Perform Preliminary Checks

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 Software Version, on page 1
- Verify Status of Hardware Modules, on page 2
- Verify Firmware Version, on page 2
- Verify Interface Status, on page 4

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.

SUMMARY STEPS

1. **show version**

DETAILED STEPS

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 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.

SUMMARY STEPS

1. **show hw-module fpd**

DETAILED STEPS

show hw-module fpd

Example:

```
RP/0/RP0/CPU0:router# show hw-module fpd
```

Displays the list of hardware modules detected on the router.

```
FPD Versions
=================
Location Card type HWver FPD device ATR Status Running Programd
--------------------------------------------------------------------
0/RP0    NCS5002    3.0  DB-MIFPGA      CURRENT  0.13    0.13
0/RP0    NCS5002    3.0  MB-MIFPGA      CURRENT  0.13    0.13
0/RP0    NCS5002    3.0  BIOS           CURRENT  1.07    1.07
0/RP0    NCS5002    3.0  IOFPGA         CURRENT  0.16    0.16
```

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.

SUMMARY STEPS

1. **show hw-module fpd**

DETAILED STEPS

show hw-module fpd

Example:

```
RP/0/RP0/CPU0:router# show hw-module fpd
FPD Versions
=================
Location Card type HWver FPD device   ATR Status Running Programd
-------------------------------------------------------------------------------
0/RP0    NCS5002   3.0   DB-MIFPGA    CURRENT    0.13    0.13
0/RP0    NCS5002   3.0   MB-MIFPGA    CURRENT    0.13    0.13
0/RP0    NCS5002   3.0   BIOS         CURRENT    1.07    1.07
0/RP0    NCS5002   3.0   IOFPGA       CURRENT    0.16    0.16
```

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 FPD, CFP, and so on.
- ATR-Attribute of the hardware component. Some of the attributes are:
  - B- Backup Image
  - S-Secure Image
  - P-Protected Image
- 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.

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.
- It is recommended to upgrade all FPGAs on a given node using the **upgrade hw-module fpd all location** {**all** | *node-id*} command. Do not upgrade the FPGA on a node using the **upgrade hw-module fpd** <*individual-fpd*> **location** {**all** | *node-id*} as it may cause errors in booting the card.
- If required, turn on the auto fpd upgrade function. To do so, use the **fpd auto-upgrade enable** command in the XR configuration [**(config)#**] mode. After it is enabled, if there are new FPD binaries present in the image being installed on the router, FPDs are automatically upgraded during the system upgrade operation.

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.

SUMMARY STEPS

1. **show ipv4 interface summary**

DETAILED STEPS

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.

```
IP address      State   State           State           State
config          up,up   up,down         down,down       shutdown,down
--------------------------------------------------------------------------
Assigned        0       0               0               0
Unnumbered      0       0               0               0
Unassigned      0       0               0               84
```

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.