED state	Displays the state of the safe-to-remove LED that is on the BladeCenter unit and some components. Possible return values are: • The state of the requested LED is ON. • The state of the requested LED is OFF.	led -r	`-T system`

Example: To display the failure LED status for the power module in power bay 2, while the BladeCenter T unit is set as the persistent command environment, at the `system>` prompt, type

```
led -T system:power[2] -e
```

The following example shows the information that is returned from this command:

```
system> led -T system:power[2] -e
The state of the requested LED is OFF.
system>
```

Chapter 4. Error messages

The command-line interface provides error messages specific to each command. The following topics list the common error messages that apply to all commands and command-specific error messages, along with their definitions.

Common errors

The following table lists error messages that apply to all commands. Each command that has unique errors will also have a list of command-specific error messages.

Table 56. Common errors

Error message	Definition
Command line contains extraneous arguments	Displays when extra command arguments are entered.
Duplicate option: *option* where *option* identifies the command option that was entered more than once.	Displays when a user tries to enter the same command option in a single command multiple times. For example, `dns -i 192.168.70.29 -i`
Each option can only be used once per command.	Displays when a user tries to enter the same command option in a single command multiple times. For example, `env -T system:blade[4] -T system:blade[5]`.
Error writing data for option *option* where *option* identifies the command option that is returning an error.	Displays when an internal error occurs while writing a command option value.
Illegal option: *option* where *option* identifies the illegal short command option that was entered.	Displays when an illegal short command option is entered.
Integer argument out of range (*range* - *range*) for *option*: *argument* where: • *range* identifies the range limits • *option* identifies the command option • *argument* identifies the integer that is out of range	Displays when an integer is entered that is out of range.
Invalid integer argument for *option*: *argument* where: • *option* identifies the command option • *argument* identifies the invalid argument	Displays when an invalid integer is entered.
Invalid option	Displays when an invalid command option is entered.
Invalid option argument for *option*: *argument* where: • *option* identifies the command option • *argument* identifies the invalid argument	Displays when an invalid argument for a command option is entered.
Invalid target path	Displays when a user tries to issue a command to a target that is not valid.

Table 56. Common errors (continued)

Error message	Definition
Long option *option* requires an argument where *option* identifies the long command option that is missing an argument.	Displays when a long command option is entered without a required argument.
Missing option name	Displays when a dash (-) is entered with out a command option name.
Read/write command error	Displays when an internal error occurs while executing the command.
Short option *option* requires an argument where *option* identifies the short command option that is missing an argument.	Displays when a short command option is entered without a required argument.
The target bay is empty.	Displays when the user tries to issue a command to an empty blade bay, blower bay, I/O-module bay, management-module bay, or power bay.
The target bay is out of range.	Displays when a user tries to issue a command to a target that is out of range for that target. For example, the `env -T system:blade[15]` command is out of range because the BladeCenter unit has only 14 blade bays.
Unrecognized long option: *option* where *option* identifies the illegal long command option that was entered.	Displays when an illegal long command option is entered.
User does not have the authority to issue this command	Displays when a user lacks the authority level necessary to execute a command.

alarm command errors

The following table lists error messages for the alarm command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 57. alarm command errors

Error message	Definition
Alarm Description must be provided for setting an alarm.	Displays when the user tries to set an alarm without providing an alarm description.
Alarm ID must be from 1 to 255.	Displays when an invalid alarm ID is entered.
Generator ID must be from 1 to 255.	Displays when an invalid generator ID is entered.
Generator ID must be provided.	Displays when a generator information ID is provided without a generator ID.
Module ID must be from 1 to 255.	Displays when an invalid module ID is entered.
No active alarm.	Displays when no active alarm is found for the command target.
No matching alarm.	Displays when no matching alarm is found for the command target.
Severity level must be provided for setting an alarm.	Displays when the user tries to set an alarm without specifying the severity level.
Software Generator ID must be from 1 to 255.	Displays when an invalid generator information is entered.
The entered Alarm Key is not in proper format.	Displays when an invalid alarm key is entered.

Table 57. alarm command errors (continued)

Error message	Definition
Unable to acknowledge the requested alarm.	Displays when an internal error occurs while acknowledging an alarm.
Unable to clear the requested alarm.	Displays when an internal error occurs while clearing an alarm.
Unable to set the requested alarm.	Displays when an internal error occurs while setting an alarm.

alertentries command errors

The following table lists error messages for the alertentries command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 58. alertentries command errors

Error message	Definition
An entry cannot be modified and deleted in the same command.	Displays when a user tries to modify an entry and delete it in the same command.
Arguments containing spaces must be enclosed in quotation marks.	Displays when a user tries to enter a string containing spaces that has an opening quotation mark without a closing quotation mark.
Invalid input. Angle brackets are not allowed in the name field.	Displays when a user tries to enter a string parameter containing < or > for the -n (name) command option.
Invalid option	Displays when an invalid command option is entered. This includes numeric options for the alert recipient that are not from 1 through 12.
Invalid parameter. Input must be numeric.	Displays when a user tries to enter a parameter value containing non-numeric characters for a command option requiring numeric input.
Syntax error. -e can only be used in conjunction with the email argument.	Displays when a user tries to enter an invalid e-mail address for the -e command option.
Syntax error. -i can only be used in conjunction with the director argument.	Displays when a user tries to enter an invalid IP address for the -i command option.
Syntax error. Type alertentries -h for help.	Displays when an alert entry number is entered without the leading dash (-).
The name must be less than 32 characters long.	Displays when a user tries to enter too many characters in an input field.
When creating a new entry, all options are required.	Displays when a required command option is missing when creating a user.

boot command errors

There are no unique errors for the boot command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

bootseq command errors

There are no unique errors for the bootseq command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

clear command errors

The following table lists error messages for the clear command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 59. clear command errors

Error message	Definition
Firmware update is in progress. Try again later.	Displays when the user tries to reset the management module to its default configuration during a firmware update. The error message displays and the management-module configuration does not reset.
Internal error resetting to defaults.	Displays when an internal error occurs while resetting the management module to its default configuration. The error message displays and the management-module configuration does not reset.

clearlog command errors

The following table lists error messages for the clearlog command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 60. clearlog command errors

Error message	Definition
Error clearing the event log.	Displays when an internal error occurs while clearing the event log.

clock command errors

There are no unique errors for the clock command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

console command errors

The following table lists error messages for the console command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 61. console command errors

Error message	Definition
Error entering console mode.	Displays when an internal error occurs while trying to establish an SOL connection.
Global SOL is not enabled	Displays when SOL is not enabled globally.
Internal Error	Displays when an internal error occurs while processing the command.
SOL is not ready	Displays when the blade server is not available, or when a socket needed to establish a connection to the blade server is not available.
SOL on blade is not enabled	Displays when SOL is not enabled on the blade server where the user is trying to start an SOL session.
SOL session is already active	Displays when the user cannot start an SOL session with a blade server because an SOL session with that blade server is already in progress.

dhcpinfo command errors

There are no unique errors for the dhcpinfo command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

displaylog command errors

The following table lists error messages for the displaylog command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 62. displaylog command errors

Error message	Definition
(There are no more entries in the event log.)	Displays when there are no more event log entries to display.

displaysd command errors

There are no unique errors for the displaysd command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

dns command errors

The following table lists error messages for the dns command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 63. dns command errors

Error message	Definition
At least one address is required to enable DNS.	Displays when a user tries to enable DNS without configuring at least one address.
Invalid ip address	Displays when a user tries to set an invalid IP address.
-on and -off cannot both be used in the same command.	Displays when a user tries to enable and disable DNS in the same command.

env command errors

There are no unique errors for the env command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

exit command errors

There are no unique errors for the exit command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

fuelg command errors

The following table lists error messages for the fuelg command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 64. fuelg command errors

Error message	Definition
A power module failure in domain *domain_number* can result in an immediate shutdown. where *domain_number* identifies the power domain.	Displays when a power module fails and the domain in which it is installed loses redundancy. The BladeCenter unit might turn itself off, based on the power management configuration.
Blade *blade_number* is not allowed to power on because of insufficient power. where *blade_number* identifies the blade server.	Displays when there is insufficient power available in the power domain to turn on this blade server.
Blade *blade_number* is throttled. where *blade_number* identifies the blade server.	Displays when the specified blade server has reduced power (power throttling) in response to a thermal event or oversubscription condition.
Blade *blade_number* was instructed to power off due to power budget restrictions. where *blade_number* identifies the blade server.	Displays when BladeCenter power management turns off a blade server that is already on in response to a oversubscription condition.
Demand exceeds a single power module. Throttling can occur in power domain *domain_number*. where *domain_number* identifies the power domain.	Displays when the power requirements of components installed in a power domain exceed the level required for redundant operation. Power throttling of BladeCenter components might be able to correct the problem.
There are mismatched power modules in power domain *domain_number*. where *domain_number* identifies the power domain.	Displays when the power modules installed in a power domain have different ratings.

health command errors

There are no unique errors for the health command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

help command errors

There are no unique errors for the help command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

history command errors

There are no unique errors for the history command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

identify command errors

The following table lists error messages for the identify command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 65. identify command errors

Error message	Definition
Delay value must be less than 60	Displays when a user tries to enter a -d value that is greater than 60 seconds.
Identify: Error accessing remote LED	Displays when an internal error occurs while processing the command.

Table 65. identify command errors (continued)

Error message	Definition
Identify: error getting LED status	Displays when an internal error occurs while processing the command.
Identify: error setting Management Module LED	Displays when an internal error occurs while processing the command.
Identify: Error unknown command	Displays when an internal error occurs while processing the command.
Identify: LED status not supported	Displays when the user tries to get the status of an LED that is not supported by a blade server.
Identify: unknown LED state *state* where *state* identifies the LED state that was returned.	Displays when an LED state other than on, off, or blinking is returned.
Identify: Unknown return status *status* where the *status* value varies based on the problem that was encountered.	Displays when an internal error occurs while processing the command.
Syntax error.	Displays when the user tries to enter an invalid command option. Type `identify -h` for command help.

ifconfig command errors

The following table lists error messages for the ifconfig command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 66. ifconfig command errors

Error message	Definition
Error reading gateway address.	Displays when an internal error occurs while reading the gateway address of a network interface (eth0 or eth1).
Error reading IP Address.	Displays when an internal error occurred while reading the IP address of the integrated system management processor on a blade server, or while reading the IP address of a network interface (eth0 or eth1).
Error reading the burned-in MAC address.	Displays when an internal error occurs while reading the burned-in MAC address of a network interface (eth0 or eth1).
Error reading the data rate.	Displays when an internal error occurs while reading the data rate setting of a network interface (eth0 or eth1).
Error reading the DHCP configuration.	Displays when an internal error occurs while reading the DHCP setting of a network interface (eth0).
Error reading the duplex setting.	Displays when an internal error occurs while reading the duplex setting of a network interface (eth0 or eth1).
Error reading the hostname.	Displays when an internal error occurs while reading the host name of a network interface (eth0).
Error reading the locally administered MAC address.	Displays when an internal error occurs while reading the locally administered MAC address of a network interface (eth0 or eth1).
Error reading the maximum transmission unit.	Displays when an internal error occurs while reading the maximum transmission unit (MTU) setting of a network interface (eth0 or eth1).

Table 66. ifconfig command errors (continued)

Error message	Definition
Error reading the subnet mask.	Displays when an internal error occurs while reading the subnet mask of a network interface (eth0 or eth1).
Error writing IP Address.	Displays when an internal error occurs while setting the IP address of the integrated system management processor on a blade server.
Invalid IP arg for *option*: *ip_address*. Each byte has to be in the range (0-255) where: • *option* identifies the command option • *ip_address* identifies the invalid IP address argument	Displays when the user tries to enter an IP address that is out of range. IP addresses must follow the standard format: *xxx.xxx.xxx.xxx*, where each *xxx* is a number from 0 to 255.
Invalid IP arg for *option*: *ip_address*. Enter 4 bytes separated by 3 dots where: • *option* identifies the command option • *ip_address* identifies the invalid IP address argument	Displays when the user tries to enter an IP address that is too long. IP addresses must follow the standard format: *xxx.xxx.xxx.xxx*, where each *xxx* is a number from 0 to 255.
Invalid IP arg for *option*: *ip_address*. Too few bytes where: • *option* identifies the command option • *ip_address* identifies the invalid IP address argument	Displays when the user tries to enter an IP address with too few bytes. IP addresses must follow the standard format: *xxx.xxx.xxx.xxx*, where each *xxx* is a number from 0 to 255.
Invalid IP arg for *option*: *ip_address*. Too many bytes where: • *option* identifies the command option • *ip_address* identifies the invalid IP address argument	Displays when the user tries to enter an IP address with too many bytes. IP addresses must follow the standard format: *xxx.xxx.xxx.xxx*, where each *xxx* is a number from 0 to 255.
Invalid hostname arg for *option*: *hostname*. Consecutive dots where: • *option* identifies the command option • *hostname* identifies the invalid hostname argument	Displays when the user tries to enter consecutive periods (.) as part of a hostname.
Invalid hostname arg for *option*: *hostname*. Length has to be < 64 characters where: • *option* identifies the command option • *hostname* identifies the invalid hostname argument	Displays when the user tries to enter a hostname longer than 63 characters.
Invalid hostname arg for *option*: *hostname*. Only alphanumeric chars and ._- allowed where: • *option* identifies the command option • *hostname* identifies the invalid hostname argument	Displays when the user tries to enter an hostname that contains invalid characters. Valid characters that can be used in a hostname are letters, numbers, periods (.), dashes (-), and underscores (_).
Invalid ip address.	Displays for one of the following errors: • A user tries to set the IP address of system:blade[1]:sp either to an invalid IP address, or an IP address whose last part is greater than 255 (the max number of blade servers). • A user tries to enter an invalid IP address for the -i (static IP address) command option.

Table 66. ifconfig command errors (continued)

Error message	Definition
Invalid MAC arg for *option*: *address*. Invalid syntax where: • *option* identifies the command option • *address* identifies the invalid MAC address argument	Displays when the user tries to enter an invalid MAC address.
Invalid MAC arg for *option*: *address*. Multicast addresses not allowed where: • *option* identifies the command option • *address* identifies the invalid MAC address argument	Displays when the user tries to enter a multicast address.
Invalid MAC arg for *option*: *address*. Too few bytes where: • *option* identifies the command option • *address* identifies the invalid MAC address argument	Displays when the user tries to enter a MAC address with too few bytes.
Invalid MAC arg for *option*: *address*. Too many bytes where: • *option* identifies the command option • *address* identifies the invalid MAC address argument	Displays when the user tries to enter a MAC address with too many bytes.
Invalid parameter. Valid values for -c are dhcp, static, or dthens.	Displays when a user tries to enter an invalid parameter for the -c (Ethernet configuration method) command option.
The target must be system:blade[1]:sp for this command	Displays when a user tries to issue the `ifconfig -i <ip address> -T system:blade[x]:sp` to a blade server other than blade[1].

info command errors

The following table lists error messages for the info command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 67. info command errors

Error message	Definition
Device not found	Displays when no VPD is available for the targeted device.
Unknown device type.	Displays when the command is targeted to an unknown device type.

kvm command errors

There are no unique errors for the kvm command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

ldapcfg command errors

The following table lists error messages for the ldapcfg command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 68. ldapcfg command errors

Error message	Definition
AMM target name is limited to 63 characters.	Displays when a user tries to set an AMM target name that is longer than 63 characters.

led command errors

There are no unique errors for the led command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

list command errors

The following table lists error messages for the list command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 69. list command errors

Error message	Definition
The level must be non-zero.	Displays when the user tries to enter a level of depth for tree-structure display of 0.

mt command errors

There are no unique errors for the mt command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

nat command errors

The following table lists error messages for the nat command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 70. nat command errors

Error message	Definition
NAT configuration is not supported on this IO module.	Displays when the user tries to direct a nat command to an I/O module that does not support the network address table.
Error reading -pi	Displays when an internal error occurs while reading the protocol ID for the specified row in the NAT table for the specified I/O module.
Error reading -ep	Displays when an internal error occurs while reading the external port number for the specified row in the NAT table for the specified I/O module.
Error reading -ip	Displays when an internal error occurs while reading the internal port number for the specified row in the NAT table for the specified I/O module.
Error reading -en	Displays when an internal error occurs while reading the state of the specified row in the NAT table for the specified I/O module.
The first two rules’ protocol names cannot be changed.	Displays when the user tries to change a rule for a protocol name that is static.
When creating a new rule, all fields must be specified.	Displays when the user does not specify all fields when creating a rule.

ntp command errors

There are no unique errors for the ntp command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

portcfg command errors

There are no unique errors for the portcfg command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

ports command errors

The following table lists error messages for the ports command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 71. ports command errors

Error message	Definition
A certificate must first be in place before SSL can be enabled. Use the web interface to generate one.	Displays when the user tries to enable SSL before setting up a valid SSL certificate and private encryption key.
An SSH server key must first be in place before SSH can be enabled. Use the web interface to generate one.	Displays when the user tries to enable SSH before setting up a valid SSH server key.
Duplicate port number entered.	Displays when the user tries to enter a port number that is already in use.
Invalid parameter. The timeout must be between 0 and 4294967295 seconds.	Displays when a user tries to enter a timeout that is outside of the valid range.
Port number out of range.	Displays when the user tries to enter a port number that is outside of the valid range.
Reserved port number entered.	Displays when the user tries to enter a port number that has been reserved.
Secure SMASH CLP cannot be enabled without a valid SSH server key in place.	Displays when the user tries to enable the secure SMASH CLP before setting up a valid SSH server key.

power command errors

The following table lists error messages for the power command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 72. power command errors

Error message	Definition
Invalid POST results.	Displays when the POST results are not valid.
POST results could not be read.	Displays when an internal error occurs during POST.
POST results not complete: *hex_code* where the *hex_code* value varies based on the problem that was encountered.	Displays when the POST results are not available. See the documentation that comes with the device that failed to respond correctly to the `power` command for information about the *hex_code* value.

read command errors

The following table lists error messages for the read command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 73. read command errors

Error message	Definition
Firmware update is in progress. Try again later.	Displays when a user tries to restore the management-module configuration from the BladeCenter unit midplane while the management-module firmware is updating.
Configuration restore from the chassis failed: operation not supported.	Displays when an internal error occurs while restoring the management-module configuration from the BladeCenter unit midplane due to a failed system check.
Configuration restore from the chassis failed: i2c bus read error	Displays when an internal error occurs while restoring the management-module configuration from the BladeCenter unit midplane due to an i2ct read error.
Configuration restore from the chassis failed: NVRAM compression error	Displays when an internal error occurs while restoring the management-module configuration from the BladeCenter unit midplane due to an EEPROM compression error.
Configuration restore from the chassis failed: unsupported midplane data format	Displays when an internal error occurs while restoring the management-module configuration from the BladeCenter unit midplane due to an unsupported EEPROM format.

reset command errors

The following table lists error messages for the reset command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 74. reset command errors

Error message	Definition
An error occurred while disabling failover.	Displays when an internal error occurs while disabling failover.
An error occurred while enabling failover.	Displays when an internal error occurs while enabling failover.
Firmware update is in progress. Try again later.	Displays when the user tries to reset the management module during a firmware update. The error message displays and the management module does not reset.
There is no backup management module installed.	Displays when a user tries to enable failover on a management-module reset and there is no back-up management module.

service command errors

There are no unique errors for the service command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

shutdown command errors

There are no unique errors for the shutdown command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

slp command errors

There are no unique errors for the slp command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

smtp command errors

The following table lists error messages for the smtp command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 75. smtp command errors

Error message	Definition
Input length is greater than the maximum characters allowed.	Displays when a user tries to enter too many characters in an input field.
Invalid host name or ip address	Displays when a user tries to set the SMTP host name or IP address to an invalid value.
SMTP server host name or IP address is not set	Displays when a user tries to view the SMTP host name or IP address and the values are not set.

snmp command errors

The following table lists error messages for the snmp command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 76. snmp command errors

Error message	Definition
Arguments containing spaces must be enclosed in quotation marks	Displays when a user tries to enter a string containing spaces that has an opening quotation mark without a closing quotation mark.
At least one configured community is required to enable SNMP.	Displays when a user tries to enable SNMP without configuring at least one community name.
Input length is greater than the maximum characters allowed.	Displays when a user tries to enter too many characters in an input field.
Invalid community name	Displays when a user tries to set a community name to an invalid value.
Invalid host name or ip address	Displays when a user tries to set the SNMP host name or IP address to an invalid value.

sol command errors

The following table lists error messages for the sol command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 77. sol command errors

Error message	Definition
An error occurred while disabling SOL globally	Displays when an internal error occurs while disabling SOL globally.
An error occurred while disabling SOL on that blade	Displays when an internal error occurs while disabling SOL on a blade server.
An error occurred while enabling SOL globally	Displays when an internal error occurs while enabling SOL globally
An error occurred while enabling SOL on that blade	Displays when an internal error occurs while enabling SOL on a blade server.
An error occurred while reading the global SOL status	Displays when an internal error occurs while reading the global SOL status.

Table 77. sol command errors (continued)

Error message	Definition
An error occurred while reading the SOL accumulate timeout	Displays when an internal error occurs while reading the SOL accumulate timeout.
An error occurred while reading the SOL retry count	Displays when an internal error occurs while reading the SOL retry count.
An error occurred while reading the SOL retry interval	Displays when an internal error occurs while reading the SOL retry interval.
An error occurred while reading the SOL send threshold	Displays when an internal error occurs while reading the SOL send threshold.
An error occurred while reading the SOL session status on that blade	Displays when an internal error occurs while reading the SOL session status on a blade server.
An error occurred while reading the SOL VLAN ID	Displays when an internal error occurs while reading the SOL VLAN ID.
An error occurred while setting the SOL accumulate timeout	Displays when an internal error occurs while setting the SOL accumulate timeout.
An error occurred while setting the SOL blade reset sequence	Displays when an internal error occurs while processing the command.
An error occurred while setting the SOL escape sequence	Displays when an internal error occurs while processing the command.
An error occurred while setting the SOL retry count	Displays when an internal error occurs while setting the SOL retry count.
An error occurred while setting the SOL retry interval	Displays when an internal error occurs while setting the SOL retry interval.
An error occurred while setting the SOL send threshold	Displays when an internal error occurs while setting the SOL send threshold.
An error occurred while setting the SOL vlan id	Displays when an internal error occurs while processing the command.
Invalid arg for -status. Must be on or off.	Displays if a user tries to enter an invalid argument for the -status command option.
Invalid parameter. The accumulate timeout must be between 1 and 1275 inclusive.	Displays when a user tries to enter an accumulate timeout that is outside of the valid range.
Invalid parameter. The retry count must be between 0 and 7, inclusive.	Displays when a user tries to enter a retry count that is outside of the valid range.
Invalid parameter. The send threshold must be between 1 and 251 inclusive.	Displays when a user tries to enter a send threshold that is outside of the valid range.
Invalid parameter. The vlan id must be between 1 and 4095 inclusive.	Displayed if a user tries to enter a VLAN ID that is out of range.
Retry interval range is too large. Setting to 250.	Displays when a user tries to enter a retry interval that is greater than 250 ms. If the user tries to enter a retry interval greater than 250 ms, the retry interval will be set to 250 ms.
This blade does not support SOL	Displays if a user tries to issue the SOL command to a blade server that does not support SOL.

sshcfg command errors

There are no unique errors for the sshcfg command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

tcpcmdmode command errors

The following table lists error messages for the tcpcmdmode command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 78. tcpcmdmode command errors

Error message	Definition
Error disabling tcpcmdmode	Displays when an internal error occurs while disabling TCP command mode.
Error enabling TCP command mode	Displays when an internal error occurs while enabling TCP command mode.
Invalid parameter. Input must be numeric.	Displays when a user tries to enter a parameter value for the -t (timeout) command option containing non-numeric characters. For example, `tcpcmdmode -t 200m`.
Invalid parameter. The timeout must be between 0 and 4294967295 seconds.	Displays when a user tries to enter a parameter value for the -t (timeout) command option that is outside of the valid range.

telnetcfg command errors

The following table lists error messages for the telnetcfg command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 79. telnetcfg command errors

Error message	Definition
Invalid parameter. Input must be numeric.	Displays when a user tries to enter a Telnet timeout value containing non-numeric characters. For example, `telnetcfg -t 200w`.
Invalid parameter. The timeout must be between 0 and 4294967295 seconds.	Displays when a user tries to enter a Telnet timeout value that is out of range.

tftp command errors

There are no unique errors for the tftp command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

update command errors

The following table lists error messages for the update command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 80. update command errors

Error message	Definition
Flash operation failed.	Displays when an internal error occurs during flash firmware update.
Flash operation failed status *percentage* where the *percentage* value varies based on when the problem was encountered.	Displays when an internal error occurs during flash firmware update.
Flash operation not in process or status unavailable.	Displays when an internal error occurs during flash firmware update.

Table 80. update command errors (continued)

Error message	Definition
Flash operation timed out *percentage* where the *percentage* value varies based on when the problem was encountered.	Displays when an internal error occurs during flash firmware update.
Flash preparation - error sending packet file *filename* where the *filename* value varies based on the file being updated.	Displays when an internal error occurs during flash firmware update.
Flash preparation error.Packet percent complete *percentage*. Flash percent complete *percentage*. where the *percentage* value varies based on when the problem was encountered.	Displays when an internal error occurs during flash firmware update.
Flash preparation error. Timeout on packet preparation operation *percentage* where the *percentage* value varies based on when the problem was encountered.	Displays when an internal error occurs during flash firmware update.
Flashing not supported on this target	Displays when a user targets the command to a I/O module that does not support flash firmware updates.
Invalid option	Displays when an invalid command option is entered. For the update command, invalid command option errors include: • the -i (IP address) command option does not have an IP address parameter • the -i (IP address) command option specifies an invalid IP address • attempting to enter the -i (IP address) command option without the -n (filename) command option • the -n (filename) command option does not have a file name parameter • attempting to enter the -n (filename) command option without the -i (IP address) command option • attempting to enter the -v (verbose) command option without the -i (IP address) command option and -n (filename) command option • attempting to enter the -v (verbose) command option with the -a command option
Management Module *bay_number* is not installed. where the *bay_number* value varies based on the problem that was encountered.	Displays when the command is targeted to a management-module bay where no management module is installed.
TFTP Error *error_code* where the *error_code* value varies based on the problem that was encountered.	Displays when an internal error occurs for the TFTP connection.
TFTP Error. Access violation.	Displays when an internal error occurs for the TFTP connection.
TFTP Error. Connection failure.	Displays when an internal error occurs for the TFTP connection.
TFTP Error. Disk full or allocation exceeded.	Displays when an internal error occurs for the TFTP connection.
TFTP Error. File already exists.	Displays when an internal error occurs for the TFTP connection.

Table 80. update command errors (continued)

Error message	Definition
TFTP Error. File error.	Displays when an internal error occurs for the TFTP connection.
TFTP Error. File not found.	Displays when an internal error occurs for the TFTP connection.
TFTP Error. Illegal option negotiation.	Displays when an internal error occurs for the TFTP connection.
TFTP Error. Illegal TFTP operation.	Displays when an internal error occurs for the TFTP connection.
TFTP Error. Unable to allocate memory.	Displays when an internal error occurs for the TFTP connection.
TFTP Error. Unknown transfer ID.	Displays when an internal error occurs for the TFTP connection.
TFTP Error. Unknown user.	Displays when an internal error occurs for the TFTP connection.
Unable to read blade server VPD bay *bay_number name*. where the *bay_number* and *name* values vary based on the problem that was encountered.	Displays when the command is specifies an empty bay or if an internal error occurs when reading the VPD.
Unable to read MM VPD bay *bay_number name*. where the *bay_number* and *name* values vary based on the problem that was encountered.	Displays when the command is specifies an empty bay or if an internal error occurs when reading the VPD.
Unable to read I/O Module VPD bay *bay_number name*. where the *bay_number* and *name* values vary based on the problem that was encountered.	Displays when the command is specifies an empty bay or if an internal error occurs when reading the VPD.
Unknown device type.	Displays when the command is targeted to an unknown device type.
Update error. Invalid destination.	Displays when a user tries to issue a command to a target that is not valid.

uplink command errors

The following table lists error messages for the uplink command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 81. uplink command errors

Error message	Definition
Invalid uplink delay value	Displays when a user tries to enter a delay value that is less than 1 or greater than 255. For example, `uplink -del 0`.

users command errors

The following table lists error messages for the users command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 82. users command errors

Error message	Definition
An entry cannot be modified and deleted in the same command.	Displays when a user tries to modify and delete a user in the same command.
Arguments containing spaces must be enclosed in quotation marks.	Displays when a user tries to enter a context name containing spaces that does not have opening and closing quotation marks.
Error: the RBS permissions capability is not enabled.	Displays when attempting to run use the -a rbs: command option on management-module firmware that does not support this option. (The -a rbs: command option is not supported for the advanced management module.)
Error converting RBS permissions	Displays when an internal error occurs while converting permissions data to role-based security (RBS) format.
Error creating user	Displays when an internal error occurs while creating a user.
Error setting the access type	Displays when an internal error occurs while setting the access type.
Error setting the authentication protocol	Displays when an internal error occurs while setting the authentication protocol.
Error setting the authority level	Displays when an internal error occurs while setting the authority level.
Error setting the context name	Displays when an internal error occurs while setting the context name.
Error setting the hostname/IP address	Displays when an internal error occurs while setting the hostname or IP address.
Error setting the password	Displays when an internal error occurs while setting the password.
Error setting the privacy password	Displays when an internal error occurs while setting the privacy password.
Error setting the privacy protocol	Displays when an internal error occurs while setting the privacy protocol.
Error setting the username	Displays when an internal error occurs while setting the username.
Incorrect login permission option: *permission* where the *permission* value varies based on the problem that was encountered.	Displays when a user tries to specify an invalid login permission for the -a command option.
Invalid argument. Valid arguments for -at are read, write, and traps.	Displays when a user tries to set an invalid argument for the -at command option.
Invalid argument. Valid choices are des or <none>.	Displays when a user tries to set an invalid argument for the -pp command option.
Invalid argument. Valid choices are md5, sha, or <none>.	Displays when a user tries to set an invalid argument for the -ap command option.
Invalid authority level.	Displays for one of the following errors: • A user tries to set an authority level that is invalid. • A user tries to set a custom authority level without specifying any customization information.

Table 82. users command errors (continued)

Error message	Definition
Invalid device number (first number must be smaller): *device_A-device_B*. where *device_A* and *device_B* identify the ends of the invalid device range being specified.	Displays when a user specifies an invalid device range while trying to create or modify a user.
Invalid device number: *device_number*. where *device_number* identifies the device number that is invalid.	Displays when a user provides a device number that is out of range while trying to create or modify a user.
Invalid hostname or ip address.	Displays when a user tries to set an invalid host name or IP address for the -i command option.
Invalid rbs device: *device*. where *device* identifies the device that is invalid.	Displays when a user specifies an invalid device while trying to create or modify a user.
Invalid rbs device: Must specify device number	Displays when a user specifies an invalid device number while trying to create or modify a user.
Invalid rbs device list.	Displays when a user does not specify a device list while trying to create or modify a user.
Invalid rbs device (must be same device): *device*. where *device* identifies the device that is invalid.	Displays when a user specifies an invalid device while trying to create or modify a user.
Invalid rbs role: *role*. where *role* identifies the role that is invalid.	Displays when a user specifies an invalid role while trying to create or modify a user.
Invalid username. The username can only contain numbers, letters, dots, and underscores.	Displays when the user tries to enter an username that contains invalid characters. Valid characters that can be used in a username are letters, numbers, periods (.), and underscores (_).
Syntax error. -a option must have an argument.	Displays when a user tries to attempt to enter the command with a -a command option that has no argument.
Syntax error. -at option must have an argument.	Displays when a user tries to attempt to enter the command with a -at command option that has no argument.
Syntax error. -cn option must have an argument.	Displays when a user tries to attempt to enter the command with a -cn command option that has no argument.
Syntax error. -i option must have an argument.	Displays when a user tries to attempt to enter the command with a -i command option that has no argument.
Syntax error. -n option must have an argument.	Displays when a user tries to attempt to enter the command with a -n command option that has no argument.
Syntax error. -ppw option must have an argument.	Displays when a user tries to attempt to enter the command with a -ppw command option that has no argument.
Syntax error. Multiple -a options found.	Displays when a user tries to enter the -a command option in a single command multiple times.
Syntax error. Multiple -ap options found.	Displays when a user tries to enter the -ap option flag in a single command multiple times.

Table 82. users command errors (continued)

Error message	Definition
Syntax error. Multiple -at options found.	Displays when a user tries to enter the -at option flag in a single command multiple times.
Syntax error. Multiple -cn options found.	Displays when a user tries to enter the -cn option flag in a single command multiple times.
Syntax error. Type users -h for help.	Displays when a user tries to set an invalid value for a command option.
Syntax error. Multiple -i options found.	Displays when a user tries to enter the -i option flag in a single command multiple times.
Syntax error. Multiple -n options found.	Displays when a user tries to enter the -n option flag in a single command multiple times.
Syntax error. Multiple -p options found.	Displays when a user tries to enter the -p option flag in a single command multiple times.
Syntax error. Multiple -pp options found.	Displays when a user tries to enter the -pp option flag in a single command multiple times.
Syntax error. Multiple -ppw options found.	Displays when a user tries to enter the -ppw option flag in a single command multiple times.
The context name must be less than 32 characters long.	Displays when a user tries to set a context name that is longer than 31 characters.
The password must be at least 5 characters long, but no more than 15 characters long.	Displays when the user tries to enter a password that is too short or too long.
The password must contain at least one alphabetic and one non-alphabetic character.	Displays when the user tries to enter a password that does not have at least one alphabetic and one non-alphabetic character.
The privacy password must also be set when setting the privacy protocol.	Displays if the user tries to set the privacy protocol to des without a specifying a privacy password (-ppw command option).
The privacy password must be less than 32 characters long.	Displays when a user tries to set a privacy password that is longer than 31 characters.
The username cannot be longer than 15 characters.	Displays when a user tries to set a user name that is longer than 15 characters.
When creating a new user, all options are required.	Displays when a user tries to create a new user without defining all command options and arguments.

write command errors

The following table lists error messages for the write command. See “Common errors” on page 142 for a list of error messages that apply to all commands.

Table 83. write command errors

Error message	Definition
Failed to save configuration settings to the chassis.	Displays when an internal error occurs while saving the management-module configuration to the BladeCenter unit midplane.
Firmware update is in progress. Try again later.	Displays when a user tries to save the management-module configuration to the BladeCenter unit midplane while the management-module firmware is updating.

Appendix A. Getting help and technical assistance

If you need help, service, or technical assistance or just want more information about IBM products, you will find a wide variety of sources available from IBM to assist you. This appendix contains information about where to go for additional information about IBM and IBM products, what to do if you experience a problem with your BladeCenter® product or optional device, and whom to call for service, if it is necessary.

Before you call

Before you call, make sure that you have taken these steps to try to solve the problem yourself:

- Check all cables to make sure that they are connected.
- Check the power switches to make sure that the system and any optional devices are turned on.
- Use the troubleshooting information in your system documentation, and use the diagnostic tools that come with your system. Information about diagnostic tools is in the *Hardware Maintenance Manual and Troubleshooting Guide* or *Problem Determination and Service Guide* on the IBM *Documentation* CD that comes with your system.
- Go to http://www.ibm.com/servers/eserver/support/bladecenter/ to check for information to help you solve the problem.

You can solve many problems without outside assistance by following the troubleshooting procedures that IBM provides in the online help or in the documentation that is provided with your IBM product. The documentation that comes with BladeCenter systems also describes the diagnostic tests that you can perform. Most BladeCenter systems, operating systems, and programs come with documentation that contains troubleshooting procedures and explanations of error messages and error codes. If you suspect a software problem, see the documentation for the software.

Using the documentation

Information about your IBM BladeCenter system and preinstalled software, if any, or optional device is available in the documentation that comes with the product. That documentation can include printed documents, online documents, readme files, and help files. See the troubleshooting information in your system documentation for instructions for using the diagnostic programs. The troubleshooting information or the diagnostic programs might tell you that you need additional or updated device drivers or other software. IBM maintains pages on the World Wide Web where you can get the latest technical information and download device drivers and updates. To access these pages, go to http://www.ibm.com/servers/eserver/support/bladecenter/ and follow the instructions. Also, some documents are available through the IBM Publications Center at http://www.ibm.com/shop/publications/order/.

Getting help and information from the World Wide Web

On the World Wide Web, the IBM Web site has up-to-date information about IBM BladeCenter systems, optional devices, services, and support at http://www.ibm.com/servers/eserver/support/bladecenter/.

Software service and support

Through IBM Support Line, you can get telephone assistance, for a fee, with usage, configuration, and software problems with BladeCenter products. For information about which products are supported by Support Line in your country or region, see http://www.ibm.com/services/sl/products/.

For more information about Support Line and other IBM services, see http://www.ibm.com/services/, or see http://www.ibm.com/planetwide/ for support telephone numbers. In the U.S. and Canada, call 1-800-IBM-SERV (1-800-426-7378).

Hardware service and support

You can receive hardware service through IBM Services or through your IBM reseller, if your reseller is authorized by IBM to provide warranty service. See http://www.ibm.com/planetwide/ for support telephone numbers, or in the U.S. and Canada, call 1-800-IBM-SERV (1-800-426-7378).

In the U.S. and Canada, hardware service and support is available 24 hours a day, 7 days a week. In the U.K., these services are available Monday through Friday, from 9 a.m. to 6 p.m.

IBM Taiwan product service

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Appendix B. Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

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