13 Configuring Switch-Wide Parameters

The OmniSwitch provides commands to display and configure parameters on a switch-wide basis. These commands are grouped into two menus: the Summary menu and the System menu. Descriptions for commands in the Summary menu begin below; descriptions for commands in the System menu begin on page 13-5.

In addition, this chapter contains documentation for duplicate MAC address support (described in *Duplicate MAC Address Support* on page 13-31), multicast claiming (described in *Multicast Claiming* on page 13-33), and disabling flood limits (described in *Disabling Flood Limits* on page 13-33).

Summary Menu

The summary menu consists of commands for displaying summary information about the switch. Enter

summary

at the prompt to enter the Summary menu. Press the question mark (**?**) to see the following list of commands.

```
Command          Summary Menu
ss               Display MIB-II System group variables
sc               OmniSwitch chassis summary
si               Current interface status

    Main      File       Summary  VLAN      Networking
    Interface Security   System   Services  Help
```

The Summary menu commands are described in the sections that follow.

Displaying the MIB-II System Group Variables

To display the MIB-II system group variables, enter

ss

at the system prompt. Something similar to the following will be displayed.

```
System description:     Alcatel OmniSwitch
System Object ID:       1.3.6.1.4.1.800.3.1.1.1.
Agent Up Time:          0 days, 00:28:14.38
Contact:                Administrator
Name:                   TechWrite
Location:               Bldg 46
Device Services:
        DataLink/Subnetwork Layer
        Internetwork Layer
        Host Layernetwork Layer
        Application Layer (Telnet, FTP)
```

The fields displayed by the **ss** command are described below.

System description. The specific type of chassis, which can be an OmniSwitch, OmniStack, or Omni Switch/Router. This field is set by the **syscfg** command, which is described in *Configuring a System Description* on page 13-20.

System Object ID. The MIB entry for the switch (where the object ID starts). This is read only. This value helps you locate Alcatel-specific variables in the MIB tree.

Agent Up Time. The time (in days, hours, minutes, and seconds) since the switch was re-initialized.

Contact. The name of a person to contact about this OmniSwitch. This field is set by the **syscfg** command, which is described in *Configuring a System Description* on page 13-20.

Name. The name the system administrator assigned to this switch (the node's fully qualified domain name, by convention). This field is set by the **syscfg** command, which is described in *Configuring a System Description* on page 13-20.

Location. The physical location of the switch. This field is set by the **syscfg** command, which is described in *Configuring a System Description* on page 13-20.

Device Services. The type of services provided by the switch. The service types are listed below:

- **Data Link /Subnetwork Layer**
- **Internetwork Layer**
- **Host Layernetwork**
- **Application Layer (Telnet, FTP)**

Displaying the Chassis Summary

To display the chassis summary information, enter

sc

at the system prompt. Something similar to the following will be displayed.

```
Type:                   Omni-5
Chassis ID:             Alcatel
Description:            DESCRIPTION NOT SET.
Backplane:              5 SLOT
Master MPM Serial No.:  52601675
Physical Changes:       7
Logical Changes:        0
Number of Resets:       26
Base MAC Address:       00:20:da:02:04:80
Free Slots:             0
```

The fields displayed by the **sc** command are described below.

Type. The description of the specific type of chassis or device.

Chassis ID. The chassis ID for this OmniSwitch.

Description. The description of this chassis. This field is set by the **syscfg** command, which is described in *Configuring a System Description* on page 13-20.

Backplane. The style of backplane (3-slot, 5-slot, or 9-slot) used in this chassis.

Master MPM Serial No. The serial number for the primary MPM.

Physical Changes. The number of physical changes that has occurred since the last reset or power-on.

Logical Changes. The number of logical changes that has occurred since the last reset or power-on.

Number of Resets. The number of times this switch has been reset since the configuration file (**mpm.cnf**) was first removed.

Base MAC Address. The base MAC address for the primary MPM.

Free Slots. The number of front panel slots not occupied by a switching module.

Displaying Current Router Interface Status

To display current interface status information, enter

si

at the system prompt. Something similar to the following will be displayed.

Interface Summary Status
4 Interfaces

Logical Interface	Interface Type	Administrative Status	Operational Status
1	Slip	Enabled	Enabled
2	Virtual Router	Enabled	Active
3	Virtual Router	Enabled	Active
4	SoftwareLoopback	Enabled	Enabled

The fields displayed by the **si** command are described below.

Logical Interface. A number, in sequence, that has been assigned to the virtual router port.

Interface Type. The type of interface, which can be virtual router (the standard interface type), SLIP, and software loopback.

Administrative Status. Whether the administrator has enabled or disabled the port. The port can be enabled by the administrator but still be made inactive by the system.

Operational Status. Whether the port is active (operational) or inactive. This status is set by software.

System Menu

The System menu contains commands to view or set system-specific parameters. Enter

system

at the UI prompt to enter the System menu. If you are not in verbose mode, press a question mark (**?**) and then press **<Enter>** to display the commands in the system menu, as shown below.

Command	System Menu
info	Basic info on this system
dt	Set system date and time
ser	View or configure the DTE or DCE port
mpm	Configure a Management Processor Module
slot	View Slot Table information
systat	View system stats related to system, power and environment
taskstat	View task utilization stats
memstat	View memory use statistics
fsck	Perform a file system check on the flash file system
newfs	Erase all file from /flash and create a new file system
syscfg	Configure info related to this system
uic	UI configuration; change - prompt, timeout, more, verbose.
camstat	View CAM info and usage
camcfg	Configure CAM info and usage
ver/ter	Enables/disables automatic display of menus on entry
echo/noecho	Enable/disable character echo
chpr	Change the prompt for the system
logging	View system logs.
health	Set health parameters or view health statistics
cli	Enter command line interface

Main Interface	File Security	Summary System	VLAN Services	Networking Help

All of the System menu commands—except for the **mpm**, **ver**, **ter**, **echo**, **noecho**, **chpr**, **logging**, **health**, and **cli** commands—are described in the following sections. The **uic**, **ver**/**ter**, **echo**, **noecho**, **chpr**, and **cli** commands are described in Chapter 8, "The User Interface." The **mpm** command is described in Chapter 10, "Configuring Management Processor Modules."

♦ Note ♦

The **ver**, **ter**, and **chpr** commands now appear as items in the UI Configuration menu (displayed through the **uic** command). If you enter the **ver**/**ter** and **chpr** commands, a message will advise you to use the **uic** command, and the UI Configuration menu will automatically display. For more information on the UI Configuration menu, refer to Chapter 8, "The User Interface."

Displaying Basic System Information

To display basic information on the switch, enter

info

at the system prompt. The following display is a typical example.

```
System Make: Alcatel OmniSwitch
System Type: 5-slot OmniSwitch
Description: DESCRIPTION NOT SET.

Backplane:   5 SLOT        Bus Speed:   640

Physical changes to the system since power-up or reset: 2
Logical changes to the system since power-up or reset: 0
Number of Resets to this system:                37

The attached MPM, slot 1, is the Primary
Automatic configuration synchronization is enabled

System base MAC Address:      00:20:da:04:21:f0
Number of Free Slots:       0
Action on Cold Start:       Load & go
Action on Reset:            Restart

Script File:    /flash/mpm.cmd
Boot File:      /flash/mpm.img
Ni Image Suffix:  img
```

The fields displayed by the **info** command are described below.

System Make. The description of the specific type of chassis or device.

System Type. The OmniSwitch type.

Description. A description of the chassis and product. This field is set by the **syscfg** command, which is described in *Configuring a System Description* on page 13-20.

Backplane. The style of backplane (3-slot, 5-slot, or 9-slot) used in this chassis.

Bus Speed. The speed of backplane, in Mbs, used in this chassis. This will be 640 Mbs unless you are using an MPM 1G or MPM 1GW, in which case it may be 960 Mbs.

Physical Changes to the system since power-up or reset. The number of physical changes that has occurred since the last reset or power-on.

Logical Changes to the system since power-up or reset. The number of logical changes that has occurred since the last reset or power-on.

No. of Resets to the System. The number of times this switch has been reset since the last cold start.

♦ Note ♦

The **info** command will also display the number of MPMs, their location in chassis, and which one is the primary and which one is the secondary. In addition, it also displays whether automatic configuration synchronization is enabled. See Chapter 10, "Configuring Management Processor Modules," for more information on redundant MPMs and automatic configuration synchronization.

System Base MAC Address. The base MAC address for the primary MPM in chassis.

Number of Free Slots. The number of slots not occupied by a module.

Action on Cold Start. The action taken when you switch the power on.

Action on Reset. The action taken when you reboot.

Script File. The name of the command file (**mpm.cmd** is the default) containing user-configurable commands.

Boot File. The boot file (**mpm.img** is the default) used by the switch when it boots up or reboots.

Ni Image Suffix. The name of the file extension (**img** is the default) indicating that the file is an executable binary file. See Chapter 10, "Configuring Management Processor Modules," to change this suffix.

Setting the System Date and Time

The **dt** command allows you to set the local date, time, and time zone. Additionally, you can set the system clock to run on Universal Time Coordinate (UTC or GMT). If applicable, you can also configure Daylight Savings Time (DST) parameters. To view or make changes to date, time, time zone, and DST for the switch, enter

dt

at the system prompt. This command displays a screen similar to the following:

```
                    Modify Date and Time Configuration

1) Local time                                : 1:45:41
2) Local date                                :10/31/99
3) Timezone (-13 . . 12, name)               : MST    UTC-7 hrs
4) Daylight Savings Time active              : Enabled
        41) DST Start Month (1 . . 12)               : April
        42) DST Start Week (1 . . 4, Last)           : 1st
        43) DST Start Day of Week (1 . . 7)          : SUNDAY
        44) DST Start Time (hh:mm)                   : 2:00
        45) DST End Month (1 . . 12)                 : October
        46) DST End Week (1 . . 4, Last)             : Last
        47) DST End Day of Week (1 . . 7)            : SUNDAY
        48) DST End Time (hh:mm)                     : 2:00
        49) DST Offset (hh:mm)                       : 1:00

Command {Item=Value/?/Help/Quit/Redraw/Save} (Redraw)    :
```

To use the **dt** command, you must have UI write privileges. Enter the line number for the variable that you would like to change, an equal sign (**=**), and then the new value for the variable. For example, to set a new date, you would enter:

2=4/20/99

After you have made changes, enter

save

to save your changes and to exit the **dt** menu. If you do not wish to make any changes, enter

quit

at the system prompt. The following sections describe the variables on this screen.

1) Local time

Indicates the current and local time. To set the time, enter the line number for **Local Time** (**1**) followed by the new time. The time format is as follows:

HH:MM:SS

where **HH** is the hour to be set based on a 24 hour (military) clock, **MM** is the minutes to be set, and **SS** is the seconds to be set. For example, if you wanted to set the time to 3:15 p.m., you would enter:

1=15:15:00

2) Local date

The current and local date. To set the date, enter the line number for **Local Date** (**2**) followed by the new date. The date format is as follows:

MM/DD/YY

where **MM** is the month to be set, **DD** is the day to be set, and **YY** is the last two digits of the year to be set. Remember to include a slash (*/*) between the month and the day and between the day and the year. For example, if you wanted to set the date to April 20, 1999, you would enter:

2=04/20/99

3) Timezone

This parameter specifies the time zone for the switch and sets the system clock to run on UTC time (or Greenwich Mean Time). Additionally, if Daylight Savings Time is enabled (see option **4** below), the clock automatically sets up default DST parameters (if applicable) for the local time zone. The local time remains active for all User Interface commands and other subsystems that require the local time. To set the time zone for the switch, you may use one of two methods:

a. Enter the line number for **Timezone** (**3**) followed by the hour(s) offset from UTC. This can be a number from -13 to +12. The number you enter will set the system clock *x* hours from the local time. For example, if the local time, 1:45:00, is seven hours behind UTC time, you would enter:

3=-7

This specification sets the UTC time to 8:45:00, seven hours ahead of the local time, 1:45:00.

b. Enter the line number for **Timezone** (**3**) followed by the time zone name. There is a limited number of time zone names available. For example, if the local time zone name is Mountain Standard Time (MST), you would enter:

3=MST

This specification automatically sets the switch to -7 hours, the number of hours MST is offset from UTC.

Daylight Savings Time. The software will automatically configure DST values for a specified time zone. However, the user can manually modify DST values.

Non-integer Offsets. Non-integer offsets are acceptable for **Timezone.** Some parts of the world are offset from UTC by increments of 15, 30, or 45 minutes. India, for example, is offset from UTC by 5 hours and 30 minutes. If you wanted to enter the time zone offset for India, for example, you would type the line number for Timezone (**3**), followed by the non-integer hour offset in the **HH:MM** format, as follows:

3=05:30

where the value of **05:30** is five hours and thirty minutes offset from UTC.

♦ Note ♦

The switch automatically enables UTC. However, if you do not want your system clock to run on UTC, simply enter the offset **+0** for the **Timezone** parameter. This sets UTC to run on local time.

The table on the following page lists the options available for **Timezone** names:

Timezone and DST Parameters

Abbr.	Name	Hours from UTC	DST Start	DST End	DST Change
NZST	New Zealand	+12:00	1st Sunday in Oct. at 2:00 a.m.	3rd Sunday in March at 3:00 a.m.	1:00
ZP11	No standard name	+11:00	No default	No default	No default
AEST	Australia East	+10:00	Last Sunday in Oct. at 2:00 a.m.	Last Sunday in March at 3:00 a.m.	1:00
GST	Guam	+10:00	No default	No default	No default
ACST	Australia Central Time	+9:30	Last Sunday in Oct. at 2:00 a.m.	Last Sunday in March at 3:00 a.m.	1:00
JST	Japan	+9:00	No default	No default	No default
KST	Korea	+9:00	No default	No default	No default
AWST	Australia West Time	+8:00	No default	No default	No default
ZP8	China, Manila, Philippines	+8:00	No default	No default	No default
ZP7	Bangkok	+7:00	No default	No default	No default
ZP6	No standard name	+6:00	No default	No default	No default
ZP5	No standard name	+5:00	No default	No default	No default
ZP4	No standard name	+4:00	No default	No default	No default
MSK	Moscow	+3:00	Last Sunday in March at 2:00 a.m.	Last Sunday in Oct. at 3:00 a.m.	1:00
EET	Eastern Europe	+2:00	Last Sunday in March at 2:00 a.m.	Last Sunday in Oct. at 3:00 a.m.	1:00
CET	Central Europe	+1:00	Last Sunday in March at 2:00 a.m.	Last Sunday in Oct. at 3:00 a.m.	1:00
MET	Middle European Time	+1:00	Last Sunday in March at 2:00 a.m.	Last Sunday in Oct. at 3:00 a.m.	1:00
BST	British Standard Time	+0:00	Last Sunday in March at 1:00 a.m.	Last Sunday in Oct. at 3:00 a.m.	1:00
WET	Western Europe	+0:00	Last Sunday in March at 1:00 a.m.	Last Sunday in Oct. at 3:00 a.m.	1:00

Timezone and DST Parameters Con't

Abbr.	Name	Hours from UTC	DST Start	DST End	DST Change
GMT	Greenwich Mean Time	+0:00	No default	No default	No default
WAT	West Africa	-1:00	No default	No default	No default
ZM2	No standard name	-2:00	No default	No default	No default
ZM3	No standard name	-3:00	No default	No default	No default
NST	Newfound-land	-3:30	1st Sunday in April at 2:00 a.m.	Last Sunday in Oct. at 2:00 a.m.	1:00
AST	Atlantic Stan-dard Time	-4:00	1st Sunday in April at 2:00 a.m.	Last Sunday in Oct. at 2:00 a.m.	1:00
EST	Eastern Stan-dard Time	-5:00	1st Sunday in April at 2:00 a.m.	Last Sunday in Oct. at 2:00 a.m.	1:00
CST	Central Stan-dard Time	-6:00	1st Sunday in April at 2:00 a.m.	Last Sunday in Oct. at 2:00 a.m.	1:00
MST	Mountain Standard Time	-7:00	1st Sunday in April at 2:00 a.m.	Last Sunday in Oct. at 2:00 a.m.	1:00
PST	Pacific Stan-dard Time	-8:00	1st Sunday in April at 2:00 a.m.	Last Sunday in Oct. at 2:00 a.m.	1:00
AKST	Alaska	-9:00	1st Sunday in April at 2:00 a.m.	Last Sunday in Oct. at 2:00 a.m.	1:00
HST	Hawaii	-10:00	No default	No default	No default
ZM11	No standard name	-11:00	No default	No default	No default

4) Daylight Savings Time active

Enables and disables DST (Daylight Savings Time). To enable DST, enter:

4=Enable

To disable DST, enter:

4=Disable

If DST is disabled, options 41-49 will not be displayed.

41) DST Start Month

Indicates which month of the year DST starts. To set the month when DST should start, enter the sequential number of the month (January=1, February=2, . . . December=12). For example, if you wanted DST to begin in April, you would enter the line number for **DST Start Month** (**41**) and the month, as follows:

41=4

42) DST Start Week

Indicates which week in a month DST starts. To set the week DST should start, enter the sequential number of the week. The possible values are 1st (1), 2nd (2), 3rd (3), 4th (4), and Last. For example, if you wanted DST to start on the 3rd Tuesday of a month, you would enter the line number for **DST Start Week** (**42**) and the week, as follows:

42=3

43) DST Start Day

Indicates which day of the week DST starts. To set the day DST should start, enter the sequential number of the day (Sunday=1, Monday=2, . . . Saturday=7). For example, if you wanted DST to begin on Friday, you would enter the line number for **DST Start Day** (**43**) and the day, as follows:

43=6

44) DST Start Time

Indicates what time of day (in local time) DST starts. To set the time DST should start, enter the time in the form **HH:MM**, where **HH** is the clock hours of a 24 hour (military) clock and **MM** is the clock minutes that DST should start. For example, if you wanted DST to start at 1:00 a.m., you would enter the line number for **DST Start Time** (**44**) and the time, as follows:

44=1:00

45) DST End Month

Indicates which month of the year DST ends. To set the month DST should end, enter the sequential number of the month (January=1, February=2, . . . December=12). For example, if you wanted DST to end in April, you would enter the line number for **DST End Month** (**45**) and the month, as follows:

45=4

46) DST End Week

Indicates which week in a month DST ends. To set the week DST should end, enter the sequential number of the week. The possible values are 1st (1), 2nd (2), 3rd (3), 4th (4), and Last. For example, if you wanted DST to end on the last Tuesday of a month, you would enter the line number for **DST End Week** (**46**) and the week, as follows:

46=Last

47) DST End Day

Indicates which day of the week DST ends. To set the day DST should end, enter the sequential number of the day (Sunday=1, Monday=2, . . . Saturday=7). For example, if you wanted DST to end on Wednesday, you would enter the line number for **DST End Day** (**47**) and the day, as follows:

47=4

48) DST End Time

Indicates what time of day (in local time) DST ends. To set the time DST should end, enter the time in the form of **HH:MM**, where **HH** is the clock hours of a 24 hour (military) clock and **MM** is the clock minutes that DST should end. For example, if you wanted DST to end at 2:00 a.m., you would enter the line number for **DST End Time** (**48**) and the time, as follows:

48=2:00

49) DST Offset

Indicates the amount of time to change the local time when DST changes. To set how much time DST should change, enter the change in the form of **HH:MM**, where **HH** is the clock hours and **MM** is the clock minutes that DST should change. For example, if you wanted the local time to move 1 hour when **DST** changes, you would enter the line number for **DST Offset** and the hour, as follows:

49=1:00

Viewing Slot Data

You can view slot table information by entering the **slot** command. You can enter **slot** to view information on all slots in the switch, or enter slot and the slot number to view information only on the specified slot. To view the slot table data, enter

```
slot
```

at the system prompt. Something similar to the following will be displayed.

Slot	Module-Type Part-Number	Adm-Status Oper-Status	HW Rev	Board Serial #	Mfg Date	Firmware-Version Base-MAC-Address
1*	MPM 05002600	Enabled Operational	L3	52601675	07/05/95	3.2.2 00:20:da:04:21:f0
2	HSM 05003106	Enabled Operational	B11	53404264	05/19/95	3.2.2 00:20:da:02:28:60 00:20:da:06:a4:a0
2-1	FDDI 05003706		D	53404104	05/24/95	
3	HSM 05003106	Enabled Operational	L	53404645	08/21/95	3.2.2 00:20:da:04:87:30 00:20:da:04:87:40
3-1	ATM 05004400		B	53404116	10/11/95	
4	Ether/8 050000014	Enabled Operational	D	53404229	02/07/95	3.2.2 00:20:da:03:09:90
5	F-Ether/M 05015906	Enabled Operational	A5	73250839	08/07/97	3.2.2 00:20:da:85:40:50

The fields display by the **slot** command are described below.

Slot. The slot number for the MPM or switching module.

Module-Type. The type of module in this slot.

Part-Number. The factory-assigned part number.

Adm-Status. The administration status. This can be enabled or disabled by the operator through the **reset** command, which is described in Chapter 58, "Running Hardware Diagnostics."

Oper-Status. The operational status. Whether the port is Up (Operational), Down, or Unknown. (Unknown means uninitialized or that the module is in a transitional state.)

HW Rev. The revision number for this module. This number may be helpful when troubleshooting.

Board Serial #. Serial number for this module.

Mfg Date. The manufacturing date for this module.

Firmware-Version. The version of the module's firmware. All modules should use the same version of software.

Base-MAC-Address. The base MAC address(es) of this module.

Viewing System Statistics

The **systat** command displays statistics related to system, power, and environment. To view these parameters, enter

systat

at the system prompt. A screen similar to the following will be displayed.

```
System Uptime                  1 days, 12:09:22.64
MPM Transmit Overruns          : 0
MPM Receive Overruns           : 22
MPM total memory               : 16 MB
MPM free memory                : 6522536 bytes
MPM CPU Utilization (  5 sec)  : 5% ( 0% intr  0% kernel  3% task  95% idle)
MPM CPU Utilization ( 60 sec)  : 5% ( 0% intr  0% kernel  3% task  96% idle)
Power Supply 1 State           : OK
Power Supply 2 State           : Not Present
Temperature Sensor             : OK - Under Threshold
Temperature Alarm Masking      : Disabled
Temperature Alarm Masking Delay : 5 minutes
```

The fields displayed by the **systat** command are described below.

System Uptime. The time since the last boot that the system has been running, displayed in days, hours, minutes, and seconds (to the nearest hundredth).

MPM Transmit Overruns. The number of times a VSE transmit buffer could not be allocated by a task on the MPM.

MPM Receive Overruns. The number of times packets were dropped because the bus had more packets to deliver than the MPM could handle. This is a "receive overrun" condition which can happen when a storm occurs or when the switch is first powered up and many unknown MAC frames are being forwarded to the MPM.

MPM total memory. The amount of total memory installed on the MPM.

MPM Free Memory. The amount of free, or unused, memory available in the MPM. This data is also displayed by the **memstat** command, which is described in *Viewing MPM Memory Statistics* on page 13-17.

MPM CPU Utilization (5 seconds). The amount of time, by percent, the MPM processor actually worked during the last 5 seconds.

MPM CPU Utilization (60 sec). The amount of time, by percent, that the MPM processor actually did work during the last minute.

Power Supply 1 State. Valid states are **OK**, **Not Present**, and **Bad**. A power supply that has been turned off will be in the **Bad** state. If not installed, it will be in the **Not Present** state.

Power Supply 2 State. Valid states are **OK**, **Not Present**, and **Bad**. A power supply that has been turned off will be in the **Bad** state. If not installed, it will be in the **Not Present** state.

Temperature Sensor. Indicates whether the MPM temperature sensor detects overheating. Valid states are **Under Threshold**, **Over Threshold**, and **Not Present**.

Temperature Alarm Masking. Indicates whether temperature alarm masking is Enabled or Disabled. You enable masking through the **maskta** command, which is described in Chapter 58, "Running Hardware Diagnostics."

Temperature Alarm Masking Delay. The amount of time after which the TEMP LED will turn off when alarm masking is partially enabled through the **maskta** command. This field will only display if the value is greater than zero.

Viewing Task Utilization Statistics

The **taskstat** command displays the task utilization statistics of the switch. To display the task utilization statistics, enter

taskstat <task-number> <sample-period>

at the system prompt. The **<task-number>** is an optional number of tasks and the **<sample-period>** is an optional sample period of 1 to 60 seconds. You must enter the **<task-number>** if you want to enter the **<sample-period>**.

The default number for **<task-number>** is 5 and the default sample period for **<sample-period>** is 5 seconds. To display the task utilizations statistics for 10 tasks over a 20-second period, for example, enter

taskstat 10 20

at the system prompt. A screen similar to the following will be displayed.

```
Task Name                    Utilization (20 secs)
-----------------            -----------------------------
tUi_shellt0                  0.76%
tCMProber                    0.70%
tUi_shellC                   0.60%
tSnmp_agent                  0.34%
tNetTask                     0.32%
tTelnetOut0                  0.19%
tif_vbInput                  0.19%
vseReceive                   0.11%
tTelnetIn0                   0.08%
bslMgr                       0.07%

All Other Tasks:             0.68%
--------------------------------
Total Task Utilization:      4.04%
```

The **taskstat** command displays the tasks in descending order in terms of the switch's CPU utilization. In addition, if you want to display all the tasks executed by the switch, enter **0** for the number of tasks.

Viewing MPM Memory Statistics

The **memstat** command displays the MPM's memory statistics. The statistics will tell you how memory is currently being used and help determine if memory problems exist, such as memory exhaustion. To view the MPM's memory statistics, enter

memstat

at the system prompt. A screen similar to the following will be displayed.

Summary of Memory Usage

status	bytes	blocks	avg block	max block
current				
free	4761672	64	74401	4719704
alloc	6429088	9114	705	-
cumulative				
alloc	24942880	148235	168	-

MPM total memory : 16MB

The fields displayed by the **memstat** command are described below.

status. The statistics appear in two groups: **current** and **cumulative**. The current status shows free and allocated memory. The cumulative status shows only allocated memory. Cumulative memory is the total amount of memory that has been allocated since the switch was started up. This value increases each time a memory allocation takes place. It can never decrease.

bytes. The number of bytes for free and allocated memory.

blocks. Block size is dynamic and depends upon memory usage and the amount of fragmentation.

avg block. The average block indicates the average size of all the memory blocks.

max block. The maximum block indicates the largest free memory block available. When this value drops to around 10K it usually indicates that the free memory is highly fragmented and probably near exhaustion.

MPM total memory. The total number of megabytes available in the MPM's memory.

Checking the Flash File System

The **fsck** command performs a file system check of flash memory, which consists of the flash file system. All image files are stored in flash memory and loaded into system memory when the switch boots up. It also provides diagnostics in the case of file corruption. To perform a file system check of flash memory, enter

```
fsck
```

at the system prompt. A screen similar to the following will be displayed.

```
Your bootroms support Flash File System Version 2 and greater.

Out of 16 file descriptors in use, 0 of these are opened on the /flash device.

Performing a file system check using manual mode. If a file is encountered
with a potential problem, you may wish to consider preserving it for technical
support analysis...

Flash file system check in progress...
  Checking root file system...  OK
  Performing file consistency check...
  Done.

There doesn't appear to be a system problem related to the Flash File
system or kernel file system data structures. If you are experiencing
problems with the flash file system, perhaps try using the "info",
"systat", or "memstat" commands. They may indicate some other condition
(such as low memory) which could prohibit correct operation of the
file system.
```

If the **fsck** command finds a problem with the flash file system, a message will be displayed detailing the problems found and/or actions taken to correct those problems.

Each logical file system (**/flash** and **/simm**) must be checked independently. If you have installed the 32 Mb SIMM upgrade and you want to check the SIMM's memory, enter

```
cd /simm
```

at the system prompt before you execute the **fsck** command.

Creating a New File System

The **newfs** command removes a complete flash file system and all files within it. It then creates a new flash file system, which is empty. You can use this command when you want to reload all files in the file system or in the unlikely event that the flash file system becomes corrupted.

To re-initialize the flash memory, enter

```
newfs
```

at the system prompt. The following will be displayed.

```
You are about to destroy all files on file system /flash. If you
are experiencing problems with the flash file system, you might
want to use the "fsck" command to help determine where problems
may exist.

Are you absolutely sure you want to strip the current file
system and create a new one? (n)
```

Enter **y** to re-initialize the flash memory or **n** to cancel (the default is **n**). If you enter **y**, you will have to load new software into the switch.

♦ Warning ♦

Do not power-down the switch after running the **newfs** command until you reload your image and configuration files. If you do, you will have to reload the image files at the boot monitor prompt using the serial interface (e.g., ZMODEM), which can take several minutes.

You can then download new files via FTP or ZMODEM. Also, before you execute the **newfs** command, you may also want to preserve your configuration file by saving it to another host.

If you have installed the 32 Mb SIMM upgrade and you want to create a new file system in the SIMM's memory, enter

```
cd /simm
```

at the system prompt before you execute the **newfs** command.

Configuring a System Description

You can enter or modify a description of a switch, its location, and a contact person. Although this information is not required, you may find it helpful in managing the switch. To enter or modify the switch descriptions, perform the following steps.

1. At the system prompt, enter

   syscfg

   The current system information will appear with a prompt asking if you want to change any of the information; for example:

   ```
   System Contact                    : Usenet
   System Name                       : no_name
   System Location                   : Unset
   System Description                : DESCRIPTION NOT SET.
   Duplicate MAC Aging Timer         : 0 (not configured)
   Change any of the above {Y/N}?  (N) :
   ```

   If you enter **n**, the **syscfg** command will exit and no changes will made (the default is **n**). If you enter **y**, the current system information will be displayed line by line. To keep the current value (shown in brackets) for a line, press **<Enter>** . To change a value, enter the new value and press **<Enter>** .

   ♦ Important Note ♦

   Except for the **Duplicate MAC Aging Timer** field, all changes you make take place immediately.

   If you entered **y**, something similar to the following will be displayed.

   ```
   System Contact (Usenet) :
   ```

2. Enter the new system contact or just press **<Enter>** to accept the default. A screen similar to the following will be displayed.

   ```
   System Name (no_name) :
   ```

3. Enter the new system name or just press **<Enter>** to accept the default. A screen similar to the following will be displayed.

   ```
   System Location (Unset) :
   ```

4. Enter the new system location or just press **<Enter>** to accept the default. A screen similar to the following will be displayed.

   ```
   System Description (DESCRIPTION NOT SET.) :
   ```

5. Enter the new system description or just press **<Enter>** to accept the default. A screen similar to the following will be displayed.

   ```
   Duplicate Mac Aging Timer :
   ```

   The **Duplicate MAC Aging Timer** indicates the time, in seconds, duplicate MACs remain in CAM if there's no traffic from those MACs. After this time, inactive MACs will age out of the CAM. You must reset the switch before this parameter takes effect. Duplicate MAC addresses will display as normal MAC addresses in other software commands, such as **fwt** and **macinfo**. See *Duplicate MAC Address Support* on page 13-31 for further discussion.

6. Enter a new duplicate MAC aging timer value (the valid range is from 10 to 1000000) or just press **<Enter>** to accept the default.

Viewing CAM Information

The **camstat** command displays information and usage about the content addressable memory (CAM) on each switching module in the chassis. To view this CAM information, enter

```
camstat
```

at the system prompt. Something similar to the following will be displayed.

Slot	# of CAMs	Cfg Usage	Max Avail	Actual Usage
2	1	1024	1022	0
3	1	1024	1024	0
4	1	1024	1014	18
5	1	256	248	0

The fields displayed by the **camstat** command are described below.

Slot. The slot number of the switching module for which CAM information is provided.

# of CAMs. The number of CAM chips installed on the switching module.

Cfg Usage. The number of CAM entries this module is configured to support. By default a module will use the maximum amount of entries supported by on-board CAM. However, you can alter this default through the **camcfg** command (described in *Configuring CAM Distribution* on page 13-22) to make the most efficient use of the CAM distributed among all switching modules in the chassis. Up to 16K of CAM is supported over all modules in an OmniSwitch.

Max Avail. The number of CAM entries available. This number will be less than the number of CAM entries configured because some entries will be used by learned MAC addresses (shown in the **Actual Usage** column) and others are used internally by the OmniSwitch.

Actual Usage. The number of MAC addresses learned by the module in this slot.

♦ Note ♦

For CAM statistics for an entire chassis, use the **hdstat** command, which is described in Chapter 15, "Health Statistics."

Configuring CAM Distribution

CAMs (Content Addressable Memory) on switching modules are used to look up the MAC address of endstations attached to the modules. The OmniSwitch and the OmniSwitch/Router each support a different amount of allowable CAM space (for more information on CAM distribution, see *OmniSwitch CAM Distribution* and *Omni Switch/Router CAM Distribution* below). You can use the **camstat** command to display each module's CAM usage. See *Viewing CAM Information* on page 13-21 for more information on the **camstat** command.

OmniSwitch CAM Distribution

The OmniSwitch supports up to 16K of CAM among all switching modules in a chassis. The 16K chassis-wide limitation is due to the size of the master Bridge Filter Table (BFT) managed by the MPM. For each entry in a module's CAM, there is a corresponding entry in the BFT.

When each switching module in a 9-slot chassis has 1K or 2K of CAM, the 16K limitation is not reached since only 8K or 16K (assuming 8 switching modules) is used. However, when some switching modules use 4K of CAM the 16K limitation could be reached quickly. If you exceed the limit of usable CAM memory among all the switching modules in a chassis, some switching modules will not come up.

For example, if six switching modules in a 9-slot chassis contained 2K CAMs and the remaining two modules contained 4K CAMs, then 20K of CAM would reside in the entire chassis. In this situation, some switching modules will not come up.

The **camcfg** command allows you to individually allocate CAM space to switching modules. This command configures the maximum entries a switching module may use, freeing up overall CAM space in the chassis so that some modules can use more of their on-board CAM. Follow these two additional rules:

- The CAM memory size for a switching module must be configured to at least one-half of the total memory available on the switching module. For example, if your switching module has 2 K of CAM memory, you must allocate at least 1 K of CAM to that switching module.
- The amount of CAM memory allocated for a switching module must be a whole-number multiple of 1024 (e.g., 1024, 2048, etc.).

Follow these steps to configure the number of CAM entries used by a switching module:

1. Enter **camcfg** followed by the slot number for the module that you want to configure. You can configure the CAM on switching modules only, not on the MPM. For example, to configure CAM for the module in slot 3, enter

   ```
   camcfg 3
   ```

2. The system displays a prompt asking for the number of CAM entries to use for this module.

   ```
   Enter maximum number of CAM entries for slot 3 (1024):
   ```

   Enter the number of CAM entries to use for this module. The current value is listed in parentheses. The value you enter must be equal to or less than the total number of entries available on board this module. For example, you could not configure 2048 entries for a switching module with only 1K of CAM.

A message similar to the following will display:

```
Slot 3 Configured to learn 256 MACs will round up to 256 MACs
This configuration will take effect only after system reboot
```

3. The new CAM configuration will take effect after you reboot the system. For this reason, you may want to configure the CAM for all modules in this system. Reboot the system and check the updated CAM configurations through the **camstat** command.

Omni Switch/Router CAM Distribution

The Omni Switch/Router supports approximately 31.25 K of usable CAM among all the switching modules in a chassis. (A small amount of CAM memory is reserved by the Omni Switch/Router for its processing.)

If any of the switching modules in a 9-slot chassis have 1 K CAMs (e.g., ESX-100C-32W, TSX-C-32W), you will not reach the 31.25 K limit. However, if *all* the switching modules in a fully-loaded 9-slot chassis have 4 K CAMs you would exceed the 31.25 K limit. In this configuration, the Omni Switch/Router would subtract 256 K of available CAM memory from the first switching module to initialize and 512 K of available CAM memory from the last switching module to initialize. Generally, there is not need to configure CAM space on the Omni Switch/Router. Therefore, the **camcfg** command is *not* supported on the Omni Switch/Router.

♦ Important Note ♦

If you use a configuration file (e.g., **mpm.cfg**) from an OmniSwitch on an Omni Switch/Router, any CAM configuration settings will be ignored.

System Logs

The logging sub-menu has commands for viewing and configuring system logs. To enter the **logging** sub-menu, enter

```
logging
```

at the system prompt. Press **?** and press **<Enter>** to see the following list of commands:

```
Command         Logging Menu
syslog          Change the syslog parameters
cmdlog          Show per-command accounting data.
conlog          Show per-connection accounting data.
logc            Logging configuration.
```

The logging sub-menu commands are described in the following sections. The **syslog** command, which is described in *Configuring the Syslog Parameters* on page 13-24, allows you to configure syslog messages. The **cmdlog** command, which is described in *Displaying the Command History Log* on page 13-29, displays the command log. The **conlog** command, which is described in *Displaying the Connection Log* on page 13-30, displays a log of connections. And the **logc** command, which is described in *Configuring the Log Configuration* on page 13-28, is used to activate and configure the session console logs.

Configuring the Syslog Parameters

Syslog messages are messages generated by individual processes in the switch. These messages contain information for conditions that range from debugging/informational to emergency/fatal error conditions.

The **syslog** command allows you to control how these messages will be handled. You can designate what kinds of messages you will see and where the messages will be sent. This syslog implementation is compatible with the standard BSD UNIX implementation for syslog services.

To see the current syslog configuration, enter

```
syslog
```

at the system prompt. A screen similar to the following will be displayed.

```
SYSLOG current configuration:

 1) Log host                - UNDEFINED
 2) Log host IP             -
 3) Syslog port (514)       - 514
 4) Default facility code   - local0
   41) Override internals   - no
 5) Default priority mask   - emerg
   51) Override internals   - no
   52) Display internals    - no
 6) Console logging         - yes
 7) Log Task ID             - yes
   71) Use Task Name        - no
 8) Message tag             - switch

(save/quit/cancel)
  :
```

Select the number of the item you want to change. To change any of the values on the previous page, enter the line number, followed by an equal sign, and then the new value. For

example, to turn off console logging, enter:

6=no

The question mark option (**?**) option refreshes the screen. To update the values you have changed, enter **save**. If you do not want to save the changes enter **quit** or **cancel**, or press **Ctrl-D**.

The fields displayed by the **syslog** command are described below.

1. **Log host**. The name of the host where you want the syslog messages sent. The Domain Name Server (DNS) must be configured for this to work. Use the **res** command to configure the DNS. (The **res** command is described in Chapter 18, "RMON and DNS Resolver.")

2. **Log host IP.** The IP address of the host where you want the syslog messages sent. If the IP address and the Log host name disagree, the IP address takes precedence.

3. **Syslog port (514)**. The port to which the syslog messages will be sent on the specified host. Port 514 is the normal port number used and is the default.

4. **Default facility code.** The facility code is used to identify which sub-system generated the syslog message. Note that this code is used only as a default for tasks that do not have a facility code. See the table below for a list of the facility codes. The default is **local0**.

Syslog Facility Codes

Facility	Source
LOG_KERN	Messages generated by the kernel
LOG_USER	Message generated by random user processes
LOG_MAIL	The mail system
LOG_DAEMON	System daemons
LOG_AUTH	The authorization system
LOG_LPR	The line printer spooling system
LOG_NEWS	Reserved for the USENET system
LOG_UUCP	Reserved for the UUCP system
LOG_CRON	The cron/at facility
LOG_LOCAL0-7	Reserved for local use

41. **Override internals.** This setting will force all syslog messages to use the default facility code specified in item No. 4 above instead of their own predefined facility codes.

5. **Default priority mask.** The mask for the priority code. Indicates the type of syslog message. Note that this mask is used only as a default for tasks that do not have a priority code. See the table below for a list of priority codes.

Syslog Priority Codes

Level	Value	Meaning
LOG_EMERG	0	FATAL system event
LOG_ALERT	1	FATAL subsystem event
LOG_CRIT	2	Problem, subsystem unstable
LOG_ERR	3	Problem, bad event, recoverable
LOG_WARNING	4	Unexpected, non-fatal event
LOG_NOTICE	5	normal but significant condition
LOG_INFO	6	info
LOG_DEBUG	7	Internal debug messages

51. **Override internals.** This field will force all syslog messages to use the default priority mask specified in item No. 5 above instead of their own predefined priority masks.

52. **Display internals**. This field allows the user to display the task log level. Enter **52=yes** to display the sub-menu below. If, for example, you wanted to change the priority mask **CM via kern** from "warn" to "alert," you would enter **4=alert**. Note that this change will take place immediately and you do not need to enter **save** for it to take effect. Type **save**, **quit**, or **cancel** and then press **<Enter>** to return to the main **syslog** menu.

```
Internal task syslog configuration:
 (NOTE: changes take effect immediately and
      are NOT saved across reboots!)

 0 )     PPM via kern          - alert
 1 )     LPM via kern          - alert
 2 )     VPM via kern          - alert
 3 )     SNMP via kern         - alert
 4 )     CM via kern           - warn
 5 )     ATMmgr via kern       - alert
 6 )     atmLANE via kern      - alert
 7 )     Q93bif via kern       - alert
 8 )     ILMIif via kern       - alert
 9 )     SSI0 via kern         - alert
 10)     atmSNMP via kern      - alert
```

6. **Console logging.** Determines whether or not you want to see syslog messages on your console (terminal). If set to yes, the messages will be displayed on either an **ASCII** terminal connected to the console port or via a Telnet session.

7. **Log Task ID**. Determines whether or not you want to see the task ID that can be included in the syslog message.

   71. **Use Task Name.** This allows the user to display descriptive task names for syslog messages (see the **Display internals** sub-menu above) instead of numeric codes.

8. **Message tag.** Text of up to 10 characters that is added to every message leaving the switch. It is useful when multiple switches send messages to the same host.

Configuring the Log Configuration

To configure the session log, enter

logc

at the system prompt. A screen similar to the following will be displayed.

```
                                Log Configuration

1) Log Enabled                :    Yes
2) Command History Enabled    :    No
3) Console Enabled            :    No
4) Log Size                   :    500 records

Command {Item=Value/?/Help/Quit/Redraw/Save} (Redraw) :
```

This log is written to flash memory. To change any of the values above, enter the line number, followed by an equal sign, followed by the new value. For example, to change the **Log Size** field to 100 records, enter

4=100

The question mark option (**?**) and the **Help** option provide reference and instructional information on using this command. The **Redraw** option refreshes the screen.

To update the values you have changed, enter **save**. If you do not want to save the changes enter **quit** or **Ctrl-D**.

The fields displayed by the **logc** command are described below.

1. **Log Enabled.** Set this field to **Yes** to enable the log and **No** to disable the log. If you set this field to **No**, then you will not be able to configure the other fields. as shown below.

```
                                Log Configuration

1) Log Enabled                :    No

Command {Item=Value/?/Help/Quit/Redraw/Save} (Redraw) :
```

2. **Command History Enabled.** Set this field to **Yes** to enable the command history and **No** to disable the command history. If you set this field to **Yes**, then use the **cmdlog** command (described in *Displaying the Command History Log* on page 13-29) to view this session log.

3. **Console Enabled.** Set this field to **Yes** to enable the console history and **No** to disable the console history. If you set this field to **Yes**, then use the **conlog** command (described in *Displaying the Connection Log* on page 13-30) to view this connection log.

4. **Log Size.** Enter the new value and press **<Enter>** to set the number of records in the log. This value must be greater than 9.

Displaying the Command History Log

The **cmdlog** command displays a list commands executed since the session log was activated by the **logc** command (described in *Configuring the Log Configuration* on page 13-28). To display this log, enter

```
cmdlog
```

at the system prompt. Something similar to the following will be displayed.

```
Command          User         Line                 Time
---------------- -------- ---------------- ----------------
cmdlog           admin        198.206.187.113    TUE NOV 18 16:42
   Actual User Input: cmdlog
xlat             admin        198.206.187.113    TUE NOV 18 16:42
   Actual User Input: xlat
conlog           admin        198.206.187.113    TUE NOV 18 16:43
   Actual User Input: conlog
logging          admin        console            WED NOV 19 10:28
   Actual User Input: logging
?                admin        console            WED NOV 19 10:28
   Actual User Input: ?
taskstat         admin        198.206.187.113    WED NOV 19 14:03
   Actual User Input: taskstat 10 20
taskstat         admin        198.206.187.113    WED NOV 19 14:05
   Actual User Input:!!
```

The fields displayed by the **cmdlog** command are described below.

Command. The UI command executed by the switch.

User. The login name of the user who executed the command.

Line. The login type of the user who executed the command. If, for example, the user was connected through the console port, "console" will be displayed. If the user was connected through Telnet, on the other hand, then the IP address of that user will be displayed.

Time. The time that the command was executed.

Actual User Input. The actual text (up to 32 characters) that the user entered at the system prompt.

♦ Note ♦

If you just want to display the commands executed during the current session you can use the **history** command, which is described in Chapter 8, "The User Interface."

Displaying the Connection Log

The **conlog** command displays a log of connections made since this log was activated by the **logc** command (described in *Configuring the Log Configuration* on page 13-28). To display this log, enter

```
conlog
```

at the system prompt. A screen similar to the following will be displayed.

```
User        Line         Peer             Start                Finish
--------    ----------   ---------------  -----------------    ------------------
CREATED     system                        FRI NOV 14 10:05
admin       Telnet       198.206.187.113  WED NOV 19 09:47 -   09:47  (00:00)
admin       Telnet       198.206.187.113  WED NOV 19 09:47 -   09:53  (00:05)
admin       Telnet       198.206.187.113  WED NOV 19 09:55 -   10:00  (00:05)
admin       console                       WED NOV 19 10:35     logged in  (00:27)
admin       Telnet       198.206.187.113  WED NOV 19 11:02     logged in(00:00)
```

The fields displayed by the **conlog** command are described below.

User. Normally, this field lists the name of the user who made the connection to the switch. At the beginning of the log it will display **CREATED** instead.

Line. The login type of connection to the switch (e.g., a Telnet or console port connection).

Peer. If the user was connected through Telnet, then the IP address of the user will be displayed. If the user was connected through the console port, then this field will be blank.

Start. The time that the connection started.

Finish. The time that the connection ended and the duration of the connection in hours and minutes (listed in parentheses).

Duplicate MAC Address Support

When the switch sees the same MAC address sending traffic on a different switch port (a Duplicate MAC Address), it assumes the original network device moved. The switch sends a trap notifying network management of this station move event. It sends one trap for a device move within the same Group and another trap for a device move outside of the home Group.

A station move trap is normally sent after an actual station move. However, certain network configurations assign the same MAC address to different network devices (physical and virtual) as standard practice. In these situations, the duplicate MAC address appears as a station move when it is really a normal occurrence in these network configurations. These network configurations that use the same MAC address for different devices include:

- LAN Emulation under Cisco routers. Cisco routers use the same MAC address for each LAN Emulation Client (LEC). In LAN Emulation, each ELAN needs to be treated as a separate LAN and should therefore have a separate MAC address.
- IBM Front End Processor (FEP). Many IBM FEPs use the same MAC address assigned to the connecting devices for the purpose of redundancy.
- DECnet networks. The DECnet protocol assigns the special MAC address, AA000400XXYY (XXYY is an internal protocol ID) to each DECnet station or routing device regardless of the number of physical interfaces.

Initially, duplicate MAC addresses in these special situations may be no more of a problem than extra traps being sent for an event (station move) that did not really happen. However, when a large number of these network devices send the same MAC address out the same port, flooding can occur and the switch will eventually shut the port down.

To prevent a port from being shut down, the switch needs some way of knowing the duplicate MAC addresses originating from the port are not an error condition.

The OmniSwitch will treat duplicate MAC addresses as separate addresses as long as they are learned from a different Group as the original MAC. Each duplicate MAC address will use one entry in the CAM. Up to 32 duplications of the same MAC address are supported. Duplicate MAC addresses learned from virtual ports within the same Group are treated as station moves and will generate corresponding traps. If the MAC address moves from one VLAN to another VLAN within the same Group, the switch will not treat the MAC addresses as separate.

If your network supports duplicate MAC addresses, there may be a significant performance impact due to the following reasons:

- A MAC address is usually stored only in the CAM of the switching module where its destination address is located. If duplicate MAC addresses are treated as separate addresses, then the same MAC address may have to be stored in the CAM of multiple switching modules, not just the module that originally learned the address.
- Every duplicate MAC address becomes a CAM table entry, so there will be less room in the CAM for other entries to be learned. Since up to 32 duplications of a single MAC address are possible, this CAM can become crowded with these duplicate entries.

  You can reduce the impact of a crowded CAM by configuring the **Duplicate MAC Aging Timer** in the **syscfg** command, which is described in *Configuring a System Description* on page 13-20. This timer allows you to age out Duplicate MAC CAM entries from devices that are inactive for the time period you specify.
- Extra search time will be required for each lookup of the same MAC address since it is treated as a separate entry in the CAM.

In addition to these performance impacts, you will lose the tracking of legitimate station moves. No traps will be sent for Duplicate MAC addresses that appear in different Groups.

Multicast Claiming

Multicast claiming can be enabled for networks with heavy multicast traffic. When enabled, multicast claiming frees the MPM from processing multicast packets by off-loading this traffic to the switching modules. When multicast claiming is enabled, the switch "claims" destination multicast addresses and places them in the CAMs of all switching modules in the OmniSwitch.

You can enable multicast claiming by adding the following line to the **mpm.cmd** file:

```
bslLearnMcPkt=1
```

You can use the **edit** command to make this change. (See Chapter 11, "Managing Files," for instructions on using the **edit** command.) You will need to reboot the switch for this parameter to take effect. Multicast claiming can later be disabled by changing the setting for this parameter to zero (0), as follows:

```
bslLearnMcPkt=0
```

An alternative method for managing multicast traffic is through the use of Multicast VLANs. See Chapter 28, "Managing AutoTracker" and Chapter 29, " Managing Multicast VLANs" for further information.

Disabling Flood Limits

Two UI commands are available for controlling flood limits for individual ports and Groups. The **modvp** command (described in Chapter 25, "Managing Groups and Ports") allows you to control the flood limits for a specific port. The **flc** command (described in Chapter 23, "Configuring Bridging Parameters") allows you to configure flood limits for all ports in a group.

You can also disable flood limits on a switch-wide basis by adding the following line to the **mpm.cmd** file:

```
disableFloodLimiting=1
```

You can use the **edit** command to make this change. See Chapter 11, "Managing Files," for instructions on using the **edit** command. You will need to reboot the switch for this parameter to take effect.