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.

Note

- Refer to System Health Check for monitoring systems in a network to proactively prevent potential issues and take preventative steps.

Inventory Support in NCS 1014

Table 1: Feature History

Feature Name	Release Information	Description
Inventory Support	Cisco IOS XR Release 7.11.1	Inventory support and pluggable optics support for QSFP28,QSFP-DD and Coherent Interface Module (CIM 8) are enabled in NCS 1014 system.

The NCS 1014 inventory model consists of the following components.

- One NCS 1014 controller card.
- NCS 1014 chassis.
- Two AC or DC power supply units (PSU) of 2KW and 2.5KW.
- Three FAN trays.
- Four line cards.

The components are connected to a 2RU chassis. NCS 1014 can support upto four line cards at once at any given point in time. The line cards supported are 1.2T, NCS1K4-2.4T-K9, CCMD-16-C and CCMD-16-L cards.

Note **CCMD-16-C**: refers to the NCS1K14-CCMD-16-C card.

CCMD-16-L: refers to the NCS1K14-CCMD-16-L card.

1.2T : refers to the NCS1K4-1.2T-K9 C-band card.

2.4T: refers to the NCS1K4-2.4T-K9 C-band card.

The show inventory command retrieves and displays the inventory information about each Cisco product in the form of a Unique Device Identifier (UDI). The UDI is a combination of three separate data elements: a product identifier (PID), a version identifier (VID), and the serial number (SN). The PID is the name by which the product is ordered. It is also known as product name or part number.

The VID is the version of the product. Whenever a product is upgraded the VID gets incremented according to the changes added. The SN is the vendor based unique serial number assigned to any product. It is used to identifying any specific product.

Verify Inventory

The **show inventory** command displays the details of the hardware inventory of NCS 1014.

To verify the inventory information for all the physical entities, use the following command.

show inventory [all | details | fan | power | vendor-type | raw | chasis | word] [location | *location* **]**.

Note The various options available under **show inventory** command are listed below.

- **Word**: Partially qualified location specification
- **All**: Inventory information for all the physical entities
- **Chassis**: Inventory information about chassis
- **Details**: Detailed entity information
- **Fan**: Inventory information about fan
- **Location**: Location of node for inventory
- **Power**: Inventory information about power
- **Raw**: Raw information
- **Vendor-type**: Vendor type information

Example

```
RP/0/RP0/CPU0:ios#show inventory ?
  WORD         Partially qualified location specification
  all          Inventory information for all the physical entities
  chassis      Inventory information about chassis
  details      detailed entity information
  fan          Inventory information about fan
  location     Location of node for inventory
  power        Inventory information about power
  raw          raw information
  vendor-type  vendor-type information
  |            Output Modifiers
  <cr>
```

show inventory

When you execute this command in the Cisco IOS XR EXEC mode, it displays the summary of NCS 1014 inventory based on different card and optics pluggables on all the slots or ports.

Example:

```
RP/0/RP0/CPU0:ios#
RP/0/RP0/CPU0:ios# show inventory
Thu Oct  5 02:32:14.231 UTC

NAME: "Rack 0", DESCR: "Network Convergence System 1014 chassis with timing support"
PID: NCS1014           , VID: V00, SN: FCB2717B151

NAME: "0/RP0/CPU0", DESCR: "Network Convergence System 1014 Controller"
PID: NCS1K14-CNTLR-K9  , VID: V00, SN: FCB2718B1AX

NAME: "0/0/NXR0", DESCR: "NCS1K4 12x QSFP28 2 Trunk C-Band DWDM card"
PID: NCS1K4-1.2T-K9    , VID: V00, SN: CAT2250B0B9

NAME: "0/1/NXR0", DESCR: "Network Convergence System 1014 2.4T Line Card"
PID: NCS1K14-2.4T-K9   , VID: V00, SN: FCB2710B0L5

NAME: "Optics0/1/0/0", DESCR: "Cisco CIM8 C K9 Pluggable Optics Module"
```

```
PID: CIM8-C-K9         , VID: VES1, SN: SIM-AX12-SW

NAME: "Optics0/1/0/1", DESCR: "Cisco 100G QSFP28 SR4-S Pluggable Optics Module"
PID: QSFP-100G-SR4-S   , VID: ES1 , SN: AVF1933G18C

NAME: "Optics0/1/0/2", DESCR: "Non-Cisco UNKNOWN TYPE Pluggable Optics Module"
PID: TR-IQ13L-N00      , VID: 1B, SN: INFBH1940242

NAME: "Optics0/1/0/3", DESCR: "Cisco UNKNOWN TYPE Pluggable Optics Module"
PID: ONS-QSFP-4X10-MLR , VID: V01 , SN: INL21010375

NAME: "Optics0/1/0/4", DESCR: "Cisco 100G QSFP28 SR4-S Pluggable Optics Module"
PID: QSFP-100G-SR4-S   , VID: ES1 , SN: AVF1933G16A

NAME: "Optics0/1/0/6", DESCR: "Cisco QSFP DD 400G FR4 S Pluggable Optics Module"
PID: QDD-400G-FR4-S    , VID: V01 , SN: FIW250504DL

NAME: "Optics0/1/0/7", DESCR: "Cisco CIM8 C K9 Pluggable Optics Module"
PID: CIM8-C-K9         , VID: VES1, SN: ACA27370055

NAME: "0/2/NXR0", DESCR: "NCS1K4 12x QSFP28 2 Trunk C-Band DWDM card"
PID: NCS1K4-1.2T-K9    , VID: V03, SN: CAT2329B32K

NAME: "Optics0/2/0/10", DESCR: "Cisco QSFP28 100G CU1M Pluggable Optics Module"
PID: QSFP-100G-CU1M    , VID: V01 , SN: LCC2402GKJ3-B

NAME: "Optics0/2/0/11", DESCR: "Cisco 100G QSFP28 LR-S Pluggable Optics Module"
PID: QSFP-100G-LR-S    , VID: ES0 , SN: FBN2321A013

NAME: "Optics0/2/0/12", DESCR: "Cisco 100G QSFP28 AOC Pluggable Optics Module"
PID: QSFP-100G-AOC3M   , VID: V03 , SN: INL23302076-B

NAME: "Optics0/2/0/13", DESCR: "Cisco 100G QSFP28 LR-S Pluggable Optics Module"
PID: QSFP-100G-LR-S    , VID: ES0 , SN: FBN2321A024

NAME: "Optics0/2/0/3", DESCR: "Cisco QSFP28 100G CU1M Pluggable Optics Module"
PID: QSFP-100G-CU1M    , VID: V01 , SN: LCC2402GKJ3-A

NAME: "Optics0/2/0/4", DESCR: "Cisco 100G QSFP28 CWDM4 Pluggable Optics Module"
PID: QSFP-100G-CWDM4-S , VID: V02 , SN: JFQ2210800T

NAME: "Optics0/2/0/5", DESCR: "Cisco 100G QSFP28 AOC Pluggable Optics Module"
PID: QSFP-100G-AOC3M   , VID: V03 , SN: INL23302076-A

NAME: "Optics0/2/0/6", DESCR: "Non-Cisco 100G QSFP28 CWDM4 Pluggable Optics Module"
PID: FTLC1152RGPL2-G2  , VID: A0, SN: UYL0AL9

NAME: "Optics0/2/0/7", DESCR: "Non-Cisco 100G QSFP28 LR4 Pluggable Optics Module"
PID: FIM37700/171      , VID: 01, SN: 37700171ZZ00PK

NAME: "Optics0/2/0/8", DESCR: "Cisco 100G QSFP28 LR4 Pluggable Optics Module"
PID: ONS-QSFP28-LR4    , VID: V01 , SN: FNS20520RM6

NAME: "0/3/NXR0", DESCR: "Network Convergence System 1014 Filler"
PID: NCS1K14-BLANK     , VID: V01, SN: N/A

NAME: "0/FT0", DESCR: "Network Convergence System 1014 FAN Module"
PID: NCS1K14-FAN       , VID: V00, SN: FCB2720B15J

NAME: "0/FT1", DESCR: "Network Convergence System 1014 FAN Module"
PID: NCS1K14-FAN       , VID: V00, SN: FCB2720B15L

NAME: "0/FT2", DESCR: "Network Convergence System 1014 FAN Module"
PID: NCS1K14-FAN       , VID: V00, SN: FCB2720B15E
```

```
NAME: "0/PM0", DESCR: "Network Convergence System 1004 AC Power Supply Unit"
PID: NCS1K4-AC-PSU     , VID: V00, SN: POG2221CL0Z

NAME: "0/PM1", DESCR: "Network Convergence System 1004 AC Power Supply Unit"
PID: NCS1K4-AC-PSU     , VID: V01, SN: POG2505CL53
RP/0/RP0/CPU0:ios#
RP/0/RP0/CPU0:ios#


RP/0/RP0/CPU0:ios#show inventory all
Mon Nov 27 11:01:53.452 UTC

NAME: "Rack 0", DESCR: "Network Convergence System 1014 chassis with timing support"
PID: NCS1014           , VID: V00, SN: FCB2717B13C

NAME: "0/RP0/CPU0", DESCR: "Network Convergence System 1014 Controller"
PID: NCS1K14-CNTLR-K9  , VID: V00, SN: FCB2723B0CX

NAME: "0/0/NXR0", DESCR: "Network Convergence System 1014 Filler"
PID: NCS1K14-BLANK     , VID: V01, SN: N/A

NAME: "0/1/NXR0", DESCR: "Network Convergence System 1014 Filler"
PID: NCS1K14-BLANK     , VID: V01, SN: N/A

NAME: "0/2/NXR0", DESCR: "Network Convergence System 1014 2.4T Line Card"
PID: NCS1K14-2.4T-K9   , VID: V00, SN: FCB2726B067

NAME: "Optics0/2/0/4", DESCR: "Cisco QSFP DD 400G DR4 S Pluggable Optics Module"
PID: QDD-400G-DR4-S    , VID: V01 , SN: CGC25512003

NAME: "Optics0/2/0/5", DESCR: "Cisco QSFP DD 400G FR4 S Pluggable Optics Module"
PID: QDD-400G-FR4-S    , VID: V01 , SN: CGC26371408

NAME: "Optics0/2/0/7", DESCR: "Cisco CIM8 C K9 Pluggable Optics Module"
PID: CIM8-C-K9         , VID: VES1, SN: ACA274500CR

NAME: "0/3/NXR0", DESCR: "Network Convergence System 1014 Filler"
PID: NCS1K14-BLANK     , VID: V01, SN: N/A

NAME: "0/FT0", DESCR: "Network Convergence System 1014 FAN Module"
PID: NCS1K14-FAN       , VID: V00, SN: FCB2720B192

NAME: "0/FT1", DESCR: "Network Convergence System 1014 FAN Module"
PID: NCS1K14-FAN       , VID: V00, SN: FCB2720B197

NAME: "0/FT2", DESCR: "Network Convergence System 1014 FAN Module"
PID: NCS1K14-FAN       , VID: V00, SN: FCB2720B19U

NAME: "0/PM0", DESCR: "Network Convergence System 1004 AC Power Supply Unit"
PID: NCS1K4-AC-PSU     , VID: V01, SN: POG2727CLP6

NAME: "0/PM1", DESCR: "Network Convergence System 1004 AC Power Supply Unit"
PID: NCS1K4-AC-PSU     , VID: V01, SN: POG2727CLKS
RP/0/RP0/CPU0:ios#
RP/0/RP0/CPU0:ios#
RP/0/RP0/CPU0:ios#
```

To display location based inventory details use this command.

```
RP/0/RP0/CPU0:ios#show inventory location 0/2/NXR0
Thu Oct  5 02:35:30.251 UTC

NAME: "0/2/NXR0", DESCR: "NCS1K4 12x QSFP28 2 Trunk C-Band DWDM card"
```

```
PID: NCS1K4-1.2T-K9    , VID: V03, SN: CAT2329B32K

NAME: "Optics0/2/0/10", DESCR: "Cisco QSFP28 100G CU1M Pluggable Optics Module"
PID: QSFP-100G-CU1M    , VID: V01 , SN: LCC2402GKJ3-B

NAME: "Optics0/2/0/11", DESCR: "Cisco 100G QSFP28 LR-S Pluggable Optics Module"
PID: QSFP-100G-LR-S    , VID: ES0 , SN: FBN2321A013

NAME: "Optics0/2/0/12", DESCR: "Cisco 100G QSFP28 AOC Pluggable Optics Module"
PID: QSFP-100G-AOC3M   , VID: V03 , SN: INL23302076-B

NAME: "Optics0/2/0/13", DESCR: "Cisco 100G QSFP28 LR-S Pluggable Optics Module"
PID: QSFP-100G-LR-S    , VID: ES0 , SN: FBN2321A024

NAME: "Optics0/2/0/3", DESCR: "Cisco QSFP28 100G CU1M Pluggable Optics Module"
PID: QSFP-100G-CU1M    , VID: V01 , SN: LCC2402GKJ3-A

NAME: "Optics0/2/0/4", DESCR: "Cisco 100G QSFP28 CWDM4 Pluggable Optics Module"
PID: QSFP-100G-CWDM4-S , VID: V02 , SN: JFQ2210800T

NAME: "Optics0/2/0/5", DESCR: "Cisco 100G QSFP28 AOC Pluggable Optics Module"
PID: QSFP-100G-AOC3M   , VID: V03 , SN: INL23302076-A

NAME: "Optics0/2/0/6", DESCR: "Non-Cisco 100G QSFP28 CWDM4 Pluggable Optics Module"
PID: FTLC1152RGPL2-G2  , VID: A0, SN: UYL0AL9

NAME: "Optics0/2/0/7", DESCR: "Non-Cisco 100G QSFP28 LR4 Pluggable Optics Module"
PID: FIM37700/171      , VID: 01, SN: 37700171ZZ00PK

NAME: "Optics0/2/0/8", DESCR: "Cisco 100G QSFP28 LR4 Pluggable Optics Module"
PID: ONS-QSFP28-LR4    , VID: V01 , SN: FNS20520RM6
RP/0/RP0/CPU0:ios#


RP/0/RP0/CPU0:ios#
RP/0/RP0/CPU0:ios#show inventory location 0/1/NXR0
Thu Oct  5 02:38:13.791 UTC

NAME: "0/1/NXR0", DESCR: "Network Convergence System 1014 2.4T Line Card"
PID: NCS1K14-2.4T-K9   , VID: V00, SN: FCB2710B0L5

NAME: "Optics0/1/0/0", DESCR: "Cisco CIM8 C K9 Pluggable Optics Module"
PID: CIM8-C-K9         , VID: VES1, SN: SIM-AX12-SW

NAME: "Optics0/1/0/1", DESCR: "Cisco 100G QSFP28 SR4-S Pluggable Optics Module"
PID: QSFP-100G-SR4-S   , VID: ES1 , SN: AVF1933G18C

NAME: "Optics0/1/0/2", DESCR: "Non-Cisco UNKNOWN TYPE Pluggable Optics Module"
PID: TR-IQ13L-N00      , VID: 1B, SN: INFBH1940242

NAME: "Optics0/1/0/3", DESCR: "Cisco UNKNOWN TYPE Pluggable Optics Module"
PID: ONS-QSFP-4X10-MLR , VID: V01 , SN: INL21010375

NAME: "Optics0/1/0/4", DESCR: "Cisco 100G QSFP28 SR4-S Pluggable Optics Module"
PID: QSFP-100G-SR4-S   , VID: ES1 , SN: AVF1933G16A

NAME: "Optics0/1/0/6", DESCR: "Cisco QSFP DD 400G FR4 S Pluggable Optics Module"
PID: QDD-400G-FR4-S    , VID: V01 , SN: FIW250504DL

NAME: "Optics0/1/0/7", DESCR: "Cisco CIM8 C K9 Pluggable Optics Module"
PID: CIM8-C-K9         , VID: VES1, SN: ACA27370055
RP/0/RP0/CPU0:ios#
RP/0/RP0/CPU0:ios#
```

To display chassis based inventory details use this command.

```
RP/0/RP0/CPU0:ios#show inventory chassis
Mon Nov 27 11:02:05.083 UTC

NAME: "Rack 0", DESCR: "Network Convergence System 1014 chassis with timing support"
PID: NCS1014           , VID: V00, SN: FCB2717B13C
RP/0/RP0/CPU0:ios#
RP/0/RP0/CPU0:ios#
RP/0/RP0/CPU0:ios#sh inventory details
Mon Nov 27 11:02:23.095 UTC

NAME: "Rack 0", DESCR: "Network Convergence System 1014 chassis with timing support"
PID: NCS1014           , VID: V00, SN: FCB2717B13C
MFG_NAME: Cisco Systems, Inc., SNMP_IDX: 8384513   , Type: Rack
PN: 800-111211-01, HW Ver: 0.1

NAME: "0/RP0/CPU0", DESCR: "Network Convergence System 1014 Controller"
PID: NCS1K14-CNTLR-K9  , VID: V00, SN: FCB2723B0CX
MFG_NAME: Cisco Systems, Inc., SNMP_IDX: 16385     , Type: Module
PN: 800-111209-01, HW Ver: 0.2

NAME: "0/0/NXR0", DESCR: "Network Convergence System 1014 Filler"
PID: NCS1K14-BLANK     , VID: V01, SN: N/A
MFG_NAME: Cisco Systems, Inc., SNMP_IDX: 1         , Type: Module
PN: 800-39505-01, HW Ver: 0.1

NAME: "0/1/NXR0", DESCR: "Network Convergence System 1014 Filler"
PID: NCS1K14-BLANK     , VID: V01, SN: N/A
MFG_NAME: Cisco Systems, Inc., SNMP_IDX: 4097      , Type: Module
PN: 800-39505-01, HW Ver: 0.1

NAME: "0/2/NXR0", DESCR: "Network Convergence System 1014 2.4T Line Card"
PID: NCS1K14-2.4T-K9   , VID: V00, SN: FCB2726B067
MFG_NAME: Cisco Systems, Inc., SNMP_IDX: 8193      , Type: Module
PN: 800-51107-01, HW Ver: 0.1

NAME: "Optics0/2/0/4", DESCR: "Cisco QSFP DD 400G DR4 S Pluggable Optics Module"
PID: QDD-400G-DR4-S    , VID: V01 , SN: CGC25512003
MFG_NAME: CISCO-CIG         , SNMP_IDX: 3129345   , Type: Module
PN: 10-3320-01, HW Ver: 0.0

NAME: "Optics0/2/0/5", DESCR: "Cisco QSFP DD 400G FR4 S Pluggable Optics Module"
PID: QDD-400G-FR4-S    , VID: V01 , SN: CGC26371408
MFG_NAME: CISCO-CIG         , SNMP_IDX: 3133441   , Type: Module
PN: 10-3321-01, HW Ver: 0.0

NAME: "Optics0/2/0/7", DESCR: "Cisco CIM8 C K9 Pluggable Optics Module"
PID: CIM8-C-K9         , VID: VES1, SN: ACA274500CR
MFG_NAME: CISCO-ACACIA      , SNMP_IDX: 3141633   , Type: Module
PN: 10-100471-01, HW Ver: 0.0

NAME: "0/3/NXR0", DESCR: "Network Convergence System 1014 Filler"
PID: NCS1K14-BLANK     , VID: V01, SN: N/A
MFG_NAME: Cisco Systems, Inc., SNMP_IDX: 12289     , Type: Module
PN: 800-39505-01, HW Ver: 0.1

NAME: "0/FT0", DESCR: "Network Convergence System 1014 FAN Module"
PID: NCS1K14-FAN       , VID: V00, SN: FCB2720B192
MFG_NAME: Cisco Systems, Inc., SNMP_IDX: 28673     , Type: Fantray
PN: 800-111210-01, HW Ver: 0.1

NAME: "0/FT1", DESCR: "Network Convergence System 1014 FAN Module"
PID: NCS1K14-FAN       , VID: V00, SN: FCB2720B197
MFG_NAME: Cisco Systems, Inc., SNMP_IDX: 32769     , Type: Fantray
```

```
PN: 800-111210-01, HW Ver: 0.1

NAME: "0/FT2", DESCR: "Network Convergence System 1014 FAN Module"
PID: NCS1K14-FAN       , VID: V00, SN: FCB2720B19U
MFG_NAME: Cisco Systems, Inc., SNMP_IDX: 36865     , Type: Fantray
PN: 800-111210-01, HW Ver: 0.1

NAME: "0/PM0", DESCR: "Network Convergence System 1004 AC Power Supply Unit"
PID: NCS1K4-AC-PSU     , VID: V01, SN: POG2727CLP6
MFG_NAME: Cisco Systems, Inc., SNMP_IDX: 20481     , Type: Power Supply
PN: 341-100825-01, HW Ver: 0.1

NAME: "0/PM1", DESCR: "Network Convergence System 1004 AC Power Supply Unit"
PID: NCS1K4-AC-PSU     , VID: V01, SN: POG2727CLKS
MFG_NAME: Cisco Systems, Inc., SNMP_IDX: 24577     , Type: Power Supply
PN: 341-100825-01, HW Ver: 0.1
RP/0/RP0/CPU0:ios#
RP/0/RP0/CPU0:ios#
RP/0/RP0/CPU0:ios#
```

To display fan based inventory details use this command.

```
RP/0/RP0/CPU0:ios#show inventory fan
Mon Nov 27 11:02:39.811 UTC

NAME: "0/FT0", DESCR: "Network Convergence System 1014 FAN Module"
PID: NCS1K14-FAN       , VID: V00, SN: FCB2720B192

NAME: "0/FT1", DESCR: "Network Convergence System 1014 FAN Module"
PID: NCS1K14-FAN       , VID: V00, SN: FCB2720B197

NAME: "0/FT2", DESCR: "Network Convergence System 1014 FAN Module"
PID: NCS1K14-FAN       , VID: V00, SN: FCB2720B19U
RP/0/RP0/CPU0:ios#
RP/0/RP0/CPU0:ios#
RP/0/RP0/CPU0:ios#sh inventory location 0/3/NXR0
Mon Nov 27 11:02:46.903 UTC

NAME: "0/3/NXR0", DESCR: "Network Convergence System 1014 Filler"
PID: NCS1K14-BLANK     , VID: V01, SN: N/A
RP/0/RP0/CPU0:ios#
RP/0/RP0/CPU0:ios#
RP/0/RP0/CPU0:ios#sh inventory power
Mon Nov 27 11:03:04.566 UTC

NAME: "0/PM0", DESCR: "Network Convergence System 1004 AC Power Supply Unit"
PID: NCS1K4-AC-PSU     , VID: V01, SN: POG2727CLP6
```

Verify Status of Hardware Components

To verify the status of all the hardware components installed on NCS 1014, perform the following procedure.

Before you begin

Ensure that all the required hardware components are installed on NCS 1014. For installation details, see *Cisco Network Convergence System 1014 Hardware Installation Guide*.

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
Node              Type                      State                    Config state
--------------------------------------------------------------------------------
0/RP0/CPU0        NCS1K14-CNTLR-K9(Active) IOS XR RUN               NSHUT,NMON
0/PM0             NCS1K4-AC-PSU            OPERATIONAL              NSHUT,NMON
0/PM1             NCS1K4-AC-PSU            OPERATIONAL              NSHUT,NMON
0/FT0             NCS1K14-FAN              OPERATIONAL              NSHUT,NMON
0/FT1             NCS1K14-FAN              OPERATIONAL              NSHUT,NMON
0/FT2             NCS1K14-FAN              OPERATIONAL              NSHUT,NMON
0/0/NXR0          NCS1K4-1.2T-K9           OPERATIONAL              NSHUT,NMON
0/1/NXR0          NCS1K14-2.4T-K9          OPERATIONAL              NSHUT,NMON
0/2/NXR0          NCS1K4-1.2T-K9           OPERATIONAL              NSHUT,NMON
0/3/NXR0          NCS1K4-1.2T-K9           OPERATIONAL              NSHUT,NMON
```

Step 2 **show inventory**

Displays details of the physical entities of NCS 1014 along with the details of QSFPs when you execute this command in Cisco IOS XR EXEC mode.

Example:

```
RP/0/RP0/CPU0:ios#show platform
Node              Type                      State                    Config state
--------------------------------------------------------------------------------
0/RP0/CPU0        NCS1K14-CNTLR-K9(Active) IOS XR RUN               NSHUT,NMON
0/PM0             NCS1K4-AC-PSU            OPERATIONAL              NSHUT,NMON
0/PM1             NCS1K4-AC-PSU            OPERATIONAL              NSHUT,NMON
0/FT0             NCS1K14-FAN              OPERATIONAL              NSHUT,NMON
0/FT1             NCS1K14-FAN              OPERATIONAL              NSHUT,NMON
0/FT2             NCS1K14-FAN              OPERATIONAL              NSHUT,NMON
0/0/NXR0          NCS1K4-1.2T-K9           OPERATIONAL              NSHUT,NMON
0/1/NXR0          NCS1K14-2.4T-K9          OPERATIONAL              NSHUT,NMON
0/2/NXR0          NCS1K4-1.2T-K9           OPERATIONAL              NSHUT,NMON
0/3/NXR0          NCS1K4-1.2T-K9           OPERATIONAL              NSHUT,NMON


Step 2 show inventory

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

NAME: "Rack 0", DESCR: "Network Convergence System 1014 chassis with timing support"
PID: NCS1014           , VID: V00, SN: FCB2726B0AR

NAME: "0/RP0/CPU0", DESCR: "Network Convergence System 1014 Controller"
PID: NCS1K14-CNTLR-K9  , VID: V00, SN: FCB2726B0LR

NAME: "0/0/NXR0", DESCR: "NCS1K4 12x QSFP28 2 Trunk C-Band DWDM card"
PID: NCS1K4-1.2T-K9    , VID: V00, SN: CAT2250B0C4

NAME: "Optics0/0/0/9", DESCR: "Cisco 100G QSFP28 FR-S Pluggable Optics Module"
PID: QSFP-100G-FR-S    , VID: V02 , SN: FBN2638A153

NAME: "Optics0/0/0/10", DESCR: "Cisco 100G QSFP28 FR-S Pluggable Optics Module"
PID: QSFP-100G-FR-S    , VID: V02 , SN: FBN2638A6J0

NAME: "Optics0/0/0/11", DESCR: "Cisco 100G QSFP28 FR-S Pluggable Optics Module"
PID: QSFP-100G-FR-S    , VID: V02 , SN: FBN2638A73V
```

```
NAME: "Optics0/0/0/12", DESCR: "Cisco 100G QSFP28 FR-S Pluggable Optics Module"
PID: QSFP-100G-FR-S    , VID: V02 , SN: FBN2544A687

NAME: "Optics0/0/0/13", DESCR: "Cisco 100G QSFP28 FR-S Pluggable Optics Module"
PID: QSFP-100G-FR-S    , VID: V02 , SN: FBN2638A2D4

NAME: "Optics0/0/0/2", DESCR: "Cisco 100G QSFP28 LR4 Pluggable Optics Module"
PID: ONS-QSFP28-LR4    , VID: V01 , SN: FNS2333080H

NAME: "Optics0/0/0/3", DESCR: "Cisco 100G QSFP28 FR-S Pluggable Optics Module"
PID: QSFP-100G-FR-S    , VID: V02 , SN: FBN2638A6J2

NAME: "Optics0/0/0/4", DESCR: "Cisco 100G QSFP28 FR-S Pluggable Optics Module"
PID: QSFP-100G-FR-S    , VID: V01 , SN: INL23243050

NAME: "Optics0/0/0/5", DESCR: "Cisco 100G QSFP28 LR4 Pluggable Optics Module"
PID: ONS-QSFP28-LR4    , VID: V01 , SN: FNS23320DZF

NAME: "Optics0/0/0/6", DESCR: "Cisco 100G QSFP28 LR4 Pluggable Optics Module"
PID: ONS-QSFP28-LR4    , VID: V01 , SN: FNS26140JRK

NAME: "Optics0/0/0/7", DESCR: "Cisco 100G QSFP28 LR4-S Pluggable Optics Module"
PID: QSFP-100G-LR4-S   , VID: V02 , SN: FNS263509QL

NAME: "Optics0/0/0/8", DESCR: "Cisco 100G QSFP28 FR-S Pluggable Optics Module"
PID: QSFP-100G-FR-S    , VID: V02 , SN: FBN2638A5G5

NAME: "0/1/NXR0", DESCR: "Network Convergence System 1014 2.4T Line Card"
PID: NCS1K14-2.4T-K9   , VID: V00, SN: FCB2726B072
```

Verify Software Version

NCS 1014 is shipped with the Cisco IOS XR Software preinstalled. Verify that the latest version of the software is installed.

show version

Displays the software version and details such as system uptime.

Example:

```
RP/0/RP0/CPU0:ios#sh version
Cisco IOS XR Software, Version 7.11.1.49I LNT
Copyright (c) 2013-2023 by Cisco Systems, Inc.

Build Information:
 Built By     : sajshah
 Built On     : Sun Nov 19 20:31:06 UTC 2023
 Build Host   : iox-ucs-077
 Workspace    : /auto/ioxdepot6/GISO/giso_build_lindt/giso_eng_create/yshivapp_2023-11-20_04-28-49_UTC

 Version      : 7.11.1.49I
 Label        : 7.11.1.49I-Weekly

cisco NCS1010 (C3758R @ 2.40GHz)
cisco NCS1014 (C3758R @ 2.40GHz) processor with 32GB of memory
```

```
KEPLER_PF6 uptime is 1 hour, 40 minutes
NCS 1014 - Chassis
```

Verify Environmental Parameters

The **show environment** command displays the environmental parameters of NCS 1014.

To verify the environmental parameters use the following commands **show environment [all | altitude | fan | power | voltage | current | temperature] [location |** *location* **]**.

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

```
RP/0/RP0/CPU0:ios#show environment fan
==============================================================
                                            Fan speed (rpm)
Location      FRU Type                      FAN_0    FAN_1
--------------------------------------------------------------

0/PM0        NCS1K4-DC-PSU-2                 11520   11216
0/PM1        NCS1K4-DC-PSU-2                 12256   12128
0/FT0        NCS1K14-FAN                     11400    9960
0/FT1        NCS1K14-FAN                     11340    9960
0/FT2        NCS1K14-FAN                     11400    9960
```

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

```
RP/0/RP0/CPU0:ios#sh environment power
Tue Nov 28 14:14:52.169 UTC
===================================================================================
CHASSIS LEVEL POWER INFO: 0
===================================================================================
   Total output power capacity (Group 0 + Group 1) :    2000W +     2000W
   Total output power required                     :    1896W
   Total power input                               :     741W
   Total power output                              :     653W

Power Group 0:
===================================================================================
   Power       Supply         ------Input----   ------Output---     Status
   Module      Type            Volts     Amps    Volts     Amps
===================================================================================
   0/PM0       NCS1K4-AC-PSU   224.0     1.8     12.1      28.9     OK

Total of Group 0:              403W/1.8A         349W/28.9A

Power Group 1:
===================================================================================
   Power       Supply         ------Input----   ------Output---     Status
   Module      Type            Volts     Amps    Volts     Amps
===================================================================================
   0/PM1       NCS1K4-AC-PSU   225.2     1.5     12.1      25.2     OK

Total of Group 1:              337W/1.5A         304W/25.2A

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

```
                                        Watts       Watts
==============================================================================
   0/FT0        NCS1K14-FAN             170         27          ON
   0/FT1        NCS1K14-FAN             170         27          ON
   0/FT2        NCS1K14-FAN             170         28          ON
   0/0/NXR0     NCS1K4-1.2T-K9          260         220         ON
   0/1/NXR0     NCS1K4-1.2T-K9          260         221         ON
   0/2/NXR0     NCS1K4-1.2T-K9          260         54          ON
   0/3/NXR0     NCS1K14-2.4T-K9         460         15          ON
   0/Rack       NCS1014                 73          14          ON
```

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

```
RP/0/RP0/CPU0:ios#show environment temperature location 0/rp0/CPU0
==============================================================================

         ============================
Location  TEMPERATURE                          Value     Crit    Major    Minor

            Minor    Major    Crit
          Sensor                              (deg C)     (Lo)     (Lo)     (Lo)

             (Hi)     (Hi)     (Hi)
------------------------------------------------------------------------------

         ----------------------------
0/RP0/CPU0
          RP_TEMP_PCB                           38      -10       -5        0

              80       85       90
          RP_TEMP_HOT_SPOT                      38      -10       -5        0

              80       85       90
          RP_TEMP_LTM4638_0                     38      -10       -5        0

              85       90       95
          RP_TEMP_LTM4644_0                     37      -10       -5        0

              85       90       95
          RP_TEMP_LTM4644_1                     38      -10       -5        0

              85       90       95
          RP_TEMP_LTM4638_1                     37      -10       -5        0

              80       90       95
          RP_TEMP_LTM4644_2                     38      -10       -5        0

              85       90       95
          RP_TEMP_LTM4638_2                     38      -10       -5        0

              80       90       95
          TEMP_CPU_DIE                          39      -10       -5        0

              80       85       90
          TEMP_DDR_DIMM                         39      -10       -5        0

              80       85       90
          TEMP_CPU_SSD                          48      -10       -5        0

              70       75       80
          TEMP_EITU_SSD                         39      -10       -5        0

              70       75       80
```

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

```
RP/0/RP0/CPU0:ios#show environment voltage location 0/rp0/cpu0
==========================================================================================
Location  VOLTAGE                            Value      Crit    Minor    Minor     Crit
          Sensor                             (mV)       (Lo)    (Lo)     (Hi)      (Hi)
------------------------------------------------------------------------------------------
0/RP0/CPU0
          RP_ADM1266_12V0                    12035    10800    11280    12720    13200
          RP_ADM1266_1V8_CPU                  1801     1670     1750     1850     1930
          RP_ADM1266_1V24_VCCREF              1238     1150     1200     1280     1330
          RP_ADM1266_1V05_CPU                 1053      980     1020     1080     1120
          RP_ADM1266_1V2_DDR_VDDQ             1205     1120     1160     1240     1280
          RP_ADM1266_1V0_VCC_RAM              1123      650      700     1250     1300
          RP_ADM1266_1V0_VNN                   946      550      600     1250     1300
          RP_ADM1266_1V0_VCCP                  704      450      500     1250     1300
          RP_ADM1266_0V6_DDR_VTT               600      560      580      620      640
          RP_ADM1266_12V0_DB                 12028    10800    11280    12720    13200
          RP_ADM1266_3V3_STAND_BY_DB          3302     3069     3201     3399     3531
          RP_ADM1266_3V3_STAND_BY             3306     3070     3200     3400     3530
          RP_ADM1266_5V0_DB                   5000     4650     4850     5150     5350
          RP_ADM1266_3V3_DB                   3328     3069     3201     3399     3531
          RP_ADM1266_2V5_DB                   2507     2325     2425     2575     2675
          RP_ADM1266_1V8_DB                   1804     1674     1746     1854     1926
          RP_ADM1266_1V0_PHY                   997      930      970     1030     1070
          RP_ADM1266_5V0                      5048     4650     4850     5150     5350
          RP_ADM1266_3V3                      3330     3070     3200     3400     3530
          RP_ADM1266_2V5_PLL                  2516     2330     2430     2580     2680
          RP_ADM1266_2V5_FPGA                 2505     2330     2430     2580     2680
          RP_ADM1266_1V2_FPGA                 1196     1120     1160     1240     1280
          RP_ADM1266_3V3_CPU                  3332     3070     3200     3400     3530
          RP_ADM1266_2V5_CPU                  2498     2330     2430     2580     2680
```

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

```
RP/0/RP0/CPU0:ios#show environment current
==========================================================================================
Location  CURRENT                            Value
          Sensor                             (mA)
------------------------------------------------------------------------------------------
0/RP0/CPU0
          RP_JMAC_1V0_VCCP_IMON                 0
          RP_JMAC_1V0_VNN_IMON                 93
          RP_JMAC_1V0_VCC_RAM_IMON              0
          RP_JMAC_1V2_DDR_VDDQ_IMON           156
          RP_CURRMON_LTM4638_0                345
          RP_CURRMON_LTM4644_0                145
          RP_CURRMON_LTM4644_1                250
          RP_CURRMON_LTM4638_1                199
          RP_CURRMON_DB                       455
0/0/NXR0
          IMON_CLI                           2979
          IMON_CTLPL                          974
          IMON_MODULE                       11270
          IMON_CDR                           3357
          SA_ADM1275_12V_IMON_LC            18624
0/1/NXR0
          IMON_CTLPL                          887
          IMON_CLI                           4587
          IMON_META0_IN0                      807
          IMON_META0_CORE_IOUT0              5648
          IMON_META0_CORE_IOUT1              4570
```

```
                IMON_META0_IN2                          669
                IMON_META0_CORE_IOUT2                  3726
                IMON_META0_AVD_IOUT                    5085
                IMON_META1_IN0                          326
                IMON_META1_CORE_IOUT0                  2566
                IMON_META1_CORE_IOUT1                  1578
                IMON_META1_IN2                          650
                IMON_META1_CORE_IOUT2                  3718
                IMON_META1_AVD_IOUT                    4593
                SA_ADM1275_12V_IMON_LC                 9433
        0/2/NXR0
                IMON_OPTM                               867
                IMON_CTLPL                              512
                SA_ADM1275_12V_IMON_LC                 1209
        0/3/NXR0
                IMON_CLI                               2867
                IMON_CTLPL                             1017
                IMON_MODULE                           11153
                IMON_CDR                               3457
                SA_ADM1275_12V_IMON_LC                17582
        0/Rack
                SA_ADM1275_12V_IMON_CPU                1843
         --More--
```

Verify Management Interface Status

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

show interfaces mgmtEth *instance*

Displays the management interface configuration.

Example:

```
RP/0/RP0/CPU0:ios#show interfaces MgmtEth 0/RP0/CPU0/0
MgmtEth0/RP0/CPU0/0 is up, line protocol is up
  Interface state transitions: 3
  Hardware is Management Ethernet, address is 4014.82ba.d26e (bia 4014.82ba.d26e)
  Internet address is 10.105.57.37/25
  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 00:09:12
  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 1000 bits/sec, 2 packets/sec
  5 minute output rate 5000 bits/sec, 1 packets/sec
     6715 packets input, 640515 bytes, 0 total input drops
     0 drops for unrecognized upper-level protocol
     Received 2213 broadcast packets, 4430 multicast packets
              0 runts, 0 giants, 0 throttles, 0 parity
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     944 packets output, 355004 bytes, 0 total output drops
     Output 94 broadcast packets, 114 multicast packets
     0 output errors, 0 underruns, 0 applique, 0 resets
     0 output buffer failures, 0 output buffers swapped out
     3 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
Interface Type          Total    UP       Down     Admin Down
--------------          -----    --       ----     ----------
ALL TYPES               5        2        0        3
--------------
IFT_ETHERNET            2        1        0        1
IFT_NULL                1        1        0        0
IFT_PTP_ETHERNET        2        0        0        2
```

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

```
RP/0/RP0/CPU0:KEPLER_PF6#show interfaces brief

               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
     Mg0/RP0/CPU0/1  admin-down  admin-down                ARPA  1514    1000000
     PT0/RP0/CPU0/0  admin-down  admin-down                ARPA  1514    1000000
     PT0/RP0/CPU0/1  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
  interface MgmtEth0/RP0/CPU0/0
   ipv4 address 10.105.57.37 255.255.255.128
  !
  ```

Verify Firmware Version

The firmware on various hardware components of NCS 1014 must be compatible with the installed Cisco IOS XR image. Incompatibility may cause the NCS 1014 to malfunction.

To verify the firmware version, perform the following procedure.

Before you begin

Step 1 **show hw-module fpd**

Example:

```
RP/0/RP0/CPU0:ios#show hw-module fpdAuto-upgrade:Enabled
Attribute codes: B golden, P protect, S secure, A Anti Theft aware
                                                                    FPD Versions
                                                                   ==============
Location   Card type             HWver FPD device       ATR Status   Running Programd  Reload Loc
----------------------------------------------------------------------------------------------
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   ADM-DB               CURRENT    2.10    2.10       NOT REQ
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   ADM-MB               CURRENT    2.30    2.30       NOT REQ
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   BIOS             S   CURRENT    4.70    4.70         0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   BIOS-Golden      BS  CURRENT            4.70         0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   CpuFpga          S   CURRENT    1.09    1.09         0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   CpuFpgaGolden    BS  NEED UPGD          1.03         0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   SsdMicron5300    S   CURRENT    0.01    0.01         0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   TamFw            S   CURRENT    9.04    9.04         0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   TamFwGolden      BS  CURRENT            9.04         0/RP0
0/PM0      NCS1K4-AC-PSU         0.1   PO-PriMCU            CURRENT    2.04    2.04       NOT REQ
0/PM0      NCS1K4-AC-PSU         0.1   PO-SecMCU            CURRENT    2.06    2.06       NOT REQ
0/PM1      NCS1K4-AC-PSU         0.1   PO-PriMCU            CURRENT    2.04    2.04       NOT REQ
0/PM1      NCS1K4-AC-PSU         0.1   PO-SecMCU            CURRENT    2.06    2.06       NOT REQ
0/0/NXR0   NCS1K4-1.2T-K9        0.1   CpuModFw         S   CURRENT  234.10  234.10       NOT REQ
0/0/NXR0   NCS1K4-1.2T-K9        0.1   OptModFw         S   CURRENT    1.38    1.38       NOT REQ
0/1/NXR0   NCS1K14-2.4T-K9       0.1   CpuModFw         S   CURRENT  234.10  234.10       NOT REQ
0/2/NXR0   NCS1K4-1.2T-K9        0.1   CpuModFw         S   CURRENT  234.10  234.10       NOT REQ
0/2/NXR0   NCS1K4-1.2T-K9        0.1   OptModFw         S   CURRENT    1.38    1.38       NOT REQ
0/3/NXR0   NCS1K4-1.2T-K9        0.1   CpuModFw         S   CURRENT  234.10  234.10       NOT REQ
0/3/NXR0   NCS1K4-1.2T-K9        0.1   OptModFw         S   CURRENT    1.38    1.38       NOT REQ
0/Rack     NCS1014               0.1   ADM-CHASSIS          CURRENT    0.21    0.21       NOT REQ
0/Rack     NCS1014               0.1   IoFpga           S   CURRENT    1.10    1.10       NOT REQ
0/Rack     NCS1014               0.1   IoFpgaGolden     BS  CURRENT            1.05       NOT REQ
0/Rack     NCS1014               0.1   SsdIntelSC2KB    S   CURRENT    1.20    1.20        0/Rack
```

- 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.

Example:

```
RP/0/RP0/CPU0:ios#show fpd package

================================ ================================================
                                          Field Programmable Device Package
                                 ================================================
                                                Req     SW      Min Req   Min Req
Card Type            FPD Description            Reload  Ver     SW Ver  Board Ver
=================== ========================== ====== ======= ======== =========
-------------------------------------------------------------------------------
NCS1014-SA           ADM-CHASSIS                 NO      0.21      0.21      0.0
                     IoFpga                      NO      1.10      1.10      0.0
                     IoFpgaGolden                NO      1.05      1.05      0.0
                     SsdIntelSC2KB               YES     1.20      1.20      0.0
-------------------------------------------------------------------------------
NCS1K14-2.4T-K9      CpuModFw                    NO    234.10    234.10      0.0
-------------------------------------------------------------------------------
NCS1K14-2.4T-L-K9    CpuModFw                    NO    234.10    234.10      0.0
-------------------------------------------------------------------------------
NCS1K14-CCMD-16-C    CpuModFw                    NO    234.10    234.10      0.0
                     OptModFw                    NO     15.01     15.01      0.0
-------------------------------------------------------------------------------
NCS1K14-CCMD-16-L    CpuModFw                    NO    234.10    234.10      0.0
                     OptModFw                    NO     15.01     15.01      0.0
-------------------------------------------------------------------------------
NCS1K14-CNTLR-K9     ADM-DB                      NO      2.10      2.10      0.2
                     ADM-MB                      NO      2.30      2.30      0.2
                     BIOS                        YES     4.70      4.70      0.0
                     BIOS-Golden                 YES     4.70      0.01      0.0
                     CpuFpga                     YES     1.09      1.09      0.0
                     CpuFpgaGolden               YES     1.09      1.09      0.0
                     SsdIntelS4510               YES    11.32     11.32      0.0
                     SsdIntelSC2KB               YES     1.20      1.20      0.0
                     SsdMicron5300               YES     0.01      0.01      0.0
                     TamFw                       YES     9.04      9.04      0.0
                     TamFwGolden                 YES     9.04      9.04      0.0
-------------------------------------------------------------------------------
NCS1K14-CTLR-B-K9    ADM-DB                      NO      2.10      2.10      0.2
                     ADM-MB                      NO      2.30      2.30      0.2
                     BIOS                        YES     4.70      4.70      0.0
                     BIOS-Golden                 YES     4.70      0.01      0.0
                     CpuFpga                     YES     1.09      1.09      0.0
                     CpuFpgaGolden               YES     1.09      1.09      0.0
                     SsdIntelS4510               YES    11.32     11.32      0.0
                     SsdIntelSC2KB               YES     1.20      1.20      0.0
                     SsdMicron5300               YES     0.01      0.01      0.0
                     TamFw                       YES     9.04      9.04      0.0
                     TamFwGolden                 YES     9.04      9.04      0.0
-------------------------------------------------------------------------------
NCS1K4-1.2T-K9       CpuModFw                    NO    234.10    234.10      0.0
                     OptModFw                    NO      1.38      1.38      0.0
-------------------------------------------------------------------------------
NCS1K4-AC-PSU        PO-PriMCU                   NO      2.04      2.04      0.1
                     PO-SecMCU                   NO      2.06      2.06      0.1
-------------------------------------------------------------------------------
NCS1K4-AC-PSU-2      PO-PriMCU                   NO      1.03      1.03      0.1
                     PO-SecMCU                   NO      1.05      1.05      0.1
```

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.

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 Alarms

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

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

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



-------------------------------------------------------------------------------
0/0             Major        Ethernet         11/21/2023 11:11:35 UTC    HundredGigECtrlr0/0/0/2 -
Carrier Loss On The LAN


0/3             Major        Ethernet         11/21/2023 11:11:37 UTC    HundredGigECtrlr0/3/0/2 -
Remote Fault


0/0             Major        Ethernet         11/21/2023 11:11:38 UTC    HundredGigECtrlr0/0/0/4 -
Local Fault


0/3             Major        Ethernet         11/21/2023 11:11:38 UTC    HundredGigECtrlr0/3/0/3 -
```

```
Local Fault

0/3             Major        Ethernet         11/21/2023 11:11:38 UTC    HundredGigECtrlr0/3/0/4 -
Local Fault

0/0             Major        Ethernet         11/21/2023 11:11:38 UTC    HundredGigECtrlr0/0/0/5 -
Local Fault

0/0             Major        Ethernet         11/21/2023 11:11:38 UTC    HundredGigECtrlr0/0/0/6 -
Local Fault

0/0             Major        Ethernet         11/21/2023 11:11:38 UTC    HundredGigECtrlr0/0/0/7 -
Local Fault

0/3             Major        Ethernet         11/21/2023 11:11:39 UTC    HundredGigECtrlr0/3/0/5 -
Local Fault

0/3             Major        Ethernet         11/21/2023 11:11:39 UTC    HundredGigECtrlr0/3/0/6 -
Local Fault

0/3             Major        Ethernet         11/21/2023 11:11:38 UTC    HundredGigECtrlr0/3/0/7 -
Local Fault

0/0             Major        Ethernet         11/21/2023 11:11:43 UTC    HundredGigECtrlr0/0/0/3 -
Local Fault

0/3             Major        Ethernet         11/21/2023 11:11:57 UTC    HundredGigECtrlr0/3/0/8 -
Local Fault

0/3             Major        Ethernet         11/21/2023 11:11:57 UTC    HundredGigECtrlr0/3/0/9 -
Local Fault

0/3             Major        Ethernet         11/21/2023 11:11:59 UTC    HundredGigECtrlr0/3/0/12 -
 Local Fault

0/3             Major        Ethernet         11/21/2023 11:11:59 UTC    HundredGigECtrlr0/3/0/13 -
 Local Fault

0/0             Major        Ethernet         11/21/2023 11:12:03 UTC    HundredGigECtrlr0/0/0/9 -
Local Fault

0/0             Major        Ethernet         11/21/2023 11:12:04 UTC    HundredGigECtrlr0/0/0/8 -
Local Fault

0/0             Major        Ethernet         11/21/2023 11:12:04 UTC    HundredGigECtrlr0/0/0/10 -
 Local Fault

0/0             Major        Ethernet         11/21/2023 11:12:04 UTC    HundredGigECtrlr0/0/0/11 -
```

```
 Local Fault

0/0             Major        Ethernet         11/21/2023 11:12:04 UTC    HundredGigECtrlr0/0/0/12 -
 Local Fault

0/0             Major        Ethernet         11/21/2023 11:12:04 UTC    HundredGigECtrlr0/0/0/13 -
 Local Fault

0/3             Major        Ethernet         11/21/2023 11:12:04 UTC    HundredGigECtrlr0/3/0/11 -
 Local Fault

0/3             Major        Ethernet         11/21/2023 11:12:05 UTC    HundredGigECtrlr0/3/0/10 -
 Local Fault
```

Note In the maintenance mode, all the alarms are suppressed and the **show alarms** command will not show the alarms details. Use the **show controllers** *controllertype R/S/I/P* command to view the client and trunk alarms.

Verify Context

The **show context** command displays core dump context information of NCS 1014.

show context

When you excecute the **show context** command in Cisco IOS XR EXEC mode, the output displays the core dump context information of any process on the NCS 1014 as well as up to 10 last instances.

Example:

```
RP/0/RP0/CPU0:ios#sh context

node: node0_RP0_CPU0
Context number: 1
----------------------------------------------------------------
Core location: 0/RP0/CPU0:/misc/disk1

Core for pid = 6232 (Terminal_Device)
Core for process: opt_terminal_device_6232.by.11.20231204-170249.node0_RP0_CPU0.877b9.core.gz
Core dump time: 2023-12-04 17:02:50.144240146 +0000

Process:
Core was generated by `opt_terminal_device'.

Build information:
### XR Information

User = deenayak
Host = iox-ucs-061
Workspace = /auto/iox-ucs-061-san1/prod/24.1.1.32I.SIT_IMAGE/ncs1010/ws/
Built on = Fri Nov 17 17:17:31 UTC 2023
Lineup = r241x.lu%EFR-00000453356
XR version = 24.1.1.32I

### Leaba Information
```

```
Platform information:
card_product_id: NCS1014
platform: ncs1010

Signal information:
Program terminated with signal 11, Segmentation fault.

Faulting thread: 6232

Registers for Thread 6232
rax:    0x7f2d0d7be000
rbx:    0x0
rcx:    0x0
rdx:    0x7f
rsi:    0x0
rdi:    0x7fff2f3d3420
rbp:    0x0
rsp:    0x7fff2f3d3410
r8:     0x0
r9:     0x7fff2f3d3510
r10:    0xffffffffffffff80
r11:    0x5287
r12:    0x7f
r13:    0x7fff2f3d3420
r14:    0x7f2d0dac4684
r15:    0x7fff2f3d3598
rip:    0x7f2d0d6701ca
eflags: 0x10206
cs:     0x33
ss:     0x2b
ds:     0x0
es:     0x0
fs:     0x0
gs:     0x0


Backtrace for Thread 6232
#0  0x00007f2d0d6701ca in ?? () from /lib64/libc-2.31.so
#1  0x00007f2d0d64b4d5 in snprintf+0x85 from /lib64/libc-2.31.so
#2  0x00007f2d0dadf5cf in ?? () from /opt/cisco/install-iosxr/base/lib/libopenconfig_cmn.so
#3  0x00007f2d0dade7a2 in ?? () from /opt/cisco/install-iosxr/base/lib/libopenconfig_cmn.so
#4  0x00007f2d0dfd6b35 in ?? () from
/opt/cisco/install-iosxr/base/lib/libinfra_sysdb_combine_82eb6a4d2fa15d0e.so
#5  0x00007f2d0dfd4b0e in sysdb_process_pending_pulse+0x512 from
/opt/cisco/install-iosxr/base/lib/libinfra_sysdb_combine_82eb6a4d2fa15d0e.so
#6  0x00007f2d0e11e3bd in ?? () from
/opt/cisco/install-iosxr/base/lib/libinfra_combine_82eb6a4d2fa15d0e.so
#7  0x00007f2d0e12831e in xr_event_dispatch+0x48 from
/opt/cisco/install-iosxr/base/lib/libinfra_combine_82eb6a4d2fa15d0e.so
#8  0x00005607924be6a9 in ?? ()
#9  0x00007f2d0d61cd1b in __libc_start_main+0xeb from /lib64/libc-2.31.so
#10 0x00005607924be31a in ?? ()

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

node: node0_RP0_CPU0
Context number: 2
-----------------------------------------------------------------
Core location: 0/RP0/CPU0:/misc/disk1

Core for pid = 5155 (sh_proc_mem_edm)
Core for process: sh_proc_mem_edm_5155.by.user.20231204-105935.node0_RP0_CPU0.4b884.core.gz
Core Dump time: Mon Dec  4 10:59:35 2023
```

```
Process:
Core was generated by: user requested dump of pid 5155

Build information:
### XR Information

User = deenayak
Host = iox-ucs-061
Workspace = /auto/iox-ucs-061-san1/prod/24.1.1.32I.SIT_IMAGE/ncs1010/ws/
Built on = Fri Nov 17 17:17:31 UTC 2023
Lineup = r241x.lu%EFR-00000453356
XR version = 24.1.1.32I

### Leaba Information


Registers for Thread (LWP 5155)
rax:    0xfffffffffffffffc
rbx:    0x5570ec6edd60
rcx:    0x7f0239431cd6
rdx:    0x20
rsi:    0x5570ec6ee060
rdi:    0x1b
rbp:    0x7ffca2a8b690
rsp:    0x7ffca2a8b4e0
r8:     0x0
r9:     0x436
r10:    0xffffffff
r11:    0x293
r12:    0x5570ec6ee020
r13:    0x5570ec6ede70
r14:    0x5570ec6ee060
r15:    0x5570ec6edd60
rip:    0x7f0239431cd6
eflags: 0x293
cs:     0x33
ss:     0x2b
ds:     0x0
es:     0x0
fs:     0x0
gs:     0x0


Backtrace for Thread (LWP 5155)
#0  0x00007f0239431cd6 in ?? () from /lib64/libc-2.31.so
#1  0x00007f0238fefd2a in event_del_nolock_+0x3a from /usr/lib64/libevent-2.1.so.7.0.0
#2  0x00007f0238fe3dbe in ?? () from /usr/lib64/libevent-2.1.so.7.0.0
#3  0x00007f0239799034 in event_block+0x204 from
/opt/cisco/install-iosxr/base/lib/libinfra_combine_82eb6a4d2fa15d0e.so
#4  0x00005570ec41fba8 in ?? () from /opt/cisco/install-iosxr/base/bin/sh_proc_mem_edm
#5  0x00007f023935ed1b in ?? () from /lib64/libc-2.31.so
#6  0x00005570ec41f8fa in ?? () from /opt/cisco/install-iosxr/base/bin/sh_proc_mem_edm

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

node: node0_RP0_CPU0
Context number: 3
----------------------------------------------------------------
Core location: 0/RP0/CPU0:/misc/disk1

Core for pid = 4316 (sysdb_mc_main)
Core for process: sysdb_mc_4316.by.user.20231203-161922.node0_RP0_CPU0.3f09d.core.gz
Core Dump time: Sun Dec  3 16:19:22 2023
```

```
Process:
Core was generated by: user requested dump of pid 4316

Build information:
### XR Information

User = deenayak
Host = iox-ucs-061
Workspace = /auto/iox-ucs-061-san1/prod/24.1.1.32I.SIT_IMAGE/ncs1010/ws/
Built on = Fri Nov 17 17:17:31 UTC 2023
Lineup = r241x.lu%EFR-00000453356
XR version = 24.1.1.32I

### Leaba Information


Registers for Thread (LWP 4316)
rax:    0xfffffffffffffffc
rbx:    0x0
rcx:    0x7f46904eca92
rdx:    0x0
rsi:    0x0
rdi:    0x7ffd281477c0
rbp:    0x7ffd28147a00
rsp:    0x7ffd281476e0
r8:     0x0
r9:     0x0
r10:    0x8
r11:    0x293
r12:    0x1
r13:    0x0
r14:    0x0
r15:    0x7ffd281477c0
rip:    0x7f46904eca92
eflags: 0x293
cs:     0x33
ss:     0x2b
ds:     0x0
es:     0x0
fs:     0x0
gs:     0x0


Backtrace for Thread (LWP 4316)
#0  0x00007f46904eca92 in ?? () from /lib64/libc-2.31.so
#1  0x00005583860ea640 in ?? () from /opt/cisco/install-iosxr/base/sbin/sysdb_mc
#2  0x00005583860bbbd1 in ?? () from /opt/cisco/install-iosxr/base/sbin/sysdb_mc
#3  0x00007f46904d7d1b in ?? () from /lib64/libc-2.31.so
#4  0x00005583860bbada in ?? () from /opt/cisco/install-iosxr/base/sbin/sysdb_mc

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

node: node0_RP0_CPU0
Context number: 4
---------------------------------------------------------------
Core location: 0/RP0/CPU0:/misc/disk1

Core for pid = 4212 (sysdb_svr_local)
Core for process: sysdb_svr_local_4212.by.user.20231203-161920.node0_RP0_CPU0.bf2d1.core.gz
Core Dump time: Sun Dec  3 16:19:20 2023

Process:
Core was generated by: user requested dump of pid 4212
```

```
Build information:
### XR Information

User = deenayak
Host = iox-ucs-061
Workspace = /auto/iox-ucs-061-san1/prod/24.1.1.32I.SIT_IMAGE/ncs1010/ws/
Built on = Fri Nov 17 17:17:31 UTC 2023
Lineup = r241x.lu%EFR-00000453356
XR version = 24.1.1.32I

### Leaba Information


Registers for Thread (LWP 4212)
rax:    0xfffffffffffffffc
rbx:    0x0
rcx:    0x7f1fcb1c4a92
rdx:    0x0
rsi:    0x0
rdi:    0x7fff60339f50
rbp:    0x7fff6033a200
rsp:    0x7fff60339e80
r8:     0x0
r9:     0x0
r10:    0x8
r11:    0x293
r12:    0x0
r13:    0x0
r14:    0x7fff60339f50
r15:    0x7f1fcb50da9e
rip:    0x7f1fcb1c4a92
eflags: 0x293
cs:     0x33
ss:     0x2b
ds:     0x0
es:     0x0
fs:     0x0
gs:     0x0


Backtrace for Thread (LWP 4212)
#0  0x00007f1fcb1c4a92 in ?? () from /lib64/libc-2.31.so
#1  0x00007f1fcb5af472 in sysdb_svr_main+0xd15 from
/opt/cisco/install-iosxr/base/lib/libsysdbsvr_only.so
#2  0x000055e2fd529851 in ?? () from /opt/cisco/install-iosxr/base/sbin/sysdb_svr_local
#3  0x00007f1fcb1afd1b in ?? () from /lib64/libc-2.31.so
#4  0x000055e2fd52975a in ?? () from /opt/cisco/install-iosxr/base/sbin/sysdb_svr_local

----------------------------------------------------------------
```

Verify Core Files

The **dir harddisk:/*core.gz** command checks for core files of NCS 1014.

dir harddisk:/*core.gz

Example:

```
RP/0/RP0/CPU0:ios#dir harddisk:/*core.gz
Wed Dec 6 04:54:16.336 UTC

Directory of harddisk:/*core.gz
2476 -rw-r--r--. 1 8120038 Oct 30 15:08
cma_server_41264.by.6.20231030-150817.node0_RP0_CPU0.502a7.core.gz
```