



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, take corrective action before making further configurations.



Note The output of the examples in the procedures is not from the latest software release. The output will change for any explicit references to the current release.

- [Verify Status of Hardware Components, on page 1](#)
- [Verify Software Version, on page 4](#)
- [Verify Firmware Version, on page 5](#)
- [Verify Management Interface Status, on page 8](#)
- [Verify Alarms, on page 9](#)
- [Verify Environmental Parameters, on page 10](#)
- [Verify Inventory, on page 12](#)

Verify Status of Hardware Components

To verify the status of all the hardware components installed on NCS 1004, perform the following procedure.

Before you begin

Ensure that all the required hardware components are installed on NCS 1004. For installation details, see *Cisco Network Convergence System 1004 Hardware Installation Guide*.

Procedure

Step 1 **show platform**

When you execute this command from the Cisco IOS XR EXEC mode, the status of Cisco IOS XR is displayed.

Example:

```
RP/0/RP0/CPU0:ios# show platform
Wed Mar  4 06:21:26.929 UTC
Node                               Type                               State                               Config state
-----
```

0/0	NCS1K4-LC-FILLER	PRESENT	NSHUT
0/1	NCS1K4-1.2T-K9	OPERATIONAL	NSHUT
0/2	NCS1K4-1.2TL-K9	OPERATIONAL	NSHUT
0/3	NCS1K4-LC-FILLER	PRESENT	NSHUT
0/RP0/CPU0	NCS1K4-CNTRLR-K9 (Active)	IOS XR RUN	NSHUT
0/FT0	NCS1K4-FAN	OPERATIONAL	NSHUT
0/FT1	NCS1K4-FAN	OPERATIONAL	NSHUT
0/FT2	NCS1K4-FAN	OPERATIONAL	NSHUT
0/PM0	NCS1K4-AC-PSU	OPERATIONAL	NSHUT
0/PM1	NCS1K4-AC-PSU	OPERATIONAL	NSHUT
0/SC0	NCS1004	OPERATIONAL	NSHUT

- a) If Cisco IOS XR is not operational, no output is shown in the result. In this case, verify the state of service domain router (SDR) on the node using the **show sdr** command in Cisco IOS XR mode.

The following example shows sample output of the **show sdr** command in Cisco IOS XR mode.

```
RP/0/RP0/CPU0:ios# show sdr
Wed Mar  4 06:23:16.143 UTC
Type                NodeName           NodeState          RedState           PartnerName
-----
NCS1K4-LC-FILLER   0/0                PRESENT            N/A                N/A
NCS1K4-1.2T-K9    0/1                OPERATIONAL        N/A                N/A
NCS1K4-1.2TL-K9   0/2                OPERATIONAL        N/A                N/A
NCS1K4-LC-FILLER   0/3                PRESENT            N/A                N/A
RP                  0/RP0/CPU0        IOS XR RUN         ACTIVE             NONE
NCS1K4-CNTRLR-K9   0/RP0             OPERATIONAL        N/A                N/A
NCS1K4-FAN         0/FT0             OPERATIONAL        N/A                N/A
NCS1K4-FAN         0/FT1             OPERATIONAL        N/A                N/A
NCS1K4-FAN         0/FT2             OPERATIONAL        N/A                N/A
NCS1K4-AC-PSU     0/PM0             OPERATIONAL        N/A                N/A
NCS1K4-AC-PSU     0/PM1             OPERATIONAL        N/A                N/A
NCS1004            0/SC0             OPERATIONAL        N/A                N/A
```

Step 2 admin

Enters System Admin EXEC mode.

Example:

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

Step 3 show platform

Displays information and status of each node in the system.

Example:

```
sysadmin-vm:0_RP0# show platform
Wed Mar  4 06:24:46.700 UTC+00:00
Location  Card Type                HW State          SW State           Config State
-----
0/0       NCS1K4-LC-FILLER        PRESENT           N/A                NSHUT
0/1       NCS1K4-1.2T-K9         OPERATIONAL       N/A                NSHUT
0/2       NCS1K4-1.2TL-K9        OPERATIONAL       N/A                NSHUT
0/3       NCS1K4-LC-FILLER        PRESENT           N/A                NSHUT
0/RP0     NCS1K4-CNTRLR-K9        OPERATIONAL       OPERATIONAL        NSHUT
0/FT0     NCS1K4-FAN              OPERATIONAL       N/A                NSHUT
0/FT1     NCS1K4-FAN              OPERATIONAL       N/A                NSHUT
0/FT2     NCS1K4-FAN              OPERATIONAL       N/A                NSHUT
0/PM0     NCS1K4-AC-PSU           OPERATIONAL       N/A                NSHUT
0/PM1     NCS1K4-AC-PSU           OPERATIONAL       N/A                NSHUT
0/SC0     NCS1004                  OPERATIONAL       N/A                NSHUT
```

Verify that all the components of NCS 1004 are displayed in output. The software state and the hardware state must be in the OPERATIONAL state. The various hardware and software states are:

Hardware states:

- OPERATIONAL—Node is operating normally and is fully functional.
- POWERED_ON—Power is on and the node is booting up.
- FAILED—Node is powered on but has encountered an internal failure.
- PRESENT—Node is in intermediate state in the boot sequence.
- POWERED_OFF—Power is off and the node cannot be accessed.

Software states:

- OPERATIONAL—Software is operating normally and is fully functional.
- SW_INACTIVE—Software is not completely operational.

Step 4 show inventory

Displays details of the physical entities of NCS 1004 along with the details of QSFPs when you execute this command in Cisco IOS XR EXEC mode.

Example:

```
RP/0/RP0/CPU0:ios# show inventory
Wed Mar  4 05:10:17.107 UTC
NAME: "0/0", DESCR: "Network Convergence System 1004 Filler"
PID: NCS1K4-LC-FILLER, VID: V01, SN: N/A

NAME: "0/1", DESCR: "NCS1K4 12x QSFP28 2 Trunk C-Band DWDM card"
PID: NCS1K4-1.2T-K9, VID: V00, SN: CAT2250B0AE

NAME: "0/1-Optics0/1/0/2", DESCR: "Cisco 100G QSFP28 AOC Pluggable Optics Module"
PID: QSFP-100G-AOC3M , VID: V03, SN: INL22262339-A

NAME: "0/1-Optics0/1/0/4", DESCR: "Cisco 100GE QSFP28 SR4 Pluggable Optics Module"
PID: QSFP-100G-SR4-S, VID: V03, SN: AVF2219S16U

NAME: "0/1-Optics0/1/0/5", DESCR: "Cisco 100G QSFP28 LR4-S Pluggable Optics Module"
PID: QSFP-100G-LR4-S, VID: V02, SN: JFQ2145701U

NAME: "0/1-Optics0/1/0/6", DESCR: "Cisco 100GE QSFP28 SR4 Pluggable Optics Module"
PID: QSFP-100G-SR4-S, VID: ES1, SN: AVF1925G012

NAME: "0/1-Optics0/1/0/7", DESCR: "Cisco 100G QSFP28 LR4-S Pluggable Optics Module"
PID: QSFP-100G-LR4-S, VID: V02, SN: JFQ2145706N

NAME: "0/1-Optics0/1/0/8", DESCR: "Cisco QSFP-100G-LR4 Pluggable Optics Module"
PID: ONS-QSFP28-LR4, VID: V01, SN: JFQ19026014

NAME: "0/1-Optics0/1/0/9", DESCR: "Cisco 100G QSFP28 LR4-S Pluggable Optics Module"
PID: QSFP-100G-LR4-S, VID: V02, SN: OPM220518HS

NAME: "0/1-Optics0/1/0/10", DESCR: "Cisco 100G QSFP28 SM-SR Pluggable Optics Module"
PID: QSFP-100G-SM-SR, VID: V02, SN: INL21490043

NAME: "0/1-Optics0/1/0/11", DESCR: "Cisco 100G QSFP28 CWDM4 Pluggable Optics Module"
PID: QSFP-100G-CWDM4-S , VID: V01, SN: JFQ211930JL
```

```

NAME: "0/1-Optics0/1/0/12", DESCR: "Cisco 100G QSFP28 CWDM4 Pluggable Optics Module"
PID: QSFP-100G-CWDM4-S, VID: V02, SN: JFQ2210801H

NAME: "0/2", DESCR: "NCS1K4 12x QSFP28 2 Trunk L-Band DWDM card"
PID: NCS1K4-1.2TL-K9 , VID: V00, SN: CAT2337B0S4

NAME: "0/2-Optics0/2/0/2", DESCR: "Cisco 100G QSFP28 AOC Pluggable Optics Module"
PID: QSFP-100G-AOC3M, VID: V03, SN: INL22262332-A

NAME: "0/2-Optics0/2/0/4", DESCR: "Cisco 100G QSFP28 SM-SR Pluggable Optics Module"
PID: QSFP-100G-SM-SR, VID: V02, SN: FNS22070HWF

NAME: "0/2-Optics0/2/0/5", DESCR: "Cisco 100G QSFP28 SM-SR Pluggable Optics Module"
PID: QSFP-100G-SM-SR, VID: V02, SN: SPT2225302D

NAME: "0/2-Optics0/2/0/6", DESCR: "Cisco 100G QSFP28 LR4-S Pluggable Optics Module"
PID: QSFP-100G-LR4-S, VID: V02, SN: FNS22310Z1X

NAME: "0/2-Optics0/2/0/8", DESCR: "Cisco QSFP-100G-LR4 Pluggable Optics Module"
PID: ONS-QSFP28-LR4, VID: V01, SN: FNS20520R8Z

NAME: "0/2-Optics0/2/0/9", DESCR: "Cisco 100G QSFP28 AOC Pluggable Optics Module"
PID: QSFP-100G-AOC3M, VID: V03, SN: INL23312282-A

NAME: "0/2-Optics0/2/0/10", DESCR: "Cisco 100G QSFP28 AOC Pluggable Optics Module"
PID: QSFP-100G-AOC3M, VID: V03, SN: INL23312282-B

NAME: "0/2-Optics0/2/0/11", DESCR: "Cisco 100G QSFP28 LR4-S Pluggable Optics Module"
PID: QSFP-100G-LR4-S, VID: V02, SN: FNS23080LKF

NAME: "0/3", DESCR: "Network Convergence System 1004 Filler"
PID: NCS1K4-LC-FILLER, VID: V01, SN: N/A

:
:
:

```

Verify Software Version

NCS 1004 is shipped with the Cisco IOS XR Software preinstalled. Verify that the latest version of the software is installed. If a newer version is available, perform a [system upgrade](#). This system upgrade installs the newer version of the software and provide the latest feature set on NCS 1004.

To verify the version of Cisco IOS XR Software running on NCS 1004, perform the following procedure.

Procedure

show version

Displays the software version and details such as system uptime.

Example:

```

RP/0/RP0/CPU0:ios# show version
Wed Feb 10 19:35:38.274 IST
Cisco IOS XR Software, Version 7.3.1.45I
Copyright (c) 2013-2021 by Cisco Systems, Inc.

```

```

Build Information:
  Built By      : ingunawa
  Built On     : Tue Feb  9 11:45:12 PST 2021
  Built Host   : iox-lnx-068
  Workspace    : /auto/iox-lnx-068-san1/prod/7.3.1.45I.SIT_IMAGE/ncs1k/ws
  Version     : 7.3.1.45I
  Location    : /opt/cisco/XR/packages/
  Label       : 7.3.1.45I

```

```

cisco NCS-1002 () processor
System uptime is 3 hours 37 minutes

```

What to do next

Verify the software version to determine whether system upgrade is required. If the upgrade is required, see the [Perform System Upgrade and Install Feature Packages](#) chapter.

Verify Firmware Version

The firmware on various hardware components of NCS 1004 must be compatible with the installed Cisco IOS XR image. Incompatibility may cause the NCS 1004 to malfunction.

To verify the firmware version, perform the following procedure.

Procedure

Step 1 show hw-module fpd

```

RP/0/RP0/CPU0:ios# show hw-module fpd
Fri Feb  5 16:52:00.151 IST

```

```

Auto-upgrade:Enabled

```

Location	Card type	HWver	FPD device	ATR	Status	FPD Versions	
						Running	Programd
0/0	NCS1K4-2-QDD-C-K9	1.0	LC_CPU_MOD_FW		CURRENT	73.10	73.10
0/0	NCS1K4-2-QDD-C-K9	1.0	LC_OPT_MOD_FW		CURRENT	1.22	1.22
0/1	NCS1K4-1.2T-K9	2.0	LC_CPU_MOD_FW		CURRENT	73.10	73.10
0/1	NCS1K4-1.2T-K9	1.0	LC_OPT_MOD_FW		CURRENT	1.20	1.20
0/2	NCS1K4-1.2TL-K9	2.0	LC_CPU_MOD_FW		CURRENT	73.10	73.10
0/2	NCS1K4-1.2TL-K9	1.0	LC_OPT_MOD_FW		CURRENT	1.20	1.20
0/3	NCS1K4-2-QDD-C-K9	1.0	LC_CPU_MOD_FW		CURRENT	73.10	73.10
0/3	NCS1K4-2-QDD-C-K9	1.0	LC_OPT_MOD_FW		CURRENT	1.22	1.22
0/RP0	NCS1K4-CNTLR-K9	4.0	CSB_IMG	S	CURRENT	0.200	0.200
0/RP0	NCS1K4-CNTLR-K9	4.0	TAM_FW		CURRENT	36.08	36.08
0/RP0	NCS1K4-CNTLR-K9	1.14	BIOS	S	CURRENT	4.70	4.70
0/RP0	NCS1K4-CNTLR-K9	4.0	CPU_FPGA		CURRENT	1.14	1.14
0/PM0	NCS1K4-AC-PSU		PO-PrimMCU		NOT READY		
0/PM1	NCS1K4-AC-PSU	0.1	PO-PrimMCU		CURRENT	2.70	2.70
0/SC0	NCS1004	2.0	BP_FPGA		CURRENT	1.25	1.25
0/SC0	NCS1004	2.0	XGE_FLASH		CURRENT	18.04	18.04

Displays firmware information of various hardware components of NCS 1004 in the Cisco IOS XR EXEC mode.

In the previous 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.
 - NOT READY—The firmware of the FPD is not ready for upgrade.
 - NEED UPGD—A newer firmware version is available in the installed image. We recommended that upgrade be performed.
 - UPGD PREP—The firmware of the FPD is preparing for upgrade.
 - RLOAD REQ—The upgrade is completed, and the card requires a reload.
 - UPGD DONE—The firmware upgrade is successful.
 - UPGD FAIL—The firmware upgrade has failed.
 - UPGD SKIP—The upgrade is skipped because the installed firmware version is higher than the version available in the image.
 - Running—Current version of the firmware running on the FPD.

Step 2 show fpd package

Use the **show fpd package** command to display the FPD image version available with this software release for each hardware component.

```
RP/0/RP0/CPU0:ios# show fpd package
Wed Mar  4 06:47:01.161 UTC
```

```
=====
                                Field Programmable Device Package
                                =====
Card Type           FPD Description           Req   SW   Min Req  Min Req
=====  =====  =====  =====  =====  =====
NCS1004-K9          BP_FPGA (A)                NO    1.25   1.25    0.0
                   XGE_FLASH (A)             YES   18.04  18.04    0.0
-----
NCS1K4-1.2T-K9     LC_CPU_MOD_FW (A)         YES   20.07  20.07    0.0
                   LC_OPT_MOD_FW (A)        YES    2.03   2.03    0.0
-----
NCS1K4-1.2TL-K9    LC_CPU_MOD_FW (A)         YES   20.07  20.07    0.0
                   LC_OPT_MOD_FW (A)        YES    2.03   2.03    0.0
-----
NCS1K4-2KW-AC      PO-PrimCU (A)             NO    2.70   2.70    0.0
=====
```

	PO-PrimMCU (A)	NO	2.70	2.70	0.1
NCS1K4-AC-PSU	PO-PrimMCU (A)	NO	2.70	2.70	0.0
	PO-PrimMCU (A)	NO	2.70	2.70	0.1
NCS1K4-CNTLR	BIOS (A)	YES	4.20	4.20	1.5
	CSE_IMG	YES	0.200	0.200	0.0
NCS1K4-DC-PSU	PO-PrimMCU (A)	NO	1.12	1.12	0.0
	PO-PrimMCU (A)	NO	1.12	1.12	0.1
NCS1K4-OTN-XP	LC_CPU_MOD_FW (A)	YES	20.07	20.07	0.0
	LC_DP_MOD_FW (A)	YES	1.10	1.10	2.0
	LC_DP_MOD_FW (A)	YES	5.10	5.10	3.0
	LC_DP_MOD_FW (A)	YES	0.10	0.10	4.0
	LC_DP_MOD_FW (A)	YES	0.10	0.10	5.0
NCS1K4-OTN-XPL	LC_CPU_MOD_FW (A)	YES	20.07	20.07	0.0
	LC_DP_MOD_FW (A)	YES	1.10	1.10	2.0
	LC_DP_MOD_FW (A)	YES	5.10	5.10	3.0
	LC_DP_MOD_FW (A)	YES	0.10	0.10	4.0
	LC_DP_MOD_FW (A)	YES	0.10	0.10	5.0
NCS1K4-TESTUNIT	LC_CPU_MOD_FW (A)	YES	0.01	0.01	0.0

What to do next

Upgrade all the FPDs using the **upgrade hw-module location all fpd all** command in the Cisco IOS XR EXEC mode. After upgrade is completed, the Status column shows RLOAD REQ if the software requires reload.

If Reload is required

If the FPGA location is 0/RP0, use the **admin hw-module location 0/RP0 reload** command. This command reboots only the CPU. As a result, traffic is not impacted. If the FPGA location is 0/0, use the **admin hw-module location all reload** command. This command reboots the chassis. As a result, traffic is impacted. After the reload is completed, the new FPGA runs the current version.



Caution The upgrade of LC_OPT_MOD_FW FPD affects traffic. Hence, you must perform this upgrade during a maintenance window.

If Firmware Upgrade Fails

If firmware upgrade fails, use the **show logging** command to view the details and upgrade the firmware again using the above commands.



Note You can upgrade the firmware version of power modules, only when both the power modules are present and powered on.

Verify Management Interface Status

To verify the management interface status, perform the following procedure.

Procedure

show interfaces mgmtEth *instance*

Displays the management interface configuration.

Example:

```
RP/0/RP0/CPU0:ios# show interfaces MgmtEth 0/RP0/CPU0/0
Wed Mar  4 06:13:12.381 UTC
MgmtEth0/RP0/CPU0/0 is up, line protocol is up
  Interface state transitions: 1
  Hardware is Management Ethernet, address is b026.80ff.d870 (bia b026.80ff.d870)
  Internet address is 10.127.60.184/24
  MTU 1514 bytes, BW 1000000 Kbit (Max: 1000000 Kbit)
    reliability 255/255, txload 0/255, rxload 0/255
  Encapsulation ARPA,
  Full-duplex, 1000Mb/s, CX, link type is autonegotiation
  loopback not set,
  Last link flapped 1d23h
  ARP type ARPA, ARP timeout 04:00:00
  Last input 00:00:00, output 00:00:00
  Last clearing of "show interface" counters never
  5 minute input rate 1368000 bits/sec, 193 packets/sec
  5 minute output rate 95000 bits/sec, 194 packets/sec
    6447256 packets input, 3947875102 bytes, 0 total input drops
    0 drops for unrecognized upper-level protocol
    Received 661276 broadcast packets, 271649 multicast packets
      0 runts, 0 giants, 0 throttles, 0 parity
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
  7190033 packets output, 3906991430 bytes, 0 total output drops
  Output 0 broadcast packets, 0 multicast packets
  0 output errors, 0 underruns, 0 applique, 0 resets
  0 output buffer failures, 0 output buffers swapped out
  1 carrier transitions
```

In the previous output, the management interface is administratively down.

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

The following example shows sample output from the **show interfaces summary** command.

```
RP/0/RP0/CPU0:ios# show interfaces summary
Wed Mar  4 06:14:52.995 UTC
Interface Type          Total    UP        Down      Admin Down
-----
ALL TYPES                4         2         0         2
-----
IFT_ETHERNET            3         1         0         2
IFT_NULL                 1         1         0         0
```

The following example shows sample output from the **show interfaces brief** command.

```
RP/0/RP0/CPU0:ios# show interfaces brief
Wed Mar  4 06:15:51.689 UTC
```


Intf Name	Intf State	LineP State	Encap Type	MTU (byte)	BW (Kbps)
Nu0	up	up	Null	1500	0
Mg0/RP0/CPU0/0	up	up	ARPA	1514	1000000
Mg0/RP0/CPU0/1	admin-down	admin-down	ARPA	1514	1000000
Mg0/RP0/CPU0/2	admin-down	admin-down	ARPA	1514	1000000

What to do next

If the management interface is administratively down, perform the following steps:

- Check the Ethernet cable connection.
- Verify the IP configuration of the management interface. For details on configuring the management interface, see [Configure Management Interface](#).
- Verify whether the management interface is in the no shut state using the **show running-config interface mgmtEth** command.

The following example shows sample output from the **show running-config interface mgmtEth** command.

```
RP/0/RP0/CPU0:ios#show running-config interface mgmtEth 0/RP0/CPU0/0
Wed Mar  4 06:17:33.833 UTC
interface MgmtEth0/RP0/CPU0/0
  ipv4 address dhcp
!
```

In the previous output, the management interface is in the no shut state.

Verify Alarms

You can view the alarm information using the **show alarms** command.

Procedure

```
show alarms [ brief [ card | rack | system ] [ location location ] [ active | history ] | detail
[ card | rack | system ] [ location location ] [ active | clients | history | stats ] ]
```

Displays alarms in brief or detail.

Example:

```
RP/0/RP0/CPU0:ios# show alarms brief card location 0/RP0/CPU0 active
```

```
Wed Mar  4 06:10:55.959 UTC
```

```
-----
Active Alarms
```

```
-----
Location          Severity    Group          Set Time          Description
-----
0/1                Major      FPD_Infra      03/02/2020 07:09:04 UTC  One Or More FPDs
-----
```

```

Need Upgrade Or Not In Current State

0/2          Major          FPD_Infra          03/03/2020 14:27:33 UTC    One Or More FPDs
Need Upgrade Or Not In Current State

0/2          Major          Ethernet           03/03/2020 20:33:33 UTC
HundredGigECtrlr0/2/0/9 - Carrier Loss On The LAN

0/2          Critical         Controller         03/03/2020 20:34:05 UTC    Optics0/2/0/3 -
Improper Removal

0/2          NotAlarmed       OTN                03/03/2020 20:34:08 UTC    ODU40/2/0/0/2 -
OPUK Client Signal Failure

0/2          NotAlarmed       OTN                03/03/2020 20:34:05 UTC    ODU40/2/0/1/2 -
OPUK Client Signal Failure

```

What to do next

For more information about alarms and steps to clear the alarms, see the *Alarm Troubleshooting* chapter of the *Troubleshooting Guide for Cisco NCS 1004*.

Verify Environmental Parameters

The **show environment** command displays the environmental parameters of NCS 1004.

To verify that the environmental parameters are as expected, perform the following procedure.

Procedure

Step 1 admin

Enters System Admin EXEC mode.

Example:

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

Step 2 show environment [all | altitude | fan | power | voltages | current | temperatures] [location | location]

Displays the environmental parameters of NCS 1004.

Example:

The following example shows sample output of the **show environment** command with the **fan** keyword.

```

sysadmin-vm:0_RP0# show environment fan
Wed Mar  4 05:36:33.678 UTC+00:00
=====
Location          FRU Type          Fan speed (rpm)
                  FAN_0            FAN_1
-----
0/FT0             NCS1K4-FAN        7020            6930
0/FT1             NCS1K4-FAN        6780            6690
0/FT2             NCS1K4-FAN        6810            6720

```

```
0/PM0      NCS1K4-AC-PSU      25376  24352
0/PM1      NCS1K4-AC-PSU      11200  11232
```

The following example shows sample output of the **show environment** command with the **temperatures** keyword.

```
sysadmin-vm:0_RP0# show environment temperatures location 0/RP0
Wed Mar  4  05:44:51.221 UTC+00:00
=====
Location  TEMPERATURE          Value  Crit Major Minor Minor Major  Crit
          Sensor              (deg C) (Lo) (Lo) (Lo) (Hi) (Hi) (Hi)
-----
0/RP0
          TEMP_LOCAL           32    -10  -5   0   55   65   70
          TEMP_REMOTE1         32    -10  -5   0   55   65   70
          TEMP_CPU_DIE          31    -10  -5   0   75   80   90
```

The following example shows sample output of the **show environment** command with the **power** keyword.

```
sysadmin-vm:0_RP0# show environment power
Wed Mar  4  05:45:35.640 UTC+00:00
=====
CHASSIS LEVEL POWER INFO: 0
=====
Total output power capacity (N + 1)      : 2000W + 0W
Total output power required              : 910W
Total power input                        : 456W
Total power output                       : 407W

Power Group 0:
=====
Power  Supply  -----Input-----  -----Output---  Status
Module  Type      Volts  Amps  Volts  Amps
=====
0/PM0   2kW-AC    0.0    0.0   0.0    0.0  FAILED or NO PWR

Total of Power Group 0:                0W/ 0.0A    0W/ 0.0A

Power Group 1:
=====
Power  Supply  -----Input-----  -----Output---  Status
Module  Type      Volts  Amps  Volts  Amps
=====
0/PM1   2kW-AC   227.8   2.0   12.0   33.9  OK

Total of Power Group 1:                456W/ 2.0A    407W/ 33.9A

=====
Location  Card Type          Power  Power  Status
          Card Type          Allocated  Used
          Card Type          Watts    Watts
=====
0/0       NCS1K4-LC-FILLER    0        -    RESERVED
0/1       NCS1K4-1.2T-K9     260      101  ON
0/2       NCS1K4-1.2TL-K9    260      168  ON
0/3       NCS1K4-LC-FILLER    0        -    RESERVED
0/RP0     NCS1K4-CNTLR-K9     55       -    ON
0/FT0     NCS1K4-FAN          100      -    ON
0/FT1     NCS1K4-FAN          100      -    ON
0/FT2     NCS1K4-FAN          100      -    ON
0/SC0     NCS1004             35       -    ON
```

The following example shows sample output of the **show environment** command with the **voltages** keyword.

```

sysadmin-vm:0_RP0# show environment voltages location 0/RP0
Wed Mar  4 05:47:24.668 UTC+00:00
=====
Location  VOLTAGE          Value  Crit Minor Minor  Crit
          Sensor            (mV)  (Lo) (Lo) (Hi) (Hi)
-----
0/RP0
ADM1266_VH1_12V          12028  10800 11040 12960 13200
ADM1266_VH3_3V3           3306   3036  3135  3465  3564
ADM1266_VH4_2V5           2492   2300  2375  2625  2700
ADM1266_VP1_1V8           1801   1656  1710  1890  1944
ADM1266_VP2_1V2           1201   1104  1140  1260  1296
ADM1266_3V3_STAND_BY      3293   3036  3135  3465  3564
ADM1266_VP4_3V3_CPU       3301   3036  3135  3465  3564
ADM1266_VP5_2V5_CPU       2494   2300  2375  2625  2700
ADM1266_VP6_1V8_CPU       1797   1656  1710  1890  1944
ADM1266_VP7_1V24_VCCREF   1236   1140  1178  1302  1339
ADM1266_VP8_1V05_CPU      1045    966   997  1102  1134
ADM1266_VP9_1V2_DDR_VDDQ  1196   1104  1140  1260  1296
ADM1266_VP10_1V0_VCCRAM   1074    500   650  1300  1400
ADM1266_VP11_VNN           882    400   550  1300  1400
ADM1266_VP12_VCCP         1068    300   450  1300  1400
ADM1266_VP13_0V6_VTT       599    552   570   630   648
ADM1293_DB_5V0            5007   4600  4750  5250  5400
ADM1293_DB_3V3            3305   3036  3135  3465  3564
ADM1293_DB_5V0_USB_0       5007   4000  4500  5500  6000
ADM1293_DB_5V0_USB_1       5017   4000  4500  5500  6000
ADM1293_MB_5V0_PMOD0       5062   4600  4750  5250  5400
ADM1293_MB_5V0_PMOD1       5032   4600  4750  5250  5400
ADM1293_MB_2V5_PLL         2483   2300  2375  2625  2700

```

What to do next

Environment parameter anomalies are logged in the syslog. As a result, if an environment parameter displayed in the **show environment** command output is not as expected, check the syslog using the **show logging** command. The syslog provides details on any logged problems.

Verify Inventory

The **show inventory** command displays details of the hardware inventory of NCS 1004.

To verify the inventory information for all the physical entities, perform the following procedure.

Procedure

Step 1 show inventory

Displays the details of NCS 1004 when you execute this command in the Cisco IOS XR EXEC mode.

Example:

```

RP/0/RP0/CPU0:ios# show inventory
Wed Mar  4 05:10:17.107 UTC
NAME: "0/0", DESCR: "Network Convergence System 1004 Filler"
PID: NCS1K4-LC-FILLER, VID: V01, SN: N/A

```

NAME: "0/1", DESCR: "NCS1K4 12x QSFP28 2 Trunk C-Band DWDM card"
PID: NCS1K4-1.2T-K9, VID: V00, SN: CAT2250B0AE

NAME: "0/1-Optics0/1/0/2", DESCR: "Cisco 100G QSFP28 AOC Pluggable Optics Module"
PID: QSFP-100G-AOC3M , VID: V03, SN: INL22262339-A

NAME: "0/1-Optics0/1/0/4", DESCR: "Cisco 100GE QSFP28 SR4 Pluggable Optics Module"
PID: QSFP-100G-SR4-S, VID: V03, SN: AVF2219S16U

NAME: "0/1-Optics0/1/0/5", DESCR: "Cisco 100G QSFP28 LR4-S Pluggable Optics Module"
PID: QSFP-100G-LR4-S, VID: V02, SN: JFQ2145701U

NAME: "0/1-Optics0/1/0/6", DESCR: "Cisco 100GE QSFP28 SR4 Pluggable Optics Module"
PID: QSFP-100G-SR4-S, VID: ES1, SN: AVF1925G012

NAME: "0/1-Optics0/1/0/7", DESCR: "Cisco 100G QSFP28 LR4-S Pluggable Optics Module"
PID: QSFP-100G-LR4-S, VID: V02, SN: JFQ2145706N

NAME: "0/1-Optics0/1/0/8", DESCR: "Cisco QSFP-100G-LR4 Pluggable Optics Module"
PID: ONS-QSFP28-LR4, VID: V01, SN: JFQ19026014

NAME: "0/1-Optics0/1/0/9", DESCR: "Cisco 100G QSFP28 LR4-S Pluggable Optics Module"
PID: QSFP-100G-LR4-S, VID: V02, SN: OPM220518HS

NAME: "0/1-Optics0/1/0/10", DESCR: "Cisco 100G QSFP28 SM-SR Pluggable Optics Module"
PID: QSFP-100G-SM-SR, VID: V02, SN: INL21490043

NAME: "0/1-Optics0/1/0/11", DESCR: "Cisco 100G QSFP28 CWDM4 Pluggable Optics Module"
PID: QSFP-100G-CWDM4-S , VID: V01, SN: JFQ211930JL

NAME: "0/1-Optics0/1/0/12", DESCR: "Cisco 100G QSFP28 CWDM4 Pluggable Optics Module"
PID: QSFP-100G-CWDM4-S, VID: V02, SN: JFQ2210801H

NAME: "0/2", DESCR: "NCS1K4 12x QSFP28 2 Trunk L-Band DWDM card"
PID: NCS1K4-1.2TL-K9 , VID: V00, SN: CAT2337B0S4

NAME: "0/2-Optics0/2/0/2", DESCR: "Cisco 100G QSFP28 AOC Pluggable Optics Module"
PID: QSFP-100G-AOC3M, VID: V03, SN: INL22262332-A

NAME: "0/2-Optics0/2/0/4", DESCR: "Cisco 100G QSFP28 SM-SR Pluggable Optics Module"
PID: QSFP-100G-SM-SR, VID: V02, SN: FNS22070HWF

NAME: "0/2-Optics0/2/0/5", DESCR: "Cisco 100G QSFP28 SM-SR Pluggable Optics Module"
PID: QSFP-100G-SM-SR, VID: V02, SN: SPT2225302D

NAME: "0/2-Optics0/2/0/6", DESCR: "Cisco 100G QSFP28 LR4-S Pluggable Optics Module"
PID: QSFP-100G-LR4-S, VID: V02, SN: FNS22310Z1X

NAME: "0/2-Optics0/2/0/8", DESCR: "Cisco QSFP-100G-LR4 Pluggable Optics Module"
PID: ONS-QSFP28-LR4, VID: V01, SN: FNS20520R8Z

NAME: "0/2-Optics0/2/0/9", DESCR: "Cisco 100G QSFP28 AOC Pluggable Optics Module"
PID: QSFP-100G-AOC3M, VID: V03, SN: INL23312282-A

NAME: "0/2-Optics0/2/0/10", DESCR: "Cisco 100G QSFP28 AOC Pluggable Optics Module"
PID: QSFP-100G-AOC3M, VID: V03, SN: INL23312282-B

NAME: "0/2-Optics0/2/0/11", DESCR: "Cisco 100G QSFP28 LR4-S Pluggable Optics Module"
PID: QSFP-100G-LR4-S, VID: V02, SN: FNS23080LKF

NAME: "0/3", DESCR: "Network Convergence System 1004 Filler"
PID: NCS1K4-LC-FILLER, VID: V01, SN: N/A

NAME: "0/RP0", DESCR: "Network Convergence System 1004 Controller"

```

PID: NCS1K4-CNTRLR-K9, VID: V00, SN: CAT2231B069

NAME: "0/SC0", DESCR: "Network Convergence System 1004 Chassis"
PID: NCS1004, VID: V00, SN: CAT2231B192

NAME: "Rack 0", DESCR: "Network Convergence System 1004 Chassis"
PID: NCS1004, VID: V00, SN: CAT2231B192

NAME: "0/FT0", DESCR: "Network Convergence System 1004 Fan"
PID: NCS1K4-FAN, VID: V00, SN: CAT2231B2GL

NAME: "0/FT1", DESCR: "Network Convergence System 1004 Fan"
PID: NCS1K4-FAN, VID: V00, SN: CAT2231B2H4

NAME: "0/FT2", DESCR: "Network Convergence System 1004 Fan"
PID: NCS1K4-FAN, VID: V00, SN: CAT2231B2GW

NAME: "0/PM0", DESCR: "Network Convergence System 1004 AC Power Supply Unit"
PID: NCS1K4-AC-PSU, VID: V00, SN: POG2221CL1V

NAME: "0/PM1", DESCR: "Network Convergence System 1004 AC Power Supply Unit"
PID: NCS1K4-AC-PSU, VID: V00, SN: POG2221CL04

```

Step 2 admin

Enters System Admin EXEC mode.

Example:**Step 3 show inventory**

Displays inventory information for all the physical entities of NCS 1004.

Example:

```

sysadmin-vm:0_RP0# show inventory
Wed Mar  4 05:27:26.231 UTC+00:00

Name: Rack 0                Descr: Network Convergence System 1004 Chassis
PID: NCS1004                VID: V00                      SN: CAT2231B192

Name: 0/0                   Descr: Network Convergence System 1004 Filler
PID: NCS1K4-LC-FILLER      VID: V01                      SN: N/A

Name: 0/1-Optics0/1/0/2     Descr: Cisco 100G QSFP28 AOC Pluggable Optics Module
PID: QSFP-100G-AOC3M      VID: V03                      SN: INL22262339-A

Name: 0/1-Optics0/1/0/4     Descr: Cisco 100GE QSFP28 SR4 Pluggable Optics Module
PID: QSFP-100G-SR4-S      VID: V03                      SN: AVF2219S16U

Name: 0/1-Optics0/1/0/5     Descr: Cisco 100G QSFP28 LR4-S Pluggable Optics Module
PID: QSFP-100G-LR4-S      VID: V02                      SN: JFQ2145701U

Name: 0/1-Optics0/1/0/6     Descr: Cisco 100GE QSFP28 SR4 Pluggable Optics Module
PID: QSFP-100G-SR4-S      VID: ES1                      SN: AVF1925G012

Name: 0/1-Optics0/1/0/7     Descr: Cisco 100G QSFP28 LR4-S Pluggable Optics Module
PID: QSFP-100G-LR4-S      VID: V02                      SN: JFQ2145706N

Name: 0/1-Optics0/1/0/8     Descr: Cisco QSFP-100G-LR4 Pluggable Optics Module
PID: ONS-QSFP28-LR4       VID: V01                      SN: JFQ19026014

Name: 0/1-Optics0/1/0/9     Descr: Cisco 100G QSFP28 LR4-S Pluggable Optics Module
PID: QSFP-100G-LR4-S      VID: V02                      SN: OPM220518HS

```

Name: 0/1-Optics0/1/0/10 PID: QSFP-100G-SM-SR	Descr: Cisco 100G QSFP28 SM-SR Pluggable Optics Module VID: V02 SN: INL21490043
Name: 0/1-Optics0/1/0/11 PID: QSFP-100G-CWDM4-S	Descr: Cisco 100G QSFP28 CWDM4 Pluggable Optics Module VID: V01 SN: JFQ211930JL
Name: 0/1-Optics0/1/0/12 PID: QSFP-100G-CWDM4-S	Descr: Cisco 100G QSFP28 CWDM4 Pluggable Optics Module VID: V02 SN: JFQ2210801H
Name: 0/1 PID: NCS1K4-1.2T-K9	Descr: NCS1K4 12x QSFP28 2 Trunk C-Band DWDM card VID: V00 SN: CAT2250B0AE
Name: 0/2-Optics0/2/0/2 PID: QSFP-100G-AOC3M	Descr: Cisco 100G QSFP28 AOC Pluggable Optics Module VID: V03 SN: INL22262332-A
Name: 0/2-Optics0/2/0/4 PID: QSFP-100G-SM-SR	Descr: Cisco 100G QSFP28 SM-SR Pluggable Optics Module VID: V02 SN: FNS22070HWF
Name: 0/2-Optics0/2/0/5 PID: QSFP-100G-SM-SR	Descr: Cisco 100G QSFP28 SM-SR Pluggable Optics Module VID: V02 SN: SPT2225302D
Name: 0/2-Optics0/2/0/6 PID: QSFP-100G-LR4-S	Descr: Cisco 100G QSFP28 LR4-S Pluggable Optics Module VID: V02 SN: FNS22310Z1X
Name: 0/2-Optics0/2/0/8 PID: ONS-QSFP28-LR4	Descr: Cisco QSFP-100G-LR4 Pluggable Optics Module VID: V01 SN: FNS20520R8Z
Name: 0/2-Optics0/2/0/9 PID: QSFP-100G-AOC3M	Descr: Cisco 100G QSFP28 AOC Pluggable Optics Module VID: V03 SN: INL23312282-A
Name: 0/2-Optics0/2/0/10 PID: QSFP-100G-AOC3M	Descr: Cisco 100G QSFP28 AOC Pluggable Optics Module VID: V03 SN: INL23312282-B
Name: 0/2-Optics0/2/0/11 PID: QSFP-100G-LR4-S	Descr: Cisco 100G QSFP28 LR4-S Pluggable Optics Module VID: V02 SN: FNS23080LKF
Name: 0/2 PID: NCS1K4-1.2TL-K9	Descr: NCS1K4 12x QSFP28 2 Trunk L-Band DWDM card VID: V00 SN: CAT2337B0S4
Name: 0/3 PID: NCS1K4-LC-FILLER	Descr: Network Convergence System 1004 Filler VID: V01 SN: N/A
Name: 0/RP0 PID: NCS1K4-CNTLR-K9	Descr: Network Convergence System 1004 Controller VID: V00 SN: CAT2231B069
Name: 0/FT0 PID: NCS1K4-FAN	Descr: Network Convergence System 1004 Fan VID: V00 SN: CAT2231B2GL
Name: 0/FT1 PID: NCS1K4-FAN	Descr: Network Convergence System 1004 Fan VID: V00 SN: CAT2231B2H4
Name: 0/FT2 PID: NCS1K4-FAN	Descr: Network Convergence System 1004 Fan VID: V00 SN: CAT2231B2GW
Name: 0/PM0 PID: NCS1K4-AC-PSU	Descr: Network Convergence System 1004 AC Power Supply Unit VID: V00 SN: POG2221CL1V
Name: 0/PM1 PID: NCS1K4-AC-PSU	Descr: Network Convergence System 1004 AC Power Supply Unit VID: V00 SN: POG2221CL04
Name: 0/SC0 PID: NCS1004	Descr: Network Convergence System 1004 Chassis VID: V00 SN: CAT2231B192

In the previous output, the significant fields are:

- PID—Physical model name of the chassis or node.
 - VID—Physical hardware revision of the chassis or node.
 - SN—Physical serial number of the chassis or node.
-