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.

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

To verify the status of all the hardware components installed on the NCS 1001, perform the following procedure.

Before you begin

Ensure that all the required hardware components have been installed on the NCS 1001. For installation details, see *Cisco Network Convergence System 1001 Hardware Installation Guide*.

Procedure

Step 1 **show platform**

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

Example:

```
RP/0/RP0/CPU0:ios# show platform
Sun Mar  5 02:33:53.075 CET
Node              Type                        State             Config state
--------------------------------------------------------------------------------

0/0               NCS1001-K9                  OPERATIONAL       NSHUT
0/3               NCS1K-EDFA                  OPERATIONAL       NSHUT
0/RP0/CPU0        NCS1K-CNTLR2(Active)        IOS XR RUN        NSHUT
0/FT0             NCS1K1-FAN                  OPERATIONAL       NSHUT
0/FT1             NCS1K1-FAN                  OPERATIONAL       NSHUT
0/FT2             NCS1K1-FAN                  OPERATIONAL       NSHUT
0/FT3             NCS1K1-FAN                  OPERATIONAL       NSHUT
```

a) If the 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 from the **show sdr** command in Cisco IOS XR mode.

```
RP/0/RP0/CPU0:ios# show sdr
Sun Mar  5 02:37:09.174 CET
Type                 NodeName       NodeState      RedState       PartnerName
--------------------------------------------------------------------------------

NCS1001-K9           0/0            OPERATIONAL                   N/A

NCS1K-EDFA           0/3            OPERATIONAL                   N/A

RP                   0/RP0/CPU0     IOS XR RUN     ACTIVE         NONE

NCS1K-CNTLR2         0/RP0          OPERATIONAL                   N/A

NCS1K1-FAN           0/FT0          OPERATIONAL                   N/A

NCS1K1-FAN           0/FT1          OPERATIONAL                   N/A

NCS1K1-FAN           0/FT2          OPERATIONAL                   N/A

NCS1K1-FAN           0/FT3          OPERATIONAL                   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 for each node in the system.

Example:

```
sysadmin-vm:0_RP0# show platform
Sun Mar  5  01:38:22.282 UTC
Location  Card Type               HW State      SW State      Config State
--------------------------------------------------------------------------------
0/0       NCS1001-K9              OPERATIONAL   N/A           NSHUT
0/3       NCS1K-EDFA              OPERATIONAL   N/A           NSHUT
0/RP0     NCS1K-CNTLR2            OPERATIONAL   OPERATIONAL   NSHUT
0/FT0     NCS1K1-FAN              OPERATIONAL   N/A           NSHUT
0/FT1     NCS1K1-FAN              OPERATIONAL   N/A           NSHUT
0/FT2     NCS1K1-FAN              OPERATIONAL   N/A           NSHUT
```

```
0/FT3     NCS1K1-FAN              OPERATIONAL   N/A           NSHUT
```

Verify that all components of the NCS 1001 are displayed in the result. 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 experienced some internal failure.
- PRESENT—Node is in the shutdown state.
- OFFLINE—User has changed the node state to OFFLINE. The node 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.
- N/A—Valid option for modules where software is not running.

Step 4 **show platform detail**

Displays the hardware and software states, and other details of the node.

Example:

```
sysadmin-vm:0_RP0# show platform detail
Sun Mar  5  01:39:45.411 UTC

Platform Information for 0/0
 PID :               NCS1001-K9
 Description :       "Network Convergence System 1001 line system 3 slots"
 VID/SN :            V00
 HW Oper State :     OPERATIONAL
 SW Oper State :     N/A
 Configuration :     "NSHUT RST"
 HW Version :        0.1
 Last Event :        HW_EVENT_OK
 Last Event Reason : "HW Event OK"

Platform Information for 0/3
 PID :               NCS1K-EDFA
 Description :       "Network Convergence System 1000 amplifier module"
 VID/SN :            V01
 HW Oper State :     OPERATIONAL
 SW Oper State :     N/A
 Configuration :     "NSHUT RST"
 HW Version :        0.1
 Last Event :        HW_EVENT_OK
 Last Event Reason : "HW Operational"

Platform Information for 0/RP0
 PID :               NCS1K-CNTLR2
 Description :       "Network Convergence System 1000 Controller 2"
 VID/SN :            V01
 HW Oper State :     OPERATIONAL
```

```
 SW Oper State :     OPERATIONAL
 Configuration :     "NSHUT RST"
 HW Version :        0.1
 Last Event :        HW_EVENT_OK
 Last Event Reason : UNKNOWN

Platform Information for 0/FT0
 PID :               NCS1K1-FAN
 Description :       "Network Convergence System 1001 Fan"
 VID/SN :            V01
 HW Oper State :     OPERATIONAL
 SW Oper State :     N/A
 Configuration :     "NSHUT RST"
 HW Version :        0.0
 Last Event :        HW_EVENT_OK
 Last Event Reason : "HW Operational"

Platform Information for 0/FT1
 PID :               NCS1K1-FAN
 Description :       "Network Convergence System 1001 Fan"
 VID/SN :            V01
 HW Oper State :     OPERATIONAL
 SW Oper State :     N/A
 Configuration :     "NSHUT RST"
 HW Version :        0.0
 Last Event :        HW_EVENT_OK
 Last Event Reason : "HW Operational"
```

Step 5 **show inventory**

Displays the details of the physical entities of the NCS 1001 when you execute this command in the Cisco IOS XR EXEC mode.

Example:

```
RP/0/RP0/CPU0:ios# show inventory
Sun Mar  5 02:42:04.865 CET
NAME: "0/0", DESCR: "Network Convergence System 1001 line system 3 slots"
PID: NCS1001-K9        , VID: V00, SN: CAT2018B033

NAME: "0/3", DESCR: "Network Convergence System 1000 amplifier module"
PID: NCS1K-EDFA        , VID: V01, SN: IIF2044002L

NAME: "0/3-PORT-0", DESCR: "Cisco SFP Pluggable Optics Module"
PID: ONS-SC-Z3-1510    , VID: V02 , SN: FNS200801EK

NAME: "0/RP0", DESCR: "Network Convergence System 1000 Controller 2"
PID: NCS1K-CNTLR2      , VID: V01, SN: CAT2051B0R5

NAME: "0/RP0-SFP-PORT", DESCR: "Unqualified SFP Pluggable Optics Module"
PID: UNQUALIFIED-SFP   , VID: N/A, SN: N/A

NAME: "Rack 0", DESCR: "Network Convergence System 1001 line system 3 slots"
PID: NCS1001-K9        , VID: V00, SN: CAT2018B033

NAME: "0/FT0", DESCR: "Network Convergence System 1001 Fan"
PID: NCS1K1-FAN        , VID: V01, SN: N/A

NAME: "0/FT1", DESCR: "Network Convergence System 1001 Fan"
PID: NCS1K1-FAN        , VID: V01, SN: N/A

NAME: "0/FT2", DESCR: "Network Convergence System 1001 Fan"
PID: NCS1K1-FAN        , VID: V01, SN: N/A

NAME: "0/FT3", DESCR: "Network Convergence System 1001 Fan"
```

```
PID: NCS1K1-FAN        , VID: V01, SN: N/A

NAME: "0/PM0", DESCR: "Network Convergence System 1000 2KW AC PSU 2"
PID: NCS1K-2KW-AC2     , VID: V01, SN: POG2049JT21

NAME: "0/PM1", DESCR: "Network Convergence System 1000 2KW AC PSU 2"
PID: NCS1K-2KW-AC2     , VID: V01, SN: POG2049JT01
```

Verify Node Status

You can verify the operational status of all the nodes using the **show platform** command. You can execute this command independently from both the Cisco IOS XR EXEC and System Admin EXEC modes.

To verify the operational status of all the nodes, perform the following procedure.

Procedure

Step 1 **show platform**

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

Example:

```
RP/0/RP0/CPU0:ios# show platform
Sun Mar  5 02:53:27.755 CET
Node              Type                        State             Config state
--------------------------------------------------------------------------------

0/0               NCS1001-K9                  OPERATIONAL       NSHUT
0/3               NCS1K-EDFA                  OPERATIONAL       NSHUT
0/RP0/CPU0        NCS1K-CNTLR2(Active)        IOS XR RUN        NSHUT
0/FT0             NCS1K1-FAN                  OPERATIONAL       NSHUT
0/FT1             NCS1K1-FAN                  OPERATIONAL       NSHUT
0/FT2             NCS1K1-FAN                  OPERATIONAL       NSHUT
0/FT3             NCS1K1-FAN                  OPERATIONAL       NSHUT
```

If the Cisco IOS XR is not operational, no output is shown 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.

Step 2 **admin**

Enters System Admin EXEC mode.

Example:

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

Step 3 **show platform**

Displays information and status for each node in the system.

Example:

```
sysadmin-vm:0_RP0# show platform
Sun Mar  5  01:56:15.749 UTC
Location  Card Type              HW State      SW State      Config State
--------------------------------------------------------------------------------
```

```
0/0       NCS1001-K9              OPERATIONAL   N/A           NSHUT
0/3       NCS1K-EDFA              OPERATIONAL   N/A           NSHUT
0/RP0     NCS1K-CNTLR2            OPERATIONAL   OPERATIONAL   NSHUT
0/FT0     NCS1K1-FAN              OPERATIONAL   N/A           NSHUT
0/FT1     NCS1K1-FAN              OPERATIONAL   N/A           NSHUT
0/FT2     NCS1K1-FAN              OPERATIONAL   N/A           NSHUT
0/FT3     NCS1K1-FAN              OPERATIONAL   N/A           NSHUT
```

Verify that all the modules of NCS 1001 are displayed in the result. 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 experienced some internal failure.
- PRESENT—Node is in the shutdown state.
- OFFLINE—User has changed the node state to OFFLINE. The node is accessible for diagnostics.

Software states:

- OPERATIONAL—Software is operating normally and is fully functional.
- DIAG_MODE—User has changed the card state to OFFLINE for diagnosis.
- SW_INACTIVE—Software is not completely operational.
- FAILED—Software is operational but the card has experienced some internal failure.
- N/A—Valid option for modules where software is not running.

Step 4 **show platform detail**

Displays the hardware and software states, and other details of the node.

Example:

```
sysadmin-vm:0_RP0# show platform detail
Sun Mar  5  01:57:40.918 UTC

Platform Information for 0/0
 PID :               NCS1001-K9
 Description :       "Network Convergence System 1001 line system 3 slots"
 VID/SN :            V00
 HW Oper State :     OPERATIONAL
 SW Oper State :     N/A
 Configuration :     "NSHUT RST"
 HW Version :        0.1
 Last Event :        HW_EVENT_OK
 Last Event Reason : "HW Event OK"

Platform Information for 0/3
 PID :               NCS1K-EDFA
 Description :       "Network Convergence System 1000 amplifier module"
 VID/SN :            V01
 HW Oper State :     OPERATIONAL
 SW Oper State :     N/A
 Configuration :     "NSHUT RST"
 HW Version :        0.1
```

```
 Last Event :        HW_EVENT_OK
 Last Event Reason : "HW Operational"

Platform Information for 0/RP0
 PID :               NCS1K-CNTLR2
 Description :       "Network Convergence System 1000 Controller 2"
 VID/SN :            V01
 HW Oper State :     OPERATIONAL
 SW Oper State :     OPERATIONAL
 Configuration :     "NSHUT RST"
 HW Version :        0.1
 Last Event :        HW_EVENT_OK
 Last Event Reason : UNKNOWN

Platform Information for 0/FT0
 PID :               NCS1K1-FAN
 Description :       "Network Convergence System 1001 Fan"
 VID/SN :            V01
 HW Oper State :     OPERATIONAL
 SW Oper State :     N/A
 Configuration :     "NSHUT RST"
 HW Version :        0.0
 Last Event :        HW_EVENT_OK
 Last Event Reason : "HW Operational"

Platform Information for 0/FT1
 PID :               NCS1K1-FAN
 Description :       "Network Convergence System 1001 Fan"
 VID/SN :            V01
 HW Oper State :     OPERATIONAL
 SW Oper State :     N/A
 Configuration :     "NSHUT RST"
 HW Version :        0.0
 Last Event :        HW_EVENT_OK
 Last Event Reason : "HW Operational"
```

Verify Software Version

The NCS 1001 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 NCS 1001.

To verify the version of Cisco IOS XR software running on the NCS 1001, 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
Mon Feb 28 15:52:01.424 UTC
Cisco IOS XR Software, Version 7.3.2
```

```
Copyright (c) 2013-2021 by Cisco Systems, Inc.

Build Information:
Built By      : deenayak
Built On      : Mon Jul 28 01:19:52 PST 2020
Built Host    : iox-lnx-071
Workspace     : /auto/srcarchive15/prod/7.3.2/ncs1001/ws
Version       : 7.3.2
Location      : /opt/cisco/XR/packages/
Label         : 7.3.2
cisco NCS-1001 () processor
```

What to do next

Verify the result to ascertain whether a 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 the NCS 1001 must be compatible with the installed Cisco IOS XR image. Incompatibility may cause the NCS 1001 to malfunction.

To verify the firmware version, perform the following procedure.

Procedure

show hw-module fpd

```
RP/0/RP0/CPU0:ios#show hw-module fpd
Thu Jan 16 15:28:28.146 CEST                                                                     FPD
 Versions

=================
Location       Card type             HWver     FPD device        ATR     Status       Running
   Programd
------------------------------------------------------------------------------------------
0/0            NCS1001-K9             0.1       Control_BKP        B       CURRENT
    1.10
0/0            NCS1001-K9             0.1       Control_FPGA               CURRENT       1.10
    1.10
0/1            NCS1K-EDFA             0.0       FW_EDFAv1                  CURRENT       1.60
    1.60
0/2            NCS1K-PSM              0.0       FW_PSMv1                   CURRENT       1.51
    1.51
0/3            NCS1K-EDFA             0.0       FW_EDFAv1                  CURRENT       1.60
    1.60
0/RP0          NCS1K-CNTLR2          0.1       BIOS_Backup        BS      CURRENT       15.10
   15.10
0/RP0          NCS1K-CNTLR2          0.1       BIOS_Primary       S       CURRENT       15.10
   15.10
0/RP0          NCS1K-CNTLR2           0.1       Daisy_Duke_BKP     BS      CURRENT
    0.20
0/RP0          NCS1K-CNTLR2           0.1       Daisy_Duke_FPGA    S       CURRENT       0.20
    0.20
```

Displays the firmware information of various hardware components of the NCS 1001 in the Cisco IOS XR EXEC mode.

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 all the FPDs using the **upgrade hw-module location all fpd all** command in the Cisco IOS XR EXEC mode. After an 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 control card. 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.

If Firmware Upgrade Fails

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

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
Sun Mar  5 03:21:33.272 CET
MgmtEth0/RP0/CPU0/0 is up, line protocol is up
  Interface state transitions: 1
  Hardware is Management Ethernet, address is 6c9c.ed50.2aa2 (bia 6c9c.ed50.2aa2
)
  Internet address is 10.58.229.131/22
  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 2d12h
  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 16000 bits/sec, 22 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     4959018 packets input, 462164262 bytes, 0 total input drops
     0 drops for unrecognized upper-level protocol
     Received 3531513 broadcast packets, 1419827 multicast packets
              0 runts, 0 giants, 0 throttles, 0 parity
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     20720 packets output, 1284846 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 above result, 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
Sun Mar  5 03:22:45.830 CET
Interface Type          Total     UP        Down      Admin Down
--------------          -----     --        ----      ----------
ALL TYPES               2         2         0         0
--------------
IFT_ETHERNET            1         1         0         0
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
Sun Mar  5 03:23:55.330 CET

               Intf       Intf        LineP              Encap  MTU        BW
               Name       State       State               Type (byte)    (Kbps)
--------------------------------------------------------------------------------

                Nu0          up          up              Null  1500          0
     Mg0/RP0/CPU0/0          up          up              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 the *Bring-up NCS 1001* chapter.
- 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
  Sun Mar  5 03:25:26.191 CET
  interface MgmtEth0/RP0/CPU0/0
   ipv4 address 10.58.229.131 255.255.252.0
  !
  ```

  In the above 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
Sun Mar  5 03:27:57.137 CET

------------------------------------------------------------------------------------
Active Alarms
------------------------------------------------------------------------------------
Location        Severity     Group            Set Time                    Description
```

```
--------------------------------------------------------------------------------
0/3             Critical     Controller       03/02/2017 14:51:45 CET    Ots0/3/
0/2 - Output OTS Power Reading Below The Fail-Low Threshold

0/3             Minor        Controller       03/04/2017 06:32:27 CET    Optics0
/3/0/4 - Optics Low Receive Power
```

What to do next

For more information about alarms and steps to clear them, see the *Alarm Troubleshooting* chapter of the *Cisco NCS 1001 Troubleshooting Guide*.

Verify Environmental Parameters

The **show environment** command displays the environmental parameters of the NCS 1001.

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** | **fan** | **power** | **voltages** | **current** | **temperatures**] [**location** | *location*]

Displays the environmental parameters of the NCS 1001.

Example:

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

```
sysadmin-vm:0_RP0# show environment fan
Sun Mar  5  02:33:51.700 UTC
=====================================
                        Fan speed (rpm)
Location     FRU Type           FAN_0
-------------------------------------
0/FT0        NCS1K1-FAN         11640
0/FT1        NCS1K1-FAN         11640
0/FT2        NCS1K1-FAN         11400
0/FT3        NCS1K1-FAN         11640
0/PM0        NCS1K-2KW-AC2       9696
0/PM1        NCS1K-2KW-AC2       9760
```

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

```
sysadmin-vm:0_RP0# show environment temperatures location 0/RP0
Sun Mar  5  02:34:55.985 UTC
================================================================================

Location  TEMPERATURE                 Value   Crit Major Minor Minor Major  Crit

          Sensor                    (deg C)   (Lo) (Lo)   (Lo)   (Hi)   (Hi)   (Hi)

--------------------------------------------------------------------------------

0/RP0
          Thermistor 1                 40    -10     0     0    55    55    85

          Thermistor 2                 41    -10     0     0    55    55    85

          Hot Spot Temperature         40    -10     0     0    55    55    85
```

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

```
sysadmin-vm:0_RP0# show environment power
Sun Mar  5  02:36:17.380 UTC
================================================================================

CHASSIS LEVEL POWER INFO: 0
================================================================================

   Total output power capacity (N + 1)             :    2000W +    2000W
   Total output power required                     :     269W
   Total power input                               :     211W
   Total power output                              :      67W

Power Group 0:
================================================================================

   Power       Supply     ------Input----   ------Output---      Status
   Module      Type        Volts     Amps    Volts     Amps
================================================================================

   0/PM0       2kW-AC      235.0      0.4     12.0      1.1    OK

Total of Power Group 0:         94W/  0.4A        13W/  1.1A

Power Group 1:
================================================================================

   Power       Supply     ------Input----   ------Output---      Status
   Module      Type        Volts     Amps    Volts     Amps
================================================================================

   0/PM1       2kW-AC      234.5      0.5     12.0      4.5    OK

Total of Power Group 1:        117W/  0.5A        54W/  4.5A

================================================================================

   Location     Card Type            Power       Power       Status
                                     Allocated   Used
                                     Watts       Watts
================================================================================

   0/0          NCS1001-K9             30          -       ON
   0/1                -                68          -       RESERVED
   0/2                -                68          -       RESERVED
   0/3          NCS1K-EDFA             68          -       ON
```

```
   0/RP0        NCS1K-CNTLR2            35          -       ON
   0/FT0        NCS1K1-FAN               0          -       ON
   0/FT1        NCS1K1-FAN               0          -       ON
   0/FT2        NCS1K1-FAN               0          -       ON
   0/FT3        NCS1K1-FAN               0          -       ON
```

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

```
sysadmin-vm:0_RP0# show environment voltages location 0/RP0
Sun Mar  5  02:37:24.468 UTC
================================================================================

Location  VOLTAGE                    Value   Crit Minor Minor  Crit
          Sensor                     (mV)    (Lo) (Lo)  (Hi)   (Hi)
--------------------------------------------------------------------------------

0/RP0
          VP1P0_CPU                  1002    900   950  1050  1100
          CPU_CORE_VCC                713    400   450  1350  1400
          CPU_CORE_VNN                952    400   450  1350  1400
          VP1P1                      1077    990  1050  1160  1210
          VP1P2                      1206   1080  1140  1260  1320
          VP1P35_DDR                 1353   1220  1280  1420  1490
          VP1P35                     1346   1220  1280  1420  1490
          VP1P5                      1503   1350  1430  1580  1650
          VP1P8_CPU                  1801   1620  1710  1890  1980
          VP3P3_STBY                 3323   2970  3140  3470  3630
          VP3P3                      3346   2970  3140  3470  3630
          VP5P0                      5029   4500  4750  5250  5500
          VP12P0                    12047  10800 11400 12600 13200
          VREF                       1224   1190  1200  1240  1250
          12V Input Voltage         11208   8000 10000 14000 16000
```

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 the NCS 1001.

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

Procedure

Step 1 **show inventory**

Displays the details of the NCS 1001 when you execute this command in the Cisco IOS XR EXEC mode.

Example:

```
RP/0/RP0/CPU0:ios# show inventory
```

```
Sun Mar  5  02:42:57.359 UTC

 Name: Rack 0               Descr: Network Convergence System 1001 line system 3 slots
 PID: NCS1001-K9            VID: V00                  SN: CAT2018B033

 Name: 0/0                  Descr: Network Convergence System 1001 line system 3 slots
 PID: NCS1001-K9            VID: V00                  SN: CAT2018B033

 Name: 0/3                  Descr: Network Convergence System 1000 amplifier module
 PID: NCS1K-EDFA            VID: V01                  SN: IIF2044002L

 Name: 0/RP0-SFP-PORT       Descr: Unqualified SFP Pluggable Optics Module
 PID: UNQUALIFIED-SFP       VID:                      SN:

 Name: 0/RP0                Descr: Network Convergence System 1000 Controller 2
 PID: NCS1K-CNTLR2          VID: V01                  SN: CAT2051B0R5

 Name: 0/FT0                Descr: Network Convergence System 1001 Fan
 PID: NCS1K1-FAN            VID: V01                  SN: N/A

 Name: 0/FT1                Descr: Network Convergence System 1001 Fan
 PID: NCS1K1-FAN            VID: V01                  SN: N/A

 Name: 0/FT2                Descr: Network Convergence System 1001 Fan
 PID: NCS1K1-FAN            VID: V01                  SN: N/A

 Name: 0/FT3                Descr: Network Convergence System 1001 Fan
 PID: NCS1K1-FAN            VID: V01                  SN: N/A

 Name: 0/PM0                Descr: Network Convergence System 1000 2KW AC PSU 2
 PID: NCS1K-2KW-AC2         VID: V01                  SN: POG2049JT21

 Name: 0/PM1                Descr: Network Convergence System 1000 2KW AC PSU 2
 PID: NCS1K-2KW-AC2         VID: V01                  SN: POG2049JT01
```

Step 2 **admin**

Enters System Admin EXEC mode.

Example:

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

Step 3 **show inventory**

Displays inventory information for all the physical entities of the NCS 1001.

Example:

```
sysadmin-vm:0_RP0# show inventory
Sun Mar  5  02:44:30.350 UTC

 Name: Rack 0               Descr: Network Convergence System 1001 line system 3 slots
 PID: NCS1001-K9            VID: V00                  SN: CAT2018B033

 Name: 0/0                  Descr: Network Convergence System 1001 line system 3 slots
 PID: NCS1001-K9            VID: V00                  SN: CAT2018B033

 Name: 0/3                  Descr: Network Convergence System 1000 amplifier module
 PID: NCS1K-EDFA            VID: V01                  SN: IIF2044002L

 Name: 0/RP0-SFP-PORT       Descr: Unqualified SFP Pluggable Optics Module
 PID: UNQUALIFIED-SFP       VID:                      SN:
```

```
Name: 0/RP0                Descr: Network Convergence System 1000 Controller 2
PID: NCS1K-CNTLR2          VID: V01                   SN: CAT2051B0R5

Name: 0/FT0                Descr: Network Convergence System 1001 Fan
PID: NCS1K1-FAN            VID: V01                   SN: N/A

Name: 0/FT1                Descr: Network Convergence System 1001 Fan
PID: NCS1K1-FAN            VID: V01                   SN: N/A

Name: 0/FT2                Descr: Network Convergence System 1001 Fan
PID: NCS1K1-FAN            VID: V01                   SN: N/A

Name: 0/FT3                Descr: Network Convergence System 1001 Fan
PID: NCS1K1-FAN            VID: V01                   SN: N/A

Name: 0/PM0                Descr: Network Convergence System 1000 2KW AC PSU 2
PID: NCS1K-2KW-AC2         VID: V01                   SN: POG2049JT21

Name: 0/PM1                Descr: Network Convergence System 1000 2KW AC PSU 2
PID: NCS1K-2KW-AC2         VID: V01                   SN: POG2049JT01
```

In the above 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 for the chassis or node.