Hardware Module Commands

To use these commands in System Admin VM, you must be in a user group associated with appropriate command rules and data rules. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

hw-module attention-led

To enable attention-LED for a specific node, use the **hw-module attention-led** command in the System Admin Config mode. To disable the attention-LED, use the **no** form of this command.

hw-module attention-led location *node-id*
no hw-module attention-led location *node-id*

Syntax Description

location *node-id*	Specifies the target location. The *node-id* argument is expressed in the *rack/slot* notation.

Command Default

Disabled.

Command Modes

System Admin Config

Command History

Release	Modification
Release 5.0.0	This command was introduced.

Usage Guidelines

Use the **show led** command in the System Admin EXEC mode to verify the output of the **hw-module attention-led** command.

This example shows how to enable attention-LED and then verify the output using the **show led** command:

```
sysadmin-vm:0_RP0#config
sysadmin-vm:0_RP0(config)#hw-module attention-led location 0/3
sysadmin-vm:0_RP0(config-location-0/3)#commit
Tue Aug  27 18:59:28.740 UTC
Commit complete.
sysadmin-vm:0_RP0(config-location-0/3)#exit
Tue Aug  27 18:59:32.439 UTC
sysadmin-vm:0_RP0(config)#exit
Tue Aug  27 18:59:34.285 UTC

sysadmin-vm:0_RP0#show led location 0/3
Tue Aug  27 18:59:59.723 UTC
========================================================
Location  LED Name                    Mode        Color
========================================================
0/3
        0/3-Attention LED           WORKING     BLUE
        0/3-Status LED              WORKING     GREEN
```

hw-module location

To recover the RP (route processor) and SC (shelf controller) card or all the nodes in a system, use the **hw-module location** command in Sysadmin EXEC mode.

System Admin EXEC Mode
hw-module location *[node-id|all]* **bootmedia** *[recovery-partition|usb|network]* **reload**

Syntax Description		
node-id|all		Node whose hardware attributes you want to configure. The *node-id* is expressed in the *rack/slot* notation in the System Admin EXEC mode and represented in the rack/slot/module format in the XR EXEC mode.
		To confgure all nodes, use *all* .
	Note	Enter the **show platform** command to see the location of all nodes installed in the router.
recovery-partition		Recovers the router using the recovery image in the hard disk partition.

Command Default   None

Command Modes   System Admin EXEC

Command History

Release	Modification
Release 5.0.0	This command was introduced.
Release 5.2.3	A reload of the hardware after the slice is shutdown using the **reload** keyword is not required as the slice is dynamically reset.
Release 5.2.5	Introduced keyword **bootmedia recovery-partition**. This keyword can be used in conjunction with the hw-module location command only in the Sysadmin mode.

Usage Guidelines   To reset a specific node, or to put a node into maintenance mode, use the **hw-module location** command in System Admin EXEC mode.

The **force** keyword forces an immediate reload or shutdown of the router without waiting for an orderly system shutdown.

⚠️

Caution   A forced reload or shutdown can corrupt the file system. Therefore, use the **force** keyword only when a normal reload or shutdown does not work.

To ensure that the router has recovered from the forced shutdown, perform a normal reload after restarting the router.

The following example shows how to change the state of the hardware module to offline to perform diagnostics:

```
sysadmin-vm:0_RP0#hw-module location 0/3 offline
Take hardware module offline ? [no,yes] yes
```

The following example shows how to recover a router from a state of disaster, using the recovery image in the hard disk partition.:

```
sysadmin-vm:0_RP0#hw-module location 0/RP1 bootmedia recovery-partition
```

hw-module logging onboard disable

To disable onboard failure logging (OBFL), use the **hw-module logging onboard disable** command in System Admin Config mode. To enable OBFL again, use the **no** form of this command.

hw-module location *node-id* **logging onboard disable**
no hw-module location *node-id* **logging onboard disable**

Syntax Description	**location** *node-id*	Enables or disables OBFL for the designated node. The *node-id* argument is entered in the *rack/slot* notation.

Command Default   By default, OBFL logging is enabled.

Command Modes   System Admin Config mode

Command History

Release	Modification
Release 5.0.0	This command was introduced.

Usage Guidelines   When the OBFL feature is disabled, existing OBFL logs are preserved. To resume OBFL data collection, enable the OBFL feature again.

> **Note**   If a new node is inserted, and OBFL is enabled for that slot, then OBFL is enabled for the new node. If a card is removed from a router and inserted into a different router, the card assumes the OBFL configuration for the new router.

Examples   The following example shows how to disable OBFL for a card:

```
sysadmin-vm:0_RP0#config
sysadmin-vm:0_RP0(config)# hw-module location 0/1 logging onboard disable
```

hw-module reset auto disable

To disable the node reset feature on a specific node, use the **hw-module reset auto disable** command in System Admin Config mode. To reenable the reset feature on a specific node, use the **no** form of this command.

hw-module reset auto disable location *node-id*
no hw-module reset auto disable location *node-id*

Syntax Description		
location *node-id*	Identifies the node on which you want to disable the auto reset feature in case of errors. The *node-id* argument is entered in the *rack/slot* notation.	

Command Default The node reset feature is disabled for all nodes.

Command Modes System Admin Config

Command History

Command History

Release	Modification
Release 5.0.0	This command was introduced.

This example shows how to disable the reset feature on a node:

```
sysadmin-vm:0_RP0# config
sysadmin-vm:0_RP0(config)# hw-module reset auto disable location 0/1
sysadmin-vm:0_RP0(config-location-0/1)# commit
Tue Aug  27 19:47:37.841 UTC
Commit complete.
sysadmin-vm:0_RP0(config-location-0/3)# exit
Tue Aug  27 19:47:37.841 UTC
sysadmin-vm:0_RP0(config)# exit
```

hw-module shutdown

To administratively shut down a specific node, use the **hw-module shutdown** command in System Admin Config mode. To return a node to the up state, use the **no** form of this command.

hw-module shutdown location *node-id*
no hw-module shutdown location *node-id*

Syntax Description	**location** *node-id* Identifies the node you want to shut down. The *node-id* argument is expressed in the *rack*/*slot* notation.

Command Default   Nodes are in the up state when the system is powered on and when the software boots on the cards.

Command History

Release	Modification
Release 5.0.0	This command was introduced.

Usage Guidelines   Nodes that are shut down do not have power.

Route processors (RPs), Fan tray (FT), and Power tray (PT) cannot be shutdown using the **hw-module shutdown** command.

Enter the **show platform** command in System Admin EXEC mode to display the results of the **hw-module shutdown** command.

This example shows how to shutdown the node 0/1 and view the result using the **show platform** command:

```
sysadmin-vm:0_RP0#config
Tue Aug  27 12:47:40.391 UTC
Entering configuration mode terminal
sysadmin-vm:0_RP0# hw-module shutdown location 0/1
sysadmin-vm:0_RP0(config-location-0/1)# commit
Tue Aug  27 12:47:57.307 UTC
Commit complete.
sysadmin-vm:0_RP0(config-location-0/1)# exit
Tue Aug  27 12:48:00.171 UTC
sysadmin-vm:0_RP0(config)# exit
Tue Aug  27 12:48:02.619 UTC
sysadmin-vm:0_RP0# show platform location 0/1
Tue Aug  27 12:48:20.766 UTC
Location   Card Type            HW State      SW State     Config State
-----------------------------------------------------------------------
0/1        NC6-10X100G-M        PRESENT       SW_INACTIVE   SHUT
```

show hw-module fpd

To display the hardware module information, use the **show hw-module fpd** command in the System Admin EXEC mode.

show hw-module [**location** {**node-id** | **all**}] **fpd** [*fpd-name*]

Syntax Description	*fpd-name*	Displays information about the field-programmable device (FPD). The value for the *fpd-name* argument can be one of the following:
		• BAO-MB FPGA
		• BIOS FPD
		• CCC FPGA
		• CCC Power-On
		• CPU Complex FPD
		• Ethernet Switch
		• Fantray FPGA
		• PM0-DT-PriMCU
		• PM0-DT-Sec5vMCU
		• PM0-DT-Sec54vMCU
		• PM1-DT-PriMCU
		• PM1-DT-Sec5vMCU
		• PM1-DT-Sec54vMCU
		• PM2-DT-PriMCU
		• PM2-DT-Sec5vMCU
		• PM2-DT-Sec54vMCU
		• Slice-1 GN2411
	location *node-id*	Specifies the target location. The *node-id* argument is expressed in the *rack*/*slot* notation.
	all	Displays hardware module information from all the nodes.

Command Default	None

Command Modes	System Admin EXEC

Command History

Release	Modification
Release 5.0.0	This command was introduced.

The following example shows how to view the output of **show hw-module** command:

```
sysadmin-vm:0_RP0#show hw-module fpd Slice-1\ GN2411

Mon Aug  19 09:03:30.797 UTC
                                                      FPD Versions
                                                      ================
Location      Card type      HWver  FPD device      Status   Running Download
-------------------------------------------------------------------------------
0/3           NC6-10X100G-M 1.0    Slice-1 GN2411   READY     2.07    2.07
```

show inventory

To retrieve and display information about all the Cisco products that are installed in the router, use the **show inventory** command in System Admin EXEC or XR EXEC mode.

System Admin EXEC Mode
show inventory [{**all** | **chassis** | **fan** | **location** {*node-id*} | **power** | **raw**}]
XR EXEC Mode
show inventory [{*locationspecifier* | **all** | **location** {*locationspecifier* | **all**} | **oid** | **raw**}]

Syntax Description		
	all	(Optional) Displays inventory information for all the physical entities in the chassis.
	location {*node-id*}	(Optional) Displays inventory information for a specific node, or for all nodes in the chassis.
	raw	(Optional) Displays raw information about the chassis for diagnostic purposes.
	chassis	(Optional) Displays inventory information for the entire chassis.
	locationspecifier	(Optional) Displays the name of the location.
	oid	(Optional) Displays OID information about the chassis.
	fan	(Optional) Displays inventory information for the fans.
	power	(Optional) Displays inventory information for the power supply.

Command Default   All inventory information for the entire chassis is displayed.

Command Modes   System Admin EXEC

XR EXEC

Command History	Release	Modification
	Release 5.0.0	This command was introduced.

Usage Guidelines   Enter the **show inventory** command with the **raw** keyword to display every RFC 2737 entity installed in the router, including those without a PID, unique device identifier (UDI), or other physical identification.

If any of the Cisco products do not have an assigned PID, the output displays incorrect PIDs, and version ID (VID) and serial number (SN) elements may be missing.

For UDI compliance products, the PID, VID, and SN are stored in EEPROM. Use the **show inventory** command to display this information.

The following example shows partial sample output from the **show inventory** command with the **raw** keyword:

```
sysadmin-vm:0_RP0# show inventory raw
```

```
Tue Aug  27 13:32:31.730 UTC

 Name: Rack 0-Chassis         Descr: NCS 6008-8-Slot Chassis
 PID: N/A                     VID: N/A                 SN: N/A

 Name: Rack 0-LineCard Chassis backplane  Descr: NCS 6008-8-Slot Chassis Backplane
 PID: N/A                     VID: N/A                 SN: N/A

 Name: Rack 0-MidPlane IDPROM  Descr: NCS 6008-8-Slot Chassis
 PID: NCS-6008        VID: V01                 SN: SAD12345678

 Name: Rack 0-Line Card Slot 0  Descr: NCS 6008-8-Slot Line Card Slot
 PID: N/A                     VID: N/A                 SN: N/A

 Name: 0/0-Card               Descr: NCS 6000 10x100G Multi-Service CXP P0
 PID: N/A                     VID: N/A                 SN: N/A

 Name: 0/0-Motherboard        Descr: Motherboard Module
 PID: N/A                     VID: N/A                 SN: N/A
--More--
```

Table 1 describes the significant fields shown in the display.

Table 1: show inventory Field Descriptions

Field	Description
NAME	Hardware for which the inventory information is displayed. If you are displaying the chassis inventory, this field shows "chassis." If you are displaying raw inventory, or all inventory information for all nodes in the chassis, this field shows the node name in partially qualified format. For a node, the NAME is expressed in *rack/slot* notation.
DESCR	Describes the chassis or the node. Chassis descriptions provide the name of the chassis and its Gbps. Node descriptions provide the type of node and its software version.
PID	Physical model name of the chassis or node.
VID	Physical hardware revision of the chassis or node.
SN	Physical serial number for the chassis or node.

show led

To display LED information for the router, or for a specific LED location, use the **show led** command in System Admin EXEC mode.

show led [{**location** [*node-id*] | **trace** {**all***trace-name*} **location** *node-id* [{**all***trace-attributes*}]}]

Syntax Description		
location *node-id*	Specifies the node for which to display LED information. The *node-id* argument is entered in the *rack*/*slot* notation.
trace	Displays LED debug traces information.
trace-name	Trace name.
location *node-id*	Specifies the target location. The *node-id* argument is expressed in the *rack/slot* notation.
trace-attribute	Trace attribute.
all	Displays all the details.

Command Default If no node is specified, information about all LEDs on the router is displayed.

Command Modes System Admin EXEC

Command History

Release	Modification
Release 5.0.0	This command was introduced.

Usage Guidelines Enter the **show platform** command to see the location of all nodes installed in the router.

The following example sample output from the **show led** command with the keyword:

```
sysadmin-vm:0_RP0# show led
Tue Aug  27 13:44:33.770 UTC
=============================================================
Location  LED Name                      Mode        Color
=============================================================
0/0
        0/0-Attention LED             WORKING     OFF
        0/0-Status LED                WORKING     GREEN
0/1
        0/1-Attention LED             -           -
        0/1-Status LED                -           -
0/RP0
        0/RP0-Attention LED           WORKING     OFF
        0/RP0-Status LED              WORKING     GREEN
        0/RP0-Alarm Minor LED         WORKING     AMBER
        0/RP0-Alarm Major LED         WORKING     AMBER
        0/RP0-Alarm Critical LED      WORKING     OFF
0/RP1
        0/RP1-Attention LED           WORKING     OFF
        0/RP1-Status LED              WORKING     GREEN
```

```
         0/RP1-Alarm Minor LED          WORKING     AMBER
         0/RP1-Alarm Major LED          WORKING     AMBER
         0/RP1-Alarm Critical LED       WORKING     OFF
0/FC0
         0/FC0-Attention LED            WORKING     OFF
```

Table 2: show led location Field Descriptions

Field	Description
LOCATION	Location of the node. LOCATION is expressed in the *rack*/*slot* notation.
LED Name	Name of the LED.
MODE	Current operating mode of the specified node.
COLOR	Color of the LED.

show platform

To display information and status for each node in the system, use the **show platform** command in System Admin EXEC or XR EXEC mode.

System Admin EXEC Mode
show platform [{**detail** | **slices**}] [**location** [*node-id*]]
XR EXEC Mode
show platform

Syntax Description		
detail	Displays details of node type and state.
slices	Displays summary of node forwarding slices.
location *node-id*	Specifies the target node. The *node-id* argument is entered in the *rack*/*slot* notation.

Command Default   Status and information are displayed for all nodes in the system.

Command Modes   System Admin EXEC

XR EXEC

Command History	Release	Modification
	Release 5.0.0	This command was introduced.
	Release 5.2.3	The output for the **detail** keyword captures card failure events and the reason for failure when **show platform** command is run in System Admin EXEC mode.

Usage Guidelines   The **show platform** command provides a summary of the nodes in the system, including node type and status.

For NCS 6008, EP1 will be displayed as, **Not allowed online**, until the required license is bought.

The following example shows sample output from the **show platform** command:

```
sysadmin-vm:0_RP0#show platform
Wed Aug  28 06:49:49.822 UTC
Location   Card Type              HW State     SW State     Config State
----------------------------------------------------------------------
0/RP0     NC6-RP                 OPERATIONAL  OPERATIONAL  NSHUT
0/RP1     NC6-RP                 OPERATIONAL  OPERATIONAL  NSHUT
0/FC0     NC6-FC                 OPERATIONAL  N/A          NSHUT
0/FT0     P-L-FANTRAY            OPERATIONAL  N/A          NSHUT
0/FT1     P-L-FANTRAY            OPERATIONAL  N/A          NSHUT
0/3       NC6-10X100G-M          OPERATIONAL  OPERATIONAL  NSHUT
0/PT1     NCS-AC-PWRTRAY         OPERATIONAL  N/A          NSHUT
```

upgrade hw-module fpd

To manually upgrade the current field-programmable device (FPD) image package on a module, use the **upgrade hw-module fpd** command in System Admin EXEC mode.

upgrade hw-module location {*node-id* | **all**} **fpd** {*fpd-type* | **all**} [**force**]

Syntax Description		
all	Upgrades all FPD images on the selected module.
fpga-type	Upgrades a specific field-programmable gate array (FPGA) image on the module. Use the **show fpd package** command to view all available FPGA images available for a specific module.
force	(Optional) Forces the update of the indicated FPD image package on a shared port adapter (SPA) that meets the minimum version requirements. Without this option, the manual upgrade upgrades only incompatible FPD images.
location {*node-id* |**all**}	Specifies the node for which to upgrade the FPD image. The *node-id* argument is expressed in the *rack/slotsubslot* notation. Use the **all** keyword to indicate all nodes.

Command Default

None

Command Modes

System Admin EXEC mode

Command History

Release	Modification
Release 5.0.0	This command was introduced.

Usage Guidelines

> **Note** The use of the force option when doing a fpd upgrade is not recommended except under explicit direction from Cisco engineering or TAC.

> **Note** It is recommended to upgrade all FPGAs on a given node using the **upgrade hw-module fpd all location** {**all** | *node-id*} command. Do not upgrade the FPGA on a node using the **upgrade hw-module fpd** *<individual-fpd>* **location** {**all** | *node-id*} as it may cause errors in booting the card.

During the upgrade procedure, the module must be offline (shut down but powered).

Naming notation for the *node-id* argument is *rack/slotsubslot*; a slash between values is required as part of the notation.

- *rack* —Chassis number of the rack.

- *slot* —Physical slot number of the SPA interface processor (SIP).

This example shows how to upgrade the Ethernet Switch and view the output using the **show hw-module fpd** command:

```
sysadmin-vm:0_RP0# upgrade hw-module location 0/RP0 fpd Ethernet
sysadmin-vm:0_RP0# show hw-module fpd
Tue Aug  27 14:54:10.200 UTC
                                                           FPD Versions
                                                        ================
Location     Card type       HWver  FPD device       Status    Running Download
--------------------------------------------------------------------------------
0/0          NC6-10X100G-M 0.2      CCC FPGA         READY       1.14    1.14
0/0          NC6-10X100G-M 0.2      BAO-MB FPGA      READY       1.00    1.00
0/0          NC6-10X100G-M 0.2      CCC Power-On     READY       1.30    1.30
0/0          NC6-10X100G-M 0.2      Ethernet Switch  READY       1.32    1.32
0/0          NC6-10X100G-M 0.2      BIOS FPD         READY       9.10    9.10
0/0          NC6-10X100G-M 1.0      Slice-1 GN2411   READY       2.07    2.07
0/1          NC6-10X100G-M 0.2      CCC FPGA         READY       1.14    1.14
0/1          NC6-10X100G-M 0.2      BAO-MB FPGA      READY       1.00    1.00
0/1          NC6-10X100G-M 0.2      CCC Power-On     READY       1.30    1.30
0/1          NC6-10X100G-M 0.2      Ethernet Switch  READY       1.32    1.32
0/1          NC6-10X100G-M 0.2      BIOS FPD         READY       9.10    9.10
0/1          NC6-10X100G-M 1.0      Slice-1 GN2411   READY       2.07    2.07
0/RP0        NC6-RP        0.1      CCC FPGA         UPGD SKIP   1.00    1.00
0/RP0        NC6-RP        0.1      CCC Power-On     UPGD SKIP   1.30    1.30
0/RP0        NC6-RP        0.1      Ethernet Switch  UPGD SKIP   1.32    1.32
0/RP0        NC6-RP        0.1      CPU Complex FPD  UPGD SKIP   3.06    3.06
0/RP0        NC6-RP        0.1      BIOS FPD         UPGD SKIP   9.10    9.10
0/RP1        NC6-RP        0.1      CCC FPGA         READY       1.00    1.00
0/RP1        NC6-RP        0.1      CCC Power-On     READY       1.30    1.30
```