



## Perform Preliminary Checks

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After successfully logging into the console, you must perform some preliminary checks to verify the default setup. If any setup issue is detected when these checks are performed, take corrective action before making further configurations. These preliminary checks are:

- [Verify Status of Hardware Modules, on page 1](#)
- [Verify Node Status, on page 1](#)
- [Verify Environmental Parameters, on page 3](#)
- [Verify Software Version, on page 4](#)
- [Verify Firmware Version, on page 4](#)
- [Verify Interface Status, on page 6](#)

## Verify Status of Hardware Modules

Hardware modules include RPs, fan trays, and so on. On the router, multiple hardware modules are installed. Perform this task to verify that all hardware modules are installed correctly and are operational.

### Before you begin

Ensure that all required hardware modules have been installed on the router.

### Procedure

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**show platform**

**Example:**

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## Verify Node Status

Each card on the router represents a node. The operational status of the node is verified using the **show platform** command. This command is to be executed independently from both XR and System Admin mode CLIs.

## Procedure

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### Step 1 show platform

#### Example:

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

The **show platform** command when executed from the XR EXEC mode displays the status of XR console running on various RPs and LCs.

Verify that all RPs are listed and their state is OPERATIONAL. This indicates that the XR console is operational on the cards.

### Step 2 admin

#### Example:

```
RP/0/RP0/CPU0:router# admin
```

Enters mode.

### Step 3 show platform

#### Example:

```
sysadmin-vm:0_RP0#show platform
```

The **show platform** command when executed from the System Admin EXEC mode displays the status of all hardware units like cards (RPs, IMs and FCs,) and hardware modules (fan trays) on the router.

```
sysadmin-vm:0_RP0# show platform
Thu Mar 28 08:19:08.640 UTC+00:00
Location  Card Type                HW State    SW State    Config State
-----
0/0       NCS4200-1T16G-PS          OPERATIONAL N/A         NSHUT
0/1       NCS4200-1T16G-PS          OPERATIONAL N/A         NSHUT
0/2       NCS4200-1T16G-PS          OPERATIONAL N/A         NSHUT
0/3       NCS4200-1T16G-PS          OPERATIONAL N/A         NSHUT
0/4       A900-IMA8Z                 OPERATIONAL N/A         NSHUT
0/5       A900-IMA8Z                 OPERATIONAL N/A         NSHUT
0/7       N560-IMA1W                 OPERATIONAL N/A         NSHUT
0/9       N560-IMA2C                 OPERATIONAL N/A         NSHUT
0/10      A900-IMA8Z                 OPERATIONAL N/A         NSHUT
0/11      A900-IMA8Z                 OPERATIONAL N/A         NSHUT
0/12      NCS4200-1T16G-PS          OPERATIONAL N/A         NSHUT
0/13      NCS4200-1T16G-PS          OPERATIONAL N/A         NSHUT
0/14      NCS4200-1T16G-PS          OPERATIONAL N/A         NSHUT
0/15      NCS4200-1T16G-PS          OPERATIONAL N/A         NSHUT
0/RP0    N560-RSP4-E               OPERATIONAL OPERATIONAL NSHUT
0/RP1    N560-RSP4-E               OPERATIONAL OPERATIONAL NSHUT
0/FT0    N560-FAN-H                OPERATIONAL N/A         NSHUT
0/PM0    A900-PWR1200-A            OPERATIONAL N/A         NSHUT
0/PM2    A900-PWR1200-A            OPERATIONAL N/A         NSHUT
```

```
sysadmin-vm:0_RP0#
```

Verify that all cards installed on the router are displayed in the result. The software state of LCs/IMs and RPs and the hardware state of FTs and power modules should be "OPERATIONAL". Various hardware and software states are listed here.

Hardware states:

- OPERATIONAL—Card is operating normally and is fully functional
- POWERED\_ON—Power is on and the card is booting up
- FAILED—Card is powered on but has experienced some internal failure
- PRESENT—Card is in the shutdown state
- OFFLINE—User has changed the card state to OFFLINE. The card is accessible for diagnostics

Software states:

- OPERATIONAL—Software is operating normally and is fully functional
- SW\_INACTIVE—Software is not completely operational
- FAILED—Software is operational but the card has experienced some internal failure

## Verify Environmental Parameters

The following commands display the environmental parameters. Execute these commands independently from both XR and System Admin mode commands.

### Procedure

#### Step 1 show environment temperatures

##### Example:

```
sysadmin-vm:0_RP0# show environment temperatures
Mon Jul 29 11:12:24.828 UTC+00:00
=====
Location  TEMPERATURE          Value  Crit Major Minor Minor Major  Crit
          Sensor              (deg C) (Lo) (Lo) (Lo) (Hi) (Hi) (Hi)
-----
0/RP0
          QMX Die Temp          55    -40  -30  -20  100  108  112
          Inlet              34    -40  -30  -20   70   75   85
          FPGA Die          60    -40  -30  -20   95   98  102
          Outlet            53    -40  -30  -20   85   90   95
          Humidity          21    -40  -30  -20   85   95   98
0/FT0
          Fan Inlet         37    -10   -5   0   100  110  120
0/PM2
          Inlet Temperature  38    -40  -30  -20   95  100  105
          Outlet Temperature  42    -40  -30  -20   75   80   85
sysadmin-vm:0_RP0#
```

#### Step 2 show environment fan

##### Example:

```
sysadmin-vm:0_RP0# show environment fan
Mon Jul 29 11:13:30.258 UTC+00:00
=====
Fan speed (rpm)
```

Location	FRU Type	FAN_0	FAN_1	FAN_2	FAN_3	FAN_4	FAN_5	FAN_6	FAN_7	FAN_8	FAN_9	FAN_10	FAN_11	FAN_12	FAN_13	FAN_14	FAN_15
0/FT0	A907-FAN-E	10298	10369	10288	10351	10330	10373	10351	10252	10341	10348	10273	10316	13215	13321	16189	16304

## Verify Software Version

The router is shipped with the Cisco IOS XR software pre-installed. Verify that the latest version of the software is installed. If a newer version is available, perform a system upgrade. This will install the newer version of the software and provide the latest feature set on the router.

Perform this task to verify the version of Cisco IOS XR software running on the router.

### Procedure

#### show version

#### Example:

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

Displays the version of the various software components installed on the router. The result includes the version of Cisco IOS XR software and its various components.

### Example

#### What to do next

Verify the result to ascertain whether a system upgrade or additional package installation is required. If that is required, refer to the tasks in the chapter [Perform System Upgrade and Install Feature Packages](#).

## Verify Firmware Version

The firmware on various hardware components of the router must be compatible with the Cisco IOS XR image installed. Incompatibility might cause the router to malfunction. Complete this task to verify the firmware version.

### Procedure

```
show hw-module fpd
```

**Example:**

```
RP/0/RP0/CPU0:N560_SYSPSV#show hw-module fpd
Wed Mar 13 22:35:40.387 IST
```

Location	Card type	HWver	FPD device	ATR Status	FPD Versions	
					Running	Programd
0/0	NCS4200-1T16G-PS	0.0	IMFPGA	CURRENT	1.76	1.76
0/1	NCS4200-1T16G-PS	0.0	IMFPGA	CURRENT	1.76	1.76
0/2	NCS4200-1T16G-PS	0.0	IMFPGA	CURRENT	1.76	1.76
0/3	NCS4200-1T16G-PS	0.0	IMFPGA	CURRENT	1.76	1.76
0/4	A900-IMA8Z	0.0	IMFPGA	CURRENT	17.02	17.02
0/5	A900-IMA8Z	0.0	IMFPGA	CURRENT	17.02	17.02
0/7	N560-IMA2C	0.0	IMFPGA	CURRENT	3.04	3.04
0/9	N560-IMA2C	0.0	IMFPGA	CURRENT	3.04	3.04
0/10	A900-IMA8Z	0.0	IMFPGA	CURRENT	17.02	17.02
0/11	A900-IMA8Z	0.0	IMFPGA	CURRENT	17.02	17.02
0/12	NCS4200-1T16G-PS	0.0	IMFPGA	CURRENT	1.76	1.76
0/13	NCS4200-1T16G-PS	0.0	IMFPGA	CURRENT	1.76	1.76
0/14	NCS4200-1T16G-PS	0.0	IMFPGA	CURRENT	1.76	1.76
0/15	NCS4200-1T16G-PS	0.0	IMFPGA	CURRENT	1.76	1.76
0/RP0	N560-RSP4-E	0.0	IOFPGA	CURRENT	0.53	0.53
0/RP0	N560-RSP4-E	0.0	PRIMARY-BIOS	CURRENT	0.14	0.14
0/RP1	N560-RSP4-E	0.0	IOFPGA	CURRENT	0.53	0.53
0/RP1	N560-RSP4-E	0.0	PRIMARY-BIOS	CURRENT	0.14	0.14
0/FT0	N560-FAN-H	0.256	PSOC	CURRENT	2.01	2.01
0/PM0	A900-PWR1200-A	0.0	PrimCU	CURRENT	0.00	0.00
0/PM0	A900-PWR1200-A	0.0	SecMCU	CURRENT	0.00	0.00
0/PM2	A900-PWR1200-A	0.0	PrimCU	CURRENT	0.00	0.00
0/PM2	A900-PWR1200-A	0.0	SecMCU	CURRENT	0.00	0.00

Effective Cisco IOS XR Release 7.2.1, the N560-1MA1W interface module is supported on the routers.

```
RP/0/RP1/CPU0:ios#show hw-module fpd
Tue Jun 23 16:10:04.026 IST
```

Location	Card type	HWver	FPD device	ATR Status	FPD Versions	
					Running	Programd
0/0	A900-IMA8CS1Z-M	0.0	IMFPGA	CURRENT	1.95	1.95
0/1	A900-IMA8CS1Z-M	0.0	IMFPGA	CURRENT	1.95	1.95
0/2	A900-IMA8CS1Z-M	0.0	IMFPGA	CURRENT	1.95	1.95
0/7	N560-1MA1W	66.32	CFP2-DE-DCO	CURRENT	38.27397	38.27397
0/7	N560-1MA1W	0.0	IMFPGA	CURRENT	1.16	1.16
0/9	N560-IMA2C	0.0	IMFPGA	CURRENT	4.80	4.80
0/10	A900-IMA8Z	0.0	IMFPGA	CURRENT	17.05	17.05
0/11	A900-IMA8Z	0.0	IMFPGA	CURRENT	17.05	17.05
0/RP0	N560-RSP4-E	0.0	ADM	CURRENT	1.05	1.05
0/RP0	N560-RSP4-E	0.0	IOFPGA	CURRENT	0.56	0.56
0/RP0	N560-RSP4-E	0.0	PRIMARY-BIOS	CURRENT	0.16	0.16
0/RP0	N560-RSP4-E	0.0	SATA	CURRENT	1.30	1.30
0/RP1	N560-RSP4-E	0.0	ADM	CURRENT	1.05	1.05
0/RP1	N560-RSP4-E	0.0	IOFPGA	CURRENT	0.56	0.56
0/RP1	N560-RSP4-E	0.0	PRIMARY-BIOS	CURRENT	0.16	0.16
0/RP1	N560-RSP4-E	0.0	SATA	CURRENT	1.30	1.30
0/FT0	N560-FAN-H	1.0	PSOC	CURRENT	2.02	2.02

```
RP/0/RP1/CPU0:ios#
```

**Note** Ensure that the CFP2-DCO firmware version is also compatible with Cisco IOS XR Release 7.2.1.

**Note** To upgrade firmware on CFP2-DCO, controller optics (R/S/I/P) must be shut down.

Displays the list of hardware modules detected on the router.

**Note** This command can be run from both XR VM and System Admin VM modes.

In the above output, some of the significant fields are:

- FPD Device—Name of the hardware component, such as IO FPGA, IM FPGA, and BIOS.
- Status—Upgrade status of the firmware. The different states are:
  - CURRENT—The firmware version is the latest version.
  - READY—The firmware of the FPD is ready for an upgrade.
  - NOT READY—The firmware of the FPD is not ready for an upgrade.
  - NEED UPGD—A newer firmware version is available in the installed image. It is recommended that an upgrade be performed.
  - RLOAD REQ—The upgrade has been completed, and the ISO image requires a reload.
  - UPGD DONE—The firmware upgrade is successful.
  - UPGD FAIL—The firmware upgrade has failed.
  - BACK IMG—The firmware is corrupted. Reinstall the firmware.
  - UPGD SKIP—The upgrade has been skipped because the installed firmware version is higher than the one available in the image.
- Running—Current version of the firmware running on the FPD.
- Programmd—Version of the FPD programmed on the module.

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### What to do next

- Upgrade the required firmware by using the **upgrade hw-module location all fpd** command in the EXEC mode. For the FPD upgrade to take effect, the router needs a power cycle.




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**Note** BIOS and IOFPGA upgrades require power cycle of the router for the new version to take effect.

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## Verify Interface Status

After the router has booted, all available interfaces must be discovered by the system. If interfaces are not discovered, it might indicate a malfunction in the unit. Complete this task to view the number of discovered interfaces.

## Procedure

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### show ipv4 interface summary

#### Example:

```
RP/0/RP0/CPU0:router#show ipv4 interface summary
```

When a router is turned on for the first time, all interfaces are in the 'unassigned' state. Verify that the total number of interfaces displayed in the result matches with the actual number of interfaces present on the router.

In the above result:

- Assigned— An IP address is assigned to the interface.
- Unnumbered— Interface which has borrowed an IP address already configured on one of the other interfaces of the router.
- Unassigned—No IP address is assigned to the interface.

You can also use the **show interfaces brief** and **show interfaces summary** commands in the XR EXEC mode to verify the interface status.

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