Perform Preliminary Checks

After successfully logging into the XR VM 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 Active VMs

On the router both the XR VM and the System Admin VM must be operational. Instances of both VMs should be running on every RP and LC . Complete this task to verify the VMs are active.

SUMMARY STEPS

1. **admin**
2. **show vm**

DETAILED STEPS

Step 1	**admin**
	Example:
	`RP/0/RP0/CPU0:router# admin`
	Enters System Admin EXEC mode.
Step 2	**show vm**

Example:

```
sysadmin-vm:0_RP0#show vm
sysadmin-vm:0_RP1# sh vm

Location: 0/0
Id               Status      IP Address      HB Sent/Recv
---------------------------------------------------------------
sysadmin         running     192.0.64.1      NA/NA
default-sdr      running     192.0.64.3      1528/1528

Location: 0/1
Id               Status      IP Address      HB Sent/Recv
---------------------------------------------------------------
sysadmin         running     192.0.68.1      NA/NA
default-sdr      running     192.0.68.3      1528/1528

Location: 0/2
Id               Status      IP Address      HB Sent/Recv
---------------------------------------------------------------
sysadmin         running     192.0.72.1      NA/NA
default-sdr      running     192.0.72.3      1528/1528

Location: 0/3
Id               Status      IP Address      HB Sent/Recv
---------------------------------------------------------------
sysadmin         running     192.0.76.1      NA/NA
default-sdr      running     192.0.76.3      1528/1528

Location: 0/4
Id               Status      IP Address      HB Sent/Recv
---------------------------------------------------------------
sysadmin         running     192.0.80.1      NA/NA
default-sdr      running     192.0.80.3      1528/1528

Location: 0/5
Id               Status      IP Address      HB Sent/Recv
---------------------------------------------------------------
sysadmin         running     192.0.84.1      NA/NA
default-sdr      running     192.0.84.3      1529/1529

Location: 0/6
Id               Status      IP Address      HB Sent/Recv
---------------------------------------------------------------
sysadmin         running     192.0.88.1      NA/NA
default-sdr      running     192.0.88.3      1531/1531

Location: 0/7
Id               Status      IP Address      HB Sent/Recv
---------------------------------------------------------------
sysadmin         running     192.0.92.1      NA/NA
default-sdr      running     192.0.92.3      1531/1531

Location: 0/RP0
Id               Status      IP Address      HB Sent/Recv
---------------------------------------------------------------
sysadmin         running     192.0.0.1       NA/NA
default-sdr      running     192.0.0.4       29736/29736

Location: 0/RP1
Id               Status      IP Address      HB Sent/Recv
---------------------------------------------------------------
sysadmin         running     192.0.4.1       NA/NA
default-sdr      running     192.0.4.4       30534/30534
```

Displays the status of the VMs running on various nodes.

```
------ VMs found at location 0/3 ------
  Id      : sysadmin
  Status : running
  IP Addr: 192.0.76.1
  HB Interval : 0s 0ns
  Last HB Sent: 2026
  Last HB Rec : 2026
  -------
  Id      : default-sdr
  Status : running
  IP Addr: 192.0.76.3
  HB Interval : 10s 0ns
  Last HB Sent: 2026
  Last HB Rec : 2026
  -------
------ VMs found at location 0/RP0 ------
  Id      : sysadmin
  Status : running
  IP Addr: 192.0.0.1
  HB Interval : 0s 0ns
  Last HB Sent: 40660
  Last HB Rec : 40659
  -------
  Id      : default-sdr
  Status : running
  IP Addr: 192.0.0.4
  HB Interval : 0s 500000000ns
  Last HB Sent: 40708
  Last HB Rec : 40707
  -------
------ VMs found at location 0/RP1 ------
  Id      : sysadmin
  Status : running
  IP Addr: 192.0.4.1
  HB Interval : 0s 0ns
  Last HB Sent: 40708
  Last HB Rec : 40708
  -------
  Id      : default-sdr
  Status : running
  IP Addr: 192.0.4.4
  HB Interval : 0s 500000000ns
  Last HB Sent: 40708
  Last HB Rec : 40708
  -------
```

In the above result:

- Id—Name of the VM. "sysadmin" represents System Admin VM; "default-sdr" represents XR VM

- Status—Status of the VM

- IP Addr—Internal IP address of the VM

If a VM is not running on a node, in the output of the **show vm** command, no output is shown for that node.

What to do next

If the XR VM is not running on a node, try reloading the node. To do so, use the **hw-module location** *node-id* **reload** command in the System Admin EXEC mode. Also, use the **show sdr** command in the System Admin EXEC mode to verify that the SDR is running on the node.

Verify Status of Hardware Modules

Hardware modules include RPs, LCs, fan trays, fabric cards, 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. For installation details, see Cisco Network Convergence System 6000 Series Routers Hardware Installation Guide.

SUMMARY STEPS

1. **admin**
2. **show hw-module** *fpd location*

DETAILED STEPS

Step 1 **admin**

Example:

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

Enters System Admin EXEC mode.

Step 2 **show hw-module** *fpd location*

Displays the list of hardware modules detected on the router.

```
LOCATION  SHOW
----------------
0/RP0     -
0/RP1     -
0/FC0     -
0/FT0     -
0/FT1     -
0/3       -
0/PT1     -
```

From the result, verify that all the hardware modules installed on the chassis are listed. If a module is not listed, it indicates either that module is malfunctioning, or it is not properly installed. Remove and reinstall the hardware module.

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 VM and System Admin VM CLIs.

For the multi-chassis system, run the command from one chassis. The verification commands will list information for all chassis.

SUMMARY STEPS

1. **sh platform**
2. **admin**
3. **show platform**

DETAILED STEPS

Step 1   **sh platform**

Example:

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

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

This is an example for single-chassis system:

```
RP/0/RP1/CPU0:#sh platform
Mon Feb 13 15:07:03.729 UTC
Node            Type                      State           Config state
--------------------------------------------------------------------------------
0/0/CPU0        NC6-10X100G-M-K           IOS XR RUN      NSHUT
0/0/NPU0        Slice                     UP
0/0/NPU1        Slice                     UP
0/0/NPU2        Slice                     UP
0/0/NPU3        Slice                     UP
0/0/NPU4        Slice                     UP
0/1/CPU0        NC6-60X10GE-L-S           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        NC6-10X100G-M-K           IOS XR RUN      NSHUT
0/2/NPU0        Slice                     UP
0/2/NPU1        Slice                     UP
0/2/NPU2        Slice                     UP
0/2/NPU3        Slice                     UP
0/2/NPU4        Slice                     UP
0/3/CPU0        NC6-10X100G-M-K           IOS XR RUN      NSHUT
0/3/NPU0        Slice                     UP
0/3/NPU1        Slice                     UP
0/3/NPU2        Slice                     UP
0/3/NPU3        Slice                     UP
0/3/NPU4        Slice                     UP
0/4/CPU0        NC6-2/10X100G-L-K         IOS XR RUN      NSHUT
```

```
0/4/NPU0          Slice                    UP
0/4/NPU1          Slice                    UP
0/4/NPU2          Slice                    UP
0/4/NPU3          Slice                    UP
0/4/NPU4          Slice                    UP
0/5/CPU0          NC6-10X100G-M-K          IOS XR RUN        NSHUT
0/5/NPU0          Slice                    UP
0/5/NPU1          Slice                    UP
0/5/NPU2          Slice                    UP
0/5/NPU3          Slice                    UP
```

This is an example for multi-chassis system:

```
Node            Type         PLIM        State          Config State
-------------------------------------------------------------------------
1/RP1/CPU0      RP(Standby)  N/A         IOS XR RUN     PWR,NSHUT,MON
1/7/CPU0        LC           GE          IOS XR RUN     PWR,NSHUT,MON
0/RP1/CPU0      RP(Standby)  N/A         IOS XR RUN     PWR,NSHUT,MON
0/RP0/CPU0      RP(Active)   N/A         IOS XR RUN     PWR,NSHUT,MON
0/0/CPU0        LC           GE          IOS XR RUN     PWR,NSHUT,MON
1/0/CPU0        LC           GE          IOS XR RUN     PWR,NSHUT,MON
0/7/CPU0        LC           GE          IOS XR RUN     PWR,NSHUT,MON
1/RP0/CPU0      RP(Active)   N/A         IOS XR RUN     PWR,NSHUT,MON
RP/0/RP0/CPU0:MCDT3#
```

Verify that all RPs and LCs are listed and their state is "IOS XR RUN". This indicates that the XR VM is operational on the cards.

If the XR VM is not running, no output is shown for that location in the result. In this case, verify the state of SDR on the node using the **show sdr** command in the System Admin EXEC mode. For details, see Verify SDR Information, on page 12. Also, verify that the node state is "OPERATIONAL" in the result of **show platform** command in the System Admin EXEC mode, as described in Step 3.

Step 2   **admin**

Example:

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

Enters System Admin EXEC 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, LCs, and FCs), and hardware modules (fan trays) on the router.

This is an example for single-chassis system:

```
Location  Card Type              HW State      SW State      Config State
----------------------------------------------------------------------------
0/RP0     NC6-RP                 OPERATIONAL   OPERATIONAL   NSHUT
0/RP1     NC6-RP                 OPERATIONAL   OPERATIONAL   NSHUT
0/FC0     NC6-FC                 OPERATIONAL   N/A           NSHUT
0/FT0     P-L-FANTRAY            OPERATIONAL   N/A           NSHUT
0/FT1     P-L-FANTRAY            OPERATIONAL   N/A           NSHUT
```

```
0/3        NC6-10X100G-M            OPERATIONAL   OPERATIONAL   NSHUT
0/7        NC6-10X100G-M            FAILED        FAILED        NSHUT
0/PT1      PWR-2KW-DC-V2 1.0        OPERATIONAL   N/A           NSHUT
```

This is an example for multi-chassis system:

```
Wed Jun  4  15:08:09.495 UTC
Location  Card Type               HW State      SW State      Config State
--------------------------------------------------------------------------
0/3        NC6-10X100G-M-P         OPERATIONAL   OPERATIONAL   NSHUT
0/6        NC6-10X100G-M-P         OPERATIONAL   OPERATIONAL   NSHUT
0/RP0      NC6-RP                  OPERATIONAL   OPERATIONAL   NSHUT
0/RP1      P-L-RP                  OPERATIONAL   OPERATIONAL   NSHUT
0/FC2      NC6-FC-MC               OPERATIONAL   N/A           NSHUT
0/FC3      NC6-FC-MC               OPERATIONAL   N/A           NSHUT
0/FC4      NC6-FC-MC               OPERATIONAL   N/A           NSHUT
0/FC5      NC6-FC-MC               OPERATIONAL   N/A           NSHUT
0/FT0      NC6-FANTRAY             OPERATIONAL   N/A           NSHUT
0/FT1      NC6-FANTRAY             OPERATIONAL   N/A           NSHUT
0/PT1      PROTO-AC-PWRTRAY        OPERATIONAL   N/A           NSHUT
1/FC2      NC6-FC-MC               OPERATIONAL   N/A           NSHUT
1/FC3      NC6-FC-MC               OPERATIONAL   N/A           NSHUT
1/FC4      NC6-FC-MC               OPERATIONAL   N/A           NSHUT
1/FC5      NC6-FC-MC               OPERATIONAL   N/A           NSHUT
1/CI0      NCS-CRFT                OPERATIONAL   N/A           NSHUT
1/FT0      NC6-FANTRAY             OPERATIONAL   N/A           NSHUT
1/FT1      NC6-FANTRAY             OPERATIONAL   N/A           NSHUT
1/PT0      NCS-AC-PWRTRAY          OPERATIONAL   N/A           NSHUT
1/PT1      NCS-AC-PWRTRAY          OPERATIONAL   N/A           NSHUT
F0/SC0     P-F-SCSW                OPERATIONAL   OPERATIONAL   NSHUT
F0/SC1     P-F-SC                  OPERATIONAL   OPERATIONAL   NSHUT
F0/FT0     NCS-FCC-FANTRAY         OPERATIONAL   N/A           NSHUT
F0/FT1     NCS-FCC-FANTRAY         OPERATIONAL   N/A           NSHUT
F1/PT1     P-F-AC-PWRTRAY          OPERATIONAL   N/A           NSHUT
F1/SW0     NCS-F-SCSW (SW)         OPERATIONAL   N/A           NSHUT
```

Verify that all cards installed on the router are displayed in the result. The software state of LCs and RPs and the hardware state of FC and FTs 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:

- DIAG_MODE—User has changed the card state to OFFLINE for diagnosis

- 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

Note In the result, the RPs are not highlighted as active and standby. This is because, at all times, the System Admin VM is operational on both RPs. If one RP fails, the System Admin VM running on the other RP continues to manage all the System Admin functions of the router.

Verify Software Version

The Cisco NCS 6008 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, its various components, and BIOS information.

Only that portion of the output where the Cisco IOS XR software version is displayed is shown here:

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.

SUMMARY STEPS

1. **admin**
2. **show hw-module fpd**

DETAILED STEPS

Step 1   **admin**

Example:

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

Enters System Admin EXEC mode.

Step 2   **show hw-module fpd**

Example:

```
sysadmin-vm:0_RP0#show hw-module fpd
```

Displays the firmware information for various hardware components of the router.

```
RP/0/RP1/CPU0:#show hw-module fpd
```

						FPD Versions	
						=================	
Location	Card type	HWver	FPD device	ATR	Status	Running	Programd
0/0	NC6-10X100G-M-K	2.0	Backup-BIOS	BSP	CURRENT		14.00
0/0	NC6-10X100G-M-K	2.0	Backup-CCC-PwrOn	BSP	CURRENT		1.36
0/0	NC6-10X100G-M-K	2.0	Backup-EthSwitch	BSP	CURRENT		1.33
0/0	NC6-10X100G-M-K	2.0	BAO-DB-FPGA		CURRENT	1.06	1.06
0/0	NC6-10X100G-M-K	2.0	BAO-MB-FPGA		CURRENT	1.06	1.06
0/0	NC6-10X100G-M-K	2.0	CCC-Bootloader	BSP	CURRENT		2.09
0/0	NC6-10X100G-M-K	2.0	CCC-FPGA	S	CURRENT	2.11	2.11
0/0	NC6-10X100G-M-K	2.0	CCC-Power-On	S	CURRENT	1.41	1.41
0/0	NC6-10X100G-M-K		CPAK-bay-0-FPD		NOT READY		
0/0	NC6-10X100G-M-K		CPAK-bay-1-FPD		NOT READY		
0/0	NC6-10X100G-M-K		CPAK-bay-2-FPD		NOT READY		
0/0	NC6-10X100G-M-K		CPAK-bay-3-FPD		NOT READY		
0/0	NC6-10X100G-M-K		CPAK-bay-4-FPD		NOT READY		
0/0	NC6-10X100G-M-K		CPAK-bay-5-FPD		NOT READY		
0/0	NC6-10X100G-M-K	2.0	CPAK-bay-6-SR10		CURRENT	2.03	2.03
0/0	NC6-10X100G-M-K	2.0	CPAK-bay-7-SR10		CURRENT	2.03	2.03
0/0	NC6-10X100G-M-K	2.0	CPAK-bay-8-LR10		CURRENT	2.03	2.03
0/0	NC6-10X100G-M-K	2.0	CPAK-bay-9-SR10		CURRENT	2.03	2.03
0/0	NC6-10X100G-M-K	2.0	Ethernet-Switch	S	CURRENT	1.33	1.33
0/0	NC6-10X100G-M-K	2.0	PLX-8748		CURRENT		

In the result, the "RUN" column displays the current version of the firmware running on the FPD.

The "ATR Status" column displays the upgrade status of the firmware. It can display these states:

• 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.

• 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.

What to do next

- Upgrade the required firmware by using the **upgrade hw-module location all fpd** command in the System Admin EXEC mode. You can selectively update individual FPDs, or update all of them together. For the FPD upgrade to take effect, the router needs a power cycle.

- If required, turn on the auto fpd upgrade function. To do so, use the **fpd auto-upgrade enable** command in the System Admin 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.

For the multi-chassis system, run the command from one chassis. The verification commands will list information for all chassis.

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           4
```

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.

Verify Fabric Plane

The packets traverse from the ingress to the egress interfaces over the fabric plane. There can be a maximum of six fabric planes. The Cisco NCS routing system fabric is implemented through multiple redundant fabric cards (FCs) installed in the line card chassis.

For the multi-chassis system, run the command from one chassis. The verification commands will list information for all chassis.

Complete this task to verify the status of the fabric planes.

Before you begin

Install all required fabric cards on the router.

SUMMARY STEPS

1. **admin**
2. **show controller fabric plane all**

DETAILED STEPS

Step 1	**admin**

Example:

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

Enters System Admin EXEC mode.

Step 2	**show controller fabric plane all**

Example:

```
sysadmin-vm:0_RP0#show controller fabric plane all
```

Displays the status of the switch fabric plane.

Verify that the Admin State and Plane State for all operational planes is "UP". Each fabric card represents one plane. If the Plane State is "DN", it indicates that traffic is not able to reach any destination using the plane. If the Plane State is "MCAST_DN", it indicates that some destinations are not reachable using the plane. This indicates that one fabric card in the line card chassis (LCC) is not operational. Reinstall the fabric card and verify that its state is "OPERATIONAL" in the result of **show platform** command in the System Admin EXEC mode.

Verify SDR Information

Secure domain routers (SDRs) divide a single physical system into multiple logically-separated routers. SDRs are also known as logical routers (LRs). On the Cisco NCS 6008 router, only one SDR is supported. This SDR is termed the default-sdr. Every router is shipped with the default-sdr, which owns all RPs and LCs installed in the routing system. An instance of this SDR runs on all nodes. Complete this task to verify the details of the SDR instances.

For the multi-chassis system, run the command from one chassis. The verification commands will list information for all chassis.

SUMMARY STEPS

1. **admin**
2. **sh sdr**

DETAILED STEPS

Step 1   **admin**

Example:

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

Enters System Admin EXEC mode.

Step 2   **sh sdr**

Example:

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

Displays the SDR information for every node.

```
SDR: default-sdr
Location    IP Address    Status        Boot Count  Time Started
--------------------------------------------------------------------------
0/RP0/VM1   192.0.0.4     RUNNING       1           02/13/2017 10:06:01
0/RP1/VM1   192.0.4.4     RUNNING       2           02/13/2017 07:27:25
0/0/VM1     192.0.64.3    RUNNING       1           02/10/2017 12:44:02
0/1/VM1     192.0.68.3    RUNNING       1           02/10/2017 12:44:02
0/2/VM1     192.0.72.3    RUNNING       1           02/10/2017 12:44:01
0/3/VM1     192.0.76.3    RUNNING       1           02/10/2017 12:44:01
0/4/VM1     192.0.80.3    RUNNING       1           02/10/2017 12:55:10
0/5/VM1     192.0.84.3    RUNNING       1           02/10/2017 12:44:02
0/6/VM1     192.0.88.3    RUNNING       1           02/10/2017 12:44:04
0/7/VM1     192.0.92.3    RUNNING       1           02/10/2017 12:44:01
1/RP0/VM1   192.1.0.4     RUNNING       1           02/13/2017 10:06:14
1/RP1/VM1   192.1.4.4     RUNNING       1           02/13/2017 07:28:54
1/0/VM1     192.1.64.3    RUNNING       1           02/13/2017 04:31:21
1/1/VM1     192.1.68.3    RUNNING       1           02/13/2017 04:31:22
1/2/VM1     192.1.72.3    RUNNING       1           02/13/2017 04:31:22
1/3/VM1     192.1.76.3    RUNNING       1           02/13/2017 05:19:19
1/4/VM1     192.1.80.3    RUNNING       1           02/13/2017 04:31:20
1/5/VM1     192.1.84.3    RUNNING       1           02/13/2017 04:31:22
```

```
1/6/VM1        192.1.88.3      RUNNING         1          02/13/2017 04:40:26
1/7/VM1        192.1.92.3      RUNNING         1          02/13/2017 04:31:22
```

For a functional SDR, the VM State is "RUNNING". If the SDR is not running on a node, no output is shown in the result, for that location. At times the node performs a core dump. During such times the VM State is "Paused & Core Dump in Progress".

What to do next

If you find SDR is not running on a node, try reloading the node. To do that, use the **hw-module location** *node-id* **reload** command in the System Admin EXEC mode.

Verify Control Ethernet Connections

The control ethernet connections connect the chassis within the multi-chassis system. A control ethernet failure disconnects one or more chassis from rest of the system. If the chassis is disconnected, the connectivity with the fabric cards chassis is impaired. The disconnect can be due to fiber cut, hardware failure or software failure.

For the multi-chassis system, run the command from one chassis. The verification commands will list information for all chassis.

Complete this task to verify the status of the control ethernet connections.

SUMMARY STEPS

1. **admin**
2. **show controller switch summary**

DETAILED STEPS

	Command or Action	**Purpose**
Step 1	**admin** **Example:** `RP/0/RP0/CPU0:router# admin`	Enters System Admin EXEC mode.

Step 2	**show controller switch summary**
	
	Example:
	`sysadmin-vm:0_RP0#show controller switch summary`
		Displays the summary of the switch.
		
		`Wed Jun  4  17:23:19.752 UTC`
		`Rack  Card  Switch  Rack Serial Number`
		`------------------------------------`
		`0     RP0   RP-SW   FMP12020050`
		
		`      Phys  Admin  Port     Protocol  Forward`
		`Port  State State  Speed    State     State`
		`  Connects To`
		`_____`
		`0     Down  Up     10-Gbps  Down      -`
		`  LC7`
		`2     Up    Up     10-Gbps  Standby   Forwarding`
		`  LC6`

Command or Action	Purpose
| | ```
4      Down   Up     1-Gbps   Down      -
  FC0
5      Down   Up     1-Gbps   Down      -
  FC1
6      Down   Up     10-Gbps  Down      -
  LC5
8      Down   Up     10-Gbps  Down      -
  LC4
10     Up     Up     1-Gbps   Standby   Forwarding
  FC2
16     Down   Up     10-Gbps  Down      -
  LC0
18     Down   Up     10-Gbps  Down      -
  LC1
20     Up     Up     1-Gbps   Standby   Forwarding
  FC5
21     Up     Up     1-Gbps   Standby   Forwarding
  FC4
22     Down   Up     10-Gbps  Down      -
  LC2
24     Up     Up     10-Gbps  Standby   Forwarding
  LC3
26     Up     Up     1-Gbps   Standby   Forwarding
  FC3
32     Up     Up     10-Gbps  Standby   Forwarding
  RP1 Card (RP0 Ctrl)
34     Up     Up     10-Gbps  -         Forwarding
  RP1 Card (RP1 Ctrl)
36     Up     Up     1-Gbps   -         Forwarding
  Mgmt Eth0
37     Up     Up     1-Gbps   -         Forwarding
  CCC (RP1 Ctrl)
38     Up     Up     1-Gbps   Standby   Forwarding
  CCC (RP0 Ctrl)
40     Up     Up     10-Gbps  -         Forwarding
  RP0 CPU (0)
48     Down   Up     10-Gbps  -         -
  I/F Shelf Eth4
49     Down   Up     10-Gbps  -         -
  I/F Shelf Eth5
50     Down   Up     10-Gbps  -         -
  I/F Shelf Eth2
51     Down   Up     10-Gbps  -         -
  I/F Shelf Eth3
54     Up     Up     1-Gbps   -         Forwarding
  Mgmt Eth1
56     Down   Up     10-Gbps  -         -
  I/F Shelf Eth0
57     Down   Up     10-Gbps  -         -
  I/F Shelf Eth1
58     Up     Up     10-Gbps  Active    Forwarding
  Exp Eth0
59     Up     Up     10-Gbps  Standby   Blocking
  Exp Eth1
```  Verify the state of Exp Eth 0 and Exp Eth 1 ports. One port must be in Active (Forwarding) state, and one port in Standby (Blocking) state. The state of the ethernet port is decided by the system. Verify that the connected ports are |

Command or Action	Purpose
	up, active and in forwarding state. If the states are not displayed correctly, check the control ethernet cabling.

Monitor Craft Panel Interface

Network Convergence System (NCS) 6000 system has a craft panel interface on the front of fabric card chassis (FCC). The craft panel interface assists the field operator in monitoring and troubleshooting the router. It consists of a touch screen LCD display and three LEDs. The LEDs indicate minor, major and critical alarms.

For more information about completing the hardware installation, see Cisco Network Convergence System 6000 Series Routers Hardware Installation Guide.

On powering up, the main screen is displayed on the craft panel LCD. The craft panel has a settings screen to adjust the brightness, volume of audio alarms and inactivity timer for the LCD. You can turn off the LCD display with the help of the sleep button. There is a help option on every screen. This option displays information (in text) for each button. Refresh and back buttons (available on each screen) enable the user to refresh and go back to the previous screen, respectively.

Craft panel interface is used to fetch the following information from the chassis:

- Chassis power configuration and consumption. This is similar to the output of the **show environment power** command.

- Power Entry Module (PEM) status information of the chassis. This is similar to the output of the **show environment power** command.

- Fan operation speed and current status. This is similar to the output of the **show environment fan** command.

- Alarms in the chassis. This is similar to the output of the **show alarms** command.

- Chassis temperature information for the route processors and shelf controllers.

- Hardware and software state of all cards in the chassis.

- Router name and rack-id of chassis (on each screen).

- Uptime of the route processors.

- Messages for the craft operator from the administrator sent from a remote location.