CHAPTER 70

Monitoring System Processes and Logs

This chapter provides details on monitoring the health of the switch. It includes the following sections:

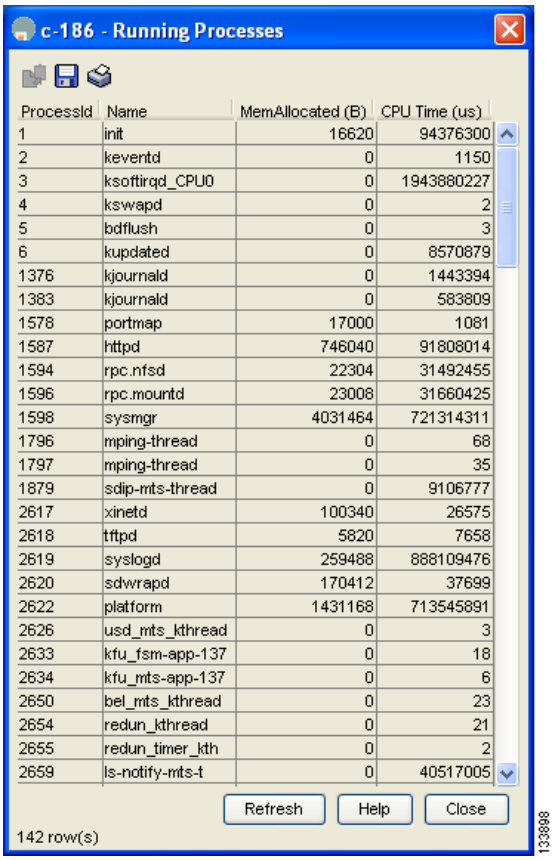
Displaying System Processes

To obtain general information about all processes using Device Manager, follow these steps:

Step 1 Choose **Admin > Running Processes**.

You see the Running Processes dialog box shown in Figure 70-1.

Figure 70-1 Running Processes Dialog Box



Where:

- ProcessId = Process ID
- Name = Name of the process
- MemAllocated = Sum of all the dynamically allocated memory that this process has received from the system, including memory that may have been returned
- Runtime (ms) = CPU time the process has used, in microseconds

Step 2 Click **Close** to close the dialog box.

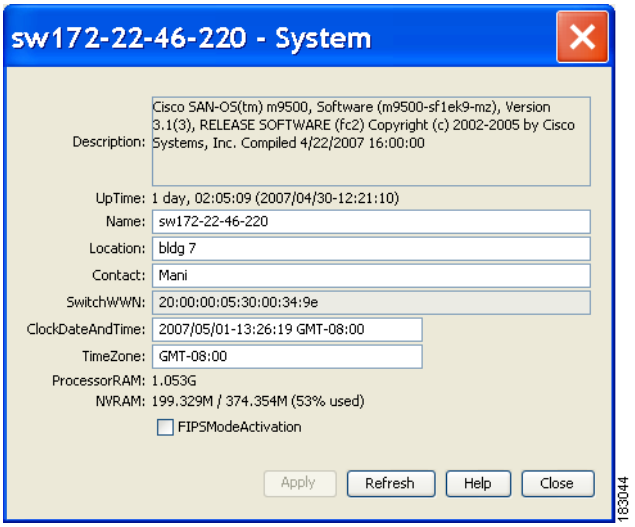
Displaying System Status

To display system status from Device Manager, follow these steps:

Step 1 Choose **Physical** > **System**.

You see the System dialog box shown in Figure 70-2.

Figure 70-2 System Dialog Box



Step 2 Click **Close** to close the dialog box.

Core and Log Files

For information on copying core and log files, refer to the *Cisco MDS 9000 Family CLI Configuration Guide*.

Displaying Core Status

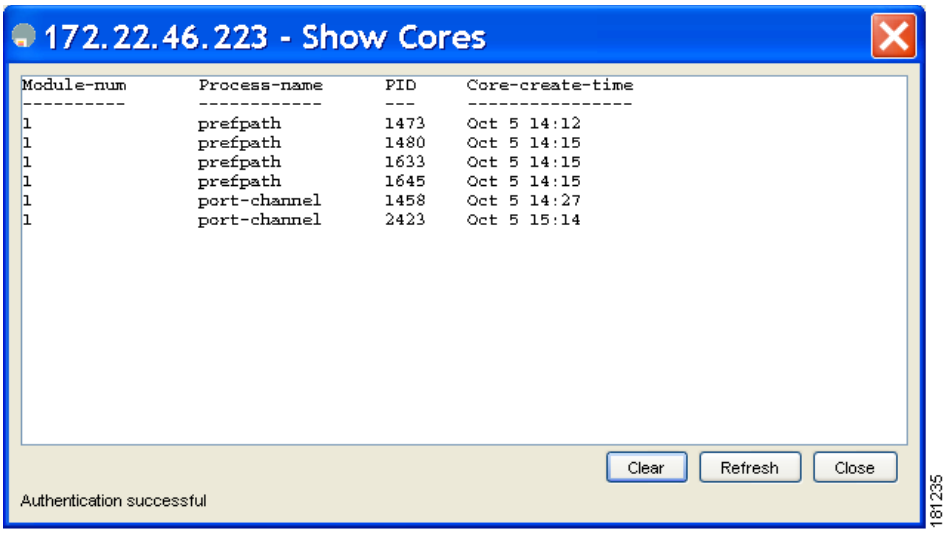
To display cores on a switch using Device Manager, follow these steps:

Note Be sure SSH2 is enabled on this switch.

Step 1 Choose **Admin > Show Cores**.

You see the Show Cores dialog box shown in Figure 70-3.

Figure 70-3 Show Cores Dialog Box



Where:

`Module-num` shows the slot number on which the core was generated.In this example, the `fspf core` was generated on the active supervisor module (slot 5), `fcc` was generated on the standby supervisor module (slot 6), and `acltcam` and `fib` were generated on the switching module (slot 8).

Step 2 Click **Close** to close the dialog box.

Clearing the Core Directory

To clear the cores on a switch using Device Manager, follow these steps:

Note Be sure SSH2 is enabled on this switch.

Step 1 Click **Clear** to clear the cores.

The software keeps the last few cores per service and per slot and clears all other cores present on the active supervisor module.

Step 2 Click **Close** to close the dialog box.

First and Last Core

The First and last core feature uses the limited system resource and retains the most important core files. Generally, the first core and the most recently generated core have the information for debugging and, the First and last core feature tries to retain the first and the last core information.

If the core files are generated from active supervisor module, the number of core files for the service is defined in the service.conf file. There is no upper limit on the total number of core files in the active supervisor module. The defined number of core files work for every VDC.

To display the core files saved in the system, use the following commands:

Command	Purpose
`switch# show cores`	Displays all the core files saved in the default-VDC.
`switch# show cores vdc-all`	Displays all the core files saved in the system. The number of core files is defined in service.conf file.

First and Last Core Verification

You can view specific information about the saved core files. Example 70-1 to Example 70-2 provide further details on saved core files.

Example 70-1 Regular Service on Default-VDC on Local Node

For example, pixm crashes five times. The output of show cores vdc-all displays five core files. Three minutes later, the second oldest core file gets deleted to comply with the number of cores defined in the service.conf file.

```
switch# show cores vdc-all

VDC No Module-num       Process-name      PID     Core-create-time
------ ----------       ------------      ---     ----------------
1      5                pixm              4103    Jan 29 01:30
1      5                pixm              5105    Jan 29 01:32
1      5                pixm              5106    Jan 29 01:32
1      5                pixm              5107    Jan 29 01:33
1      5                pixm              5108    Jan 29 01:40

switch# show cores vdc-all

VDC No Module-num       Process-name      PID     Core-create-time
------ ----------       ------------      ---     ----------------
1      5                pixm              4103    Jan 29 01:30
1      5                pixm              5106    Jan 29 01:32
1      5                pixm              5107    Jan 29 01:33
1      5                pixm              5108    Jan 29 01:40
```

Example 70-2 Regular Service on vdc 2 on Active Supervisor Module

For example, there are five radius core files from vdc2 on the active supervisor module. The second and third oldest files get deleted to comply with the number of core files defined in the service.conf file.

```
switch# show cores vdc vdc2

VDC No Module-num       Process-name      PID     Core-create-time
------ ----------       ------------      ---     ----------------
2      5                radius            6100    Jan 29 01:47
2      5                radius            6101    Jan 29 01:55
2      5                radius            6102    Jan 29 01:55
2      5                radius            6103    Jan 29 01:55
2      5                radius            6104    Jan 29 01:57
```

```
switch# show cores vdc vdc2

VDC No Module-num       Process-name      PID     Core-create-time
------ ----------       ------------      ---     ----------------
2      5                radius            6100    Jan 29 01:47
2      5                radius            6103    Jan 29 01:55
2      5                radius            6104    Jan 29 01:57
```

Online System Health Management

The Online Health Management System (system health) is a hardware fault detection and recovery feature. It ensures the general health of switching, services, and supervisor modules in any switch in the Cisco MDS 9000 Family.

Note For information on most Online Health Management System procedures, refer to the *Cisco MDS 9000 Family CLI Configuration Guide*.

This section includes the following topics:

About Online System Health Management

The Online Health Management System (OHMS) is a hardware fault detection and recovery feature. It runs on all Cisco MDS switching, services, and supervisor modules and ensures the general health of any switch in the Cisco MDS 9000 Family. The OHMS monitors system hardware in the following ways:

- The OHMS component running on the active supervisor maintains control over all other OHMS components running on the other modules in the switch.
- The system health application running in the standby supervisor module only monitors the standby supervisor module—if that module is available in the HA standby mode. See the "HA Switchover Characteristics" section on page 17-2.

The OHMS application launches a daemon process in all modules and runs multiple tests on each module to test individual module components. The tests run at preconfigured intervals, cover all major fault points, and isolate any failing component in the MDS switch. The OHMS running on the active supervisor maintains control over all other OHMS components running on all other modules in the switch.

On detecting a fault, the system health application attempts the following recovery actions:

- Performs additional testing to isolate the faulty component
- Attempts to reconfigure the component by retrieving its configuration information from persistent storage.
- If unable to recover, sends Call Home notifications, system messages and exception logs; and shuts down and discontinues testing the failed module or component (such as an interface)

- Sends Call Home and system messages and exception logs as soon as it detects a failure.
- Shuts down the failing module or component (such as an interface).
- Isolates failed ports from further testing.
- Reports the failure to the appropriate software component.
- Switches to the standby supervisor module, if an error is detected on the active supervisor module and a standby supervisor module exists in the Cisco MDS switch. After the switchover, the new active supervisor module restarts the active supervisor tests.
- Reloads the switch if a standby supervisor module does not exist in the switch.
- Provides CLI support to view, test, and obtain test run statistics or change the system health test configuration on the switch.
- Performs tests to focus on the problem area.

Each module is configured to run the test relevant to that module. You can change the default parameters of the test in each module as required.

Performing Internal Loopback Tests

You can run manual loopback tests to identify hardware errors in the data path in the switching or services modules, and the control path in the supervisor modules. Internal loopback tests send and receive FC2 frames to/from the same ports and provide the round trip time taken in microseconds. These tests are available for Fibre Channel, IPS, and iSCSI interfaces.

Choose **Interface > Diagnostics > Internal** to perform an internal loopback test from Device Manager.

Performing External Loopback Tests

You can run manual loopback tests to identify hardware errors in the data path in the switching or services modules, and the control path in the supervisor modules. External loopback tests send and receive FC2 frames to/from the same port or between two ports.

You need to connect a cable (or a plug) to loop the Rx port to the Tx port before running the test. If you are testing to/from the same port, you need a special loop cable. If you are testing to/from different ports, you can use a regular cable. This test is only available for Fibre Channel interfaces.

Choose **Interface > Diagnostics > External** to perform an external loopback test from Device Manager.

Default Settings

Table 70-1 lists the default system health and log settings.

Table 70-1 Default System Health and Log Settings

Parameters	Default
Kernel core generation	One module.
System health	Enabled.
Loopback frequency	5 seconds.
Failure action	Enabled.