

Hardware Redundancy and Node Administration Commands

This module describes the commands used to manage the hardware redundancy, power, and administrative status of the nodes on a router running Cisco IOS XR software.

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fpd auto-reload

To enable or disable automatic reload of a line card after successful FPD upgrade, use the **fpd auto-reload** command in XR Config mode and System Admin Config mode.

fpd auto-reload { **enable** | **disable** }

Syntax Description

enable	Enables LC auto reload after FPD auto upgrade.
disable	Disables LC auto reload after FPD auto upgrade.

Command Default

None.

Command Modes

XR Config mode

System Admin Config mode

Command History

Release	Modification
Release 7.0.1	This command was introduced.

Usage Guidelines

This command is supported on Cisco IOS XR 64-bit OS.

Task ID

Task ID	Operation
system	read, write

Examples

The following example shows how to enable automatic LC reload after successful FPD upgrades:

```
Router# configure
Router(config)# fpd auto-reload enable
```

fpd auto-upgrade

To enable the automatic upgrade of FPD images during a software upgrade, use the **fpd auto-upgrade** command in XR Config mode and System Admin Config mode. To disable automatic FPD upgrades, use the **no** form of this command.

fpd auto-upgrade { **enable** | **disable** }

Syntax Description

enable	Enables FPD auto upgrade.
disable	Disables FPD auto upgrade.

Command Default

FPD images are not automatically upgraded.

Command Modes

XR Config mode

System Admin Config mode

Command History

Release	Modification
Release 7.0.1	This command was introduced.

Usage Guidelines

By default automatic upgrades of the FPD images are not performed during a software upgrade. Once the **fpd auto-upgrade** command is enabled, when you upgrade the software and an FPD upgrade is required, the FPD upgrade is done automatically before the router is rebooted. The automatic FPD upgrade works only if the FPD image is upgraded together with the mini installation PIE. For example, use the **install add** and **install activate** commands as shown here:

```
Router# install add ncs5500-mpls-1.0.0.0-r244142I.x86_64.rpm
Router# install activate ncs5500-mpls-1.0.0.0-r244142I.x86_64.rpm
```

Task ID

Task ID	Operation
system	read, write

Examples

The following example shows how to enable automatic FPD upgrades:

```
Router# configure
Router(config)# fpd auto-upgrade enable
```

hw-module reset auto

To reset a specific node, use the **hw-module reset auto** command in administration configuration mode. To disable 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

disable	Disables the node reset feature on the specified node.
location *node-id*	Identifies the node you want to reload. The *node-id* argument is entered in the *rack/slot* notation.

Command Default

The node reset feature is enabled for all nodes.

Command Modes

Administration configuration

Command History

Release	Modification
Release 7.0.1	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The **hw-module reset auto** command is used to reload Cisco IOS XR software on a specific node. The node reloads with the current running configuration and active software set for that node.

Task ID

Task ID	Operations
root-system	read, write
root-lr	read, write

The following example shows how to reload a node:

```
Router# configure
Router(config)# hw-module reset auto location 0/2/CPU0

RP/0/RP0/CPU0:router# RP/0/RP0/CPU0:Apr  2 22:04:43.659 : shelfmgr[294]:
%S HELFMGR-3-USER_RESET : Node 0/2/CPU0 is reset due to user reload request
```

hw-module fault-recovery

To configure the number of times a fault recovery can take place before permanently shutting down a line card, fabric card, shelf controller, or a route processor, use the **hw-module fault-recovery** command in System Admin mode.

hw-module fault-recovery location *hw-module-location* **count** *count*

Syntax Description

location *hw-module-location*	Specifies the hardware module for which fault recovery limit is configured. The *hw-module-location* argument is expressed in the **rack/slot/module** notation.
count*count*	Specifies the number of times a hardware module can attempt fault recovery before permanently shutting down. The *count* value can have range from 1 to 3.

Command Default

This feature is disabled by default.

Command Modes

System Admin Config

Command History

Release	Modification
Release 24.3.1	The command was introduced.
Release 26.2.1	This command was modified to display the values for location and count keywords.

Usage Guidelines

You must enable this command for each location. To apply this configuration to all the locations, specify each location individually and then save your changes. The router prompt displays the *location all* option, but it is not functional.

From Release 26.2.1, users can identify the *location-id* for fault recovery by entering **?** in the hw-module fault-recovery location command. For example, hw-module fault-recovery location ? displays the list of available locations. Also, from this release onward, the count range displayed for the count keyword in the hw-module fault-recovery location *location-id* count command is 1 to 3.

Task ID

Task ID	Operation
config-services	read,write

The configuration example shows the fault recovery attempts on the fabric card FC0:

```
Router#configure
Router (config)#hw-module fault-recovery location 0/FC0 count 1
Router(config)#commit
```

power-mgmt redundancy

To control the power budget so as to not exceed the power capacity, use the **power-mgmt redundancy**-num-pms command. To restore default (N+1) power module redundancy, use the **no** form of this command.

By default, power module redundancy is set to (N+1). There is no power tray level redundancy.

power-mgmt redundancy-num-pms [*integer*] **location** { *node-id* }
no power-mgmt redundancy-num-pms location { *node-id* }

Syntax Description

integer	Number of redundant power modules that the user wants to configure. The total number of functioning power modules in the system is at least *integer* number more than the number of power modules needed to support the power required for all the cards in the system. Range of *integer* is from 0 to 8. 0 means no power redundancy is required.
location {*node-id* | **all**}	Specifies the location of the module. The *node-id* argument is expressed in the *rack/slot* notation. Use the **all** keyword to indicate all nodes.

Command Default

None

Command Modes

System Admin Config

Command History

Release	Modification
Release 7.0.1	This command was introduced.

Usage Guidelines

If the system is planned to have power module redundancy (N+x), then this command can be used to set the number of power modules required for power redundancy.

This example shows how to configure power module level redundancy:

```
sysadmin-vm:0_RP0(config)# power-mgmt redundancy-num-pms 2
Mon Apr  29 11:46:18.885 UTC+00:00
```

power-mgmt action

To disable the power budget control, use the **power-mgmt action disable** command in the System Admin Config mode.

power-mgmt action disable

Syntax Description

disable	Disables the power budget control.

Command Default

Power budget control is set to (N+1) and enabled by default.

Command Modes

System Admin Config

Command History

Release	Modification
Release 7.0.1	This command was introduced.

Usage Guidelines

Power-management action is done at the chassis level.

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The power manager automatically calculates power required for each card. The system will only power up line cards if there is sufficient power. Use the **power-mgmt action disable** command to disable enforcement of power budgeting line card boot requests. This is not recommended, allowing for situations where chassis can overdraw current, causing instability or immediate chassis reset.

Use the **show environment** command with the **power** option to display power related information.

Use show power budge profile to view power requirements for each card type.

Before a card powers up its basic or upper layers, it must request budget. If that budget is not available, the boot request is denied.

If **power-mgmt action** command is enabled, it only prevents previously unpowered line cards from coming up in the event of low power budget scenarios. Reloading an operational line card cannot release its reserved budget. Therefore, a line card can be reloaded, even in low power budget scenarios, and allowed to return to operational. If configured with **power-mgmt action disable** command, line cards can always be given an allocated power budget and allowed to boot, regardless of available power.

This example shows you how to disable the chassis power management control:

```
sysadmin-vm:0_RP0# config
sysadmin-vm:0_RP0(config)# power-mgmt action disable
```

show environment

To display environmental monitor parameters for the system, use the **show environment** command in the appropriate mode.

Syntax Description

all	(Optional) Displays information for all environmental monitor parameters.
fans	(Optional) Displays information about the fans.
power-supply	(Optional) Displays power supply voltage and current information.
temperatures	(Optional) Displays system temperature information.
voltages	(Optional) Displays system voltage information.
node-id	(Optional) Node whose information you want to display. The *node-id* argument is expressed in the *rack/slot* notation.

Command Default

All environmental monitor parameters are displayed.

Command Modes

System Admin EXEC

Command History

Release	Modification
Release 7.0.1	This command was introduced.

Usage Guidelines

The **show environment** command displays information about the hardware that is installed in the system, including fans, LEDs, power supply voltage, and current information and temperatures.

Task ID

Task ID	Operations
system	read

The following example shows sample output from the **show environment** command with the **temperatures** keyword:

```
sysadmin-vm:0_RP0# show environment temperatures
Mon Apr  29 11:24:32.508 UTC+00:00
================================================================================
Location  TEMPERATURE                Value   Crit Major Minor Minor Major  Crit
          Sensor                   (deg C)   (Lo) (Lo)   (Lo)   (Hi)   (Hi)   (Hi)
```

```
--------------------------------------------------------------------------------
0/0
          CPU_PVCCIN_TEMP                27    -10    -5     0   105   115   125
          CPU_VDDQ_TEMP                  26    -10    -5     0   105   115   125
          P1V05_CPU_TEMP                 26    -10    -5     0   105   115   125
          P1V0_ALD_CORE_AVDD_TEMP        26    -10    -5     0   105   115   125
          ALDRIN_DIE_TEMP                31    -10    -5     0   103   105   110
          P1V2_JER0_HBM_VDDO_TEMP        26    -10    -5     0   105   115   125
          P1V2_JER0_HBM_VDCC_TEMP        25    -10    -5     0   105   115   125
          P0V8_J2C_TRVDD_TEMP            34    -10    -5     0   105   115   125
          J2C_VDDC_TEMP                  37    -10    -5     0   105   115   125
          J2C_DIE_TEMP                   38    -10    -5     0   103   105   110
          J2C_TMP421_LOCAL_TEMP          26    -10    -5     0   110   117   125
          P0V8_PHY234_VDDC_TEMP          33    -10    -5     0   105   115   125
          P0V8_PHY01_VDDC_TEMP           35    -10    -5     0   105   115   125
          P1V15_PHY_AVDD12_TEMP          35    -10    -5     0   105   115   125
          P3V3_SFP_TEMP                  33    -10    -5     0   105   115   125
          MT3722_DIE_CHIP0_TEMP          47    -10    -5     0   103   105   110
          MT3722_DIE_CHIP1_TEMP          47    -10    -5     0   103   105   110
          MT3722_DIE_CHIP2_TEMP          43    -10    -5     0   103   105   110
          MT3722_DIE_CHIP3_TEMP          41    -10    -5     0   103   105   110
          MT3722_DIE_CHIP4_TEMP          44    -10    -5     0   103   105   110
          J2C_HBM_DIE_TEMP               30    -10    -5     0    90    93    95
          CPU                            31    -10    -5     0    90    96   102
```

show environment temperatures Field Descriptions describes the significant fields shown in the display.

Table 1: show environment temperatures Field Descriptions

Field	Description
R/S/I	Rack number, slot number, and interface for which information is displayed, in the format *rack*/*slot*.
Modules	Module for which temperature information is displayed.
Inlet Temperature (deg C)	Current temperature of the inlet sensor, in degrees Celsius. **Note** The inlet temperature corresponds to the room air temperature entering the router.
Exhaust Temperature (deg C)	Current temperature of the exhaust sensor, in degrees Celsius. **Note** The exhaust temperature corresponds to the air being exhausted from the router.
Hotspot Temperature (deg C)	Current temperature of the hotspot, in degrees Celsius.

show environment leds Field Descriptionsdescribes the significant fields shown in the display.

Table 2: show environment leds Field Descriptions

Field	Description
rack_num/*slot_num*/*:	Rack number and slot number where the node resides.

Field	Description
Module (host) LED status says:	Current LED status of the specified node.

The following example shows sample output from the **show environment** command the with the **power-supply** keyword:

```
sysadmin-vm:0_RP0#show environment power
Mon Apr  29 11:25:39.863 UTC+00:00
================================================================================
CHASSIS LEVEL POWER INFO: 0
================================================================================
   Total output power capacity (N + 0)             :   18000W +       0W
   Total output power required                      :    8615W
   Total power input                                :    3761W
   Total power output                               :    3388W

Power Group 0:
================================================================================
   Power       Supply     ------Input----   ------Output---      Status
   Module      Type        Volts     Amps    Volts     Amps
================================================================================
   0/PM0       3kW-AC      227.3      2.7     12.2     45.7    OK
   0/PM1       3kW-AC      227.3      2.4     12.2     39.0    OK
   0/PM2       3kW-AC      227.9      2.7     12.2     45.2    OK
   0/PM3       3kW-AC      228.4      2.7     12.2     45.7    OK

Total of Power Group 0:       2391W/ 10.5A      2142W/175.6A

Power Group 1:
================================================================================
   Power       Supply     ------Input----   ------Output---      Status
   Module      Type        Volts     Amps    Volts     Amps
================================================================================
   0/PM4       3kW-AC      228.2      3.3     12.2     56.6    OK
   0/PM5       3kW-AC      228.4      2.7     12.2     45.5    OK

Total of Power Group 1:       1370W/  6.0A      1246W/102.1A

================================================================================
   Location     Card Type            Power       Power       Status
                                     Allocated   Used
                                     Watts       Watts
================================================================================
   0/0          NC57-48Q2D-S          500         157       ON
   0/1          NC55-36X100G-A-SE    1050         500       ON
   0/2          NC57-48Q2D-SE-S       500         181       ON
   0/3          NC55-24X100G-SE       940         488       ON
   0/4                -                25           -       RESERVED
   0/5          NC57-36H6D-S         1000         500       ON
   0/6          NC57-48Q2D-SE-S       500         195       ON
   0/7          NC55-MOD-A-S          600         181       ON
   0/RP0        NC55-RP2-E             80          53       ON
   0/RP1        NC55-RP-E              80          40       ON
   0/FC0              -                25           -       RESERVED
   0/FC1        NC55-5508-FC2         320         183       ON
   0/FC2        NC55-5508-FC2         320         183       ON
   0/FC3        NC55-5508-FC2         320         185       ON
   0/FC4              -                25           -       RESERVED
   0/FC5        NC55-5508-FC2         320         180       ON
   0/FT0        NC55-5508-FAN2        660          85       ON
   0/FT1        NC55-5508-FAN2        660          87       ON
   0/FT2        NC55-5508-FAN2        660          82       ON
```

```
0/SC0          NC55-SC                    15           15        ON
0/SC1          NC55-SC                    15           15        ON
```

This table describes the significant fields shown in the display.

Table 3: show environment power-supply Field Descriptions

Field	Description
R/S/I	Rack number, slot number, and interface for which information is displayed, in the format PEM/Power Module/* (for example 0/PM0/*).
Modules	Module for which power information is displayed.
Capacity	Power capacity of each power module in Watts.
Status	Operational status of power modules.
Power Draw	Real (measured) power drawn from each power module.
Voltage	Real (measured) power module voltage.
Current	Real (measured) power module current draw.
Power Shelves Type	AC or DC.
Total Power Capacity	Sum of the power capacity of each of the modules installed in the chassis.
Usable Power Capacity	Sum of the power capacity of each of the powered and operational power modules installed in the chassis.
Supply Failure Protected Capacity	Protected power capacity of the chassis with power module redundancy.
Worst Case Power Used	Sum of the estimated power draw of each of the load modules in the chassis. Load modules can be fan trays, RSPs and line cards.
Worst Case Power Available	Usable power capacity minus the worst case power used.
Supply Protected Capacity Available	Supply failure protected capacity minus the worst case power used.
Feed Protected Capacity Available	Feed failure protected capacity minus the worst case power used.
Power Budget Enforcement	This field displays the Power Budget Enforcement status as Enabled or Disabled.
Power Budget Mode	This field displays the power redundancy mode used (for example, N+1).
N+1 Supply Failure Protected Capacity	This field represents the Supply Protected Power capacity of the chassis with power module redundancy in N+1 mode.

show fpd package

To display information about the supported Modular Port Adapters (MPAs) and their interface processors for your current software release. This command provides details on the required Field Programmable Device (FPD) images and the minimum hardware requirements for these modules. use the **show fpd package** command in EXEC mode.

show fpd package

Syntax Description

This command has no keywords or arguments.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 7.0.1	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

If there are multiple FPD images for your card, use the **show fpd package** command to determine which FPD image to use if you only want to upgrade a specific FPD type.

Task ID

Task ID	Operations
sysmgr	read

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

```
RP/0/RP0/CPU0:router#show fpd package
Mon Apr 29 14:04:49.225 IST

================================ ================================================
                                        Field Programmable Device Package
                                 ================================================
                                                  Req     SW      Min Req   Min Req
Card Type            FPD Description             Reload  Ver     SW Ver  Board Ver
================== ========================== ====== ======= ======== =========
--------------------------------------------------------------------------------
NC55-12X100G-SE-PR   Bootloader(A)               YES     1.20      1.20      0.0
                     IOFPGA(A)                   YES     0.12      0.12      0.0
                     MIFPGA                      YES     0.03      0.03      0.0
                     SATA-INTEL_240G(A)          NO    1132.00   1132.00     0.0
                     SATA-INTEL_480G(A)          NO    1132.00   1132.00     0.0
                     SATA-M500IT-MC(A)           NO      3.00      3.00      0.0
                     SATA-M500IT-MU-A(A)         NO      5.00      5.00      0.0
                     SATA-M500IT-MU-B(A)         NO      4.00      4.00      0.0
                     SATA-M5100(A)               NO     75.00     75.00      0.0
                     SATA-M600-MCT(A)            NO      5.00      5.00      0.0
```

```
                    SATA-M600-MU(A)           NO      6.00      6.00      0.0
                    SATA-Micron(A)            NO      1.00      1.00      0.0
                    SATA-SMART-128G(A)        NO   1241.00   1241.00      0.0
--------------------------------------------------------------------------------
NC55-12X100GE-PROT  Bootloader(A)             YES     1.22      1.22      0.0
                    IOFPGA(A)                 YES     0.15      0.15      0.0
                    MIFPGA                    YES     0.09      0.09      0.0
                    SATA-INTEL_240G(A)        NO    1132.00   1132.00     0.0
                    SATA-INTEL_480G(A)        NO    1132.00   1132.00     0.0
                    SATA-M500IT-MC(A)         NO      3.00      3.00      0.0
                    SATA-M500IT-MU-A(A)       NO      5.00      5.00      0.0
                    SATA-M500IT-MU-B(A)       NO      4.00      4.00      0.0
                    SATA-M5100(A)             NO     75.00     75.00      0.0
                    SATA-M600-MCT(A)          NO      5.00      5.00      0.0
                    SATA-M600-MU(A)           NO      6.00      6.00      0.0
                    SATA-Micron(A)            NO      1.00      1.00      0.0
                    SATA-SMART-128G(A)        NO   1241.00   1241.00      0.0
--------------------------------------------------------------------------------
NC55-18H18F         Bootloader(A)             YES     1.20      1.20      0.0
                    IOFPGA(A)                 YES     0.22      0.22      0.0
                    MIFPGA                    YES     0.03      0.03      0.0
                    SATA-INTEL_240G(A)        NO    1132.00   1132.00     0.0
                    SATA-INTEL_480G(A)        NO    1132.00   1132.00     0.0
                    SATA-M500IT-MC(A)         NO      3.00      3.00      0.0
                    SATA-M500IT-MU-A(A)       NO      5.00      5.00      0.0
                    SATA-M500IT-MU-B(A)       NO      4.00      4.00      0.0
                    SATA-M5100(A)             NO     75.00     75.00      0.0
                    SATA-M600-MCT(A)          NO      5.00      5.00      0.0
                    SATA-M600-MU(A)           NO      6.00      6.00      0.0
                    SATA-Micron(A)            NO      1.00      1.00      0.0
                    SATA-SMART-128G(A)        NO   1241.00   1241.00      0.0
--------------------------------------------------------------------------------
NC55-24H12F-SE      Bootloader(A)             YES     1.20      1.20      0.0
                    IOFPGA(A)                 YES     0.09      0.09      0.0
                    MIFPGA                    YES     0.03      0.03      0.0
                    SATA-INTEL_240G(A)        NO    1132.00   1132.00     0.0
                    SATA-INTEL_480G(A)        NO    1132.00   1132.00     0.0
                    SATA-M500IT-MC(A)         NO      3.00      3.00      0.0
                    SATA-M500IT-MU-A(A)       NO      5.00      5.00      0.0
                    SATA-M500IT-MU-B(A)       NO      4.00      4.00      0.0
                    SATA-M5100(A)             NO     75.00     75.00      0.0
                    SATA-M600-MCT(A)          NO      5.00      5.00      0.0
                    SATA-M600-MU(A)           NO      6.00      6.00      0.0
                    SATA-Micron(A)            NO      1.00      1.00      0.0
                    SATA-SMART-128G(A)        NO   1241.00   1241.00      0.0
--------------------------------------------------------------------------------
NC55-24X100G-SE     Bootloader(A)             YES     1.20      1.20      0.0
                    IOFPGA(A)                 YES     0.13      0.13      0.0
                    MIFPGA                    YES     0.03      0.03      0.0
                    SATA-INTEL_240G(A)        NO    1132.00   1132.00     0.0
                    SATA-INTEL_480G(A)        NO    1132.00   1132.00     0.0
                    SATA-M500IT-MC(A)         NO      3.00      3.00      0.0
                    SATA-M500IT-MU-A(A)       NO      5.00      5.00      0.0
                    SATA-M500IT-MU-B(A)       NO      4.00      4.00      0.0
                    SATA-M5100(A)             NO     75.00     75.00      0.0
                    SATA-M600-MCT(A)          NO      5.00      5.00      0.0
                    SATA-M600-MU(A)           NO      6.00      6.00      0.0
                    SATA-Micron(A)            NO      1.00      1.00      0.0
                    SATA-SMART-128G(A)        NO   1241.00   1241.00      0.0
--------------------------------------------------------------------------------
NC55-32T16Q4H-A     Bootloader(A)             YES     0.05      0.05      0.0
                    DBFPGA(A)                 YES     0.14      0.14      0.0
                    IOFPGA(A)                 YES     0.93      0.93      0.0
                    MIFPGA                    YES     0.60      0.60      0.0
```

```
                        SATA-INTEL_240G(A)          NO    1132.00   1132.00     0.0  ?
                        SATA-INTEL_480G(A)          NO    1132.00   1132.00     0.0
                        SATA-M500IT-MC(A)           NO      3.00      3.00      0.0
                        SATA-M500IT-MU-A(A)         NO      5.00      5.00      0.0
                        SATA-M500IT-MU-B(A)         NO      4.00      4.00      0.0
                        SATA-M5100(A)               NO     75.00     75.00      0.0
                        SATA-M600-MCT(A)            NO      5.00      5.00      0.0
                        SATA-M600-MU(A)             NO      6.00      6.00      0.0
                        SATA-Micron(A)              NO      1.00      1.00      0.0
                        SATA-SMART-128G(A)          NO   1241.00   1241.00      0.0
                        TimingIC-A                  YES     7.216     7.216     0.0
                        TimingIC-B                  YES     7.216     7.216     0.0
--------------------------------------------------------------------------------
```

This table describes the significant fields shown in the display:

Table 4: show fpd package Field Descriptions

Field	Description
Card Type	Module part number.
FPD Description	Description of all FPD images available for the line card.
Type	Hardware type. Possible types can be: • MPA - Modular Port Adapters • LC - Line card
Subtype	FPD subtype. These values are used in the **upgrade hw-module fpd** command to indicate a specific FPD image type to upgrade.
SW Version	FPD software version recommended for the associated module running the current Cisco IOS XR software.
Min Req SW Vers	Minimum required FPD image software version to operate the card. Version 0.0 indicates that a minimum required image was not programmed into the card.
Min Req HW Vers	Minimum required hardware version for the associated FPD image. A minimum hardware requirement of version 0.0 indicates that all hardware can support this FPD image version.

Note In the **show fpd package** command output, the "subtype" column shows the FPDs that correspond with each line card image. To upgrade a specific FPD with the **upgrade hw-module fpd** command, replace the *fpga-type* argument with the appropriate FPD from the "subtype" column, as shown in the following example:

```
Router# upgrade hw-module fpd fpga2 location 0/3/1 reload
```

show hw-module fpd

To display field-programmable device (FPD) compatibility for all modules or a specific module, use the **show hw-module fpd** command in the EXEC or administration EXEC mode.

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

Syntax Description

location {*node-id* | **all**}	Specifies the location of the module. The *node-id* argument is expressed in the *rack/slot* notation. Use the **all** keyword to indicate all nodes.

Command Default

No default behavior or values

Command Modes

EXEC

Administration EXEC mode

Command History

Release	Modification
Release 7.0.1	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
sysmgr	read
root-lr	read

The following is sample output from the **show hw-module fpd**:

```
Router#show hw-module fpd
Mon Apr 29 14:30:53.049 IST

Auto-upgrade:Disabled
                                                                          FPD Versions
                                                                          ==============
Location   Card type            HWver FPD device       ATR Status    Running   Programd
-------------------------------------------------------------------------------------
0/0        NC57-48Q2D-S          0.2   MIFPGA                CURRENT     0.99      0.21

0/0        NC57-48Q2D-S          1.0   TimingIC-A            CURRENT     7.216     7.216

0/0        NC57-48Q2D-S          1.0   TimingIC-B            CURRENT     7.216     7.216

0/0        NC57-48Q2D-S          0.2   ALDRINFPGA            CURRENT     1.06      1.06

0/0        NC57-48Q2D-S          0.2   Bootloader            CURRENT     1.00      1.00

0/0        NC57-48Q2D-S          0.2   DBFPGA                CURRENT     0.14      0.14
```

0/0	NC57-48Q2D-S	0.2	IOFPGA	CURRENT	0.105	0.105
0/0	NC57-48Q2D-S	0.2	SATA-Micron	CURRENT	1.00	1.00
0/1	NC55-36X100G-A-SE	1.0	MIFPGA	CURRENT	0.03	0.03
0/1	NC55-36X100G-A-SE	1.0	Bootloader	CURRENT	0.15	0.15
0/1	NC55-36X100G-A-SE	1.0	DBFPGA	CURRENT	0.14	0.14
0/1	NC55-36X100G-A-SE	1.0	IOFPGA	CURRENT	0.26	0.26
0/2	NC57-48Q2D-SE-S	0.2	MIFPGA	CURRENT	0.21	0.21
0/2	NC57-48Q2D-SE-S	1.0	TimingIC-A	CURRENT	7.216	7.216
0/2	NC57-48Q2D-SE-S	1.0	TimingIC-B	CURRENT	7.216	7.216
0/2	NC57-48Q2D-SE-S	0.2	ALDRINFPGA	CURRENT	1.06	1.06
0/2	NC57-48Q2D-SE-S	0.2	Bootloader	CURRENT	1.00	1.00
0/2	NC57-48Q2D-SE-S	0.2	DBFPGA	CURRENT	0.14	0.14
0/2	NC57-48Q2D-SE-S	0.2	IOFPGA	CURRENT	0.105	0.105
0/2	NC57-48Q2D-SE-S	0.2	SATA-Micron	CURRENT	1.00	1.00
0/3	NC55-24X100G-SE	1.0	MIFPGA	CURRENT	0.03	0.03
0/3	NC55-24X100G-SE	1.0	Bootloader	CURRENT	1.20	1.20
0/3	NC55-24X100G-SE	1.0	IOFPGA	CURRENT	0.13	0.13
0/3	NC55-24X100G-SE	1.0	SATA-M600-MCT	CURRENT	5.00	5.00
0/5	NC57-36H6D-S	1.0	MIFPGA	CURRENT	0.40	0.40
0/5	NC57-36H6D-S	1.0	TimingIC-A	CURRENT	7.216	7.216
0/5	NC57-36H6D-S	1.0	TimingIC-B	CURRENT	7.216	7.216
0/5	NC57-36H6D-S	1.0	Bootloader	CURRENT	0.02	0.02
0/5	NC57-36H6D-S	1.0	DBFPGA	CURRENT	0.14	0.14
0/5	NC57-36H6D-S	1.0	IOFPGA	CURRENT	0.47	0.47
0/5	NC57-36H6D-S	1.0	SATA-Micron	CURRENT	1.00	1.00
0/6	NC57-48Q2D-SE-S	0.2	MIFPGA	CURRENT	0.21	0.21
0/6	NC57-48Q2D-SE-S	1.0	TimingIC-A	CURRENT	7.216	7.216
0/6	NC57-48Q2D-SE-S	1.0	TimingIC-B	CURRENT	7.216	7.216
0/6	NC57-48Q2D-SE-S	0.2	ALDRINFPGA	CURRENT	1.06	1.06
0/6	NC57-48Q2D-SE-S	0.2	Bootloader	CURRENT	1.00	1.00
0/6	NC57-48Q2D-SE-S	0.2	DBFPGA	CURRENT	0.14	0.14
0/6	NC57-48Q2D-SE-S	0.2	IOFPGA	CURRENT	0.105	0.105

```
0/6         NC57-48Q2D-SE-S       0.2   SATA-Micron           CURRENT     1.00      1.00
0/7         NC55-MOD-A-S          0.302 MIFPGA                CURRENT     0.16      0.16
0/7         NC55-MOD-A-S          0.302 Bootloader            CURRENT     1.03      1.03
0/7         NC55-MOD-A-S          0.302 DBFPGA                CURRENT     0.14      0.14
0/7         NC55-MOD-A-S          0.302 IOFPGA                CURRENT     0.14      0.14
0/7         NC55-MOD-A-S          0.302 SATA-M600-MCT         CURRENT     5.00      5.00
0/RP0       NC55-RP2-E            1.0   TimingIC-A            CURRENT     7.216     7.216
0/RP0       NC55-RP2-E            1.0   TimingIC-B-0          CURRENT     7.216     7.216
0/RP0       NC55-RP2-E            1.0   TimingIC-B-1          CURRENT     7.216     7.216
0/RP0       NC55-RP2-E            1.0   Bootloader            CURRENT     0.09      0.09
0/RP0       NC55-RP2-E            1.0   IOFPGA                CURRENT     0.50      0.50
0/RP0       NC55-RP2-E            1.0   OMGFPGA               CURRENT     0.52      0.52
0/RP0       NC55-RP2-E            1.0   SATA-Micron           CURRENT     1.00      1.00
0/RP1       NC55-RP-E             1.0   Bootloader            CURRENT     1.24      1.24
0/RP1       NC55-RP-E             1.0   IOFPGA                CURRENT     0.23      0.23
0/RP1       NC55-RP-E             1.0   OMGFPGA               CURRENT     0.61      0.61
0/RP1       NC55-RP-E             1.0   SATA-M5100            CURRENT    75.00     75.00
0/FC1       NC55-5508-FC2         1.0   Bootloader            CURRENT     1.80      1.80
0/FC1       NC55-5508-FC2         1.0   IOFPGA                CURRENT     0.19      0.19
0/FC1       NC55-5508-FC2         1.0   SATA-INTEL_240G       CURRENT  1132.00   1132.00
0/FC2       NC55-5508-FC2         1.0   Bootloader            CURRENT     1.80      1.80
0/FC2       NC55-5508-FC2         1.0   IOFPGA                CURRENT     0.19      0.19
0/FC2       NC55-5508-FC2         1.0   SATA-INTEL_240G       CURRENT  1132.00   1132.00
0/FC3       NC55-5508-FC2         1.0   Bootloader            CURRENT     1.80      1.80
0/FC3       NC55-5508-FC2         1.0   IOFPGA                CURRENT     0.19      0.19
0/FC3       NC55-5508-FC2         1.0   SATA-INTEL_240G       CURRENT  1132.00   1132.00
0/FC5       NC55-5508-FC2         1.0   Bootloader            CURRENT     1.80      1.80
0/FC5       NC55-5508-FC2         1.0   IOFPGA                CURRENT     0.19      0.19
0/FC5       NC55-5508-FC2         1.0   SATA-M5100            CURRENT    75.00     75.00
0/SC0       NC55-SC               1.4   Bootloader            CURRENT     1.74      1.74
0/SC0       NC55-SC               1.4   IOFPGA                CURRENT     0.11      0.11
0/SC1       NC55-SC               1.4   Bootloader            CURRENT     1.74      1.74
```

```
0/SC1       NC55-SC               1.4    IOFPGA                CURRENT      0.11       0.11
fpd
```

Table 5: show hw-module fpd Field Descriptions

Field	Description
Location	Module location.
Card Type	Module part number.
HW Version	Hardware model version for the module.
FPD device	Specific FPD device on the card.
ATR	The attribute of the FPD, which usually indicates its current status.
Status	Currently running FPD image status.
FPD Versions Running	Currently running FPD image version.
FPD Versions Programd	The version of the FPD that is programmed or available for upgrade.

show hw-module profile

To display the active profiles on the router, use the **show hw-module profile** command in EXEC mode.

show hw-module profile { **mdb-scale** | **npu-operating-mode** }

Syntax Description

mdb-scale	Display mdb scale profile
npu-operating-mode	Display NPU operating mode

Command Modes

EXEC

Command History

Release	Modification
Release 7.0.1	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The **show hw-module profile** command displays only active profiles. If a profile has been configured and the line card has not be reloaded since the configuration, the profile is not active. Use the **show running-config hw-module profile** command to view configured profiles.

Task ID

Task ID	Operation
root-lr	read

This example shows sample output from the **show hw-module profile**command with the **mdb-scale** keyword:

```
RP/0/RP0/CPU0:routerS#show hw-module profile mdb-scale
Mon Apr 29 14:33:14.412 IST
MDB scale profile: N/A
```

This example shows sample output from the **show hw-module profile**command with the **npu-operating-mode** keyword:

```
RP/0/RP0/CPU0:router#show hw-module profile npu-operating-mode
Mon Apr 29 14:34:35.151 IST
NPU Operation mode: Compatibility Mode
```

show inventory

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

System Admin EXEC mode 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.
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

EXEC

Administration EXEC

Command History

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:

```
RP/0/RP0/CPU0:router#show inventory raw
Mon Apr 29 14:37:31.513 IST
NAME: "Rack 0-Line Card Slot 0", DESCR: "NC5 Line Card Slot"
PID: N/A               , VID: N/A, SN: N/A

NAME: "0/0", DESCR: "NCS 5700 32x1/10/25G + 16x1/10/25/50G + 2x400G Line Card BASE"
PID: NC57-48Q2D-S      , VID: V00, SN: JAE262009MM

NAME: "0/0-MPA bay 0", DESCR: "MPA Container"
PID: N/A               , VID: N/A, SN: N/A

NAME: "0/0-MPA bay 1", DESCR: "MPA Container"
```

```
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

NAME: "0/0-CPU_PVCCIN_IOUT", DESCR: "Current Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-CPU_VDDQ_IOUT", DESCR: "Current Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-P1V05_CPU_IOUT", DESCR: "Current Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-P1V0_ALD_CORE_AVDD_IOUT", DESCR: "Current Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-P1V2_JER0_HBM_VDDO_IOUT", DESCR: "Current Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-P1V2_JER0_HBM_VDDC_IOUT", DESCR: "Current Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-P0V8_J2C_TRVDD_IOUT", DESCR: "Current Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-J2C_VDDC_IOUT1", DESCR: "Current Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-J2C_VDDC_IOUT2", DESCR: "Current Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-CPU_PVCCIN_TEMP", DESCR: "Temperature Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-CPU_VDDQ_TEMP", DESCR: "Temperature Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-P1V05_CPU_TEMP", DESCR: "Temperature Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-P1V0_ALD_CORE_AVDD_TEMP", DESCR: "Temperature Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-ALDRIN_DIE_TEMP", DESCR: "Temperature Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-P1V2_JER0_HBM_VDDO_TEMP", DESCR: "Temperature Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-P1V2_JER0_HBM_VDCC_TEMP", DESCR: "Temperature Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-P0V8_J2C_TRVDD_TEMP", DESCR: "Temperature Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-J2C_VDDC_TEMP", DESCR: "Temperature Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-P12V0_DM1_VOUT", DESCR: "Voltage Sensor"
PID: N/A                , VID: N/A, SN: N/A

NAME: "0/0-P3V3_ADVANCE_VOUT", DESCR: "Voltage Sensor"
PID: N/A                , VID: N/A, SN: N/A
```

```
NAME: "0/0-P2V5_ADVANCE_VOUT", DESCR: "Voltage Sensor"
PID: N/A               , VID: N/A, SN: N/A

NAME: "0/0-P1V2_ADVANCE_VOUT", DESCR: "Voltage Sensor"
PID: N/A               , VID: N/A, SN: N/A

NAME: "0/0-P1V8_ADVANCE_VOUT", DESCR: "Voltage Sensor"
PID: N/A               , VID: N/A, SN: N/A

NAME: "0/0-P1V0_ALD_CORE_VDD_VOUT", DESCR: "Voltage Sensor"
PID: N/A               , VID: N/A, SN: N/A
```

show led

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

Syntax Description

Command Default

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

Command Modes

Command History

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.

```
sysadmin-vm:0_RP0#show led
Mon Apr  29 09:17:24.120 UTC+00:00
=============================================================
Location  LED Name                        Mode          Color
=============================================================
0
          0-Chassis RP Status             WORKING     GREEN
          0-Chassis FC Status             WORKING     GREEN
          0-Chassis LC Status             WORKING     GREEN
          0-Chassis PM Status             WORKING     GREEN
          0-Chassis PWR MGMT Status       WORKING     GREEN
          0-Chassis Attention (ATTN)      WORKING     OFF
          0-Chassis FT Status             WORKING     GREEN
0/0
          0/0-Status (STS)                WORKING     GREEN
          0/0-Attention (ATTN)            WORKING     OFF
0/1
          0/1-Status (STS)                WORKING     GREEN
          0/1-Attention (ATTN)            WORKING     OFF
0/2
          0/2-Status (STS)                WORKING     GREEN
          0/2-Attention (ATTN)            WORKING     OFF
0/3
          0/3-Status (STS)                WORKING     GREEN
          0/3-Attention (ATTN)            WORKING     OFF
0/5
          0/5-Status (STS)                WORKING     GREEN
          0/5-Attention (ATTN)            WORKING     OFF
0/6
          0/6-Status (STS)                WORKING     GREEN
          0/6-Attention (ATTN)            WORKING     OFF
0/7
          0/7-Status (STS)                WORKING     GREEN
          0/7-Attention (ATTN)            WORKING     OFF
0/RP0
          0/RP0-Status (STS)              WORKING     GREEN
          0/RP0-Attention (ATTN)          WORKING     OFF
          0/RP0-Active (ACT)              WORKING     GREEN
0/RP1
          0/RP1-Status (STS)              WORKING     GREEN
          0/RP1-Attention (ATTN)          WORKING     OFF
          0/RP1-Active (ACT)              WORKING     AMBER
0/FC1
          0/FC1-Status (STS)              WORKING     GREEN
```

```
          0/FC1-Attention (ATTN)        WORKING     OFF
0/FC2
          0/FC2-Status (STS)            WORKING     GREEN
          0/FC2-Attention (ATTN)        WORKING     OFF
0/FC3
          0/FC3-Status (STS)            WORKING     GREEN
          0/FC3-Attention (ATTN)        WORKING     OFF
0/FC5
          0/FC5-Status (STS)            WORKING     GREEN
          0/FC5-Attention (ATTN)        WORKING     OFF
0/FT0
          0/FT0-FT Status (FT STS)      WORKING     GREEN
          0/FT0-FC Status (FC STS)      WORKING     GREEN
          0/FT0-Attention (ATTN)        WORKING     OFF
0/FT1
          0/FT1-FT Status (FT STS)      WORKING     GREEN
          0/FT1-FC Status (FC STS)      WORKING     GREEN
          0/FT1-Attention (ATTN)        WORKING     OFF
0/FT2
          0/FT2-FT Status (FT STS)      WORKING     GREEN
          0/FT2-FC Status (FC STS)      WORKING     GREEN
          0/FT2-Attention (ATTN)        WORKING     OFF
0/PM0
          0/PM0-Fail                    WORKING     OFF
          0/PM0-OK                      WORKING     GREEN
0/PM1
          0/PM1-Fail                    WORKING     OFF
          0/PM1-OK                      WORKING     GREEN
0/PM2
          0/PM2-Fail                    WORKING     OFF
          0/PM2-OK                      WORKING     GREEN
0/PM3
          0/PM3-Fail                    WORKING     OFF
          0/PM3-OK                      WORKING     GREEN
0/PM4
          0/PM4-Fail                    WORKING     OFF
          0/PM4-OK                      WORKING     GREEN
0/PM5
          0/PM5-Fail                    WORKING     OFF
          0/PM5-OK                      WORKING     GREEN
0/SC0
          0/SC0-Status (STS)            WORKING     GREEN
          0/SC0-Attention (ATTN)        WORKING     OFF
          0/SC0-Active (ACT)            WORKING     GREEN
0/SC1
          0/SC1-Status (STS)            WORKING     GREEN
          0/SC1-Attention (ATTN)        WORKING     OFF
```

show operational

To display all operational data provided as XML schema, use the **show operational** command in EXEC mode.

show operational *mda-class*[*mda-class*][*mda-class/naming=value*][**descriptive**]

Syntax Description

mda-class	Name of the management data API (MDA) class to output. To specify a class name in hierarchy, all classes must be specified from the top of the class to the specific class name that you are interested in. MDA classes are case-sensitive. To view all available MDA classes, use the question mark (**?**) online help function.
descriptive	Displays more descriptive information.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Although the **show operational** command uses the schema database, the command displays the information in a string format like the other **show** commands. No XML related setups or knowledge is required to use the command.

Task ID

Task ID	Operations
Depends on the MDA class for which you are displaying the information	read

The following example shows sample output from the **show operational** command. Not all the output is shown.

```
RP/0/RP0/CPU0:router# show operational BGP DefaultVRF GlobalProcessInfo descriptive
[BGP DefaultVRF GlobalProcessInfo]
InStandaloneMode: true[Standalone or Distributed mode]
RouterID: 0.0.0.0[Router ID for the local system]
ConfiguredRouterID: 0.0.0.0[Configured router ID]
LocalAS: 10[Local autonomous system #]
RestartCount: 1[No of times BGP has started]
ISRedistributeIBGPToIGPsEnabled: false[Redistribute iBGP into IGPs enabled]
IsFastExternalFalloverEnabled: true[Fast external fallover enabled]
IsBestpathMissingMEDIsWorstEnabled: false[Bestpath: Treat missing MED as worst]
.
.
.
DefaultLocalPreference: 100[Default local preference]
KeepAliveTime: 60[Default keepalive timer (seconds)]
HoldTime: 180[Default hold timer (seconds)]
GenericScanPeriod: 60[Period (in seconds) of generic scanner runs]
.
.
```

```
.
VrfIsActive: true[VRF state ]
VrfName: "default"[Name of the VRF ]
```

This example shows sample output from the **show operational** command where only the top-level MDA class is specified. Not all of the output is shown.

```
RP/0/RP0/CPU0:router# show operational Inventory
Mon Apr 29 14:53:48.625 IST
[Inventory]
Entities
  Entity/Name=Rack 0
    Attributes
      InvBasicBag
        Description: NCS5500 8 Slot Single Chassis
        VendorType: 1.3.6.1.4.1.9.12.3.1.3.1682
        Name: Rack 0
        HardwareRevision: V01
        SoftwareRevision: 24.2.1.34I
        SerialNumber: FGE2012067X
        ManufacturerName: Cisco Systems, Inc.
        ModelName: NCS-5508
        assetIdStr: FGE2012067X
        IsFieldReplaceableUnit: true
        CompositeClassCode: 65536
        Alias: FGE2012067X
        UnrecognizedFRU: false
        UniqueID: 8384513
        AllocatedPower: 0
        PowerCapacity: 0
      InvAssetBag
        PartNumber: A0
        ManufacturerAssemblyNumber: 73-17789-01
        ManufacturerAssemblyRevision: A0
        ManufacturerCommonLanguageEquipmentIdentifier: CMMT810BRA
      FRUInfo
        CardAdministrativeState: 2
        PowerAdministrativeState: 2
        CardOperationalState: 2
        CardMonitorState: -1

 --More--
```

show platform

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

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

Syntax Description

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

Command Modes

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:

```
RP/0/RP0/CPU0:router#show platform
Mon Apr 29 14:55:30.938 IST
Node              Type                       State             Config state
--------------------------------------------------------------------------------
0/0/CPU0          NC57-48Q2D-S               IOS XR RUN        NSHUT
0/0/NPU0          Slice                      UP
0/1/CPU0          NC55-36X100G-A-SE          IOS XR RUN        NSHUT
0/1/NPU0          Slice                      UP
0/1/NPU1          Slice                      UP
0/1/NPU2          Slice                      UP
0/1/NPU3          Slice                      UP
0/2/CPU0          NC57-48Q2D-SE-S            IOS XR RUN        NSHUT
0/2/NPU0          Slice                      UP
0/3/CPU0          NC55-24X100G-SE            IOS XR RUN        NSHUT
0/3/NPU0          Slice                      UP
0/3/NPU1          Slice                      UP
0/3/NPU2          Slice                      UP
0/3/NPU3          Slice                      UP
0/5/CPU0          NC57-36H6D-S               IOS XR RUN        NSHUT
0/5/NPU0          Slice                      UP
```

```
0/6/CPU0          NC57-48Q2D-SE-S            IOS XR RUN        NSHUT
0/6/NPU0          Slice                      UP
0/7/CPU0          NC55-MOD-A-S               IOS XR RUN        NSHUT
0/7/NPU0          Slice                      UP
0/RP0/CPU0        NC55-RP2-E(Active)         IOS XR RUN        NSHUT
0/RP1/CPU0        NC55-RP-E(Standby)         IOS XR RUN        NSHUT
0/FC1             NC55-5508-FC2              OPERATIONAL       NSHUT
0/FC2             NC55-5508-FC2              OPERATIONAL       NSHUT
0/FC3             NC55-5508-FC2              OPERATIONAL       NSHUT
0/FC5             NC55-5508-FC2              OPERATIONAL       NSHUT
0/FT0             NC55-5508-FAN2             OPERATIONAL       NSHUT
0/FT1             NC55-5508-FAN2             OPERATIONAL       NSHUT
0/FT2             NC55-5508-FAN2             OPERATIONAL       NSHUT
0/PM0             N9K-PAC-3000W-B            OPERATIONAL       NSHUT
0/PM1             N9K-PAC-3000W-B            OPERATIONAL       NSHUT
0/PM2             NC55-PWR-3KW-AC            OPERATIONAL       NSHUT
0/PM3             NC55-PWR-3KW-AC            OPERATIONAL       NSHUT
0/PM4             N9K-PAC-3000W-B            OPERATIONAL       NSHUT
0/PM5             N9K-PAC-3000W-B            OPERATIONAL       NSHUT
0/SC0             NC55-SC                    OPERATIONAL       NSHUT
0/SC1             NC55-SC                    OPERATIONAL       NSHUT
```

The following example shows sample output from the **show platform**command in system admin mode:

```
sysadmin-vm:0_RP0#show platform
Mon Apr  29 09:27:02.124 UTC+00:00
Location  Card Type                HW State      SW State      Config State
------------------------------------------------------------------------------
0/0       NC57-48Q2D-S             OPERATIONAL   OPERATIONAL   NSHUT
0/1       NC55-36X100G-A-SE        OPERATIONAL   OPERATIONAL   NSHUT
0/2       NC57-48Q2D-SE-S          OPERATIONAL   OPERATIONAL   NSHUT
0/3       NC55-24X100G-SE          OPERATIONAL   OPERATIONAL   NSHUT
0/5       NC57-36H6D-S             OPERATIONAL   OPERATIONAL   NSHUT
0/6       NC57-48Q2D-SE-S          OPERATIONAL   OPERATIONAL   NSHUT
0/7       NC55-MOD-A-S             OPERATIONAL   OPERATIONAL   NSHUT
0/RP0     NC55-RP2-E               OPERATIONAL   OPERATIONAL   NSHUT
0/RP1     NC55-RP-E                OPERATIONAL   OPERATIONAL   NSHUT
0/FC1     NC55-5508-FC2            OPERATIONAL   OPERATIONAL   NSHUT
0/FC2     NC55-5508-FC2            OPERATIONAL   OPERATIONAL   NSHUT
0/FC3     NC55-5508-FC2            OPERATIONAL   OPERATIONAL   NSHUT
0/FC5     NC55-5508-FC2            OPERATIONAL   OPERATIONAL   NSHUT
0/FT0     NC55-5508-FAN2           OPERATIONAL   N/A           NSHUT
0/FT1     NC55-5508-FAN2           OPERATIONAL   N/A           NSHUT
0/FT2     NC55-5508-FAN2           OPERATIONAL   N/A           NSHUT
0/PM0     NC55-PWR-3KW-AC          OPERATIONAL   N/A           NSHUT
0/PM1     NC55-PWR-3KW-AC          OPERATIONAL   N/A           NSHUT
0/PM2     NC55-PWR-3KW-AC          OPERATIONAL   N/A           NSHUT
0/PM3     NC55-PWR-3KW-AC          OPERATIONAL   N/A           NSHUT
0/PM4     N9K-PAC-3000W-B          OPERATIONAL   N/A           NSHUT
0/PM5     NC55-PWR-3KW-AC          OPERATIONAL   N/A           NSHUT
0/SC0     NC55-SC                  OPERATIONAL   OPERATIONAL   NSHUT
0/SC1     NC55-SC                  OPERATIONAL   OPERATIONAL   NSHUT
```

show redundancy

To display the status of route processor redundancy, use the **show redundancy** command in EXEC mode.

show redundancy [**location** {*node-id* | **all**} | **statistics** | **summary**]

Syntax Description

location {*node-id* | **all**}	(Optional) Specifies the node for which to display LED information. The *node-id* argument is expressed in the *rack/slot* notation. Use the **all** keyword to indicate all nodes.
statistics	(Optional) Displays redundancy statistics information.
summary	(Optional) Displays a summary of all redundant node pairs in the router.

Command Default

Route processor redundancy information is displayed for all nodes in the system.

Command Modes

XR EXEC

Command History

Release	Modification
Release 5.0.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **show redundancy** command to display the redundancy status of the . The **show redundancy** command also displays the boot and switchover history for the RPs. . To view the nonstop routing (NSR) status of the standby RPs in the system, use the **summary** keyword.

Task ID

Task ID	Operations
system	read
basic-services	read (for **statistics** keyword)

```
RP/0/RP0/CPU0:router# show redundancy
Mon Apr 29 15:11:38.718 IST
Redundancy information for node 0/RP0/CPU0:
==========================================
Node 0/RP0/CPU0 is in ACTIVE role
Partner node (0/RP1/CPU0) is in STANDBY role
Standby node in 0/RP1/CPU0 is ready
Standby node in 0/RP1/CPU0 is NSR-ready

Reload and boot info
----------------------
RP reloaded Sat Apr 27 10:50:01 2024: 2 days, 4 hours, 21 minutes ago
```

```
Active node booted Sat Apr 27 10:50:01 2024: 2 days, 4 hours, 21 minutes ago
Standby node boot Sat Apr 27 15:34:50 2024: 1 day, 23 hours, 36 minutes ago
Standby node last went not ready Mon Apr 29 10:39:47 2024: 4 hours, 31 minutes ago
Standby node last went ready Mon Apr 29 10:39:50 2024: 4 hours, 31 minutes ago
Standby node last went not NSR-ready Sat Apr 27 15:29:44 2024: 1 day, 23 hours, 41 minutes
 ago
Standby node last went NSR-ready Sat Apr 27 15:39:22 2024: 1 day, 23 hours, 32 minutes ago
There have been 0 switch-overs since reload

Active node reload "CARD_SHUTDOWN"
Standby node reload "CARD_SHUTDOWN "
```

Table 6: show redundancy Field Descriptions

Field	Description
Node */*/* is in *XXX* role	Current role of the primary route processor, where (*/*/*) is the route processor ID in the format *rack*/*slot*/*module*, and *XXX* is the role of the route processor (active or standby). In the example, this field shows that the node with the ID 0/RP0/CPU0 is in active role.
Partner node (*/*/*) is in *XXX* role	Current role of the secondary (or partner) route processor, where (*/*/*) is the route processor ID in the *rack*/*slot*/*module* format, and *XXX* is the role of the route processor (active or standby). In the example, this field shows that the node with the ID 0/RP1/CPU0 is in standby role.
Standby node in (*/*/*) is ready	Current state of the standby node, where (*/*/*) is the standby route processor ID. In the example, the standby node is ready.
Standby node in (*/*/*) is NSR-ready	Current state of the standby node regarding nonstop routing (NSR), where (*/*/*) is the standby route processor ID. In the example, the standby node is NSR-ready.
Reload and boot info	General overview of the active and standby route processors' reload and boot history.

show version

To display the configuration of the system hardware, the software version, the names and sources of configuration files, and the boot images, use the **show version** command in appropriate configuration mode.

show version [**detail**]

Syntax Description

detail	Specifies detail log of system hardware and software status

Command Default

No default behavior or values

Command Modes

XR EXEC

Command History

Release	Modification
Release 5.0.0	This command was introduced.

Usage Guidelines

The **show version** command displays a variety of system information, including hardware and software version, router uptime, boot settings (configuration register), and active software.

Task ID

Task ID	Operations
basic-services	read

This example shows partial output from the **show version** command for for IOS XR 64 Bit version:

```
RP/0/RP0/CPU0:router#show version
Mon Apr 29 15:13:48.798 IST
Cisco IOS XR Software, Version 24.2.1.34I
Copyright (c) 2013-2024 by Cisco Systems, Inc.

Build Information:
 Built By     : swtools
 Built On     : Mon Apr 22 02:27:23 PDT 2024
 Built Host   : iox-ucs-032
 Workspace    : /auto/iox-ucs-032-san1/prod/24.2.1.34I.SIT_IMAGE/ncs5500/ws
 Version      : 24.2.1.34I
 Location     : /opt/cisco/XR/packages/
 Label        : 24.2.1.34I

cisco NCS-5500 () processor
System uptime is 2 days 4 hours 23 minutes
```

The following is sample output from the **show version** command with the detail keyword:

```
RP/0/RP0/CPU0:router#show version detail
Mon Apr 29 15:13:57.610 IST
Cisco IOS XR Software, Version 24.2.1.34I
Copyright (c) 2013-2024 by Cisco Systems, Inc.

Build Information:
 Built By     : swtools
```

```
 Built On     : Mon Apr 22 02:27:23 PDT 2024
 Built Host   : iox-ucs-032
 Workspace    : /auto/iox-ucs-032-san1/prod/24.2.1.34I.SIT_IMAGE/ncs5500/ws
 Version      : 24.2.1.34I
 Location     : /opt/cisco/XR/packages/
 Label        : 24.2.1.34I

cisco NCS-5500 () processor
Cisco NCS-5508 (Intel(R) Xeon(R) CPU D-1528 @ 1.90GHz) processor with 32GB of memory
MSFT_5508_VigorLS System uptime is 2 days 4 hours 23 minutes
NCS5500 8 Slot Single Chassis
```