

Show Commands

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show fpd package

To display which shared port adapters (SPA) and SPA interface processors (SIPs) are supported with your current Cisco IOS XR software release, which field-programmable device (FPD) image you need for each SPA and SIP, and what the minimum hardware requirements are for the SPA and SIP modules, use the **show fpd package** command in administration EXEC mode.

show fpd package

Syntax Description

This command has no keywords or arguments.

Command Default

No default behavior or values

Command Modes

System Admin EXEC

Command History

Release	Modification
Release 5.0.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

If there are multiple FPD images for your card, use the **show fpd package** command to determine which FPD image to use if you only want to upgrade a specific FPD type.

Task ID

Task ID	Operations
sysmgr	read

The following example shows a sample output from the **show fpd package** command:

```
Router#show fpd package
================================ ================================================
                                        Field Programmable Device Package
                                 ================================================
                                                  Req     SW      Min Req   Min Req
Card Type            FPD Description             Reload  Ver     SW Ver  Board Ver
================== ========================== ====== ======= ======== =========
--------------------------------------------------------------------------------
8201                 Bios                        YES     1.23      1.23      0.0
                     BiosGolden                  YES     1.23      1.15      0.0
                     IoFpga                      YES     1.11      1.11      0.1
                     IoFpgaGolden                YES     1.11      0.48      0.1
                     SsdIntelS3520               YES     1.21      1.21      0.0
                     SsdIntelS4510               YES    11.32     11.32      0.0
                     SsdMicron5100               YES     7.01      7.01      0.0
                     SsdMicron5300               YES     0.01      0.01      0.0
                     x86Fpga                     YES     1.05      1.05      0.0
                     x86FpgaGolden               YES     1.05      0.48      0.0
                     x86TamFw                    YES     5.13      5.13      0.0
                     x86TamFwGolden              YES     5.13      5.05      0.0
--------------------------------------------------------------------------------
```

```
8201-ON             Bios                        YES     1.208     1.208     0.0
                    BiosGolden                  YES     1.208     1.207     0.0
                    IoFpga                      YES     1.11      1.11      0.1
                    IoFpgaGolden                YES     1.11      0.48      0.1
                    SsdIntelS3520               YES     1.21      1.21      0.0
                    SsdIntelS4510               YES    11.32     11.32      0.0
                    SsdMicron5100               YES     7.01      7.01      0.0
                    SsdMicron5300               YES     0.01      0.01      0.0
                    x86Fpga                     YES     1.05      1.05      0.0
                    x86FpgaGolden               YES     1.05      0.48      0.0
                    x86TamFw                    YES     5.13      5.13      0.0
                    x86TamFwGolden              YES     5.13      5.05      0.0
--------------------------------------------------------------------------------
8201-SYS            Bios                        YES     1.23      1.23      0.0
                    BiosGolden                  YES     1.23      1.15      0.0
```

This table describes the significant fields shown in the display:

Table 1: show fpd package Field Descriptions

Field	Description
Card Type	Module part number.
FPD Description	Description of all FPD images available for the line card.
Type	Hardware type. Possible types can be: • spa—Shared port adapter • lc—Line card
Subtype	FPD subtype. These values are used in the **upgrade hw-module fpd** command to indicate a specific FPD image type to upgrade.
SW Version	FPD software version recommended for the associated module running the current Cisco IOS XR software.
Min Req SW Vers	Minimum required FPD image software version to operate the card. Version 0.0 indicates that a minimum required image was not programmed into the card.
Min Req HW Vers	Minimum required hardware version for the associated FPD image. A minimum hardware requirement of version 0.0 indicates that all hardware can support this FPD image version.

Note In the **show fpd package** command output, the "subtype" column shows the FPDs that correspond with each line card image. To upgrade a specific FPD with the **upgrade hw-module fpd** command, replace the *fpga-type* argument with the appropriate FPD from the "subtype" column, as shown in the following example:

```
Router(admin)# upgrade hw-module fpd fpga2 location 0/3/1 reload
```

show hw-module fpd

To display field-programmable device (FPD) compatibility for all modules or a specific module, use the **show hw-module fpd** command in XR EXEC mode.

show hw-module [**fpd** | **location** *node-id* **fpd** | **location** *node-id* **fpd** *fpd-name* | **location all fpd** *fpd-name*]

Syntax Description

location {*node-id* | **all**}	Specifies the location of the module. The *node-id* argument is expressed in the *rack/slot* notation. Use the **all** keyword to indicate all nodes.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
sysmgr	read
root-lr	read

The following example shows the output of **show hw-module fpd** command:

```
Router#show hw-module fpd
Wed Apr 5 17:46:55.067 UTC

Auto-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 8201            0.2   Bios             S   CURRENT    1.27    1.27    0/RP0/CPU0
0/RP0/CPU0 8201            0.2   BiosGolden       BS  CURRENT            1.20    0/RP0/CPU0
0/RP0/CPU0 8201             0.2   IoFpga               CURRENT    1.11    1.11    0/RP0
0/RP0/CPU0 8201             0.2   IoFpgaGolden     B   CURRENT            1.01    0/RP0
0/RP0/CPU0 8201             0.2   x86Fpga          S   CURRENT    1.06    1.06    0/RP0
0/RP0/CPU0 8201             0.2   x86FpgaGolden    BS  CURRENT            1.01    0/RP0
0/RP0/CPU0 8201             0.2   x86TamFw         S   CURRENT    5.13    5.13    0/RP0
0/RP0/CPU0 8201             0.2   x86TamFwGolden   BS  CURRENT            5.06    0/RP0
0/PM0      PSU1.4KW-ACPE    0.0   DT-PrimMCU           CURRENT    3.01    3.01    NOT REQ
0/PM0      PSU1.4KW-ACPE    0.0   DT-SecMCU            CURRENT    2.02    2.02    NOT REQ
0/PM1      PSU1.4KW-ACPE    0.0   DT-PrimMCU           CURRENT    3.01    3.01    NOT REQ
0/PM1      PSU1.4KW-ACPE    0.0   DT-SecMCU            CURRENT    2.02    2.02    NOT REQ
```

The following example shows how to display FPD compatibility for specific location module in the router:

```
Router#show hw-module location 0/RP0/CPU0 fpd
Wed Apr 5 17:47:01.104 UTC

Auto-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 8201            0.2   Bios             S   CURRENT    1.27    1.27    0/RP0/CPU0
0/RP0/CPU0 8201            0.2   BiosGolden       BS  CURRENT            1.20    0/RP0/CPU0
0/RP0/CPU0 8201            0.2   IoFpga               CURRENT    1.11    1.11    0/RP0
0/RP0/CPU0 8201            0.2   IoFpgaGolden     B   CURRENT            1.01    0/RP0
0/RP0/CPU0 8201            0.2   x86Fpga          S   CURRENT    1.06    1.06    0/RP0
0/RP0/CPU0 8201            0.2   x86FpgaGolden    BS  CURRENT            1.01    0/RP0
0/RP0/CPU0 8201            0.2   x86TamFw         S   CURRENT    5.13    5.13    0/RP0
0/RP0/CPU0 8201            0.2   x86TamFwGolden   BS  CURRENT            5.06    0/RP0
```

The following example shows the output of **show hw-module location 0/RP0/CPU0 fpd Bios** command:

```
Router#show hw-module location 0/RP0/CPU0 fpd Bios
Wed Apr 5 17:47:04.255 UTC

Auto-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 8201            0.2   Bios             S CURRENT      1.27    1.27    0/RP0/CPU0
```

The following example shows how to display FPD compatibility for all modules in the router:

```
Router#show hw-module fpd all
Tue Apr  4 08:55:32.545 UTC

Auto-upgrade:Disabled
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 8201            0.30  Bios                 NEED UPGD  7.01    7.01    0/RP0/CPU0
0/RP0/CPU0 8201            0.30  BiosGolden       B   NEED UPGD          7.01    0/RP0/CPU0
0/RP0/CPU0 8201            0.30  IoFpga               NEED UPGD  7.01    7.01         0/RP0
0/RP0/CPU0 8201            0.30  IoFpgaGolden     B   NEED UPGD          7.01         0/RP0
0/RP0/CPU0 8201            0.30  SsdIntelS3520        NEED UPGD  7.01    7.01         0/RP0
0/RP0/CPU0 8201            0.30  x86Fpga              NEED UPGD  7.01    7.01         0/RP0
0/RP0/CPU0 8201            0.30  x86FpgaGolden    B   NEED UPGD          7.01         0/RP0
0/RP0/CPU0 8201            0.30  x86TamFw             NEED UPGD  7.01    7.01         0/RP0
0/RP0/CPU0 8201            0.30  x86TamFwGolden   B   NEED UPGD          7.01         0/RP0
0/PM0      PSU2KW-ACPI     0.0   PO-PrimMCU           NEED UPGD  7.01    7.01       NOT REQ
0/PM1      PSU2KW-ACPI     0.0   PO-PrimMCU           NEED UPGD  7.01    7.01       NOT REQ
```

The following example shows the output of **show hw-module location all fpd IoFpga** command:

```
Router#show hw-module location all fpd IoFpga
Wed Apr 5 17:47:10.752 UTC

Auto-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 8201            0.2   IoFpga           CURRENT        1.11    1.11    0/RP0
```

show install active

To display active packages, use the **show install active** command in XR EXEC mode.

show install active [**all** [**location** { *node-id* | **all** }] | **keys** | **node-inconsistencies** | **origin** | **summary**]

Syntax Description

all location	Displays all the active packages.
location *node-id* **location all**	Displays all packages in a specified location or all locations.
keys	Display all keys used to sign each package.
node-inconsistencies	Displays all active non-XR packages inconsistent across all nodes.
origin	Displays all packages from a specific origin.
summary	Displays a summary of active packages along with a list of optional packages.

Command Default

The command without the **all** keyword just displays the currently active XR packages. It does not display all packages on the system such as OS packages.

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 26.1.1	A new keyword, **keys**, was added to the command to show all active packages, and the key ID of the keys the packages are signed with.
Release 7.0.12	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

This example shows how to view all active packages:

```
Router#show install active all
Wed Mar  8 04:57:35.230 UTC

Software Hash: bf46f5add2ea3cd85c91c647a2ca043e1a829c49e5c290baec0c89c937a17429
Package                                                                 Version
------------------------------------------------------          ------------------
8000-boot-scripts                                                       7.8.1.34Iv1.0.0-r0
8000-cpa-setup-x86                                                      7.8.1.34Iv1.0.0-r0
8101-32h-cpa-sb-x86                                                     7.8.1.34Iv1.0.0-r0
8102-64h-cpa-sb-x86                                                     7.8.1.34Iv1.0.0-r0
8111-32eh-cpa-sb-x86                                                    7.8.1.34Iv1.0.0-r0
8201-32fh-cpa-sb-x86                                                    7.8.1.34Iv1.0.0-r0
8201-cpa-sb-x86                                                         7.8.1.34Iv1.0.0-r0
8202-32fh-m-cpa-sb-x86                                                  7.8.1.34Iv1.0.0-r0
8202-cpa-sb-x86                                                         7.8.1.34Iv1.0.0-r0
8203-88h16fh-m-cpa-sb-x86                                               7.8.1.34Iv1.0.0-r0
```

```
8212-cpa-sb-x86                                                 7.8.1.34Iv1.0.0-r0
8608-fb-data-cpa-sb-x86                                         7.8.1.34Iv1.0.0-r0
8608-mpa-crevalle-cpa-sb-x86                                    7.8.1.34Iv1.0.0-r0
8608-mpa-narwhal-cpa-sb-x86                                     7.8.1.34Iv1.0.0-r0
8608-mpa-pinafore-cpa-sb-x86                                    7.8.1.34Iv1.0.0-r0
8608-mpa-tiber-cpa-sb-x86                                       7.8.1.34Iv1.0.0-r0
8804-fc-data-cpa-sb-x86                                         7.8.1.34Iv1.0.0-r0
acl                                                             2.2.52-r0.61
argon                                                           7.8.1.34Iv1.0.0-r0
 --More--
```

This example shows how to view all active packages in a specified location:

```
Router#show install active all location 0/RP0/CPU0
Wed Mar  8 04:58:25.254 UTC

Software Hash: ef055dac99b856182211deb7585c02fb812c02d6a04cd5b92b521ccf7b9c6ee5
Package                                     Architecture                    Version
------------------------------------------- ------------------  -------------------
8000-boot-scripts                           corei7_64            7.8.1.34Iv1.0.0-r0
8000-cpa-setup-x86                          corei7_64            7.8.1.34Iv1.0.0-r0
8101-32h-cpa-sb-x86                         corei7_64            7.8.1.34Iv1.0.0-r0
8102-64h-cpa-sb-x86                         corei7_64            7.8.1.34Iv1.0.0-r0
8111-32eh-cpa-sb-x86                        corei7_64            7.8.1.34Iv1.0.0-r0
8201-32fh-cpa-sb-x86                        corei7_64            7.8.1.34Iv1.0.0-r0
8201-cpa-sb-x86                             corei7_64            7.8.1.34Iv1.0.0-r0
8202-32fh-m-cpa-sb-x86                      corei7_64            7.8.1.34Iv1.0.0-r0
8202-cpa-sb-x86                             corei7_64            7.8.1.34Iv1.0.0-r0
8203-88h16fh-m-cpa-sb-x86                   corei7_64            7.8.1.34Iv1.0.0-r0
8212-cpa-sb-x86                             corei7_64            7.8.1.34Iv1.0.0-r0
8608-fb-data-cpa-sb-x86                     corei7_64            7.8.1.34Iv1.0.0-r0
8608-mpa-crevalle-cpa-sb-x86                corei7_64            7.8.1.34Iv1.0.0-r0
8608-mpa-narwhal-cpa-sb-x86                 corei7_64            7.8.1.34Iv1.0.0-r0
8608-mpa-pinafore-cpa-sb-x86                corei7_64            7.8.1.34Iv1.0.0-r0
8608-mpa-tiber-cpa-sb-x86                   corei7_64            7.8.1.34Iv1.0.0-r0
8804-fc-data-cpa-sb-x86                     corei7_64            7.8.1.34Iv1.0.0-r0
acl                                         corei7_64            2.2.52-r0.61
argon                                       wrlsdk_x86           7.8.1.34Iv1.0.0-r0
 --More--
```

This example shows how to view all active keys used to sign packages:

```
Router# show install active keys
Tue Feb 10 05:02:59.398 UTC

XR Software Hash: 78a02a7bd0157fae32a04cf764b8679d0ddd365541ae9a5799a60bb526a924ff

XR Package                                        Version                GPG Key ID
------------------------------------------------  ---------------------  ----------------
xr-8000-af-ea                                    26.1.1.30Iv1.0.0-1     747278115c06976b
xr-8000-aib                                      26.1.1.30Iv1.0.0-1     747278115c06976b
xr-8000-bfd                                      26.1.1.30Iv1.0.0-1     747278115c06976b
xr-8000-buffhdr-ea                               26.1.1.30Iv1.0.0-1     747278115c06976b
xr-8000-bundles                                  26.1.1.30Iv1.0.0-1     747278115c06976b
xr-8000-card-support                             26.1.1.30Iv1.0.0-1     747278115c06976b
xr-8000-cdp-ea                                   26.1.1.30Iv1.0.0-1     747278115c06976b
xr-8000-cem-driver                               26.1.1.30Iv1.0.0-1     747278115c06976b
xr-8000-cfm                                      26.1.1.30Iv1.0.0-1     747278115c06976b
xr-8000-common-otn                               26.1.1.30Iv1.0.0-1     747278115c06976b
--More--
```

This example shows how to view the summary of active pakages:

```
Router#show install active summary
Wed Mar  8 05:00:29.564 UTC
```

```
Active Packages:    XR: 205    All: 1465
Label:              7.8.1.34I-PROD_BUILD_7_8_1_34I_SIT_IMAGE
Software Hash:      bf46f5add2ea3cd85c91c647a2ca043e1a829c49e5c290baec0c89c937a17429

Optional Packages                                                    Version
---------------------------------------------------- -         ------------------
xr-8000-l2mcast                                                  7.8.1.34Iv1.0.0-1
xr-8000-mcast                                                    7.8.1.34Iv1.0.0-1
xr-8000-netflow                                                  7.8.1.34Iv1.0.0-1
xr-bgp                                                           7.8.1.34Iv1.0.0-1
xr-cdp                                                           7.8.1.34Iv1.0.0-1
xr-ipsla                                                         7.8.1.34Iv1.0.0-1
xr-is-is                                                         7.8.1.34Iv1.0.0-1
xr-k9sec                                                         7.8.1.34Iv1.0.0-1
xr-lldp                                                          7.8.1.34Iv1.0.0-1
xr-mcast                                                         7.8.1.34Iv1.0.0-1
xr-mpls-oam                                                      7.8.1.34Iv1.0.0-1
xr-netflow                                                       7.8.1.34Iv1.0.0-1
xr-ospf                                                          7.8.1.34Iv1.0.0-1
xr-perf-meas                                                     7.8.1.34Iv1.0.0-1
xr-perfmgmt                                                      7.8.1.34Iv1.0.0-1
xr-telnet                                                        7.8.1.34Iv1.0.0-1
xr-track                                                         7.8.1.34Iv1.0.0-1
 --More--
```

show install available

To display packages available for installation, use the **show install available** command in XR EXEC mode.

show install available [**all**]

Syntax Description

all location *node-id*	(Optional) Displays all packages available to be installed in a system.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

The following example shows how to view the available packages:

```
Router# show install available all
```

show install committed

To display committed packages, use the **show install committed** command in XR EXEC mode.

show install committed [**all** [**location** { *node-id* | **all** }] | **keys** | **node-inconsistencies** | **origin** | **summary**]

Syntax Description

all	Displays user-installable XR packages on all locations.
location *node-id* **location all**	Displays all packages in a specified location or all locations.
keys	Display all keys used to sign each package.
node-inconsistencies	Displays all committed non-XR packages inconsistent across all nodes.
origin	Displays all packages from a specific origin.
summary	Displays summary of committed packages (optional and bugfix packages only). .

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 26.1.1	A new keyword, **keys**, was added to the command to show all keys used to sign packages.
Release 7.0.12	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

This example shows how to view all active keys used to sign packages:

```
Router# show install committed keys
Tue Feb 10 05:06:12.091 UTC

XR Software Hash: 78a02a7bd0157fae32a04cf764b8679d0ddd365541ae9a5799a60bb526a924ff

XR Package                                    Version                      GPG Key ID
--------------------------------------------- ---------------------------- ----------------
xr-8000-af-ea                                 26.1.1.30Iv1.0.0-1           747278115c06976b
xr-8000-aib                                   26.1.1.30Iv1.0.0-1           747278115c06976b
xr-8000-bfd                                   26.1.1.30Iv1.0.0-1           747278115c06976b
xr-8000-bsp                                   26.1.1.30Iv1.0.0-1           747278115c06976b
xr-8000-buffhdr-ea                            26.1.1.30Iv1.0.0-1           747278115c06976b
xr-8000-bundles                               26.1.1.30Iv1.0.0-1           747278115c06976b
xr-8000-card-support                          26.1.1.30Iv1.0.0-1           747278115c06976b
```

```
xr-8000-cdp-ea                                26.1.1.30Iv1.0.0-1          747278115c06976b
xr-8000-cem-driver                            26.1.1.30Iv1.0.0-1          747278115c06976b
xr-8000-cfm                                   26.1.1.30Iv1.0.0-1          747278115c06976b
xr-8000-common-otn                            26.1.1.30Iv1.0.0-1          747278115c06976b
xr-8000-core                                  26.1.1.30Iv1.0.0-1          747278115c06976b
xr-8000-cpa                                   26.1.1.30Iv1.0.0-1          747278115c06976b
xr-8000-cpa-devobj-gnss                       26.1.1.30Iv1.0.0-1          747278115c06976b
xr-8000-cpa-devobj-misc                       26.1.1.30Iv1.0.0-1          747278115c06976b
xr-8000-cpa-driver-fpgalib-kmod-oe            26.1.1.30Iv1.0.0-1          747278115c06976b
xr-8000-cpa-npu                               26.1.1.30Iv1.0.0-1          747278115c06976b
xr-8000-cpa-npu-sdk                           26.1.1.30Iv1.0.0-1          747278115c06976b
xr-8000-cpa-sb-data                           26.1.1.30Iv1.0.0-1          747278115c06976b
xr-8000-dot1x                                 26.1.1.30Iv1.0.0-1          747278115c06976b
xr-8000-dsm                                   26.1.1.30Iv1.0.0-1          747278115c06976b
xr-8000-dyinggasp-pd                          26.1.1.30Iv1.0.0-1          747278115c06976b
--More--
```

The following example shows how to view the summary of committed packages:

```
Router#show install committed summary
Wed Jun 28 10:34:18.792 UTC
Committed Packages: XR: 206    All: 1537
Label:              7.10.1.31I
Software Hash:      8ba19933d88a72378955c470a1e07b0742ddded043ec332a72c5640c1ec62c55

Optional Packages                                                    Version
-------------------------------------------                  ------------------
xr-8000-l2mcast                                              7.10.1.31Iv1.0.0-1
xr-8000-mcast                                                7.10.1.31Iv1.0.0-1
xr-8000-netflow                                              7.10.1.31Iv1.0.0-1
xr-bgp                                                       7.10.1.31Iv1.0.0-1
xr-ipsla                                                     7.10.1.31Iv1.0.0-1
xr-is-is                                                     7.10.1.31Iv1.0.0-1
xr-lldp                                                      7.10.1.31Iv1.0.0-1
xr-mcast                                                     7.10.1.31Iv1.0.0-1
xr-mpls-oam                                                  7.10.1.31Iv1.0.0-1
xr-netflow                                                   7.10.1.31Iv1.0.0-1
xr-ops-script-repo                                           7.10.1.31Iv1.0.0-1
xr-ospf                                                      7.10.1.31Iv1.0.0-1
xr-perf-meas                                                 7.10.1.31Iv1.0.0-1
xr-perfmgmt                                                  7.10.1.31Iv1.0.0-1
xr-track                                                     7.10.1.31Iv1.0.0-1
```

show install fixes

To display bug fixes, use the **show install fixes** command in XR EXEC mode.

show install fixes { **active** | **available** | **committed** | **deactivate** } [**brief** | **bugids** *value*]

active	Display active bug fixes.
available	Display the list of available bug fixes.
committed	Display committed bug fixes
deactivate *bugfix_list*	Display information on how to remove a bug fix
brief	(Optional) Displays only the bug IDs and not the relevant packages.
bugids *value*	(Optional) Displays bug fixes for a specific bug ID. You can choose to view information for more than one bug id seperated by a space.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

The following example shows how to view the list of available bug fixes:

```
Router# show install fixes available
Bug Id             Packages                       Repository
-----------    ----------------------------  ----------------
CSCxx12345     xr-8000-core-7.0.11v1.0.1-1       <repository-name>
               xr-core-7.0.11v1.0.1-1            <repository-name>
```

The following example shows how to view the information for a active bug ID:

```
Router# show install fixes active bugids CSCxx12345
```

The following example shows how to remove the DDTS CSCwc26944:

```
Router#show install fixes deactivate CSCwc26944

User-requested DDTSs deactivated by this command: CSCwc26944

All DDTSs deactivated by this command: CSCvs01738,CSCwc26944

Package changes:
```

```
  xr-8000-core-7.5.2v1.0.5 -> xr-8000-core-7.5.2v1.0.4
  xr-8000-fib-ea-7.5.2v1.0.1 -> xr-8000-fib-ea-7.5.2v1.0.0           (missing)
  xr-8000-leabaofa-7.5.2v1.0.3 -> xr-8000-leabaofa-7.5.2v1.0.2
  xr-8000-mcast-7.5.2v1.0.1 -> xr-8000-mcast-7.5.2v1.0.0             (missing)
  xr-8000-utapp-blaze-7.5.2v1.0.2 -> xr-8000-utapp-blaze-7.5.2v1.0.1
  xr-fib-7.5.2v1.0.3 -> xr-fib-7.5.2v1.0.2
  xr-mcast-7.5.2v1.0.1 -> xr-mcast-7.5.2v1.0.0                       (missing)
  xr-ncs540l-core-7.5.2v1.0.14 -> xr-ncs540l-core-7.5.2v1.0.10
  xr-ncs5700-core-7.5.2v1.0.14 -> xr-ncs5700-core-7.5.2v1.0.10
  xr-ofa-7.5.2v1.0.3 -> xr-ofa-7.5.2v1.0.1
  xr-snmp-7.5.2v1.0.1 -> xr-snmp-7.5.2v1.0.0                         (missing)

Example install commands:
  install source any-configured xr-8000-core-7.5.2v1.0.4 xr-8000-fib-ea-7.5.2v1.0.0
xr-8000-leabaofa-7.5.2v1.0.2 xr-8000-mcast-7.5.2v1.0.0 xr-8000-utapp-blaze-7.5.2v1.0.1
xr-fib-7.5.2v1.0.2 xr-mcast-7.5.2v1.0.0 xr-ncs540l-core-7.5.2v1.0.10
xr-ncs5700-core-7.5.2v1.0.10 xr-ofa-7.5.2v1.0.1 xr-snmp-7.5.2v1.0.0
  install package downgrade xr-8000-core-7.5.2v1.0.4 xr-8000-fib-ea-7.5.2v1.0.0
xr-8000-leabaofa-7.5.2v1.0.2 xr-8000-mcast-7.5.2v1.0.0 xr-8000-utapp-blaze-7.5.2v1.0.1
xr-fib-7.5.2v1.0.2 xr-mcast-7.5.2v1.0.0 xr-ncs540l-core-7.5.2v1.0.10
xr-ncs5700-core-7.5.2v1.0.10 xr-ofa-7.5.2v1.0.1 xr-snmp-7.5.2v1.0.0

IMPORTANT: The above commands cannot currently be run because there are missing packages.Put
 the following packages in an accessible repository.
  xr-8000-fib-ea-7.5.2v1.0.0
  xr-8000-mcast-7.5.2v1.0.0   (optional package)
  xr-mcast-7.5.2v1.0.0        (optional package)
  xr-snmp-7.5.2v1.0.0

IMPORTANT: If the optional packages are not available, then they can be completely removed
 before removing the DDTS using install package remove xr-8000-mcast-7.5.2v1.0.0
xr-mcast-7.5.2v1.0.0
```

show install history

To display the history of the installation process , use the **show install history** command in XR EXEC mode.

show install history { **all** [**location** *node-id*] [**reverse**] [**verbose**] | **table** [**ID** *number* | [**last** *entries*] [**reverse**]] }

all	Displays the history of all install operations.
last *entries*	Displays a last entry of the history information table
location *node-id*	Displays details of the specified location. The *node-id* argument is entered in the `rack/slot/module` notation.
table	Displays a summary table of the install operations.
ID *number*	Specifies the table ID of the history information.
reverse	Displays entries in reverse order.
verbose	Displays detailed information.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

To identify whether a reload is required or only process restart is needed, use **show install history last transaction verbose** command.

When there is insufficient disk space in the root file system, the **show install request** command displays an error message. Use **show install history last package** command to view the details of the packaging operation and any errors that have occurred.

The following example shows how to view the history of the install operation:

```
Router# show install history table
  Transaction             Atomic Change          Packaging Operations
--------------------  -------------------------  ----------------------------------
Id   Status          Id  Method   Status      Id  Operation   Inputs Status
--------------------  -------------------------  ----------------------------------
 1   In progress     1   Reload   Success      1   Upgrade        1  Success
```

The following example shows how to view history of last transaction:

```
Router# show install history last transaction verbose
2019-09-11 17:01:46 UTC    Transaction 3 started
2019-09-11 17:01:46 UTC      Atomic change 3.1 started
2019-09-11 17:01:46 UTC      Packaging operation 3.1.1 startedtion cleanup in progress
2019-09-11 17:16:46 UTC    Transaction 3 complete
```

The following example shows how to view the last packaging operation for a specific location:

```
Router# show install history last package location 0/RP0/CPU0 verbose
```

The following example shows how to view the complete details of the last packaging operation, including a failure:

```
Router# show install history last package
Wed Jan  8 13:29:51.586 UTC
2020-01-08 13:25:32 UTC        Packaging operation 3.2.1 started
2020-01-08 13:25:32 UTC        Add
2020-01-08 13:25:32 UTC         xr-telnet
2020-01-08 13:28:26 UTC       Error on 0/1/CPU0: Insufficient disk space to install packages
2020-01-08 13:28:26 UTC        Packaging operation 3.2.1 failed: Disk space check failed
on nodes: 0/1/CPU0
2020-01-08 13:28:26 UTC        Packaging operation 3.2.1 aborted: Automatically recovered
after failure

Location 0/1/CPU0
  Last event: Error (Insufficient disk space to install packages)
  Disk space pre-check failure:
     Phase: Download
     Required space: 140944B
     Available space: 110623B
```

show install log

To display the details of installation requests, use the **show install log** command in XR EXEC mode.

show install log [**all**] [**detail**] [**id number**] [**last** *number*] [**reverse**]

Syntax Description

all	(Optional) Displays a log for all install operations.
detail	(Optional) Displays details including impact to processes and nodes.
id *number*	(Optional) Displays the log information for the specified transaction ID.
last *number*	(Optional) Displays the log information for the last number of transactions.
reverse	(Optional) Displays the logs in reverse order.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

Enter the **show install log** command with no arguments to display a summary of all installation operations, including the changes to files and the processes impacted by each request. Specify the **id** argument to display details for a specific operation.

Task ID

Task ID	Operations
pkg-mgmt	read

The following example shows the log information for a specific transaction ID:

```
Router# show install log detail id 1
```

show install request

To display the current status of install requests, use the **show install request** command in XR EXEC mode.

show install request { **brief** [**monitor**] | **location** *node-id* [**monitor**] | { **verbose location** *node-id* [**monitor**] | **monitor location** *node-id* } }

Syntax Description

brief	Displays install request information summary.
location *node-id*	Displays install information for the designated node. The *node-id* argument is entered in the *rack/slot/module* notation.
verbose	Displays detailed information about the install request.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.
Release 7.8.1	The keyword **monitor** was deprecated.

Usage Guidelines

Cisco IOS XR processes only one installation request per device at a time. The **show install request** command displays any incomplete request that is currently running.

Note When the command is running asynchonously, use **show install request** command to monitor the progress.

If the install operation encounters a failure, the **show install request** command, displays an error message. Use the **show install history last package** command to obtain complete details of the failure.

The following example shows sample output from the **show install request** command:

```
Router# show install request

Install operation 17 'install add /tftp://172.31.255.255/dir/19mcast' started by user
'user_b' at 14:38:45 UTC Thu Mar 30 2006. The operation is 1% complete 2,017KB
downloaded The operation can still be aborted.
```

The following example shows sample output from the **show install request** command when there is insufficient disk space in the root file system. An error message is displayed to indicate the insufficient disk space .

```
Router#show install request
Wed Jan  8 13:29:38.086 UTC
```

```
User request: install replace /harddisk:/replace.iso
Operation ID: 3.2
State:        Failure since 2020-01-08 13:28:26 UTC
Disk space check failed on nodes: 0/1/CPU0. Automatically recovered after failure, ready
for next user request.

Current activity:    Await user input
Time started:        2020-01-08 13:29:25

The following actions are available:
    install package add
    install package remove
    install package upgrade
    install package downgrade
    install package replace
    install package rollback
    install commit
```

show install rpmdb

To display keys and packages stored in RPM database, use the **show install rpmdb** command in XR EXEC mode.

show install rpmdb [**keys** | **unverified-packages**]

Syntax Description

keys	Display information about the keys stored in the RPM database.
unverified-packages	Displays packages that cannot be verified by any installed keys.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 26.1.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

This example shows how to view information about the keys in the RPM database:

```
Router#show install rpmdb keys
Tue Feb 10 06:31:52.559 UTC
Name                                    GPG Key ID       Owner Packages
--------------------------------------- ---------------- --------------
gpg-pubkey-5c06976b-5cc2acc9            747278115c06976b              0
gpg-pubkey-834bc6f5-58684680            da0b5a46834bc6f5              0
gpg-pubkey-af885846-603760e7            9841eaabaf885846              0
gpg-pubkey-ca48eb8a-58684680            27e4332bca48eb8a              0
```

This example show how to view packages that cannot be verified by installed keys.

```
Router#show install rpmdb unverified-packages
Tue Feb 10 10:25:49.685 UTC
owner-one-1-1.x86_64
owner-two-1-1.x86_64
```

show interfaces

To display statistics, state and other information such as mac address etc. for all interfaces configured on the router or for a specific node, use the **show interfaces** command in XR EXEC mode.

show interfaces [**summary** | [*type interface-path-id* | **all** | **local**] [**non-dynamic**] | **no-tunnels** [**brief compact** | **wide** | **description wide** | **detail** | **sparse** | **accounting** | **counters** *rates physical*]] [**location** *node-id*]

Syntax Description

type	(Optional) Specifies the type of interface for which you want to display statistics. For more information, use the question mark (**?**) online help function.
interface-path-id	Physical interface or virtual interface. **Note** Use the **show interfaces brief** command to see a list of all interfaces configured on the router. For more information about the syntax for the router, use the question mark (**?**) online help function.
all	(Optional) Displays interface information for all interfaces. This is the default.
local	(Optional) Displays interface information for all interfaces in the local card.
location *node-id*	(Optional) Displays information about all interfaces on the specified node. The *node-id* argument is entered in the *rack/slot/module* notation.
accounting	(Optional) Displays the number of packets of each protocol type that have been sent through the interface.
brief	(Optional) Displays brief information of each interface (one line per interface).

wide	(Optional) Displays full interface names in the command output and includes the interface state-reason field when applicable.
no-tunnels	Displays interface information while excluding tunnel interfaces from the command output.
description	(Optional) Displays the status, protocol, and description of each interface (one line per interface).
detail	(Optional) Displays detailed information about each interface. This is the default.
summary	(Optional) Displays a summary of interface information by interface type.
sparse	(Optional) Displays sparse per interface information excluding interface statistics.
non-dynamic	(Optional) Displays interface information excluding dynamic interfaces.
counters *rates physical*	(Optional) Displays the ingress and egress statistics of all physical interfaces. The following details are displayed: InterfaceName, Intval, InMbps, InBW%, InKpps, OutMbps, OutBW%, OutKpps. **Note** This keyword is applicable only for Cisco 8000 platform.

Command Default

By default, executing **show interface** command without any option works similar as **show interface all**, and it displays the information for all interfaces in the system.

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 4.0.0	This command was introduced.
Release 7.4.2	The keywords **sparse** and **non-dynamic** were introduced.

Release	Modification
Release 7.9.1	A new keyword, **counters**, was introduced.
Release 26.1.1	The **wide** and **no-tunnels** keywords were introduced. It introduces optional display and filtering keywords that expand interface name width, filter tunnel interfaces, and add a state-reason field, while keeping the default command behavior unchanged unless the new options are explicitly used.

Usage Guidelines

The **show interfaces** command displays statistics, state and other information such as mac address etc. for the network interfaces.

For example, if you type the **show interfaces** command without an interface type, you receive information for all the interfaces installed in the networking device. Only by specifying the interface *type*, *slot*, and *port* arguments can you display information for a particular interface.

If you enter a **show interfaces** command for an interface type that has been removed from the networking device, an error message is displayed: “Interface not found.”

The output displayed depends on the network for which an interface has been configured.

Note Executing **show interfaces** command without filters obtains and displays interface statistics for all interfaces. Hence, it is recommended to execute the command with filters to select specific interfaces or interface types of interest for a faster response. Executing **show interfaces** with options **brief** or **sparse** excludes interface statistics thus providing a faster response.

Note The 5-minute input and output rates should be used only as an approximation of traffic per second during a given 5-minute period. These rates are exponentially weighted averages with a time constant of 5 minutes. A period of four time constants must pass before the average is within 2 percent of the instantaneous rate of a uniform stream of traffic over that period.

Task ID

Task ID	Operations
interface	read

Examples

This example shows the output from the **show interfaces** command. The output displayed depends on the type and number of interface cards in the networking device.

```
Router# show interfaces HundredGigE 0/3/0/35

HundredGigE0/3/0/35 is up, line protocol is up
  Interface state transitions: 1
  Hardware is HundredGigE, address is e666.9aa0.223c (bia e666.9aa0.223c)
  Description: **To RouterX Hu0/7/0/2**
  Internet address is 192.168.1.29/30
  MTU 1514 bytes, BW 100000000 Kbit (Max: 100000000 Kbit)
     reliability 255/255, txload 239/255, rxload 238/255
```

```
Encapsulation ARPA,
Full-duplex, 100000Mb/s, unknown, link type is force-up
output flow control is off, input flow control is off
Carrier delay (up) is 10 msec
loopback not set,
Last link flapped 3w3d
ARP type ARPA, ARP timeout 04:00:00
Last input 00:00:00, output 00:00:00
Last clearing of "show interface" counters never
30 second input rate 93725392000 bits/sec, 32528692 packets/sec
30 second output rate 93726416000 bits/sec, 32527860 packets/sec
   68118736643563 packets input, 24783244282360579 bytes, 0 total input drops
   0 drops for unrecognized upper-level protocol
   Received 0 broadcast packets, 0 multicast packets
            0 runts, 0 giants, 0 throttles, 0 parity
   174 input errors, 174 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
   68115867305777 packets output, 24782409845763776 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
   0 carrier transitions
```

This example shows bundle member links whose link interface status is “err-disable” and line protocol state is “admin-down” after the bundle interface has been administratively shut down using the **shutdown** command:

```
Router# show interfaces brief

Thu May  6 06:30:55.797 DST

               Intf       Intf        LineP              Encap  MTU        BW
               Name       State       State               Type (byte)    (Kbps)
--------------------------------------------------------------------------------
               BE10        down        down               ARPA  1514          0
              BE100          up          up               ARPA  1514  100000000
              BE101          up          up               ARPA  1514  100000000
                Lo0          up          up           Loopback  1500          0
                Nu0          up          up               Null  1500          0
         Fo0/3/0/26  admin-down  admin-down               ARPA  1514   40000000
          Hu0/3/0/0  admin-down  admin-down               ARPA  1514  100000000
          Hu0/3/0/1  admin-down  admin-down               ARPA  1514  100000000
          Hu0/3/0/2  admin-down  admin-down               ARPA  1514  100000000
          Hu0/3/0/3  admin-down  admin-down               ARPA  1514  100000000
          Hu0/3/0/4  admin-down  admin-down               ARPA  1514  100000000
          Hu0/3/0/5  admin-down  admin-down               ARPA  1514  100000000
          Hu0/3/0/6  admin-down  admin-down               ARPA  1514  100000000
          Hu0/3/0/7  admin-down  admin-down               ARPA  1514  100000000
          Hu0/3/0/8  admin-down  admin-down               ARPA  1514  100000000
          Hu0/3/0/9  admin-down  admin-down               ARPA  1514  100000000
         Hu0/3/0/10  admin-down  admin-down               ARPA  1514  100000000
         Hu0/3/0/11  admin-down  admin-down               ARPA  1514  100000000
         Hu0/3/0/12  admin-down  admin-down               ARPA  1514  100000000
         Hu0/3/0/13        down        down               ARPA  1514  100000000
         Hu0/3/0/14          up          up               ARPA  1514  100000000
         Hu0/3/0/15          up          up               ARPA  1514  100000000
         Hu0/3/0/16  admin-down  admin-down               ARPA  1514  100000000
         Hu0/3/0/17  admin-down  admin-down               ARPA  1514  100000000
         Hu0/3/0/18          up          up               ARPA  1514  100000000
         Hu0/3/0/19          up          up               ARPA  1514  100000000
         Hu0/3/0/20  admin-down  admin-down               ARPA  1514  100000000
         Hu0/3/0/21  admin-down  admin-down               ARPA  1514  100000000
         Hu0/3/0/22  admin-down  admin-down               ARPA  1514  100000000
```

```
      Hu0/3/0/23  admin-down  admin-down              ARPA  1514  100000000
      Hu0/3/0/24          up          up              ARPA  1514  100000000
      Hu0/3/0/25  admin-down  admin-down              ARPA  1514  100000000
      Hu0/3/0/27  admin-down  admin-down              ARPA  1514  100000000
      Hu0/3/0/28  admin-down  admin-down              ARPA  1514  100000000
      Hu0/3/0/29  admin-down  admin-down              ARPA  1514  100000000
      Hu0/3/0/30  admin-down  admin-down              ARPA  1514  100000000
      Hu0/3/0/31  admin-down  admin-down              ARPA  1514  100000000
      Hu0/3/0/32  admin-down  admin-down              ARPA  1514  100000000
      Hu0/3/0/33  admin-down  admin-down              ARPA  1514  100000000
      Hu0/3/0/34        down        down              ARPA  1514  100000000
      Hu0/3/0/35          up          up              ARPA  1514  100000000
  Mg0/RP0/CPU0/0          up          up              ARPA  1514    1000000
  Mg0/RP1/CPU0/0          up          up              ARPA  1514    1000000
```

This example shows the output from the **show interfaces** *interface-path-id* **sparse** command.

```
Router#show interfaces gigabitEthernet 0/1/0/0 sparse
Wed Apr 5 18:05:34.000 IST

Interface name : GigabitEthernet0/1/0/0
Operational state : administratively down
Admin state : administratively down
MAC address : 02:7d:42:e9:bd:36
Burned In Address : 027d.42e9.bd36
IPv4 Address : 2.2.2.2/24
Max. Bandwidth (Kbit) : 1000000
Effective Bandwidth (Kbit) : 1000000
MTU (in bytes) : 1514
Duplexity : Full-duplex
Link type : force-up
```

This example shows the output from the **show interfaces** *counters rates physical* command.

```
Router# show interfaces counters rates physical

Fri Feb  3 23:06:45.101 UTC
InterfaceName                Intval     InMbps    InBW%    InKpps     OutMbps   OutBW%
OutKpps
HundredGigE0/0/0/0             0:03    93715.7   100.0%    32742.9     93715.6   100.0%
 32742.8
HundredGigE0/0/0/35            0:03        0.0     0.0%        0.0         0.0     0.0%
     0.0
HundredGigE0/0/0/34            0:03        0.0     0.0%        0.0         0.0     0.0%
     0.0
HundredGigE0/0/0/33            0:03        0.0     0.0%        0.0         0.0     0.0%
     0.0
HundredGigE0/0/0/32            0:03        0.0     0.0%        0.0         0.0     0.0%
     0.0
HundredGigE0/0/0/31            0:03        0.0     0.0%        0.0         0.0     0.0%
     0.0
HundredGigE0/0/0/30            0:03        0.0     0.0%        0.0         0.0     0.0%
     0.0
HundredGigE0/0/0/29            0:03        0.0     0.0%        0.0         0.0     0.0%
     0.0
HundredGigE0/0/0/28            0:03        0.0     0.0%        0.0         0.0     0.0%
     0.0
HundredGigE0/0/0/27            0:03        0.0     0.0%        0.0         0.0     0.0%
     0.0
HundredGigE0/0/0/26            0:03        0.0     0.0%        0.0         0.0     0.0%
     0.0
HundredGigE0/0/0/25            0:03        0.0     0.0%        0.0         0.0     0.0%
     0.0
```

```
HundredGigE0/0/0/24           0:03        0.0     0.0%        0.0         0.0     0.0%
     0.0
HundredGigE0/0/0/13           0:03        0.0     0.0%        0.0         0.0     0.0%
     0.0
HundredGigE0/0/0/11           0:03        0.0     0.0%        0.0         0.0     0.0%
     0.0
HundredGigE0/0/0/7            0:03        0.0     0.0%        0.0         0.0     0.0%
     0.0
HundredGigE0/0/0/6            0:03        0.0     0.0%        0.0         0.0     0.0%
     0.0
HundredGigE0/0/0/3            0:03        0.0     0.0%        0.0         0.0     0.0%
     0.0
HundredGigE0/0/0/1            0:03    93715.7   100.0%    32742.9     93715.6   100.0%
 32742.9
```

This example shows the output from the **show interfaces brief wide** command.

```
Router# show interfaces brief wide
Mon Jul 21 15:35:54.721 IST

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

Null0                                          up        up        Null    1500   0

srte_test_backup_path_idx0002_TE64name
                                              down      down      TUNNEL  1500   0   Phy
member down

srte_test_main_path_idx0003_TE64name
                                              down      down      TUNNEL  1500   0

srte_test_primary_path_idx0001_TE64name
                                              down      down      TUNNEL  1500   0

GigabitEthernet0/0/0/0                        admin-down  admin-down     ARPA    1514 1000000
  Phy down

GigabitEthernet0/1/0/0                        admin-down  admin-down     ARPA    1514 1000000
  Phy down
```

This example shows the output from the **show interfaces description wide** command.

```
Router# show interfaces description wide
Mon Jul 21 15:35:54.721 IST

Interface                      Status      Protocol     Reason              Description
--------------------------------------------------------------------------------------------------
srte_test_idx0002_TE64name   down        down         Phy member down

GigabitEthernet0/0/0/0      admin-down  admin-down    Phy down       uplink_to_core_router

GigabitEthernet0/0/0/0       admin-down  admin-down    Phy Down
Uplink_to_Distribution_Swi
tch_DS2_via_40G_QSFP_Fiber_Location:_Building_R2_Rack_17_|_Role:_Data_Center_Aggregation_Layer_link_with_Priority_QoS_Profile
```

Table 2: show interfaces Field Descriptions

Field	Description
Interface name	Displays the name of the current interface. In the example, the interface name is TenGigE0/1/0/1.
Interface state	Displays the state of the interface. In the example, the interface is in the administratively down state.
Interface state transitions	Displays the number of times the interface has changed the state. **Note** • Interface state transitions command counts only if the interface stays up. If the line protocol flaps, then it is not counted. • Interface state transitions counts the state when the line protocol state changes the state from up to down/admin-down or admin-down/down to up. If an interface changes the state from down to admin-down or admin-down to down, the counter is not incremented. • Use the **clear state-transitions** command to clear the counter for the current or all interfaces.
line protocol state	Displays the state of the Layer 2 line protocol. This field may be different from the interface state if, for example, a keepalive failure has brought down the Layer 2. **Note** The line protocol state is not the same as the protocol state displayed in the **show ip interfaces** command, because it is the state of Layer 2 (media) rather than Layer 3 (IP protocol).
Hardware	Displays the current hardware type.
address is *n.n.n.n/n*	Displays the Layer 2 address (MAC address for Ethernet interfaces). **Note** Enter the **mac-address** command to configure the hardware address.
bia	Displays the burned-in address (BIA) for the interface. The BIA is the default L2 (MAC) address for the interface. **Note** The BIA is not configurable.

Field	Description
description	Displays the user-defined string that is associated with the interface. **Note** Enter the **description** command to configure the description associated with the interface.
Internet address	Displays the Layer 3 (IP) address for the interface. **Note** Enter the **ipv4 address** command to configure the internet address for the interface.
MTU	Displays the maximum transmission unit (MTU) for the interface. The MTU is the maximum packet size that can be transmitted over the interface. **Note** The MTU field indicates the interface MTU. Enter the **mtu** command to configure a lower MTU value at the Layer 3 level.
BW	Displays the bandwidth of the interface in kbps.
Reason	Displays the reason an interface is in the down state.
reliability	Displays the proportion of packets that are not dropped and do not have errors. **Note** The reliability is shown as a fraction of 255.
txload	Indicates the traffic flowing out of the interface as a proportion of the bandwidth. **Note** The txload is shown as a fraction of 255.
rxload	Indicates the traffic flowing into the interface as a proportion of the bandwidth. **Note** The rxload is shown as a fraction of 255.
Encapsulation	Layer 2 encapsulation installed on the interface.

Field	Description
CRC	Indicates the length of the cyclic redundancy check (CRC), in bytes. **Note** The CRC is not present for all interface types. **Note** Enter the **pos crc** command to configure the CRC.
loopback or controller loopback	Indicates whether the hardware has been configured to be looped back. **Note** Enter the **loopback** command to configure the loopback or controller loopback.
keepalive	Displays the configured keepalive value, in seconds. **Note** Enter the **keepalive** command to configure the value of the keepalive field. **Note** The *keepalive* field may not be present if it is not applicable to the interface type.
Duplexity	Displays the duplexity of the link. **Note** This field is present only for shared media. **Note** For some interface types, you can configure the duplexity by entering the **full-duplex** and **half-duplex** commands.
Speed	Speed and bandwidth of the link in Mbps. This field is present only when other parts of the media info line are also displayed (see duplexity and media type).
Media Type	Media type of the interface.
output flow control	Whether output flow control is enabled on the interface.
input flow control	See output flow control.
ARP type	Address Resolution Protocol (ARP) type used on the interface. This value is not displayed on interface types that do not use ARP.

Field	Description
ARP timeout	ARP timeout in *hours*:*mins*:*secs*. This value is configurable using the **arp timeout** command.
Last clearing of counters	Time since the following counters were last cleared using the **clear counters** exec command in *hours*:*mins*:*secs*.
Input rate	Average number of bits and packets received per second during the load-interval. If the interface is not in promiscuous mode, it senses network traffic that it sends and receives (rather than all network traffic). **Note** Load duration is based on load-interval configured under the interface. The default load duration is 5 minutes, if load-interval is not configured under the interface. **Note** The input rate should be used only as an approximation of traffic per second during a given load duration. This rate is exponentially weighted average with a time constant of load duration. A period of four time constants must pass before the average will be within two percent of the instantaneous rate of a uniform stream of traffic over that period.
packets input	Number of packets received on the interface that were successfully delivered to higher layers.
bytes input	Total number of bytes successfully received on the interface. **Note** This does not include FCS bytes.
total input drops	Total number of packets that were dropped after they were received. This includes packets that were dropped due to configured quality of service (QoS) or access control list (ACL) policies. This does not include drops due to unknown Layer 3 protocol.
drops for unrecognized upper-level protocol	Total number of packets that could not be delivered because the necessary protocol was not configured on the interface.
Received broadcast packets	Total number of Layer 2 broadcast packets received on the interface. This is a subset of the total input packet count.

Field	Description
Received multicast packets	Total number of Layer 2 multicast packets received on the interface. This is a subset of the total input packet count.
runts	Number of received packets that were too small to be handled. This is a subset of the input errors count.
giants	Number of received packets that were too large to be handled. This is a subset of the input errors count.
throttles	Number of packets dropped due to throttling (because the input queue was full).
parity	Number of packets dropped because the parity check failed.
input errors	Total number of received packets that contain errors and hence cannot be delivered. Compare this to total input drops, which counts packets that were not delivered despite containing no errors.
CRC	Number of packets that failed the CRC check.
frame	Number of packets with bad framing bytes.
overrun	Number of overrun errors experienced by the interface. Overruns represent the number of times that the receiver hardware is unable to send received data to a hardware buffer because the input rate exceeds the receiver's ability to handle the data.
ignored	Total number of ignored packet errors. Ignored packets are those that are discarded because the interface hardware does not have enough internal buffers. Broadcast storms and bursts of noise can result in an increased number of ignored packets.
abort	Total number of abort errors on the interface.
packets output	Number of packets received on the interface that were successfully delivered to higher layers.
bytes output	Total number of bytes successfully received on the interface. **Note** This does not include FCS bytes.
total output drops	Number of packets that were dropped before being transmitted

Field	Description
Received broadcast packets	Number of Layer 2 broadcast packets transmitted on the interface. This is a subset of the total input packet count.
Received multicast packets	Total number of Layer 2 multicast packets transmitted on the interface. This is a subset of the total input packet count.
output errors	Number of times that the receiver hardware was unable to handle received data to a hardware buffer because the input rate exceeded the receiver's ability to handle the data.
underruns	Number of underrun errors experienced by the interface. Underruns represent the number of times that the hardware is unable to transmit data to a hardware buffer because the output rate exceeds the transmitter’s ability to handle the data.
applique	Number of applique errors.
resets	Number of times that the hardware has been reset. The triggers and effects of this event are hardware-specifc.
output buffer failures	Number of times that a packet was not output from the output hold queue because of a shortage of MEMD shared memory.
output buffers swapped out	Number of packets stored in main memory when the output queue is full; swapping buffers to main memory prevents packets from being dropped when output is congested. The number is high when traffic is bursty.
carrier transitions	Number of times the carrier detect (CD) signal of a serial interface has changed state.
Intval	Displays the time period in ms over which the rates are calculated.
InMbps	Displays the calculated input data rate for the interface in Mbps.
InBW%	Displays the percent input bandwidth utilization of the interface.
InKpps	Displays the calculated input packets rate for the interface in Kpps.
OutMbps	Displays the calculated output data rate for the interface in Mbps.

Field	Description
OutBW%	Displays the percent output bandwidth utilization of the interface.
OutKpps	Displays the calculated output packets rate for the interface in Kpps.

show inventory

To retrieve and display information about all the Cisco products that are installed in the router, use the **show inventory** command in XR EXEC mode.

show inventory [*node-id* | **all** | **location** { *node-id* | **all** } | **raw** | **chassis** | **details** | **fan** | **power** | **vendor-type**]

Syntax Description

node-id	(Optional) Location for which to display the specified information. The *node-id* argument is entered in the *rack/slot* notation.
all	(Optional) Displays inventory information for all the physical entities in the chassis.
location {*node-id*|**all**}	(Optional) Displays inventory information for a specific node, or for all nodes in the chassis.
raw	(Optional) Displays raw information about the chassis for diagnostic purposes.
chassis	(Optional) Displays only information about the chassis.
details	(Optional) Displays detailed entity information.
fan	(Optional) Displays inventory information for the fans.
power	(Optional) Displays inventory information for the power supply.
vendor-type	(Optional) Displays vendor-type information.

Command Default

All inventory information for the entire chassis is displayed.

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

If a Cisco entity is not assigned a product ID (PID), that entity is not retrieved or displayed.

Enter the **show inventory** command with the **raw** keyword to display every RFC 2737 entity installed in the router, including those without a PID, unique device identifier (UDI), or other physical identification.

Note The **raw** keyword is primarily intended for troubleshooting problems with the **show inventory** command itself.

If any of the Cisco products do not have an assigned PID, the output displays incorrect PIDs, and version ID (VID) and serial number (SN) elements may be missing.

For UDI compliance products, the PID, VID, and SN are stored in EEPROM and NVRAM. Use the **show inventory** command to display this information.

The following example shows partial sample output from the **show inventory** command with the **raw** keyword:

```
Router#show inventory raw
Tue Mar  7 07:34:48.602 UTC

NAME: "Rack 0", DESCR: "Cisco 8201 1RU Chassis"
PID: 8201              , VID: V00, SN: FOC2217JIRS

NAME: "Rack 0-Control Card Slot 0", DESCR: "8201 Route Processor Slot 0"
PID: N/A               , VID: N/A, SN: N/A

NAME: "0/RP0/CPU0", DESCR: "Cisco 8201 1RU Chassis"
PID: 8201              , VID: V00, SN: FOC2219JGLB

NAME: "0/RP0/CPU0-Mother Board", DESCR: "Mother Board"
PID: N/A               , VID: N/A, SN: N/A

NAME: "0/RP0/CPU0-Broadwell-DE (D-1530)", DESCR: "Processor Module"
PID: N/A               , VID: N/A, SN: N/A

NAME: "0/RP0/CPU0-Attention", DESCR: "LED Sensor"
PID: N/A               , VID: N/A, SN: N/A

NAME: "0/RP0/CPU0-Status", DESCR: "LED Sensor"
PID: N/A               , VID: N/A, SN: N/A

NAME: "0/RP0/CPU0-Sync", DESCR: "LED Sensor"
PID: N/A               , VID: N/A, SN: N/A

NAME: "0/RP0/CPU0-MB_RT_GB_PIN", DESCR: "Power Sensor - MB-RT_GB_ONLY_0.8VB_PIN"
PID: N/A               , VID: N/A, SN: N/A
 --More--
```

The following example shows the sample output from the **show inventory** command with the **chassis** keyword:

```
Router#show inventory chassis
Thu Apr 6 04:56:46.987 UTC

NAME: "Rack 0", DESCR: "Cisco 8808 8-slot Chassis"
PID: 8808 , VID: V00, SN: FOX224PPUDA
```

The following table describes the significant fields shown in the display.

Table 3: show inventory Field Descriptions

Field	Description
NAME	Hardware for which the inventory information is displayed. If you are displaying the chassis inventory, this field shows "chassis." If you are displaying raw inventory, or all inventory information for all nodes in the chassis, this field shows the node name in partially qualified format. For a node, the NAME is expressed in *rack/slot* notation.
DESCR	Describes the chassis or the node. Chassis descriptions provide the name of the chassis and its Gbps. Node descriptions provide the type of node and its software version.
PID	Physical model name of the chassis or node.

Field	Description
VID	Physical hardware revision of the chassis or node.
SN	Physical serial number for the chassis or node.

show ipv4 interface

To display the usability status of interfaces configured for IPv4, use the **show ipv4 interface** command in XR EXEC mode.

show ipv4 interface [*type interface-path-id* | **brief** | **summary**]

Command Default

If VRF is not specified, the software displays the default VRF.

Command Modes

XR EXEC mode

Usage Guidelines

The **show ipv4 interface** command provides output similar to the **show ipv6 interface** command, except that it is IPv4-specific.

Task ID

Task ID	Operations
ipv4	read
network	read

Examples

This is the sample output of the **show ipv4 interface** command:

```
Router# show ipv4 interface

Loopback0 is Up, line protocol is Up
  Internet address is
.0.0.1/

  Secondary address 10.0.0./8
  MTU is 1514 (1514 is available to IP)
  Multicast reserved groups joined: 10.0.0.1
  Directed broadcast forwarding is disabled
  Outgoing access list is not set
  Inbound  access list is not set
  Proxy ARP is enabled
  ICMP redirects are always sent
  ICMP unreachables are always sent
/0/0/0 is Up, line protocol is Up
  Internet address is 10.25.58.1/16
  MTU is 1514 (1500 is available to IP)
  Multicast reserved groups joined: .0..1
  Directed broadcast forwarding is disabled
  Outgoing access list is not set
  Inbound  access list is not set
  Proxy ARP is enabled
  ICMP redirects are always sent
  ICMP unreachables are always sent
/0/0/0 is Shutdown, line protocol is Down

  Internet protocol processing disabled
```

This table describes the significant fields shown in the display.

Table 4: show ipv4 interface Command Field Descriptions

Field	Description
Loopback0 is Up	If the interface hardware is usable, the interface is marked “Up.” For an interface to be usable, both the interface hardware and line protocol must be up.
line protocol is Up	If the interface can provide two-way communication, the line protocol is marked “Up.” For an interface to be usable, both the interface hardware and line protocol must be up.
Internet address	IPv4 Internet address and subnet mask of the interface.
Secondary address	Displays a secondary address, if one has been set.
MTU	Displays the IPv4 MTU[1] value set on the interface.
Multicast reserved groups joined	Indicates the multicast groups this interface belongs to.
Directed broadcast forwarding	Indicates whether directed broadcast forwarding is enabled or disabled.
Outgoing access list	Indicates whether the interface has an outgoing access list set.
Inbound access list	Indicates whether the interface has an incoming access list set.
Proxy ARP	Indicates whether proxy ARP[2] is enabled or disabled on an interface.
ICMP redirects	Specifies whether ICMPv4[3] redirects are sent on this interface.
ICMP unreachables	Specifies whether unreachable messages are sent on this interface.
Internet protocol processing disabled	Indicates an IPv4 address has not been configured on the interface.

1 MTU = maximum transmission unit
2 ARP = Address Resolution Protocoladdress resolution protocol
3 ICMPv4 = Internet Control Message Protocol internet control message protocol version 4

show ipv6 interface

To display the usability status of interfaces configured for IPv6, use the **show ipv6 interface** command in XR EXEC mode.

show ipv6 interface [**summary** | [*type* *interface-path-id*] [**brief** [**link-local** | **global**]]]

Syntax Description

type	(Optional) Interface type. For more information, use the question mark (?) online help function.

interface-path-id	(Optional) Either a physical interface instance or a virtual interface instance as follows:
	• Physical interface instance. Naming notation is *rack/slot/module/port* and a slash between values is required as part of the notation.
	  • *rack*: Chassis number of the rack.
	  • *slot*: Physical slot number of the modular services card or line card.
	  • *module*: Module number. A physical layer interface module (PLIM) is always 0.
	  • *port*: Physical port number of the interface.
	Note In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RSP0) and the module is CPU0. Example: interface MgmtEth0/RSP0 /CPU0/0.
	• Virtual interface instance. Number range varies depending on interface type.
	For more information about the syntax for the router, use the question mark (?) online help function.

brief	(Optional) Displays the primary IPv6 addresses configured on the router interfaces and their protocol and line states.
link-local	(Optional) Displays the link local IPv6 address.
global	(Optional) Displays the global IPv6 address.
summary	(Optional) Displays the number of interfaces on the router that are assigned, unassigned, or unnumbered.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 6.0	This command was introduced.

Usage Guidelines

The **show ipv6 interface** command provides output similar to the **show ipv4 interface** command, except that it is IPv6-specific.

Use the **link-local** or **global** keywords along with the **brief** keyword to view the link local or global IPv6 addresses.

Task ID

Task ID	Operations
ipv6	read

Examples

This is the sample output of the **show ipv6 interface** command:

```
Router#show ipv6 interface
Wed Mar  8 04:27:58.236 UTC
FourHundredGigE0/0/0/0 is Shutdown, ipv6 protocol is Down, Vrfid is default (0x60000000)
  IPv6 is disabled, link-local address unassigned
  No global unicast address is configured
FourHundredGigE0/0/0/1 is Shutdown, ipv6 protocol is Down, Vrfid is default (0x60000000)
  IPv6 is disabled, link-local address unassigned
  No global unicast address is configured
FourHundredGigE0/0/0/2 is Shutdown, ipv6 protocol is Down, Vrfid is default (0x60000000)
  IPv6 is disabled, link-local address unassigned
  No global unicast address is configured
FourHundredGigE0/0/0/3 is Shutdown, ipv6 protocol is Down, Vrfid is default (0x60000000)
  IPv6 is disabled, link-local address unassigned
  No global unicast address is configured
FourHundredGigE0/0/0/4 is Shutdown, ipv6 protocol is Down, Vrfid is default (0x60000000)
  IPv6 is disabled, link-local address unassigned
  No global unicast address is configured
FourHundredGigE0/0/0/5 is Shutdown, ipv6 protocol is Down, Vrfid is default (0x60000000)
  IPv6 is disabled, link-local address unassigned
  No global unicast address is configured
FourHundredGigE0/0/0/6 is Shutdown, ipv6 protocol is Down, Vrfid is default (0x60000000)
  IPv6 is disabled, link-local address unassigned
  No global unicast address is configured
FourHundredGigE0/0/0/7 is Shutdown, ipv6 protocol is Down, Vrfid is default (0x60000000)
  IPv6 is disabled, link-local address unassigned
 --More--
```

This table describes the significant fields shown in the display.

Table 5: show ipv6 interface Command Field Descriptions

Field	Description
	Indicates whether the interface hardware is currently active (whether line signal is present) and whether it has been taken down by an administrator. If the interface hardware is usable, the interface is marked “Up.” For an interface to be usable, both the interface hardware and line protocol must be up.
line protocol is Up (or down)	Indicates whether the software processes that handle the line protocol consider the line usable (that is, whether keepalives are successful). If the interface can provide two-way communication, the line protocol is marked “Up.” For an interface to be usable, both the interface hardware and line protocol must be up.

Field	Description
IPv6 is enabled, stalled, disabled (stalled and disabled are not shown in sample output)	Indicates that IPv6 is enabled, stalled, or disabled on the interface. If IPv6 is enabled, the interface is marked “enabled.” If duplicate address detection processing identified the link-local address of the interface as being a duplicate address, the processing of IPv6 packets is disabled on the interface and the interface is marked “stalled.” If IPv6 is not enabled, the interface is marked “disabled.”
link-local address	Displays the link-local address assigned to the interface.
TENTATIVE	The state of the address in relation to duplicate address detection. States can be any of the following: • duplicate—The address is not unique and is not being used. If the duplicate address is the link-local address of an interface, the processing of IPv6 packets is disabled on that interface. • tentative—Duplicate address detection is either pending or under way on this interface. **Note** If an address does not have one of these states (the state for the address is blank), the address is unique and is being used.
Global unicast addresses	Displays the global unicast addresses assigned to the interface.
ICMP redirects	State of Internet Control Message Protocol (ICMP) IPv6 redirect messages on the interface (the sending of the messages is enabled or disabled).
ND DAD	State of duplicate address detection on the interface (enabled or disabled).
number of DAD attempts	Number of consecutive neighbor solicitation messages that are sent on the interface while duplicate address detection is performed.
ND reachable time	Displays the neighbor discovery reachable time (in milliseconds) assigned to this interface.

This is the sample output of the **show ipv6 interface brief link-local** command:

```
Router#show ipv6 interface brief link-local
```

This is the sample output of the **show ipv6 interface brief global** command:

```
Router#show ipv6 interface brief global
```

This is the sample output of the **show ipv6 interface** *type interface-path-id* **brief link-local** command:

```
Router#show ipv6 interface tenGigE 0/0/0/0 brief link-local

Interface                  IPv6-Address                  Status     Protocol
0/0/0/0    fe80::fe:8ff:fecb:26c5        Up         Up
```

This is the sample output of the **show ipv6 interface** *type interface-path-id* **brief global** command:

```
Router#show ipv6 interface tenGigE 0/0/0/0 brief global

Interface                  IPv6-Address                  Status     Protocol
0/0/0/0    2001:db8::1                   Up         Up
```

show logging

To display the contents of the logging buffer, use the **show logging** command in XR EXEC mode.

show logging [[**alarm-location location** *location*] | [**correlator** *options*] | **local location** *node-id* | [**location** *node-id*] [**start** *month day hh* **:** *mm* **:** *ss*] [**process** *name*] [**string** *string*] [**end** *month day hh* **:** *mm* **: ss**] [**events** *options*] [**files**] [**history**] [**last** *entries*] [**onboard** *entries*] [**suppress rule** { *rule_name* | **all** }]]

Syntax Description

alarm-location trace *location*	(Optional) Displays alarm-location information. The **trace** option shows trace data for the alarm location components.
correlator*options*	(Optional) Displays content and information about correlation buffer. Options available are: • buffer: Displays content of the correlation buffer. • info: Displays information about event correlation. • trace: Displays trace data for the alarm_logger component.
end *month day hh* **:** *mm* **:** *ss*	(Optional) Displays syslog messages with a time stamp equal to or lower than the time stamp specified with the *monthday hh* **:** *mm* **:** *ss* argument. The ranges for the *month day hh* **:** *mm* **:** *ss* arguments are: • *month*—The month of the year. The values for the *month* argument are the names of the twelve months. • *day*—Day of the month. Range is from 01 to 31. • *hh* **:**—Hours. Range is from 00 to 23. You must insert a colon after the *hh* argument. • *mm* **:**—Minutes. Range is from 00 to 59. You must insert a colon after the *mm* argument. • *ss*—Seconds. Range is from 00 to 59.
events *options*	Displays content and information about the event buffer.The various options available are: • buffer: Displays content of the event buffer. • info: Displays information about events buffer. • rule: Displays specified rules. • ruleset: Displays rulesets. • trace: Displays trace data for the correlation component.

files	Show logging files and path.
history	Displays contents of logging history.
last *entries*	Displays last <n> entries. The number of entries can range from 1 to 500.
local location *node-id*	(Optional) Displays system logging (syslog) messages from the specified local buffer. The *node-id* argument is entered in the *rack/slot/modul e* notation.
location *node-id*	(Optional) Displays syslog messages from the designated node. The *node-id* argument is entered in the *rack/slot/modul e* notation.
onboard *options*	Displays on board logging.The various options available are: • alarm: Displays alarm data. • fpd: Displays FPD version data. • inventory: Displays inventory data. • npu: Displays NPU life-time data. • temperature: Displays temperature sensor data • uptime: Displays system uptime data • voltage: Displays voltage sensor data.
start *month day hh* **:** *mm* **:** *ss*	(Optional) Displays syslog messages with a time stamp equal to or higher than the time stamp specified with the *month day mm* **:** *hh* **:** *ss* argument. The ranges for the *month day hh* **:** *mm* **:** *ss* arguments are as follows: • *month*—The month of the year. The values for the *month* argument are the names of the twelve months. • *day*—Day of the month. Range is from 01 to 31. • *hh* **:**—Hours. Range is from 00 to 23. You must insert a colon after the *hh* argument. • *mm* **:**—Minutes. Range is from 00 to 59. You must insert a colon after the *mm* argument. • *ss*—Seconds. Range is from 00 to 59.
process *name*	(Optional) Displays syslog messages related to the specified process.
string *string*	(Optional) Displays syslog messages that contain the specified string.

suppress rule{*rule_name*|**all**}	Displays content and information about log suppression. The **rule** option shows specified rules.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

Use the **show logging** command to display the state of syslog error and event logging on the processor console. The information from the command includes the types of logging enabled and the size of the buffer.

Task ID

Task ID	Operations
logging	read

Examples

This is the sample output from the **show logging** command using both the **process** *name* keyword argument pair and **location** *node-id* keyword argument pair. Syslog messages related to the "init" process emitted from node 0/RP0/CPU0 are displayed in the sample output.

```
Router#show logging process init location 0/RP0/CPU0
Tue Mar  7 08:07:49.157 UTC
Syslog logging: enabled (0 messages dropped, 0 flushes, 0 overruns)
    Console logging: level warnings, 7 messages logged
    Monitor logging: level debugging, 0 messages logged
    Trap logging: level informational, 0 messages logged
    Buffer logging: level debugging, 133 messages logged

Log Buffer (2097152 bytes):
```

This table describes the significant fields shown in the display.

Table 6: show logging Field Descriptions

Field	Description
Syslog logging	If enabled, system logging messages are sent to a UNIX host that acts as a syslog server; that is, the host captures and saves the messages.
Console logging	If enabled, the level and the number of messages logged to the console are stated; otherwise, this field displays "disabled."
Monitor logging	If enabled, the minimum level of severity required for a log message to be sent to the monitor terminal (not the console) and the number of messages logged to the monitor terminal are stated; otherwise, this field displays "disabled."
Trap logging	If enabled, the minimum level of severity required for a log message to be sent to the syslog server and the number of messages logged to the syslog server are stated; otherwise, this field displays "disabled."

Field	Description
Buffer logging	If enabled, the level and the number of messages logged to the buffer are stated; otherwise, this field displays “disabled.”

To find out OOR state of a router's hardware and Software Development Kit (SDK) resources, you can view the sample output from the **show logging** command with the output modifier as OOR. You can configure the threshold value at which a router reaches the **OOR State Red** or **Yellow** by using the `oor hw threshold` command. For more information, see `oor hw threshold` command in the chapter *Logging Services Commands* of *System Monitoring Command Reference for Cisco 8000 Series Routers*.

```
Router# show logging | inc OOR
Wed Jan 6 23:36:34.138 EST
LC/0/0/CPU0:Jan 6 23:01:09.609 EST: npu_drvr[278]: %PLATFORM-OFA-4-OOR_YELLOW : NPU 1, Table
 nhgroup, Resource stage2_lb_group
LC/0/0/CPU0:Jan 6 23:01:29.655 EST: npu_drvr[278]: %PLATFORM-OFA-4-OOR_YELLOW : NPU 1, Table
 nhgroup, Resource stage2_lb_member
LC/0/0/CPU0:Jan 6 23:01:38.938 EST: npu_drvr[278]: %PLATFORM-OFA-1-OOR_RED : NPU 3, Table
nhgroup, Resource stage2_lb_group
```

show ntp status

To display the status of Network Time Protocol (NTP), use the **show ntp status** command in XR EXEC mode.

show ntp status [**location** *node-id*]

Syntax Description

location *node-id*	(Optional) Displays the status of NTP from the designated node. The *node-id* argument is entered in the *rack/slot* notation.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
ip-services	read

This example shows sample output from the **show ntp status** command:

```
Router# show ntp status

Clock is synchronized, stratum 3, reference is 192.168.128.5
nominal freq is 1000.0000 Hz, actual freq is 1000.0021 Hz, precision is 2**24
reference time is CC38EC6A.8FCCA1C4 (10:10:02.561 JST Tue Jul 29 2008)
clock offset is -124.051 msec, root delay is 174.060 msec
root dispersion is 172.37 msec, peer dispersion is 0.10 msec
loopfilter state is 'CTRL' (Normal Controlled Loop), drift is -0.0000021106 s/s
system poll interval is 32, last update was 19 sec ago
```

Table 7: show ntp status Field Descriptions

Field	Description
synchronized	Synchronized system to an NTP peer.
stratum	NTP stratum of this system.
reference	IPv4 address or first 32 bits of the MD5 hash of the IPv6 address of the peer to which clock is synchronized.
nominal freq	Nominal frequency in Hertz (Hz) of the system hardware clock.

Field	Description
actual freq	Measured frequency in Hz of the system hardware clock.
precision	Precision of the clock of this system in Hz.
reference time	Reference time stamp.
clock offset	Offset of clock to synchronized peer, in milliseconds.
root delay	Total delay along path to root clock, in milliseconds.
root dispersion	Dispersion of root path.
peer dispersion	Dispersion of synchronized peer.
loopfilter state	The state of the clock state machine transition function.
drift	Drift of the hardware clock.
system poll interval	Poll interval of the peer.
last update	Time the router last updated its NTP information.

show optics firmware upgrade

To display the status of an ongoing or completed firmware upgrade operation, use the **show optics firmware upgrade** command in XR EXEC mode.

show optics firmware upgrade **port** *port-number* **location** *node-id*

Syntax Description

port*port-number*	Specifies the optic port number where the firmware upgrade is performed.
location*node-id*	Specifies the CPU node responsible for managing the optic. This may be the route processor or a line card CPU depending on the platform architecture.

Command Default

None

Command Modes

XR EXEC mode

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
system	read

This example displays the status of an ongoing or completed firmware upgrade operation

```
Router# show optics firmware upgrade port 16 location 0/RP0/CPU0
```

show platform

To display information and status for each node in the system, use the **show platform** command in XR EXEC mode.

show platform [*node-id*] **reload location** { **all** | **All slots** }

Syntax Description

node-id	(Optional) Node for which to display information. The *node-id* argument is entered in the *rack/slot* notation.

Command Default

Status and information are displayed for all nodes in the system.

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

The **show platform** command provides a summary of the nodes in the system, including node type and status.

Enter the **show platform** command in EXEC mode to display output for only those nodes that belong to the SDR on which the command is executed.

Task ID

Task ID	Operations
system	read

The following example shows sample output from the **show platform** command:

```
Router#show platform
Thu Apr 6 00:56:22.922 UTC
Node               Type                       State                     Config state
--------------------------------------------------------------------------------
0/RP0/CPU0         8800-RP(Active)            IOS XR RUN                NSHUT,NMON
0/0/CPU0           8800-LC-48H                IOS XR RUN                NSHUT
0/1/CPU0           88-LC0-36FH-M              IOS XR RUN                NSHUT
0/FC0              8812-FC                    OPERATIONAL               NSHUT
0/FC1              8812-FC                    OPERATIONAL               NSHUT
0/FT0              8812-FAN                   OPERATIONAL               NSHUT
0/FT1              8812-FAN                   OPERATIONAL               NSHUT
0/FT2              8812-FAN                   OPERATIONAL               NSHUT
0/FT3              8812-FAN                   OPERATIONAL               NSHUT
0/PT0              8800-HV-TRAY               OPERATIONAL               NSHUT
0/PT1              8800-HV-TRAY               OPERATIONAL               NSHUT
0/PT2              8800-HV-TRAY               OPERATIONAL               NSHUT
```

The following is sample output for the **show platform** command with the *node-id* argument:

```
Router#show platform location 0/RP0/CPU0
Wed Mar  8 04:05:07.106 UTC
Node               Type                       State                     Config state
--------------------------------------------------------------------------------
0/RP0/CPU0         8201(Active)               IOS XR RUN                NSHUT
```

The following example shows sample output from the **show platform** command with the MPA reload information after executing the**reload location** command.

```
Router#show platform
Tue Sep 17 16:39:19.188 IST
Node               Type                       State                     Config state
--------------------------------------------------------------------------------------
0/RP0/CPU0         8712-MOD-M(Active)         IOS XR RUN                NSHUT
0/FT0              FAN-PI-V3                  OPERATIONAL               NSHUT
0/FT1              FAN-PI-V3                  OPERATIONAL               NSHUT
0/FT2              FAN-PI-V3                  OPERATIONAL               NSHUT
0/FT3              FAN-PI-V3                  OPERATIONAL               NSHUT
0/PM0              PSU2KW-ACPI                OPERATIONAL               NSHUT
0/PM1              PSU2KW-ACPI                OPERATIONAL               NSHUT
0/0                8K-MPA-16H                 OPERATIONAL               NSHUT
0/1                8K-MPA-16Z2D               OPERATIONAL               NSHUT
0/2                8K-MPA-4D                  OPERATIONAL               NSHUT
0/3                8K-MPA-16Z2D               OPERATIONAL               NSHUT
```

This table describes the significant fields shown in the display.

Table 8: show platform Field Descriptions

Field	Description
Node	Identifier of the node in the *rack*/*slot* notation.
Type	Type of node.
State	Current state of the specified node.
Config State	Current configuration state of the specified node.

show redundancy

To display the status of route processor redundancy, use the **show redundancy** command in

EXEC

mode.

show redundancy [**location** {*node-id* | **all**} | **statistics** | **summary**]

Syntax Description

location {*node-id* | **all**}	(Optional) Specifies the node for which to display LED information. The *node-id* argument is expressed in the *rack/slot* notation. Use the **all** keyword to indicate all nodes.
statistics	(Optional) Displays redundancy statistics information.
summary	(Optional) Displays a summary of all redundant node pairs in the router.

Command Default

Route processor redundancy information is displayed for all nodes in the system.

Command Modes

EXEC

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

Use the **show redundancy** command to display the redundancy status of the route switch processors (RSPs). The **show redundancy** command also displays the boot and switchover history for the . To view the nonstop routing (NSR) status of the standby in the system, use the **summary** keyword.

Task ID

Task ID	Operations
system	read
basic-services	read (for **statistics** keyword)

The following example shows sample output from the **show redundancy** command:

```
Router# show redundancy location 0/rsp0/cpu0
Thu Jul 30 05:47:12.155 DST
Node 0/RSP0/CPU0 is in ACTIVE role
Node 0/RSP0/CPU0 has no valid partner

Reload and boot info
----------------------
A9K-RSP-4G reloaded Tue Jul 14 15:21:30 2009: 2 weeks, 1 day,
14 hours, 25 minutes ago
Active node booted Tue Jul 14 15:21:30 2009: 2 weeks, 1 day,
14 hours, 25 minutes ago
```

```
Active node reload "Cause: User initiated forced reload all"
```

Table 9: show redundancy Field Descriptions

Field	Description
Node */*/* is in *XXX* role	Current role of the primary route processor, where (*/*/*) is the route processor ID in the format *rack*/*slot*/*module*, and *XXX* is the role of the route processor (active or standby). In the example, this field shows that the node with the ID 0/RP0/CPU0 is in active role.
Partner node (*/*/*) is in *XXX* role	Current role of the secondary (or partner) route processor, where (*/*/*) is the route processor ID in the *rack*/*slot*/*module* format, and *XXX* is the role of the route processor (active or standby). In the example, this field shows that the node with the ID 0/RP1/CPU0 is in standby role.
Standby node in (*/*/*) is ready	Current state of the standby node, where (*/*/*) is the standby route processor ID. In the example, the standby node is ready.
Standby node in (*/*/*) is NSR-ready	Current state of the standby node regarding nonstop routing (NSR), where (*/*/*) is the standby route processor ID. In the example, the standby node is NSR-ready.
Reload and boot info	General overview of the active and standby route processors' reload and boot history.

show running-config

To display the contents of the currently running configuration or a subset of that configuration, use the **show running-config** command in the appropriate mode.

show running-config [[**exclude**] *command*] [**sanitized**]

Syntax Description

exclude	(Optional) Excludes a specific configuration from the display.
command	(Optional) Command for which to display the configuration.
sanitized	(Optional) Displays a sanitized configuration for safe distribution and analysis.

Command Default

The **show running-config** command without any arguments or keywords displays the entire contents of the running configuration file.

Command Modes

System Admin EXEC

Command History

Release	Modification
Release 5.0.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

You can display either the entire running configuration, or a subset of the running configuration. The subset may be all the commands within a specified command mode.

Note In Cisco IOS XR software, the running configuration is automatically used at system startup, reset, or power cycle. The running configuration is the committed configuration.

Sanitized Output

Use the **show running-config** command with the **sanitized** keyword to display the contents of the active running configuration without installation-specific parameters. Some configuration details, such as IP addresses, are replaced with different addresses. The sanitized configuration can be used to share a configuration without exposing the configuration details.

Command Modes

When the **show running-config** command is entered in administration configuration mode, the configuration for the administration plane is displayed, including the configured logical routers for the system. When the **show running-config** command is entered in any global configuration mode, or in EXEC mode, the configuration for the specific secure domain router (SDR) is displayed.

The **inheritance** and **no-annotations** keywords are not supported in administration EXEC or configuration modes.

Excluding Parts of the Display

Use the **exclude** keyword followed by a *command* argument to exclude a specific configuration from the display.

Task ID

Task ID	Operations
config-services	read

This example shows how to enter the **show running-config** command with the question mark (?) online help function to display the available subsets of the running configuration that can be entered to display a subset of the running configuration:

```
RP/0/RP0/CPU0:router# show running-config ?

aaa                Authentication, Authorization and Accounting
alias              Create an alias for entity
aps                Configure SONET Automatic Protection Switching (APS)
arp                Global ARP configuration subcommands
as-path            BGP autonomous system path filter
as-path-set        Define an AS-path set
banner             Define a login banner
cdp                Enable CDP, or configure global CDP subcommands
cef                CEF configuration commands
cinetd             Global Cisco inetd configuration commands
class-map          Configure QoS Class-map command
clock              Configure time-of-day clock
community-list     Add a community list entry
community-set      Define a community set
controller         Controller configuration subcommands
dhcp               Dynamic Host Configuration Protocol
domain             Domain service related commands
exception          Coredump configuration commands
exclude            Exclude a feature or configuration item from display
explicit-path      Explicit-path config commands
extcommunity-set   Define an extended communitiy set
fault              Fault related commands
forward-protocol   Controls forwarding of physical and directed IP broadcasts
ftp                Global FTP configuration commands
--More--
```

This example shows sample output from the **show running-config** command with the **sanitized** keyword displays a sanitized version of the running configuration. The sanitized configuration can be used to share a configuration without exposing specific configuration details.

```
RP/0/RP0/CPU0:router# show running-config sanitized


Building configuration...

!! Last configuration change at 05:26:50 UTC Thu Jan 19 2009 by <removed>
!
snmp-server traps fabric plane
snmp-server traps fabric bundle state
hostname <removed>
line console
exec-timeout 0 0
!
```

```
exception choice 1 compress off filepath <removed>
logging console debugging
telnet vrf <removed> ipv4 server max-servers no-limit
snmp-server ifindex persist
snmp-server host 10.0.0.1 traps version <removed> priv <removed> udp-port 2555
snmp-server view <removed> <removed> included
snmp-server community <removed> RO LROwner
snmp-server community <removed> RO LROwner
snmp-server group <removed> v3 priv read <removed> write <removed>
snmp-server traps snmp
snmp-server traps syslog
interface Loopback10
!
interface Loopback1000
!
 --More--
```

show version

To display the software version, build information, system hardware type and uptime, use the **show version** command in XR EXEC mode.

show version

Syntax Description

This command has no keywords or arguments.

.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

The **show version** command displays a variety of system information, including hardware and software version, router uptime, and active software.

Task ID

Task ID	Operations
basic-services	read

This example shows partial output from the **show version** command:

```
Router#show version
Cisco IOS XR Software, Version 7.8.2 LNT
Copyright (c) 2013-2023 by Cisco Systems, Inc.

Build Information:
 Built By     : ingunawa
 Built On     : Wed Mar 15 16:45:19 UTC 2023
 Build Host   : iox-ucs-060
 Workspace    : /auto/srcarchive13/prod/7.8.2/8000/ws
 Version      : 7.8.2
 Label        : 7.8.2

cisco 8000 (Intel(R) Xeon(R) CPU D-1530 @ 2.40GHz)
cisco 8812 (Intel(R) Xeon(R) CPU D-1530 @ 2.40GHz) processor with 32GB of memory
R1 uptime is 7 hours, 19 minutes
Cisco 8812 12-slot Chassis
```

show media

To display the current state of the disk storage media, use the **show media** command in XR EXEC mode.

show media location { *node-id* | **all** }

Syntax Description

location {*node-id* | **all**}	(Optional) Specifies the node where the file system is located. The *node-id* argument is expressed in the *rack*/*slot* notation. Use the **all** keyword to indicate all nodes.

Command Default

The disk storage media for the active RP is displayed.

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 26.2.1	The **/var/lib/docker** partition was renamed to **apphost** in the **show media** CLI output.
Release 7.0.12	This command was introduced.

Usage Guidelines

Use the **show media** command to view the status of the storage media on your system.

Task ID

Task ID	Operations
filesystem	read

This example shows output from the show media command:

```
Router#show media location 0/RP0/CPU0
Wed Nov 26 22:18:07.438 PST

Media Info for Location: node0_RP0_CPU0
Partition                Size     Used  Percent    Avail  Encrypted
-----------------------------------------------------------------------
rootfs:                   28G     6.8G      24%    21.2G      Yes
tmp:                    4.0G     136K       1%     4.0G       No
disk0:                  3.6G     5.7M       1%     3.4G      Yes
log:                    4.5G     126M       3%     4.2G      Yes
apphost:                9.1G     432M       5%     8.2G      Yes
harddisk:                41G      8.2G      22%      30G      Yes
install:                 28G     1.9G       7%      25G      Yes
-----------------------------------------------------------------------
```

show ztp information bootz tls

To display the TLS capability of the device with Bootz, along with the details of last successful bootz attempt including TLS version, RPC performed to get bootstrap data and time of attempt, use the **show ztp information bootz tls** command in XR EXEC mode.

show ztp information bootz tls

Syntax Description

This command has no keywords or arguments.

Command Default

No default behavior or values

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 26.2.1	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
sysmgr	read

The following example shows a sample output using the **show ztp information bootz tls** command:

```
Router# show ztp information bootz tls
Fri Jul 18 13:17:45.888 IST
TLS Capability  :  TLS 1.3 (BootstrapStream)

=============== Last Bootz attempt ===============
TLS version     :  TLS 1.3
RPC Method      :  BootstrapStream
Time            :  Fri, 18 Jul 2025 13:14:38 IST
```