



Hardware Redundancy and Node Administration Commands

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environment altitude

To specify the chassis altitude, so the system can adjust the fan speed to compensate for lower cooling capability at higher altitudes, use the environment altitude command in administration configuration mode. To remove the altitude setting, use the no form of this command.

```
environment altitude altitude rack rack-no
no environment altitude altitude rack rack-no
```

Syntax Description	altitude	Chassis location altitude in meters. Values can range from 0 to 4000.
	rack rack-no	Specifies the rack number of the chassis.
Command Default	1800 meters	
Command Modes	Administration configuration	
Command History	Release	Modification
	Release 7.0.12	This command was introduced.
Usage Guidelines	No specific guidelines impact the use of this command.	
Task ID	Task ID	Operation
	root-system	read, write

This example specifies that the chassis is located at sea level:

```
RP/0/RP0/CPU0:router(admin-config)#environment altitude 0 rack 0
```

factory-reset

To perform factory reset of routers or individual nodes on the router, use the **factory-reset** command in XR EXEC mode.

factory-reset { **reload** | **shutdown** } **location** { **all** *location-id* }

Syntax Description	reload	Resets the router, or the card (LC or RP) and reloads it after the factory reset operation
	shutdown	Resets the router, or the card (LC or RP) and shuts it down after the factory reset operation
	location	Specifies the node (LC or RP) location on which factory reset operation is to be performed.
Command Default	None.	
Command Modes	XR EXEC	
Command History	Release	Modification
	Release 7.5.1	This command was introduced.
	Release 7.3.4	
Usage Guidelines	Follow these usage guidelines to perform factory reset operation on Cisco IOS XR routers: - You cannot initiate factory reset if the entire system is down or if no active RP is booted to IOS XR OS. - From Cisco IOS XR Software Release 25.1.1, we support the <i>zero_fill</i> option from <i>gNOI factory_reset.proto</i>. - From Cisco IOS XR Software Release 25.1.1, the factory reset functionality is enhanced to securely remove data from the entire SSD of the router, except the disaster recovery partition on the active RP.	
Task ID	Task ID	Operations
	root-lr	execute
Examples	This example shows how to do factory reset of a particular line card on a Cisco IOS XR router with the reload option: <pre>Router#factory-reset reload location 0/3/CPU0 Tue Mar 11 11:18:43.222 UTC Performing factory-reset may affect the stability of the system. Re-imaging maybe required to recover. Continue? [confirm]</pre>	

This example shows how to do factory reset of a particular line card on a Cisco IOS XR router with the **shutdown** option:

```
Router#factory-reset shutdown location 0/3/CPU0
```

```
Tue Mar 11 11:18:43.222 UTC
```

```
Performing factory-reset may affect the stability of the system. Re-imaging maybe required  
to recover. Continue?
```

```
[confirm]
```

fpd auto-upgrade

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

fpd auto-upgrade { **disable** | **enable** | **exclude** | **include** } **pm**

Syntax Description

disable	Disables FPD auto-upgrade for power module.
enable	Enables FPD auto-upgrade for power module.
exclude	Specifies that the FPD auto-upgrade process should exclude the power modules from its scope.
include	Specifies that the FPD auto-upgrade process should include the power modules in its scope.
pm	Specifies that the FPD auto-upgrade process exclusion or inclusion is for power modules.

Command Default

FPD images are not automatically upgraded.

In Cisco IOS XR Releases from 7.5.2 until 24.3.1, PSU upgrade was automatically included in the automatic FPD upgrade unless explicitly excluded using this command option.

Starting with Cisco IOS XR Release 24.3.1, PSU upgrades are excluded by default from the automatic FPD upgrade process.

Command Modes

System Admin Config mode

Command History

Release	Modification
Release 24.3.1	This command was modified to include the include pm keyword.
Release 7.5.2	This command was modified to include the exclude pm keyword.
Release 7.0.12	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:

```
(admin)# install add comp-hfr-mini.pie hfr-fpd.pie hfr-mps-p.pie
(admin)# install activate disk0:/comp-hfr-mini.pie disk0:/hfr-fpd.pie disk0:/hfr-mps-p.pie
```

Task ID

Task ID	Operation
system	read, write

The following example shows how to enable automatic FPD upgrades:

```
Router(admin-config)# fpd auto-upgrade
```

The following example shows how to exclude the power modules from FPD auto-upgrade process:

```
Router# config
Router(config)# fpd auto-upgrade enable
Router(config)# fpd auto-upgrade exclude pm
Router(config)# commit
```

The following example shows how to include the power modules to FPD auto-upgrade process:

```
Router# config
Router(config)# fpd auto-upgrade enable
Router(config)# fpd auto-upgrade include pm
Router(config)# commit
```

fpd auto-upgrade (Cisco IOS XR 64-bit)

To enable or disable the automatic upgrade of FPD images during a software upgrade, use the **fpd auto-upgrade** command in System Admin Config mode or XR Configuration mode.

fpd auto-upgrade { enable | disable }

Syntax Description	enable Enables auto upgrade of FPD images.
	disable Disables auto upgrade of FPD images.

Command Default	FPD images are not automatically upgraded.
------------------------	--

Command Modes	• System Admin Config mode • XR Configuration mode
----------------------	---

Command History

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: <pre>(admin)# install add comp-hfr-mini.pie hfr-fpd.pie hfr-mpls-p.pie (admin)# install activate disk0:/comp-hfr-mini.pie disk0:/hfr-fpd.pie disk0:/hfr-mpls-p.pie</pre>
-------------------------	---

Task ID	Task	Operation
	ID	
	system	read, write

The following example shows how to enable or disable automatic FPD upgrades in Admin configuration mode:

```
RP/0/RP0/CPU0:router(admin-config)# fpd auto-upgrade enable
RP/0/RP0/CPU0:router(admin-config)# fpd auto-upgrade disable
```

The following example shows how to enable or disable automatic FPD upgrades in XR configuration mode:

```
RP/0/RP0/CPU0:router(config)# fpd auto-upgrade enable
RP/0/RP0/CPU0:router(config)# fpd auto-upgrade disable
```

hw-module fabric-fec-monitor disable

To disable the fabric FEC monitor, use the **hw-module fabric-fec-monitor disable** command in XR Config mode mode.

hw-module fabric-fec-monitor disable

Syntax Description	This command has no keywords or arguments.	
Command Default	No default behavior or values.	
Command Modes	XR Config mode	
Command History	Release	Modification
	Release 24.2.11	This command was introduced.
Usage Guidelines	No specific guidelines impact the use of this command.	
Task ID	Task ID	Operations
	sysmgr	read

The following example shows how to disable the fabric FEC monitor:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# hw-module fabric-fec-monitor disable
RP/0/RP0/CPU0:router(config)# commit
```


hw-module npu-power-profile

To configure NPU power mode, use the **hw-module npu-power-profile** command in XR Config mode.

hw-module npu-power-profile { **high** | **medium** | **low** }

Syntax Description	high	The router will use the maximum amount of power, resulting in the best possible performance.
	medium	The router power consumption and performance levels are both average.
	low	The router operates with optimal energy efficiency while providing a modest level of performance.
Command Default	No default behavior or values	
Command Modes	XR Config	
Command History	Release	Modification
	Release 7.3.15	This command was introduced.
Usage Guidelines	Reload the chassis using the reload command for the configuration changes to take effect.	
Task ID	Task ID	Operations
	root-system	read, write
	root-lr	read, write

The following example shows how to configure an NPU power mode on a fixed chassis:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# hw-module npu-power-profile high
RP/0/RP0/CPU0:router(config)# commit

RP/0/RP0/CPU0:router(config)# reload
```



Note Note: Reload the chassis for the configurations changes to take effect.

Use the **show controllers npu driver** command to verify the NPU power mode configuration on a fixed chassis:

```
RP/0/RP0/CPU0:router# show controllers npu driver location 0/RP0/CPU0
Mon Aug 24 23:29:34.302 UTC
=====
```

```

NPU Driver Information
=====
Driver Version: 1
SDK Version: 1.32.0.1
Functional role: Active,      Rack: 8203, Type: lcc, Node: 0
Driver ready      : Yes
NPU first started : Mon Aug 24 23:07:41 2020
Fabric Mode:
NPU Power profile: High
Driver Scope: Node
Respawn count     : 1
Availability masks :
                  card: 0x1,      asic: 0x1,      exp asic: 0x1
...

```

The following example shows how to configure an NPU power mode on a fabric card and a line card:

```

RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# hw-module npu-power-profile card-type FC high
RP/0/RP0/CPU0:router(config)# hw-module npu-power-profile card-type LC low location 0/1/cpu0
RP/0/RP0/CPU0:router(config)# commit

```



Note For the configurations to take effect, you must:

- Reload a line card if the configuration is applied on the line card.
- Reload a router if the configuration is applied on a fabric card.

Use the **show controllers npu driver location** command to verify the NPU power mode configuration on a fabric card and a line card:

```

RP/0/RP0/CPU0:router# show controllers npu driver location 0/1/CPU0

Functional role: Active,      Rack: 8808, Type: lcc, Node: 0/RP0/CPU0
Driver ready      : Yes
NPU first started : Mon Apr 12 09:57:27 2021
Fabric Mode: FABRIC/8FC
NPU Power profile: High
Driver Scope: Rack
Respawn count     : 1
Availability masks :
                  card: 0xba,      asic: 0xcfcc,      exp asic: 0xcfcc
Weight distribution:
                  Unicast: 80,      Multicast: 20
+-----+
| Process | Connection | Registration | Connection | DLL      |
| /Lib    | status     | status       | requests   | registration|
+-----+
| FSDB    | Active     | Active       |            | 1| n/a      |
| FGID    | Active     | Active       |            | 1| n/a      |
| AEL     | n/a        | n/a          |            | n/a| Yes      |
| SM      | n/a        | n/a          |            | n/a| Yes      |
+-----+

Asics :
HP - HotPlug event, PON - Power On reset
HR - Hard Reset,      WB - Warm Boot
+-----+

```

Asic inst. (R/S/A)	fap id	HP state	Slice type	Asic state	Admin state	Oper state	Asic state	Last init	PON (#)	HR (#)	FW Rev
0/FC1/2	202	1	UP	s123	UP	UP	NRML	PON	1	0	0x0000
0/FC1/3	203	1	UP	s123	UP	UP	NRML	PON	1	0	0x0000
0/FC3/6	206	1	UP	s123	UP	UP	NRML	PON	1	0	0x0000
0/FC3/7	207	1	UP	s123	UP	UP	NRML	PON	1	0	0x0000
0/FC4/8	208	1	UP	s123	UP	UP	NRML	PON	1	0	0x0000
0/FC4/9	209	1	UP	s123	UP	UP	NRML	PON	1	0	0x0000
0/FC5/10	210	1	UP	s123	UP	UP	NRML	PON	1	0	0x0000
0/FC5/11	211	1	UP	s123	UP	UP	NRML	PON	1	0	0x0000
0/FC7/14	214	1	UP	s123	UP	UP	NRML	PON	1	0	0x0000
0/FC7/15	215	1	UP	s123	UP	UP	NRML	PON	1	0	0x0000

SI Info :

Card	Board	SI Board	SI Param	Retimer SI	Retimer SI	Front Panel
	HW Version	Version	Version	Board Version	Param Version	PHY
FC1	0.22	1	6	NA	NA	NA
FC3	0.21	1	6	NA	NA	NA
FC4	0.21	1	6	NA	NA	NA
FC5	0.21	1	6	NA	NA	NA
FC7	0.21	1	6	NA	NA	NA

Functional role: Active, Rack: 8808, Type: lcc, Node: 0/1/CPU0

Driver ready : Yes

NPU first started : Mon Apr 12 09:58:10 2021

Fabric Mode: FABRIC/8FC

NPU Power profile: Low

Driver Scope: Node

Respawn count : 1

Availability masks :

card: 0x1, asic: 0x7, exp asic: 0x7

Weight distribution:

Unicast: 80, Multicast: 20

Process /Lib	Connection status	Registration status	Connection requests	DLL registration
FSDb	Active	Active	1	n/a
FGID	Inactive	Inactive	0	n/a
AEL	n/a	n/a	n/a	Yes
SM	n/a	n/a	n/a	Yes

Asics :

HP - HotPlug event, PON - Power On reset

HR - Hard Reset, WB - Warm Boot

Asic inst. (R/S/A)	fap id	HP state	Slice type	Asic state	Admin state	Oper state	Asic state	Last init	PON (#)	HR (#)	FW Rev
0/2/0	8	1	UP	npu	UP	UP	NRML	PON	1	0	0x0000
0/2/1	9	1	UP	npu	UP	UP	NRML	PON	1	0	0x0000
0/2/2	10	1	UP	npu	UP	UP	NRML	PON	1	0	0x0000

+-----+							
SI Info :							
+-----+							
	Card		Board		SI Board		SI Param
					Retimer SI		Retimer SI
			HW Version		Version		Version
					Board Version		Param Version
							PHY
+-----+							
	LC2		0.41		1		9
							NA
							NA
							DEFAULT
+-----+							

hw-module profile pbr vrfredirect

To redirect policy-based routing to VRF, use the **hw-module profile pbr vrfredirect** command in XR Config mode. To disable the redirect feature, use the **no** form of this command.

```
hw-module profile pbr vrfredirect
no hw-module profile pbr vrfredirect
```

Syntax Description	This command has no keywords or arguments.
---------------------------	--

Command Default	No default behavior or values
------------------------	-------------------------------

Command Modes	XR Config
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Command History	Release	Modification
	Release 7.8.1	This command was introduced.

Usage Guidelines	No specific guidelines impact the use of this command.
-------------------------	--

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

The following example shows how to redirect a policy-based routing to VRF:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# hw-module profile pbr vrfredirect

Tue Mar 21 18:07:18.338 UTC
In order to activate/deactivate this stats profile, you must manually reload the chassis/all
line cards
```

hw-module profile npu-compatibility

To configure a router for handling line cards of different ASIC families, use the **hw-module npu-compatibility** command in XR Config mode. To go back to the default mode, use the **no** form of this command.

hw-module profile npu-compatibility mode-name

Syntax Description	npu-compatibility	Allows you to make a router compatible with an ASIC family.
	mode-name	Allows you to set the mode, such as Q100, Q200, or P100.
Command Default	No default behavior or values	
Command Modes	XR Config	
Command History	Release	Modification
	Release 7.7.1	This command was introduced.
Usage Guidelines	Reload the chassis using the reload command for the configuration changes to take effect.	
Task ID	Task ID	Operations
	root-system	read, write
	root-lr	read, write

The following example shows how to configure the NPU compatibility mode on a chassis:

```
Router# configure
Router(config)# hw-module profile npu-compatibility q200
Router(config)# commit
Router(config)# reload
```

Use the **show hw-module profile npu-compatibility matrix** command to verify the NPU compatibility mode configuration on a chassis:

```
RP/0/RP0/CPU0:router# show hw-module profile npu-compatibility matrix
Mon Aug 24 23:29:34.302 UTC
Node          Card Type          NPU Type
-----
0/0/CPU0      8800-LC-48H          Q100

NPU Type      Compatibility      Compatibility
               Mode Q100          Mode Q200
-----
Q100          Compatible        Not Compatible
Q200          Compatible        Compatible
Default mode: Q100
RP/0/RP0/CPU0:ios# show hw-module profile npu-compatibility
```

Mon Jun 27 19:41:59.318 UTC

Knob	Status	Applied	Action
npu_compatibility	Unconfigured	N/A	None

RP/0/RP0/CPU0:ios#

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 <i>node-id</i> argument is entered in the <i>rack/slot</i> notation.

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

Command Modes Administration configuration

Command History	Release	Modification
	Release 7.0.12	This command was introduced.

Usage Guidelines 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:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# configure
RP/0/RP0/CPU0:router(admin-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 shutdown

To administratively shut down a specific node, use the **hw-module shutdown** command in XR Config mode.

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 Modes	XR Config mode	
Command History	Release	Modification
	Release 7.0.12	The command was introduced.
Usage Guidelines	Nodes that are shut down do not have power. Enter the show platform command in XR EXEC mode to display the results of the hw-module shutdown command.	
Task ID	Task ID	Operation
	root-system	read,write
	root-lr	read,write

This example displays how to shutdown the node 0/3/CPU0:

```
Router# configure
Router(config)# hw-module shutdown location 0/3/CPU0
Router(config)# commit
```

Verify the result using the **show platform** command:

```
Router# show platform
Fri Sep 20 05:22:12.596 UTC
```

Node	Type	State	Config state
0/RP0/CPU0	8800-RP (Active)	IOS XR RUN	NSHUT
0/RP1/CPU0	8800-RP (Standby)	IOS XR RUN	NSHUT
0/3/CPU0	8800-LC-48H	SHUT DOWN	SHUT
0/5/CPU0	88-LC0-36FH-M	IOS XR RUN	NSHUT
0/8/CPU0	88-LC0-36FH-M	IOS XR RUN	NSHUT
0/FC0	8812-FC	OPERATIONAL	NSHUT
0/FC3	8812-FC	OPERATIONAL	NSHUT
0/FT0	SF-D-12-FAN	OPERATIONAL	NSHUT
0/FT1	SF-D-12-FAN	OPERATIONAL	NSHUT
0/FT2	SF-D-12-FAN	OPERATIONAL	NSHUT
0/FT3	SF-D-12-FAN	OPERATIONAL	NSHUT
0/PT0	FAM7000-ACHV-TRAY	OPERATIONAL	NSHUT

hw-module shutdown

0/PT1	FAM7000-ACHV-TRAY	OPERATIONAL	NSHUT
0/PT2	FAM7000-ACHV-TRAY	OPERATIONAL	NSHUT

redundancy switchover

To cause the primary (active) route processor (RP) to fail over to the redundant standby RP, use the **redundancy switchover** command in

EXEC or administration EXEC

mode. To disable the forced switchover, use the **no** form of this command.

redundancy switchover [**location** *node-id*]

no redundancy switchover [**location** *node-id*]

Syntax Description	location <i>node-id</i> (Optional) Specifies the primary RP on which to force a switchover. The <i>node-id</i> argument is expressed in the <i>rack/slot</i> notation.
---------------------------	---

Command Default	No default behavior or values
------------------------	-------------------------------

Command Modes	EXEC Administration EXEC
----------------------	-----------------------------

Command History	Release Release 7.0.12	Modification This command was introduced.
------------------------	----------------------------------	---

Usage Guidelines	Use the redundancy switchover command to trigger a switchover from the primary RP to the standby RP. When the redundancy switchover command is issued, the running (committed) configuration is automatically saved and loaded during switchover, and the standby RP becomes the active primary RP, while the original primary RP becomes the standby RP.
-------------------------	---



Note	The redundancy switchover command can be used only if the standby RP is in the ready state. Use the show redundancy command to view the status of the RPs.
-------------	--

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

The following example shows partial output for a successful redundancy switchover operation:

```
RP/0/RP0/CPU0:router# show redundancy
```

```
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

Reload and boot info
-----
RP reloaded Tue Mar 28 09:02:26 2006: 5 hours, 41 minutes ago
Active node booted Tue Mar 28 09:02:56 2006: 5 hours, 41 minutes ago
Last switch-over Tue Mar 28 09:09:26 2006: 5 hours, 34 minutes ago
Standby node boot Tue Mar 28 09:10:37 2006: 5 hours, 33 minutes ago
Standby node last went not ready Tue Mar 28 09:25:49 2006: 5 hours, 18 minutes
go
Standby node last went ready Tue Mar 28 09:25:51 2006: 5 hours, 18 minutes ago
There has been 1 switch-over since reload
....
RP/0/RP0/CPU0:router# redundancy switchover

Initializing DDR SDRAM...found 2048 MB
Initializing ECC on bank 0
...
Turning off data cache, using DDR for first time

Initializing NVRAM...
Testing a portion of DDR SDRAM ...done
Reading ID EEPROMs ...
Initializing SQUID ...
Initializing PCI ...

PCI0 device[1]: Vendor ID 0x10ee

Configuring MPPs ...
Configuring PCMCIA slots ...
--More--

```

If the standby RP is not in the ready state, the switchover operation is not allowed. The following example shows output for a failed redundancy switchover attempt:

```

RP/0/RP0/CPU0:router# show redundancy

This node (0/RP0/CPU0) is in ACTIVE role
Partner node (0/RP1/CPU0) is in UNKNOWN role

RP/0/RP0/CPU0:router# redundancy switchover

Standby card not running; failover disallowed.

```

reload location

To reload a hardware module either from a specified location or from all slots, use the **reload location** command in XR EXEC mode.

reload location { *location-id* | **all** }

Syntax Description	<i>location-id</i>	Specifies the location of the hardware module which is to be reloaded.
	all	Use the all keyword to indicate all hardware locations to reload them. • 0/RP0/CPU0—Fully qualified location specification. • 0/0/CPU0—Fully qualified location specification. • 0/FC0—Fully qualified location specification. • 0/FC1—Fully qualified location specification. • 0/RP0 —Partially qualified location string for full board operations. • 0/0—Partially qualified location string for full board operations
Command Default	None	
Command Modes	EXEC	
Command History	Release	Modification
	Release 7.0.1	This command was introduced.
Usage Guidelines	No specific guidelines impact the use of this command.	
Task ID	Task ID	Operations
	system	read

The following example shows sample output from the **reload location all** command:

```
Router# reload location all
Tue Oct 1 06:57:11.984 UTC
Proceed with reload? [confirm] y
...
...
[Done]
```

secure-erase

To perform secure erase of the solid state drive (SSD) data on a particular card such as a line card (LC) or a route processor (RP), or on the entire router, use the **secure-erase** command in XR EXEC mode.

secure-erase **location** { **all** *location-id* }

Syntax Description	location Specifies the node (LC or RP) location on which secure erase operation is to be performed.	
Command Default	None.	
Command Modes	XR EXEC	
Command History	Release	Modification
	Release 25.1.1	This command was introduced.
Usage Guidelines	The active RP must be operational to initiate secure erase process. The router or the card shuts down after a secure erase operation.	
Task ID	Task ID	Operations
	root-lr	execute
Examples	This example shows how to securely erase the route processor data on a Cisco IOS XR router: <pre>Router#secure-erase location 0/RP0/CPU0 Tue Mar 11 11:17:51.294 UTC Performing secure erase operation will erase the SSD and shut down the card. Proceed? [confirm]</pre>	

reload location

To reload a hardware module either from a specified location or from all slots, use the **reload location** command in XR EXEC mode.

reload location { *location-id* | **all** }

Syntax Description	<i>location-id</i>	Specifies the location of the hardware module which is to be reloaded.
	all	Use the all keyword to indicate all hardware locations to reload them. • 0/RP0/CPU0—Fully qualified location specification. • 0/0/CPU0—Fully qualified location specification. • 0/FC0—Fully qualified location specification. • 0/FC1—Fully qualified location specification. • 0/RP0 —Partially qualified location string for full board operations. • 0/0—Partially qualified location string for full board operations
Command Default	None	
Command Modes	EXEC	
Command History	Release	Modification
	Release 7.0.1	This command was introduced.
Usage Guidelines	No specific guidelines impact the use of this command.	
Task ID	Task ID	Operations
	system	read

The following example shows sample output from the **reload location all** command:

```
Router# reload location all
Tue Oct 1 06:57:11.984 UTC
Proceed with reload? [confirm] y
...
...
[Done]
```

Show asic-error

To display error messages related to ASIC (Application-Specific Integrated Circuit) components use the **show-asic error** command in EXEC mode. This command provides information on ASIC errors like error type, error code, and affected ASIC component.

show asic-errors all { **Detail** | **Summary** | **history** | **location** } [**all** | *<location>*]

Syntax Description	Detail	Displays detailed information about ASIC errors that occurred on the current node.
	Summary	Provides a summarized view of ASIC errors that occurred on the current node.
	history	Displays the system history of events and errors before the current node reload or shutdown.
	location	Displays ASIC errors for all instances at all locations.

Command Default No default behavior or values.

Command Modes Admin EXEC mode

Command History	Release	Modification
	Release 7.9.1	This command was introduced.

Usage Guidelines You can use the **show asic-error** command, along with other tools, to find and fix problems with the ASIC components on the routers.

The common error messages in the **show asic-error** command output include interface errors, buffer errors, and packet errors. Depending on the specific error message, administrators can take appropriate action to resolve the issue, such as resetting the affected interface.



Note ASIC error interrupts occur when the ASICs detect errors or critical situations, signaling the need for attention. These interrupts include reset, single-bit, multiple-bit, and parity errors.

Task ID	Task ID	Operations
	drivers	read

Examples The following example displays ASIC errors details for 0/RP0/CPU0.

```
RP/0/RP0/CPU0:ios#show asic-errors all detail location 0/RP0/CPU0
Thu Jun  1 09:46:00.873 UTC
```



```

*****
*                                0_RP0_CPU0                                *
*****
*                                NPU ASIC Error Summary                      *
*****
*                                Instance : 0                              *
*****
*                                Reset Errors                              *
*****
*                                Single Bit Errors                        *
*****
*                                Multiple Bit Errors                      *
*****
*                                Parity Errors                            *
*****
*                                Unexpected Errors                        *
*****
*                                Link Errors                              *
*****
8000, 8201, 0/RP0/CPU0, npu[0]
Name       : slice[0].ifg[0].mac_pool8[0].rx_link_status_down.rx_link_status_down0
Block ID   : 0x62
Addr       : 0x100
Leaf ID    : 0xc402000
Error count : 1
Last clearing : Thu Jun  1 07:51:26 2023
Last N errors : 1
-----

```

show environment

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

show environment [**all** | **alarm** | **altitude** | **current** | **fan** | **humidity** | **power** | **temperature** | **voltage**] [*node-id*]

Syntax Description

all	Displays information for all environmental monitor parameters.
alarm	Displays information for all alarm port information.
altitude	Displays altitude information.
current	Displays system current information.
fan	Displays information about the fans.
humidity	Displays the system humidity information.
temperature	(Optional) Displays system temperature information.
power	Displays the maximum power limit of a router.
voltage	(Optional) Displays system voltage information.
<i>node-id</i>	(Optional) Node whose information you want to display.

Command Default

All environmental monitor parameters is displayed.

Command Modes

System Admin EXEC

Command History

Release	Modification
Release 24.1.1	This command was modified to include <code>Total feed redundancy capacity</code> field in the command output.
Release 7.11.1	This command was modified to include the power keyword.
Release 7.0.12	This command was introduced.

Usage Guidelines

The **show environment** command displays information about the hardware that is installed in the system, including fans, altitude, humidity, current, and temperature information.

Task ID**Task Operations**

system read

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

```
Router:#show environment power
Tue Nov 7 20:38:01.700 PST
=====
CHASSIS LEVEL POWER INFO: 0
=====
Total output power capacity (N + 1)      : 18900W + 6300W
Total output power required              : 16222W
Total power input                        : 5527W
Total power output                      : 5033W
Configured max power capacity           : 20000W
=====
```

Power Module	Supply Type	-----Input-----		-----Output----		Status
		Volts	A/B	Volts	Amps	
0/PT0-PM0	PSU6.3KW-HV	212.6/212.6	3.3/3.3	55.0	23.4	OK
0/PT0-PM1	PSU6.3KW-HV	212.6/212.6	3.2/3.2	54.9	22.2	OK
0/PT0-PM2	PSU6.3KW-HV	212.9/212.9	3.2/3.2	55.1	22.6	OK
0/PT1-PM1	PSU6.3KW-HV	212.3/212.3	3.3/3.3	54.8	23.4	OK

```
Total of Power Modules:      5527W/26.0A      5033W/91.6A
=====
```

The following example shows sample output for **show environment** command including the **Total feed redundancy capacity** field:

```
Router:#show environment power
=====
CHASSIS LEVEL POWER INFO: 0
=====
Total output power capacity (N + 1)      : 28800W + 4800W
Total output power required              : 6679W
Total power input                        : 2394W
Total power output                      : 2066W
Total feed redundancy capacity (Single Fault) : 16800W
=====
```

Power Module	Supply Type	-----Input-----		-----Output----		Status
		Volts	A/B	Volts	Amps	
0/PT0-PM0	PSU4.8KW-DC100	62.8/62.7	2.6/2.5	55.2	5.3	OK
0/PT0-PM1	PSU4.8KW-DC100	62.7/62.7	2.7/2.6	55.3	5.3	OK
0/PT0-PM3	PSU4.8KW-DC100	61.0/62.7	2.6/2.5	55.2	4.8	OK
0/PT1-PM0	PSU4.8KW-DC100	67.3/67.3	2.7/2.5	55.3	5.2	OK
0/PT1-PM1	PSU4.8KW-DC100	67.3/67.2	2.8/2.7	55.3	5.7	OK
0/PT1-PM2	PSU4.8KW-DC100	67.3/67.4	2.7/2.7	55.2	5.6	OK

show environment

```
0/PT1-PM3    PSU4.8KW-DC100  67.3/67.3  2.6/2.5  55.3    5.5    OK
Total of Power Modules:      2394W/36.7A      2066W/37.4A
```

=====

show fpd package

To display which shared port adapters (SPA) and SPA interface processors (SIPs) are supported with your current Cisco IOS XR software release, which field-programmable device (FPD) image you need for each SPA and SIP, and what the minimum hardware requirements are for the SPA and SIP modules, use the **show fpd package** command in administration EXEC mode.

show fpd package

Syntax Description	This command has no keywords or arguments.				
Command Default	No default behavior or values				
Command Modes	Administration EXEC System Admin EXEC				
Command History	<table> <tr> <th>Release</th><th>Modification</th></tr> <tr> <td>Release 7.0.12</td><td>This command was introduced.</td></tr> </table>	Release	Modification	Release 7.0.12	This command was introduced.
Release	Modification				
Release 7.0.12	This command was introduced.				
Usage Guidelines	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	<table> <tr> <th>Task ID</th><th>Operations</th></tr> <tr> <td>sysmgr</td><td>read</td></tr> </table>	Task ID	Operations	sysmgr	read
Task ID	Operations				
sysmgr	read				

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

```
=====
                                Field Programmable Device Package
                                =====
Card Type          FPD Description          Req   SW   Min Req   Min Req
                  Reload Ver       SW Ver   Board Ver
=====
-----
8800-LC-36H Bios YES 1.15 1.15 0.0
BiosGolden YES 1.15 1.15 0.0
EthSwitch YES 0.07 0.07 0.0
EthSwitchGolden YES 0.07 0.07 0.0
IoFpga YES 0.08 0.08 0.0
IoFpgaGolden YES 0.08 0.08 0.0
x86Fpga YES 0.33 0.33 0.0
x86FpgaGolden YES 0.33 0.33 0.0
x86TamFw YES 5.05 5.05 0.0
x86TamFwGolden YES 5.05 5.05 0.0
-----
8800-LC-48H Bios YES 1.15 1.15 0.0
BiosGolden YES 1.15 1.15 0.0
EthSwitch YES 0.07 0.07 0.0
EthSwitchGolden YES 0.07 0.07 0.0
IoFpga YES 0.08 0.08 0.0
```

show fpd package

```

IoFpgaGolden YES 0.08 0.08 0.0
x86Fpga YES 0.33 0.33 0.0
x86FpgaGolden YES 0.33 0.33 0.0
x86TamFw YES 5.05 5.05 0.0
x86TamFwGolden YES 5.05 5.05 0.0
-----
8800-RP Bios YES 1.15 1.15 0.0
BiosGolden YES 1.15 1.15 0.0
BmcFitPrimary YES 0.300 0.300 0.0
BmcFpga YES 0.19 0.19 0.0
BmcFpgaGolden YES 0.19 0.19 0.0
BmcTamFw YES 5.05 5.05 0.0
BmcTamFwGolden YES 5.05 5.05 0.0
BmcUbootPrimary YES 0.15 0.15 0.0
EthSwitch YES 0.07 0.07 0.0
EthSwitchGolden YES 0.07 0.07 0.0
TimingFpga YES 0.11 0.11 0.0
TimingFpgaGolden YES 0.11 0.11 0.0
x86Fpga YES 0.24 0.24 0.0
x86FpgaGolden YES 0.24 0.24 0.0
x86TamFw YES 5.05 5.05 0.0
x86TamFwGolden YES 5.04 5.04 0.0
-----
8808-FC IoFpga YES 0.05 0.05 0.0
IoFpgaGolden YES 0.05 0.05 0.0
-----
8812-FC IoFpga YES 0.05 0.05 0.0
IoFpgaGolden YES 0.05 0.05 0.0
-----
8818-FC IoFpga YES 0.05 0.05 0.0
IoFpgaGolden YES 0.05 0.05 0.0
-----
FAM7008-FAN FTFPGAGolden YES 0.16 0.16 0.0
FTFPGAUpgrade NO 0.16 0.16 0.0
-----
FAM7012-FAN FTFPGAGolden YES 0.16 0.16 0.0
FTFPGAUpgrade NO 0.16 0.16 0.0
-----
FAM7018-FAN FTFPGAGolden YES 0.16 0.16 0.0
FTFPGAUpgrade NO 0.16 0.16 0.0
-----
PSU6.3KW-HV LogicMCU NO 4.11 4.11 0.0
PrimMCU NO 4.01 4.01 0.0
SecMCU NO 4.00 4.00 0.0
-----
PWR-4.4KW-DC-V3 LogicMCU NO 3.00 3.00 0.0
Prim1MCU NO 3.00 3.00 0.0
Prim2MCU NO 3.00 3.00 0.0
Sec1MCU NO 3.00 3.00 0.0
Sec2MCU NO 3.00 3.00 0.0

```

This table describes the significant fields shown in the display:

Table 1: show fpd package Field Descriptions

Field	Description
Card Type	Module part number.
FPD Description	Description of all FPD images available for the module.
Req Reload	Displays if the module requires a reload.

Field	Description
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 Board Vers	Minimum required board version for the associated FPD image. A minimum board requirement of version 0.0 indicates that all hardware can support this FPD image version.

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 XR EXEC mode.

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

Syntax Description	location { <i>node-id</i> all } Specifies the location of the module. The <i>node-id</i> argument is expressed in the <i>rack/slot</i> notation. Use the all keyword to indicate all nodes.						
Command Default	None						
Command Modes	XR EXEC mode						
Command History	<table> <tr> <th>Release</th><th>Modification</th></tr> <tr> <td>Release 7.0.12</td><td>This command was introduced.</td></tr> </table>	Release	Modification	Release 7.0.12	This command was introduced.		
Release	Modification						
Release 7.0.12	This command was introduced.						
Usage Guidelines	No specific guidelines impact the use of this command.						
Task ID	<table> <tr> <th>Task ID</th><th>Operations</th></tr> <tr> <td>sysmgr</td><td>read</td></tr> <tr> <td>root-lr</td><td>read</td></tr> </table>	Task ID	Operations	sysmgr	read	root-lr	read
Task ID	Operations						
sysmgr	read						
root-lr	read						

The following example shows the output of **show hw-module fpd** command:

```
Router#show hw-module fpd
Wed Apr 5 17:46:55.067 UTC
```

```
Auto-upgrade:Enabled
Attribute codes: B golden, P protect, S secure, A Anti Theft aware
FPD Versions
=====
```

Location	Card type	HWver	FPD device	ATR	Status	Running	Programd	Reload	Loc
0/RP0/CPU0	8201	0.2	Bios	S	CURRENT	1.27	1.27	0/RP0/CPU0	
0/RP0/CPU0	8201	0.2	BiosGolden	BS	CURRENT		1.20	0/RP0/CPU0	
0/RP0/CPU0	8201	0.2	IoFpga		CURRENT	1.11	1.11	0/RP0	
0/RP0/CPU0	8201	0.2	IoFpgaGolden	B	CURRENT		1.01	0/RP0	
0/RP0/CPU0	8201	0.2	x86Fpga	S	CURRENT	1.06	1.06	0/RP0	
0/RP0/CPU0	8201	0.2	x86FpgaGolden	BS	CURRENT		1.01	0/RP0	
0/RP0/CPU0	8201	0.2	x86TamFw	S	CURRENT	5.13	5.13	0/RP0	
0/RP0/CPU0	8201	0.2	x86TamFwGolden	BS	CURRENT		5.06	0/RP0	
0/PM0	PSU1.4KW-ACPE	0.0	DT-PrimMCU		CURRENT	3.01	3.01	NOT REQ	
0/PM0	PSU1.4KW-ACPE	0.0	DT-SecMCU		CURRENT	2.02	2.02	NOT REQ	
0/PM1	PSU1.4KW-ACPE	0.0	DT-PrimMCU		CURRENT	3.01	3.01	NOT REQ	
0/PM1	PSU1.4KW-ACPE	0.0	DT-SecMCU		CURRENT	2.02	2.02	NOT REQ	

The following example shows how to display FPD compatibility for specific location module in the router:

```
Router#show hw-module location 0/RP0/CPU0 fpd
Wed Apr 5 17:47:01.104 UTC
```

Auto-upgrade:Enabled

Attribute codes: B golden, P protect, S secure, A Anti Theft aware

FPD Versions

=====

Location	Card type	HWver	FPD device	ATR	Status	Running	Programd	Reload Loc
0/RP0/CPU0	8201	0.2	Bios	S	CURRENT	1.27	1.27	0/RP0/CPU0
0/RP0/CPU0	8201	0.2	BiosGolden	BS	CURRENT		1.20	0/RP0/CPU0
0/RP0/CPU0	8201	0.2	IoFpga		CURRENT	1.11	1.11	0/RP0
0/RP0/CPU0	8201	0.2	IoFpgaGolden	B	CURRENT		1.01	0/RP0
0/RP0/CPU0	8201	0.2	x86Fpga	S	CURRENT	1.06	1.06	0/RP0
0/RP0/CPU0	8201	0.2	x86FpgaGolden	BS	CURRENT		1.01	0/RP0
0/RP0/CPU0	8201	0.2	x86TamFw	S	CURRENT	5.13	5.13	0/RP0
0/RP0/CPU0	8201	0.2	x86TamFwGolden	BS	CURRENT		5.06	0/RP0

The following example shows the output of **show hw-module location 0/RP0/CPU0 fpd Bios** command:

```
Router#show hw-module location 0/RP0/CPU0 fpd Bios
Wed Apr 5 17:47:04.255 UTC
```

Auto-upgrade:Enabled

Attribute codes: B golden, P protect, S secure, A Anti Theft aware

FPD Versions

=====

Location	Card type	HWver	FPD device	ATR	Status	Running	Programd	Reload Loc
0/RP0/CPU0	8201	0.2	Bios	S	CURRENT	1.27	1.27	0/RP0/CPU0

The following example shows how to display FPD compatibility for all modules in the router:

```
Router#show hw-module fpd all
Tue Apr 4 08:55:32.545 UTC
```

Auto-upgrade:Disabled

Attribute codes: B golden, P protect, S secure, A Anti Theft aware

Location	Card type	HWver	FPD device	ATR	Status	Running	Programd	FPD Versions	Reload Loc
0/RP0/CPU0	8201	0.30	Bios		NEED UPGD	7.01	7.01		0/RP0/CPU0
0/RP0/CPU0	8201	0.30	BiosGolden	B	NEED UPGD		7.01		0/RP0/CPU0
0/RP0/CPU0	8201	0.30	IoFpga		NEED UPGD	7.01	7.01		0/RP0
0/RP0/CPU0	8201	0.30	IoFpgaGolden	B	NEED UPGD		7.01		0/RP0
0/RP0/CPU0	8201	0.30	SsdIntelS3520		NEED UPGD	7.01	7.01		0/RP0
0/RP0/CPU0	8201	0.30	x86Fpga		NEED UPGD	7.01	7.01		0/RP0
0/RP0/CPU0	8201	0.30	x86FpgaGolden	B	NEED UPGD		7.01		0/RP0
0/RP0/CPU0	8201	0.30	x86TamFw		NEED UPGD	7.01	7.01		0/RP0
0/RP0/CPU0	8201	0.30	x86TamFwGolden	B	NEED UPGD		7.01		0/RP0
0/PM0	PSU2KW-ACPI	0.0	PO-PrimMCU		NEED UPGD	7.01	7.01		NOT REQ
0/PM1	PSU2KW-ACPI	0.0	PO-PrimMCU		NEED UPGD	7.01	7.01		NOT REQ

The following example shows the output of **show hw-module location all fpd IoFpga** command:

```
Router#show hw-module location all fpd IoFpga
Wed Apr 5 17:47:10.752 UTC
```

Auto-upgrade:Enabled

Attribute codes: B golden, P protect, S secure, A Anti Theft aware

show hw-module fpd

FPD Versions
=====

Location	Card type	HWver	FPD device	ATR Status	Running Programd		Reload Loc
0/RP0/CPU0	8201	0.2	IoFpga	CURRENT	1.11	1.11	0/RP0

show inventory

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

show inventory [*node-id* | **all** | **location** { *node-id* | **all** } | **raw** | **chassis** | **details** | **fan** | **power** | **vendor-type**]

Syntax Description		
<i>node-id</i>	(Optional)	Location for which to display the specified information. The <i>node-id</i> argument is entered in the <i>rack/slot</i> notation.
all	(Optional)	Displays inventory information for all the physical entities in the chassis.
location { <i>node-id</i> all }	(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 only information about the chassis.
details	(Optional)	Displays detailed entity information.
fan	(Optional)	Displays inventory information for the fans.
power	(Optional)	Displays inventory information for the power supply.
vendor-type	(Optional)	Displays vendor-type information.

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

Command Modes XR EXEC mode

Command History	Release	Modification
	Release 7.0.12	This command was introduced.

Usage Guidelines If a Cisco entity is not assigned a product ID (PID), that entity is not retrieved or displayed.

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.



Note The **raw** keyword is primarily intended for troubleshooting problems with the **show inventory** command itself.

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 and NVRAM. 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:

```
Router#show inventory raw
Tue Mar 7 07:34:48.602 UTC

NAME: "Rack 0", DESCR: "Cisco 8201 1RU Chassis"
PID: 8201 , VID: V00, SN: FOC2217JIRS

NAME: "Rack 0-Control Card Slot 0", DESCR: "8201 Route Processor Slot 0"
PID: N/A , VID: N/A, SN: N/A

NAME: "0/RP0/CPU0", DESCR: "Cisco 8201 1RU Chassis"
PID: 8201 , VID: V00, SN: FOC2219JGLB

NAME: "0/RP0/CPU0-Mother Board", DESCR: "Mother Board"
PID: N/A , VID: N/A, SN: N/A

NAME: "0/RP0/CPU0-Broadwell-DE (D-1530)", DESCR: "Processor Module"
PID: N/A , VID: N/A, SN: N/A

NAME: "0/RP0/CPU0-Attention", DESCR: "LED Sensor"
PID: N/A , VID: N/A, SN: N/A

NAME: "0/RP0/CPU0-Status", DESCR: "LED Sensor"
PID: N/A , VID: N/A, SN: N/A

NAME: "0/RP0/CPU0-Sync", DESCR: "LED Sensor"
PID: N/A , VID: N/A, SN: N/A

NAME: "0/RP0/CPU0-MB_RT_GB_PIN", DESCR: "Power Sensor - MB-RT_GB_ONLY_0.8VB_PIN"
PID: N/A , VID: N/A, SN: N/A
--More--
```

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

```
Router#show inventory chassis
Thu Apr 6 04:56:46.987 UTC

NAME: "Rack 0", DESCR: "Cisco 8808 8-slot Chassis"
PID: 8808 , VID: V00, SN: FOX224PPUDA
```

The following table describes the significant fields shown in the display.

Table 2: 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 <i>rack/slot</i> 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.

Field	Description
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 EXECEXEC or administration EXEC mode.

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

Syntax Description	location { <i>node-id</i> all }		(Optional) Specifies the node for which to display LED information. The <i>node-id</i> argument is expressed in the <i>rack/slot</i> notation. Use the all keyword to indicate all nodes.
Command Default	If no node is specified, information about all LEDs on the router is displayed.		
Command Modes	EXEC Administration EXEC		
Command History	Release	Modification	
	Release 7.0.12	This command was introduced.	
Usage Guidelines	Enter the show platform command to see the location of all nodes installed in the router.		
Task ID	Task ID	Operations	
	system	read	

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

```
RP/0/RP0/CPU0:router# show led location all

Thu Jul 30 05:26:24.896 DST
  Location      Message      Mode      Status
  =====
    0/RSP0/*      ACTV    DEFAULT  UNLOCKED
```

Table 3: show led location Field Descriptions

Field	Description
LOCATION	Location of the node. LOCATION is expressed in the <i>rack/slot</i> notation.
MESSAGE	Current message displayed by the LED.
MODE	Current operating mode of the specified node.

Field	Description
STATUS	Current status of the specified node.

show platform

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

show platform [*node-id*] **reload location** { **all** | **All slots** }

Syntax Description	<i>node-id</i>	(Optional) Node for which to display information. The <i>node-id</i> argument is entered in the <i>rack/slot</i> notation.
Command Default	Status and information are displayed for all nodes in the system.	
Command Modes	XR EXEC mode	
Command History	Release	Modification
	Release 7.0.12	This command was introduced.
Usage Guidelines	The show platform command provides a summary of the nodes in the system, including node type and status. Enter the show platform command in EXEC mode to display output for only those nodes that belong to the SDR on which the command is executed.	
Task ID	Task ID	Operations
	system	read

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

```
Router#show platform
Thu Apr 6 00:56:22.922 UTC
Node          Type          State          Config state
-----
0/RP0/CPU0    8800-RP(Active)  IOS XR RUN     NSHUT,NMON
0/0/CPU0      8800-LC-48H     IOS XR RUN     NSHUT
0/1/CPU0      88-LC0-36FH-M   IOS XR RUN     NSHUT
0/FC0         8812-FC         OPERATIONAL    NSHUT
0/FC1         8812-FC         OPERATIONAL    NSHUT
0/FT0         8812-FAN        OPERATIONAL    NSHUT
0/FT1         8812-FAN        OPERATIONAL    NSHUT
0/FT2         8812-FAN        OPERATIONAL    NSHUT
0/FT3         8812-FAN        OPERATIONAL    NSHUT
0/PT0         8800-HV-TRAY    OPERATIONAL    NSHUT
0/PT1         8800-HV-TRAY    OPERATIONAL    NSHUT
0/PT2         8800-HV-TRAY    OPERATIONAL    NSHUT
```

The following is sample output for the **show platform** command with the *node-id* argument:

```
Router#show platform location 0/RP0/CPU0
Wed Mar 8 04:05:07.106 UTC
Node          Type          State          Config state
-----
0/RP0/CPU0    8201(Active)   IOS XR RUN     NSHUT
```


The following example shows sample output from the **show platform** command with the MPA reload information after executing **thereload location** command.

```
Router#show platform
Tue Sep 17 16:39:19.188 IST
Node              Type                               State              Config state
-----
0/RP0/CPU0        8712-MOD-M(Active)                IOS XR RUN         NSHUT
0/FT0             FAN-PI-V3                         OPERATIONAL        NSHUT
0/FT1             FAN-PI-V3                         OPERATIONAL        NSHUT
0/FT2             FAN-PI-V3                         OPERATIONAL        NSHUT
0/FT3             FAN-PI-V3                         OPERATIONAL        NSHUT
0/PM0             PSU2KW-ACPI                       OPERATIONAL        NSHUT
0/PM1             PSU2KW-ACPI                       OPERATIONAL        NSHUT
0/0               8K-MPA-16H                        OPERATIONAL        NSHUT
0/1               8K-MPA-16Z2D                     OPERATIONAL        NSHUT
0/2               8K-MPA-4D                         OPERATIONAL        NSHUT
0/3               8K-MPA-16Z2D                     OPERATIONAL        NSHUT
```

This table describes the significant fields shown in the display.

Table 4: show platform Field Descriptions

Field	Description
Node	Identifier of the node in the <i>rack/slot</i> notation.
Type	Type of node.
State	Current state of the specified node.
Config State	Current configuration state of the specified node.

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 { <i>node-id</i> all }	(Optional) Specifies the node for which to display LED information. The <i>node-id</i> argument is expressed in the <i>rack/slot</i> 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 EXEC

Command History	Release	Modification
	Release 7.0.12	This command was introduced.

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

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

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

```
Router# show redundancy location 0/rsp0/cpu0
Thu Jul 30 05:47:12.155 DST
Node 0/RSP0/CPU0 is in ACTIVE role
Node 0/RSP0/CPU0 has no valid partner

Reload and boot info
-----
A9K-RSP-4G reloaded Tue Jul 14 15:21:30 2009: 2 weeks, 1 day,
14 hours, 25 minutes ago
Active node booted Tue Jul 14 15:21:30 2009: 2 weeks, 1 day,
14 hours, 25 minutes ago
```

Active node reload "Cause: User initiated forced reload all"

Table 5: 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 <i>rack/slot/module</i>, 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 <i>rack/slot/module</i> 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 software version, build information, system hardware type and uptime, use the **show version** command in XR EXEC mode.

show version

Syntax Description	This command has no keywords or arguments.	
Command Default	None	
Command Modes	XR EXEC mode	
Command History	Release	Modification
	Release 7.0.12	This command was introduced.
Usage Guidelines	The show version command displays a variety of system information, including hardware and software version, router uptime, and active software.	
Task ID	Task ID	Operations
	basic-services	read

This example shows partial output from the **show version** command:

```
Router#show version
Cisco IOS XR Software, Version 7.8.2 LNT
Copyright (c) 2013-2023 by Cisco Systems, Inc.

Build Information:
  Built By      : ingunawa
  Built On     : Wed Mar 15 16:45:19 UTC 2023
  Build Host   : iox-ucs-060
  Workspace    : /auto/srcarchive13/prod/7.8.2/8000/ws
  Version      : 7.8.2
  Label       : 7.8.2

cisco 8000 (Intel(R) Xeon(R) CPU D-1530 @ 2.40GHz)
cisco 8812 (Intel(R) Xeon(R) CPU D-1530 @ 2.40GHz) processor with 32GB of memory
R1 uptime is 7 hours, 19 minutes
Cisco 8812 12-slot Chassis
```

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 .

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

Syntax Description	all	Upgrades all FPD images on the selected module.
	fabldr	Upgrades the fabric-downloader FPD image on the module.
	<i>fpga-type</i>	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.
	rommon	Upgrades the ROMMON image on the 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 { <i>node-id</i> all }	Specifies the node for which to upgrade the FPD image. The <i>node-id</i> argument is expressed in the <i>rack/slotsubslot</i> notation. Use the all keyword to indicate all nodes.
Command Default	None	
Command Modes		
Command History	Release	Modification
	Release 7.0.12	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.

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).
- *subslot* —Subslot number of the SPA.

For more information about the syntax for the router, use the question mark (?) online help function.

When you start the FPD upgrade procedure or log into a router that is running the FPD upgrade procedure, the following message is displayed to the screen on TTY, console and AUX ports:

```
FPD upgrade in progress on some hardware, reload/configuration change on those
is not recommended as it might cause HW programming failure and result in RMA
of the hardware.
```

If you enter administration mode while the FPD upgrade procedure is running, the following message is displayed to the screen on TTY, console and AUX ports:

```
FPD upgrade in progress on some hardware, reload/configuration change on those
is not recommended as it might cause HW programming failure and result in RMA
of the hardware. Do you want to continue? [Confirm (y/n)]
```

If you enter global configuration mode while the FPD upgrade procedure is running, the following message is displayed to the screen on TTY, console and AUX ports:

```
FPD upgrade in progress on some hardware, configuration change on those is not
recommended as it might cause HW programming failure and result in RMA of the
hardware. Do you want to continue? [Confirm (y/n)]
```

When the FPD upgrade global timer expires, the following warning message displayed to the screen.

```
FPD upgrade has exceeded the maximum time window, the process will terminate now.
Please check the status of the hardware and reissue the upgrade command if required.
```

Task ID	Task ID	Operations
	sysmgr	read, write

The following example shows how to upgrade the default FPGA on a SPA:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# upgrade hw-module fpd fpga location 0/1/4

% RELOAD REMINDER:
- The upgrade operation of the target module will not interrupt its normal
  operation. However, for the changes to take effect, the target module
  will need to be manually reloaded after the upgrade operation. This can
  be accomplished with the use of "hw-module <target> reload" command.
- If automatic reload operation is desired after the upgrade, please use
  the "reload" option at the end of the upgrade command.
- The output of "show hw-module fpd location" command will not display
  correct version information after the upgrade if the target module is
  not reloaded.
Continue? [confirm] y

SP/0/1/SP:Dec 22 05:41:17.920 : upgrade_daemon[125]: programming...with file
```

```
/net/node0_RP1_CPU0/-lc-3.3.83/fpd/ucode/fpga_gladiator_sw0.6.xsvf
SP/0/1/SP:Dec 22 05:41:28.900 : upgrade_daemon[125]: ...programming...
SP/0/1/SP:Dec 22 05:41:28.906 : upgrade_daemon[125]: ...it will take a while...
SP/0/1/SP:Dec 22 05:41:29.004 : upgrade_daemon[125]: ...it will take a while...
SP/0/1/SP:Dec 22 05:43:03.432 : upgrade_daemon[125]: ...programming...
SP/0/1/SP:Dec 22 05:43:03.438 : upgrade_daemon[125]: ...it will take a while...
Successfully upgraded spa fpga instance 4 on location 0/1/4.
```

Show asic non-error

To display non-error messages related to ASIC (Application-Specific Integrated Circuit) components use the **show asic non-error** command in EXEC mode. This command provides status messages, statistics, and performance metrics for regular operation, and details on affected non-ASIC components.

show asic non-error all { **Detail** | **Summary** | **history** | **location** } [**all** | *<location>*]

Syntax Description	Detail	Displays detailed information about ASIC non-errors that occurred on the current node.
	Summary	Provides a summarized view of ASIC non-errors that occurred on the current node.
	history	Displays the system history of events and errors before the current node reload or shutdown.
	location	Displays ASIC non-errors for all instances at all locations.

Command Default No default behavior or values.

Command Modes Admin EXEC mode

Command History	Release	Modification
	Release 7.9.1	This command was introduced.

Usage Guidelines You can use the **show asic non-error** command, along with other tools, to find nonerror messages related to ASIC components on the routers.

The common nonerror messages in the **show asic non-error** command output include informational or status messages indicating regular operation, statistics, or performance metrics. Administrators can take appropriate action to resolve the issue depending on the specific nonerror message, such as resetting the affected interface.



Note ASICs generate non-error interrupts to provide information or signaling for non-error conditions or events. These interrupts include updates on system operations, status, or specific ASIC events.

Task ID	Task ID	Operations
	drivers	read

The following example displays ASIC nonerror details for 0/RP0/CPU0.


```

RP/0/RP0/CPU0:ios#show asic non-errors all detail location
0/RP0/CPU0*****
*                0_RP0_CPU0                *
*****
*****
*                Non Errors                *
*****
8000, 8201-32FH, 0/RP0/CPU0, npu[0]
Name       : slice[2].ifg[1].mac_pool8[2].rx_link_status_down.rx_link_status_down0
Block ID   : 0x143
Addr       : 0x100
Leaf ID    : 0x28602000
Error count : 1
Last clearing : Mon Feb 13 02:41:39 2023
Last N errors : 1
-----

```

power-mgmt configured-power-capacity

To configure a maximum power limit for a router, use the **power-mgmt configured-power-capacity** command in Global Configuration mode .

Syntax:

power-mgmt configured-power-capacity
maximum-watts

Syntax Description	<i>maximum-watts</i> Specifies the maximum power capacity, in watts, to be set for the router.
---------------------------	--

Command Default	None
------------------------	------

Command Modes	XR Config mode
----------------------	----------------

Command History	Release	Modification
	Release 7.11.1	This command was introduced.

Usage Guidelines	Make sure the configured max power doesn't cross the max PSUs capacity and not below minimum chassis required power.
	A new alarm PKT_INFRA-FM-3-FAULT_MAJOR : ALARM_MAJOR :Power reservation exceeds configured power is introduced to be raised when the max power capacity is crossed.



Note This alarm is extremely rare and is raised only when the power reservation exceeds configured power. This can only happen when hardware is inserted, it is granted power without a request, such as a fan tray.

Task ID	Task ID	Operation
	config-services	read, write

This example shows how to set the maximum power limit for the router.

```
Router#configure
Router(config)#power-mgmt configured-power-capacity 20000
Router(config)#commit
Router(config)#exit
```

power-mgmt feed-redundancy

To configure feed failure protection in the router, use the **power-mgmt feed-redundancy** command in Global Configuration mode.

power-mgmt feed-redundancy { **dual-fault-protection** | **single-fault-protection** } **capacity** *single feed capacity*

Syntax Description	dual-fault-protection	Provides protection against power supply feed failure and PSU redundancy failure.
	single-fault-protection	Provides protection against power supply feed failure or PSU redundancy failure.
	<i>single feed capacity</i>	Specifies the PSU single feed capacity for feed redundancy budget calculation in watts.

Command Default By default, this feature is not enabled.

Command Modes XR Config mode

Command History	Release	Modification
	Release 24.1.1	This command was introduced.

Usage Guidelines The PSU single feed capacity range differs across various models of Cisco 8000 Series Routers. We recommend configuring the PSU single feed capacity value adhering to your network requirements.

Task ID	Task ID	Operation
	config-services	read, write

This example shows how to configure feed failure protection in the router:

```
Router# config
Router(config)# power-mgmt feed-redundancy dual-fault-protection capacity 2400
Router(config)# commit
Router(config)# exit
```

power-mgmt feed-redundancy