Command Reference for Cisco NCS 1014

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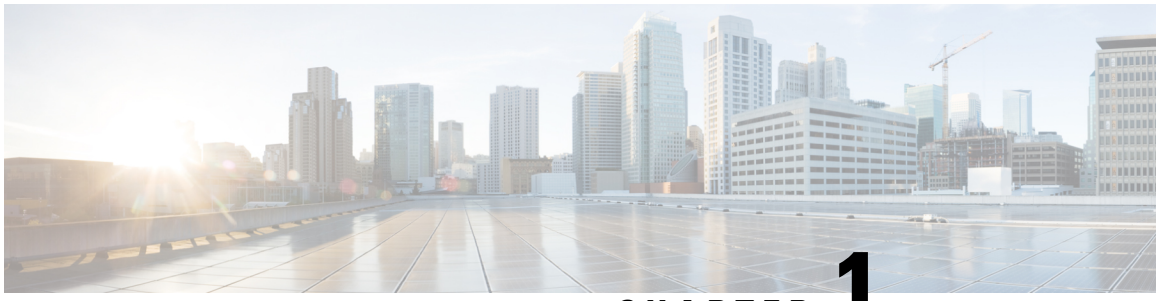

CHAPTER 1

List of Commands

This guide describes the commands supported in NCS 1014.

ains-soak

To configure the default AINS settings for all controllers, use the **ains-soak** command in the IOS XR configuration mode.

ains-soak hours *hours* **minutes** *minutes*

Syntax Description		
	ains-soak hours *hours* **minutes** *minutes*	Specifies the AINS configuration in hours and minutes.

Command Default None

Command Modes Cisco IOS XR Configuration

Example

The following is a sample in which all the controllers on a line card are configured with AINS with soak time period specified to be two minutes.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#ains-soak hours 0 minutes 2
RP/0/RP0/CPU0:ios(config)#commit
```

automatic-in-service

To override the default AINS settings on a specific controller of a 1.2T and 2.4T card, use the **automatic-in-service** command.

Note This configuration does not persist after a RP reload operation.

automatic-in-service controller optics *R/S/I/P* **hours** *hours* **minutes** *minutes*

Syntax Description		
	R/S/I/P	Rack/Slot/Instance/Port of the optics controller.
	hours **minutes** *minutes*	Specifies the AINS configuration in hours and minutes.

Command Default None

Command Modes None

Example

The following is a sample in which the optics controller of the 2.4T card is configured with a soak time period of 45 minutes.

```
RP/0/RP0/CPU0:ios#automatic-in-service controller optics 0/1/0/0 hours 0 minutes 45
```

cfs check

To clear any inconsistencies between running configuration and binary startup configuration maintained on the disk, use the **cfs check** command.

cfs check

Syntax Description

This command has no keywords or arguments.

Command Default

This command has no default behavior or values.

Command Modes

XR EXEC mode.

Command History

Release	Modification
Release 24.3.1	This command was introduced.

Usage Guidelines

Use this command to clear any inconsistencies between running configuration and binary startup configuration maintained on the disk.

On executing this command, the existing binary startup configuration maintained on the disk is discarded and the entire binary startup configuration is recreated from system's running configuration. This clears any inconsistency between the two.

Note While this command runs, redundancy of the is disabled.

Note On executing this command, the database is locked preventing other commit operations until the current operation completes.

Task ID

Task ID	Operations
root-lr	read, write

Examples

The following example shows how to perform a CFS check:

```
RP/0/RP0/CPU0:ios# cfs check

Creating any missing directories in Configuration File system...OK
Initializing Configuration Version Manager...OK
Syncing commit database with running configuration...OK
Re-initializing cache files...OK
Updating Commit Database.  Please wait...[OK]
```

clear configuration ascii inconsistency

To perform an ASCII backup of the system's running configuration and clear inconsistencies between running configuration and ASCII backup copy maintained on the disk, use the **clear configuration ascii inconsistency** command.

clear configuration ascii inconsistency

Syntax Description

This command has no keywords or arguments.

Command Default

This command has no default behavior or values.

Command Modes

XR EXEC mode.

Command History

Release	Modification
Release 24.3.1	This command was introduced.

Usage Guidelines

Use this command to perform a forced ASCIl backup and reset the periodic ASCII backup timer. Once the backup is complete, the router automatically initiates the next periodic ASCII backup operation only after 55 minutes from the time the **clear configuration ascii inconsistency** command is executed.

On executing this command, the ASCII backup synchronizes with the latest running configuration up to the point of the last commit made before executing the command. This clears any inconsistencies between the running configuration and the ASCII backup copy stored on disk. Additionally, this command resets the periodic ASCII backup timer.

Task ID

Task ID	Operations
config-services	execute

Examples

The following example shows how to perform an ASCII backup and reset the ASCII backup timer to zero:

```
RP/0/RP0/CPU0:ios# clear configuration ascii inconsistency
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! Warning: !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!! It is recommended to run this command only when all nodes in router      !!!!
!!!! are in IOS-XR RUN state. To determine node state, run following command: !!!!
```

```
!!!! 'show platform'.                                                    !!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! Warning: !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Proceed with the command ?[confirm] y
 Ascii configuration backup is in progress...
Configuration ascii backup complete
```

clear context

To clear core dump context information, use the **clear context** command.

clear context

Syntax Description

This command has no keywords or arguments.

Command Default

No default behavior or values

Command Modes

IOS XR EXEC

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

None

Example

The following example shows how to clear core dump context information:

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

controller HundredGigECtrlr

To configure the Ethernet controller, use the **controller HundredGigECtrlr** command in the Ethernet controller configuration mode.

controller HundredGigECtrlr *R/S/I/P* [**pm** { **30-sec |15-min | 24-hour** } { **ether** } { **report | threshold** } *value*] | [**perf-mon disable**] | [**loopback** { **internal** | **line** }] | [**sec-admin-state** *maintenance*] | [**shutdown**] | [**laser-squelch**] | [**fec** { **none** | **standard** }] | [**holdoff-time trunk-fault** *timevalue*] **insert-idle ingress** **insert-idle egress**

Syntax Description

R/S/I/P	Rack/Slot/Instance/Port of the Ethernet controller.
pm {**30-sec | 15-min | 24-hour** }	Configures performance monitoring parameters for 30 second, 15 minutes, or 24 hour intervals.

ether	Configures Ethernet PM data in 30 second, 15 minute or 24 hour intervals.
report	Configures TCA reporting status.
threshold	Configures threshold on Ethernet controller parameters.
perf-mon disable	Disables performance monitoring.
loopback [internal | line]	Configures the internal or line loopback mode on the Ethernet controller. For the 1.2T line card, internal and line loopbacks are supported on the Ethernet controllers whereas only internal loopbacks are supported on the CoherentDSP controllers.
sec-admin-state *maintenance*	Configures the administrative state of the controller indicating that the controller is under maintenance.
shutdown	Disables the configuration of the controller.
laser-squelch	Enables laser squelching so that laser is brought down in the event of trunk faults (LOF, LOS) and a SQUELCHED alarm is raised.
fec { **none** | **standard** }	Disables FEC or enables standard (Reed-Solomon) FEC.
holdoff-time trunk-fault *timevalue*	When a fault occurs on the trunk port, the user can hold the propagation of Local Fault using this parameter. The range of *timevalue* is 0 to 3000 ms.
insert-idle ingress	Enables idle frames insertion in the ingress direction.
insert-idle egress	Enables idle frames insertion in the egress direction.

Command Default

None

Command Modes

Ethernet controller configuration

Example

The following example shows how to configure the performance monitoring parameters of the Ethernet controller in 15 minute intervals.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#controller HundredGigECtrlr 0/1/0/10 pm 15-min pcs report bip
enable
```

The following example shows how to configure the internal loopback.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#controller HundredGigECtrlr 0/1/0/10 secondary-admin-state
maintenance
RP/0/RP0/CPU0:ios(config)#controller HundredGigECtrlr 0/1/0/10 loopback internal
RP/0/RP0/CPU0:ios(config)#commit
```

The following example enables IDLE hold off timer in Ethernet controller.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#controller HundredGigECtrlr 0/1/0/10 holdoff-time trunk-fault
3000
RP/0/RP0/CPU0:ios(config)#commit
```

The following is a sample where laser squelching is enabled on the Ethernet controller.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#controller HundredGigECtrlr 0/1/0/10 laser-squelch
RP/0/RP0/CPU0:ios(config)#commit
```

controller fourHundredGigECtrlr

To configure the Ethernet controller, use the **controller FourHundredGigECtrlr** command in the Ethernet controller configuration mode.

controller FourHundredGigECtrlr *R/S/I/P* [**pm** { **30-sec |15-min | 24-hour** } { **ether** } { **report | threshold** } *value*] | [**perf-mon disable**] | [**loopback** { **internal** | **line** }] | [**sec-admin-state** *maintenance*] | [**shutdown**] | [**laser-squelch**] | [**fec** { **none** | **standard** }] | [**holdoff-time trunk-fault** *timevalue*] **insert-idle ingress insert-idle egress opu prbs mode { source | sink | source-sink } pattern invertedpn31**

Syntax Description

R/S/I/P	Rack/Slot/Instance/Port of the Ethernet controller.
pm { **30-sec | 15-min | 24-hour** }	Configures performance monitoring parameters for 30 second, 15 minutes, or 24 hour intervals.
ether	Configures Ethernet PM data in 30 second, 15 minute or 24 hour intervals.
report	Configures TCA reporting status.
threshold	Configures threshold on Ethernet controller parameters.
perf-mon disable	Disables performance monitoring.
loopback [internal | line]	Configures the internal or line loopback mode on the Ethernet controller. For the 1.2T line card, internal and line loopbacks are supported on the ethernet controllers whereas only internal loopbacks are supported on the CoherentDSP controllers.
sec-admin-state *maintenance*	Configures the administrative state of the controller indicating that the controller is under maintenance.
shutdown	Disables the configuration of the controller.
laser-squelch	Enables laser squelching so that laser is brought down in the event of trunk faults (LOF, LOS) and a SQUELCHED alarm is raised.
fec { **none** | **standard** }	Disables FEC or enables standard (Reed-Solomon) FEC.

holdoff-time trunk-fault *timevalue*	When a fault occurs on the trunk port, the user can hold the propagation of Local Fault using this parameter. The range of *timevalue* is 0 to 3000 ms.
insert-idle ingress	Enables idle frames insertion in the ingress direction.
insert-idle egress	Enables idle frames insertion in the egress direction.
opu	Configures Optical Channel Payload Unit (OPU) on the ODU2e controller.
prbs mode { source | sink | source-sink}	Configures Pseudo Random Binary Sequence (PRBS) mode as source, sink, or source sink.
patterninvertedpn31	Configures PRBS pattern as inverted pattern. Sequence length is from 2^31 -1 bits.

Command Default

None

Command Modes

Ethernet controller configuration

Example

The following example shows how to configure the performance monitoring parameters of the Ethernet controller in 15 minute intervals.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#controller HundredGigECtrlr 0/1/0/10 pm 15-min pcs report bip
enable
```

The following example shows how to configure the internal loopback.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#controller HundredGigECtrlr 0/1/0/10 secondary-admin-state
maintenance
RP/0/RP0/CPU0:ios(config)#controller HundredGigECtrlr 0/1/0/10 loopback internal
RP/0/RP0/CPU0:ios(config)#commit
```

The following example enables IDLE hold off timer in Ethernet controller.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#controller HundredGigECtrlr 0/1/0/10 holdoff-time trunk-fault
3000
RP/0/RP0/CPU0:ios(config)#commit
```

The following is a sample where laser quelching is enabled on the Ethernet controller.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#controller HundredGigECtrlr 0/1/0/10 laser-squelch
RP/0/RP0/CPU0:ios(config)#commit
```

controller coherentDSP

To configure the coherent DSP controller, use the **controller coherentDSP** command in the Coherent DSP controller configuration mode.

controller coherentDSP *R/S/I/P* [**description**] | [**fec** *fec-value*] | [**pm** { **30-sec |15-min | 24-hour** } { **fec | otn** } { **report | threshold** } *value*] | [**perf-mon** { **enable** | **disable** }] | [**loopback internal**] | [**secondary-admin-state** { **maintenance | normal** }] | [**shutdown**] | [**tti** { **sent | expected** } { **ascii | hex** } *tti-string*] [**gcc0**] [**flexo** { **gid** *gid-no* **| iid** *iid-no* }]

Syntax Description

R/S/I/P	Rack/Slot/Instance/Port of the coherent DSP controller.
description *description*	Description of the coherent DSP controller.
fec *fec-value*	Configures the FEC on the controller. The supported option are: • Etherne controllers: *Standard* • coherentDSP controller: *EnhancedSD15*
pm {**30-sec |15-min	24-hour**} {**fec	otn**} {**report	threshold**} *value*	Configures performance monitoring parameters for 30 second, 15 minute, or 24-hour intervals. The **fec** keyword configures FEC PM data in 30 second, 15 minute, or 24-hour intervals. The **otn** keyword configures OTN PM data in 30 second, 15 minute, or 24-hour intervals. The **report** keyword configures TCA reporting status. The **threshold** keyword configures threshold values on PM parameters.
perf-mon { **enable**	**disable** }	Enables or disables performance monitoring.
loopback internal	Configures the internal loopback mode on the controller. For the 1.2T line card, internal and line loopbacks are supported on the Ethernet controllers whereas only internal loopback is supported on the CoherentDSP controllers.
secondary-admin-state	Configures the administrative state of the controller. The values are maintenance or normal.
shutdown	Disables the configuration of the controller.
**tti sent {ascii	hex}** *tti-string*	Configures the Trail Trace Identifier (TTI) ASCII or hex string to be sent. From Release 7.3.2 onwards, TTI strings such as SAPI, DAPI, and operator inputs are supported.

tti expected {ascii | hex} *tti-string*	Configures the expected TTI ASCII or hex string. The OTUK-TIM alarm is raised if the received TTI string does not match the expected TTI string. From Release 7.3.2 onwards, TTI strings such as SAPI, DAPI, and operator inputs are supported.
gcc0	Enables the GCC0 interface.
flexo { **gid***gid-no* | **iid***iid-no* }]	Configures FlexO group identification (GID) and FlexO instance identification (IID) on the controller. The range of the **gid** *gid-no* is 1–1,048,576. The range of the **iid** *iid-no* is 1–254.

Command Default

None

Command Modes

Coherent DSP controller configuration

Example

The following is a sample in which performance monitoring parameters of Coherent DSP controller is configured in 30-second intervals.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#controller coherentDSP 0/0/1/1 pm 30-sec fec threshold post-fec-ber
 max OE-15
RP/0/RP0/CPU0:ios(config)#commit
```

The following example shows how to configure TTI on a coherentDSP controller with the sent and expected strings set to the same ASCII string. The state of the controller is up.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#controller coherentDSP 0/1/0/1 tti sent ascii 1234
RP/0/RP0/CPU0:ios(config)#controller coherentDSP 0/1/0/1 tti expected ascii 1234
RP/0/RP0/CPU0:ios(config)#commit
```

The following example shows how to configure TTI on a coherentDSP controller with the sent and expected strings set to different ASCII strings. The state of the controller goes down and the OTUK-TIM alarm is raised.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#controller coherentDSP 0/1/0/1 tti sent ascii 1234
RP/0/RP0/CPU0:ios(config)#controller coherentDSP 0/1/0/1 tti expected ascii 5678
RP/0/RP0/CPU0:ios(config)#commit
```

The following is a sample to enable the GCC0 interface.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#controller CoherentDSP0/0/0/0
RP/0/RP0/CPU0:ios(config-CoDSP)#gcc0
RP/0/RP0/CPU0:ios(config-CoDSP)#commit
RP/0/RP0/CPU0:ios(config-CoDSP)#exit
```

The following is a sample to configure FEC with the EnhancedSD15 option on the CoherentDSP controller of the OTN-XP card:

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#controller coherentDSP 0/0/0/0
```

```
RP/0/RP0/CPU0:ios(config-CoDSP)#fec EnhancedSD15
Tue Feb 25 11:25:52.670 UTC
WARNING! Changing FEC mode can impact traffic
RP/0/RP0/CPU0:ios(config-CoDSP)#commit
```

The following is a sample to configure with the O-FEC option on the CoherentDSP controller of the OTN-XP card:

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#controller coherentDSP 0/0/0/0
RP/0/RP0/CPU0:ios(config-CoDSP)#fec OFEC
Tue Feb 25 11:25:52.670 UTC
WARNING! Changing FEC mode can impact traffic
RP/0/RP0/CPU0:ios(config-CoDSP)#commit
```

The following is a sample to configure flexO GID and IID on the CoherentDSP controller of the OTN-XP card:

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#controller coherentDSP0/2/0/12
RP/0/RP0/CPU0:ios(config-CoDSP)#flexo
RP/0/RP0/CPU0:ios(config-CoDSP)#gid 2 iid 5,6,7,8
RP/0/RP0/CPU0:ios(config-CoDSP)#commit
```

The following sample displays how to configure loopback on a coherent DSP controller ports on the OTN-XP in inverse muxponder configuration mode.

```
Thu Sep 30 14:16:04.678 UTC
RP/0/RP0/CPU0:ios(config)#controller coherentDSP 0/2/0/12
RP/0/RP0/CPU0:ios(config-CoDSP)#secondary-admin-state maintenance
RP/0/RP0/CPU0:ios(config-CoDSP)#loopback internal
RP/0/RP0/CPU0:ios(config-CoDSP)#commit
Thu Sep 30 14:16:19.594 UTC
RP/0/RP0/CPU0:ios(config-CoDSP)#controller coherentDSP 0/2/0/13
RP/0/RP0/CPU0:ios(config-CoDSP)#secondary-admin-state maintenance
RP/0/RP0/CPU0:ios(config-CoDSP)#loopback internal
RP/0/RP0/CPU0:ios(config-CoDSP)#commit
```

The following sample displays how to configure TTI on a coherent DSP controller port 12 on the OTN-XP in inverse muxponder configuration mode.

```
RP/0/RP0/CPU0:ios#configure
Thu Sep 30 14:18:13.288 UTC
RP/0/RP0/CPU0:ios(config)#controller coherentDSP 0/2/0/12
RP/0/RP0/CPU0:ios(config-CoDSP)#tti sent sapi ascii cisco
RP/0/RP0/CPU0:ios(config-CoDSP)#commit
```

controller ODU4

To configure the ODU4 controller, use the **controller ODU4** command in the configuration mode.

controller ODU4 *R/S/I/P* **gcc2**

Syntax Description

R/S/I/P/L	Rack/Slot/Instance/Port/Lane of the ODU4 controller.

Command Default None

Command Modes Configuration

Example

The following is a sample in which OTNSec is configured on ODU4 controllers.

```
RP/0/RP0/CPU0:ios#configure
Mon Mar 12 12:10:21.374 UTC
RP/0/RP0/CPU0:ios(config)#controller ODU4 0/1/0/0/1
RP/0/RP0/CPU0:ios(config-odu4)#otnsec
RP/0/RP0/CPU0:ios(config-otnsec)#source ipv4 10.0.0.1
RP/0/RP0/CPU0:ios(config-otnsec)#destination ipv4 10.0.0.2
RP/0/RP0/CPU0:ios(config-otnsec)#session-id 9000
RP/0/RP0/CPU0:ios(config-otnsec)#policy otnsec-policy1
RP/0/RP0/CPU0:ios(config-otnsec)#ikev2 profile1
RP/0/RP0/CPU0:ios(config-otnsec)#commit
Mon Mar 12 12:14:17.609 UTC
RP/0/RP0/CPU0:ios(config-otnsec)#exit
RP/0/RP0/CPU0:ios(config)#exit
```

The following is a running configuration on an ODU4 controller.

```
RP/0/RP0/CPU0:ios#show run controller ODU4 0/1/0/0/1
Tue Mar 12 12:20:49.153 UTC
controller ODU40/1/0/0/1
 gcc2
 otnsec
  policy otnsec-policy1
  source ipv4 10.0.0.1
  destination ipv4 10.0.0.2
  session-id 9000
 !
!
```

controller oms

To configure the OMS controller, use the **controller oms** command in the controller OTS configuration mode.

controller oms *R/S/I/P* [**tone-rate**] [**tone-pattern-expected**] [**tone-frequency**]

Syntax Description

R/S/I/P	Rack/Slot/Instance/Port of the OTS controller.
tone-rate*value*	Configures the tone rate for tone generation.
tone-pattern*value*	Configures the tone pattern for tone generation.
tone-frequency*value*	Configures the tone frequency for tone generation.

Command Default None

Command Modes controller configuration mode

Command History

Release	Modification
Release 7.11.1	Introduced this command.

Example

The following output is a sample of configuring various tone generation parameters using the **controller oms 0/0/0/3** command.

```
RP/0/RP0/CPU0:(config)#controller oms 0/1/0/0
RP/0/RP0/CPU0:(config-Oms)#tone-rate 2
RP/0/RP0/CPU0:(config-Oms)#tone-pattern-expected aabbccdd
RP/0/RP0/CPU0:(config-Oms)#tone-detect-oob
RP/0/RP0/CPU0:(config-Oms)#commit
```

controller optics

To configure the optics controller, use the **controller optics** command in the optics controller configuration mode.

controller optics *R/S/I/P* [**baud-rate** *rate*] [**bits-per-symbol** *value*] [**cd-max** *cd-max* | **cd-min** *cd-min* | **cd-low-threshold** *cd-low* | **cd-high-threshold** *cd-high* | **dgd-high-threshold** *dgd-value* | **lbc-high-threshold** *lbc-value* | **osnr-low-threshold** *osnr-value* **description** *description* | **rx-high-threshold** *rx-high* | **rx-low-threshold** *rx-low* | **tx-high-threshold** *tx-high* | **tx-low-threshold** *tx-low* | **sec-admin-state {maintenance | normal}** | **shutdown** | **transmit-power** *transmit-power* | **transmit-shutdown** | **perf-mon** { **enable** | **disable** } | **pm** { **30-sec |15-min | 24-hour** } | **optics** { **report** | **threshold** { **cd** | **dgd** | **lbc** | **lbc-pc** | **opr** | **opr-dbm** | **opt** | **opt-dbm** | **osnr** | **pcr** | **pdl** | **pn** | **sopmd** | **rx-sig-pow** | **rx-sig-pow-dbm** } }]

To configure the sub-sea parameters for the optics controller, use the following command:

controller optics *R/S/I/P* [**rx-voa target-power** *value* | **rx-voa fixed-ratio** *value* | **enh-colorless-mode** *value* | **enh-sop-tol-mode** *value* | **nleq-comp-mode** *value*]

Syntax Description

R/S/I/P	Rack/Slot/Instance/Port of the optics controller.
baud-rate *rate*	Sets baud-rate for this controller in GBd.
bits-per-symbol *value*	Sets bits-per-symbol for this controller.
cd-max *cd-max*	(Only for trunk optics controllers) Maximum chromatic dispersion. The range is –350000 to +350000 ps/nm.
cd-min *cd-min*	(Only for trunk optics controllers) Minimum chromatic dispersion. The range is –350000 to +350000 ps/nm.

cd-low-threshold *cd-low*	(Only for trunk optics controllers) Minimum acceptable chromatic dispersion. The CD alarm is raised if the chromatic dispersion goes below this value. The range is –350000 to +350000 ps/nm.
cd-high-threshold *cd-high*	(Only for trunk optics controllers) Maximum acceptable chromatic dispersion. The CD alarm is raised if the chromatic dispersion exceeds this value. The range is –350000 to +350000 ps/nm.
dgd-high-threshold *dgd-value*	(Only for trunk optics controllers) Configures the maximum acceptable Differential Group Delay (DGD) value. The DGD alarm is raised if DGD exceeds this value. The range is 0–18000 (in the units of 0.01 ps).
lbc-high-threshold *lbc-value*	Configures the high laser bias current threshold. The range is 0 to 100%.
osnr-low-threshold *osnr-value*	(Only for trunk optics controllers) Configures the minimum acceptable Optical Signal to Noise ratio (OSNR) value. The OSNR alarm is raised if OSNR goes below this value. The range is 0–4000 (in units of 0.01db).
description *description*	Description of the optics controller.
rx-high-threshold *rx-high*	Configures high receive power threshold. The range is –400 to 300 (in the units of 0.1 dBm).
rx-low-threshold *rx-low*	Configures low receive power threshold. The range is –400 to 300 (in the units of 0.1 dBm).
tx-high-threshold *tx-high*	Configures high transmit power threshold. The range is –400 to 300 dBm (in the units of 0.1 dBm).
tx-low-threshold *tx-low*	Configures low transmit power threshold. The range is –400 to 300 dBm (in the units of 0.1 dBm).
sec-admin-state	Configures the administrative state of the controller. The values are maintenance or normal.
shutdown	Disables the configuration of the controller.
pm	Configures performance monitoring parameters for 30 second, 15 minute, and 24-hour intervals.
transmit-power *transmit-power*	(Only for trunk optics controllers) Configures the transmit power. The range is –190 to 30 dBm (in the units of 0.1 dBm). The value of transmit power on the CFP2 DCO optics for the OTN-XP card is –10 to +1 dBm.
transmit-shutdown	Shuts down the transmit laser.

perf-mon { **enable** | **disable** }	Enables or disables performance monitoring.
cd	Configures the chromatic dispersion threshold.
dgd	Configures the differential group delay threshold.
lbc	Configures the laser bias current threshold.
lbc-pc	Configures the laser bias current threshold in percentage.
opr	Configures the optical Rx power threshold in uW.
opr-dbm	Configures the optical Rx power threshold in dBm. The unit is 0.01 dBm. For example, if you want to configure 30.00 dBm, enter 3000.
opt	Configures the optical Tx power threshold in uW.
opt-dbm	Configures the optical Tx power threshold in dBm. The unit is 0.01 dBm.
osnr	Configures the OSNR threshold.
pcr	Configures the Polarization Change Rate (PCR) threshold.
pdl	Configures the Polarization-Dependent Loss (PDL) threshold.
pn	Configures the Phase Noise (PN) threshold.
sopmd	Configures the Second Order Polarization Mode Dispersion (SOPMD) threshold.
rx-sig-pow	Configures the Rx signal power threshold in uW.
rx-sig-pow-dbm	Configures the Rx signal power threshold in dBm. The unit is 0.01 dBm.
rx-voa target-power *value*	Configures the receive target power. The range is –190 to +30.
rx-voa fixed-ratio *value*	Configures the receive ratio of optical attenuation. The range is +100 to +1700.
enh-colorless-mode *value*	Configures the enhanced colorless mode. The range is 1–3.
enh-sop-tol-mode *value*	Configures the enhanced SOP tolerance mode. The range is 1–3.
nleq-comp-mode *value*	Configures the non-linear compensation. The range is 1–4.

Command Default

None

Command Modes

Optics controller configuration

Command History

Release	Modification
Release 7.11.1	Introduced this command.

Usage Guidelines

The configurations for chromatic dispersion (cd-max, cd-min, cd-low-threshold, and cd-high-threshold) must be performed only after the **hw-module** configuration. These configurations must be removed before the **no hw-module** configuration.

Example

The following example shows how to configure the optics controller and set the high-power threshold at the transmit and receive side.

```
RP/0/RP0/CPU0:ios# configure
RP/0/RP0/CPU0:ios(config)#controller optics 0/0/1/1
RP/0/RP0/CPU0:ios(config-optics)#rx-high-threshold 200
RP/0/RP0/CPU0:ios(config-optics)#tx-high-threshold 300
```

The following example shows how to configure the optics controller and set the ranges for chromatic dispersion.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#controller optics 0/0/1/1
RP/0/RP0/CPU0:ios(config-optics)#cd-max 10000
RP/0/RP0/CPU0:ios(config-optics)#cd-min 2000
```

The following is a sample in which the performance monitoring parameters of optics controller are configured in 24-hour intervals.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#controller optics 0/0/1/1 pm 24-hour optics threshold osnr max
345
RP/0/RP0/CPU0:ios(config)#commit
```

The following is a sample in which the fastpoll data is enabled on the optics controller:

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)# [no] controller optics <r/s/i/p> fastpoll enable
```

controller osc

To configure the OSC controller, use the **controller osc** command in the controller configuration mode.

controller osc *R/S/I/P* [**transmit-power** *value* | **sec-admin-state {normal | maintenance}** | **tx-low-threshold** *value* | **shutdown**]

Syntax Description

R/S/I/P	Rack/Slot/Instance/Port of the OSC controller.
transmit-power *value*	Configures the transmit power.
sec-admin-state	Configures the administrative state of the controller. The values are maintenance or normal.
tx-low-threshold *value*	Configures low transmit power threshold
shutdown	Disables the configuration of the controller.

Command Default None

Command Modes Controller configuration mode

Command History

Release	Modification
Release 25.1.1	This command was introduced.

Usage Guidelines None

Line side OSC port:

```
RP/0/RP0/CPU0:ios#config
RP/0/RP0/CPU0:ios(config)#controller osc 0/3/0/0
RP/0/RP0/CPU0:ios(config-Osc)#transmit-power 20
Wed Feb 12 13:01:19.298 IST
WARNING! Changing TX power can impact traffic
RP/0/RP0/CPU0:ios(config-Osc)#commit
```

Pluggable side OSC port:

```
RP/0/RP0/CPU0:ios#config
RP/0/RP0/CPU0:ios(config)#controller osc 0/3/0/4
RP/0/RP0/CPU0:ios(config-Osc)#transmit-power -100
Wed Feb 12 13:02:16.123 IST
WARNING! Changing TX power can impact traffic
RP/0/RP0/CPU0:ios(config-Osc)#commit
```

controller ots

To configure the OTS controller, use the **controller ots** command in the controller OTS configuration mode.

Use the following parameters to configure different configurations for an OTS controller on an ILA node.

controller ots *R/S/I/P* [**tx-voa-attenuation** *value*] [**egress-ampli-gain-range {normal | extended}**] [**egress-ampli-gain** *value*] [**egress-ampli-tilt** *value*] [**egress-ampli-osri {on | off}**] [**egress-ampli-safety-control-mode {auto | disabled}**] [**egress-ampli-force-apr {on | off}**] [**ingress-ampli-gain-range {normal | extended}**] [**ingress-ampli-gain** *value*] [**otdr scan-mode expert**] [**otdr rx auto reflectance-threshold** *value*] [**otdr rx auto splice-loss-threshold** *value*] [**otdr rx expert pulse-width** *value*] [**otdr tx auto reflectance-threshold** *value*] [**otdr tx auto splice-loss-threshold** *value*] [**otdr rx auto excess-reflection-threshold** *value*] [**otdr tx auto excess-reflection-threshold** *value*] [**otdr rx back-scattering** *value*] [**otdr tx back-scattering** *value*] [**otdr rx refractive-index** *value*] [**otdr tx refractive-index** *value*] [**otdr rx expert pulse-width** *value*] [**otdr tx expert pulse-width** *value*] [**otdr rx expert capture-end** *value*] [**otdr tx expert capture-end** *value*] [**otdr rx expert capture-start** *value*] [**otdr tx expert capture-start** *value*] [**otdr rx expert scan duration** *value*] [**otdr tx expert scan duration** *value*] [**otdr rx auto excess-orl-threshold** *value*] [**otdr tx auto excess-orl-threshold** *value*] [**otdr rx auto excess-attenuation-threshold** *value*] [**otdr tx auto excess-attenuation-threshold** *value*] [**otdr tx auto end-of-fiber-loss-threshold** *value*] [**otdr tx auto end-of-fiber-loss-threshold** *value*]

Syntax Description

R/S/I/P	Rack/Slot/Instance/Port of the OTS controller.
tx-voa-attenuation*value*	Configures the TX VoA attenuation set point.
egress-ampli-gain-range {normal | extended}	Configures egress amplification gain range to normal or extended.
egress-ampli-gain *value*	Configures egress amplification gain.
egress-ampli-tilt *value*	Configures egress amplifier tilt.
egress-ampli-osri {on | off}	Enables or disables egress optical safety remote interlock (OSRI).
egress-ampli-safety-control-mode {auto | disabled}	Configure egress amplification safety control mode to auto or disables it.
egress-ampli-force-apr {on | off}	Enables or disables egress amplification force automatic power reduction.
ingress-ampli-gain-range {normal | extended}	Configure ingress amplification safety control mode to auto or disables it.
ingress-ampli-gain *value*	Configures ingress amplification gain.
otdr rx auto reflectance-threshold *value*	Configures OTDR reflectance threshold in RX direction in auto mode.
otdr rx auto splice-loss-threshold *value*	Configures OTDR splice loss threshold in RX direction in auto mode.
otdr rx expert pulse-width *value*	Configures OTDR pulse width threshold in RX direction in expert mode.
otdr tx auto reflectance-threshold *value*	Configures OTDR reflectance threshold in TX direction in auto mode.
otdr tx auto splice-loss-threshold *value*	Configures OTDR splice loss threshold in TX direction in auto mode.
otdr scan-mode expert	Configures OTDR scan in expert.
otdr rx auto raman-setpoint *value*	Configures OTDR Raman in RX direction in auto mode.
otdr tx auto raman-setpoint *value*	Configures OTDR Raman in TX direction in auto mode.
otdr rx auto excess-reflection-threshold *value*	Configures OTDR excess reflection threshold in RX direction in auto mode.
otdr tx auto excess-reflection-threshold *value*	Configures OTDR excess reflection threshold in TX direction in auto mode.
otdr rx back- scattering *value*	Configures OTDR back scattering in RX direction in auto mode.

otdr tx back- scattering *value*	Configures OTDR back scattering in TX direction in auto mode.
otdr rx refractive-index *value*	Configures OTDR refractive index in RX direction in auto mode.
otdr tx refractive-index *value*	Configures OTDR refractive index in TX direction in auto mode.
otdr rx expert pulse-width *value*	Configures OTDR pulse width in RX direction in expert mode.
otdr tx expert pulse-width *value*	Configures OTDR pulse width in TX direction in expert mode.
otdr rx expert capture-end *value*	Configures OTDR capture end time in RX direction in expert mode.
otdr tx expert capture-end *value*	Configures OTDR capture end time in TX direction in expert mode.
otdr rx expert capture-start *value*	Configures OTDR capture start time in RX direction in expert mode.
otdr tx expert capture-start *value*	Configures OTDR capture start time in TX direction in expert mode.
otdr rx expert scan duration *value*	Configures OTDR scan duration in RX direction in expert mode.
otdr tx expert scan duration *value*	Configures OTDR scan duration in TX direction in expert mode.
otdr tx auto end-of-fiber-loss-threshold *value*	Configures the threshold based on which the OTDR identifies the fiber's end, distinguishing it from other components like splices or connectors, in TX direction in auto mode.
otdr tx auto end-of-fiber-loss-threshold *value*	Configures the threshold based on which the OTDR identifies the fiber's end, distinguishing it from other components like splices or connectors, in RX direction in auto mode.

Command Default

None

Command Modes

controller configuration mode

Command History

Release	Modification
Release 25.1.1	This command was introduced.

Example

This is a sample that configure OTDR parameters on the ots controllers.

```
RP/0/RP0/CPU0:ios(config-Ots)#otdr rx auto reflectance-threshold -50
RP/0/RP0/CPU0:ios(config-Ots)#otdr rx auto splice-loss-threshold 0.2
RP/0/RP0/CPU0:ios(config-Ots)#otdr rx expert pulse-width 6000
RP/0/RP0/CPU0:ios(config-Ots)#commit
```

These are the samples that configure optical safety parameters on the ots controllers.

```
RP/0/RP0/CPU0:ios(config)#controller ots 0/0/0/1 egress-ampli-safety-control-mode auto
RP/0/RP0/CPU0:ios(config)#controller ots 0/0/0/2 admin-state in-service
RP/0/RP0/CPU0:ios(config)#controller ots 0/0/0/0 egress-ampli-osri
```

crypto ca authenticate

To authenticate the certification authority (CA) by getting the certificate for the CA, use the **crypto ca authenticate** command in configuration mode.

crypto ca authenticate *ca-name*

Syntax Description

ca-name	Name of the CA server.

Command Default

None

Command Modes

Config mode

Command History

Release	Modification
Cisco IOS XR Release 25.2.1	This command was introduced.

Usage Guidelines

The **crypto ca authenticate** command is required when you initially configure CA support at your NCS 1014.

This command authenticates the CA to your NCS 1014 by obtaining the CA certificate, which contains the public key for the CA. For self-signed root CA, because the CA signs its own certificate, you should manually authenticate the CA public key by contacting the CA administrator when you use this command. The certificate fingerprint matching is done out-of-band (for example, phone call, and so forth).

Authenticating a second-level CA requires prior authentication of the root CA.

After the **crypto ca authenticate** command is issued and the CA does not respond by the specified timeout period, you must obtain terminal control again to re-enter the command.

Examples

The CA sends the certificate, and the NCS 1014 prompts the administrator to verify the certificate by checking the certificate fingerprint (a unique identifier). The CA administrator can also display the CA certificate fingerprint, so you should compare what the CA administrator sees to what the NCS 1014 displays on the screen. If the fingerprint on the display matches the fingerprint displayed by the CA administrator, you should accept the certificate as valid.

This sample shows that the NCS 1014 requests the CA certificate:

```
RP/0/RP0/CPU0:ios# crypto ca authenticate trust_all_R1
Mon Jun 23 12:30:17.758 UTC
Serial Number  : 01
Subject:
CN=MICROMDM SCEP CA,OU=SCEP CA,O=scep-ca,C=US
Issued By      :
CN=MICROMDM SCEP CA,OU=SCEP CA,O=scep-ca,C=US
Validity Start : 03:39:43 UTC Wed Jan 08 2025
Validity End   : 03:39:43 UTC Mon Jan 08 2035
SHA1 Fingerprint:
853C4D0216E35AE2F765FA1F274BBD238080D06F
Do you accept this certificate? [yes/no]: yes
RP/0/RP0/CPU0:ios#
```

crypto ca enroll

To obtain a NCS 1014 certificate from the certification authority (CA), use the **crypto ca enroll** command in configuration mode.

crypto ca enroll { *ca-name* }

Syntax Description

ca-name	Name of the CA Server.

Command Default

None

Command Modes

Config mode

Command History

Release	Modification
Cisco IOS XR Release 25.2.1	This command was introduced.

Usage Guidelines

Use the **crypto ca enroll** command to request certificates from the CA for the Rivest, Shamir, and Adelman (RSA) key pairs for NCS 1014 defined by the **rsakeypair** command in trustpoint configuration mode. If no **rsakeypair** command is configured for the current trustpoint, the default RSA key pair is used for enrollment. This task is also known as enrolling with the CA. (Enrolling and obtaining certificates are two separate events, but they both occur when the **crypto ca enroll** command is issued.) When using manual enrollment, these two operations occur separately.

NCS 1014 needs a signed certificate from the CA for each of the RSA key pairs on NCS 1014; if you previously generated general-purpose keys, this command obtains the one certificate corresponding to the one general-purpose RSA key pair. If you previously generated special-usage keys, this command obtains two certificates corresponding to each of the special-usage RSA key pairs.

If you already have a certificate for your keys, you are unable to configure this command; instead, you are prompted to remove the existing certificate first.

The **crypto ca enroll** command is not saved in NCS 1014 configuration.

Note The root certificate signs the leaf certificate.

Examples

This is a sample output from the **crypto ca enroll** command:

```
RP/0/RP0/CPU0:ios#crypto ca enroll trust_all_R1Mon Jun 23 12:30:32.506 UTC
% Start certificate enrollment ...
% Create a challenge password. You will need to verbally provide this
  password to the CA Administrator in order to revoke your certificate.
% For security reasons your password will not be saved in the configuration.
% Please make a note of it.

Password:
Re-enter Password:

% The subject name in the certificate will include: CN=Acadia.cisco.com,OU=SPBU,O=Cisco
Systems,L=Bengaluru,ST=KA,C=IN
% The subject name in the certificate will include: 175_ne.cisco.com
% Include the router serial number in the subject name? [yes/no]: no
% The IP address in the certificate is 0.0.0.0
    Fingerprint:  34463337 30304543 44313936 36443031
```

crypto key generate rsa

To generate a Rivest, Shamir, and Adelman (RSA) key pair, use the **crypto key generate rsa** command in Config mode.

crypto key generate rsa *keypair-label*

Syntax Description

keypair-label	(Optional) RSA key pair label that names the RSA key pairs.

Command Default

RSA key pairs do not exist.

If the **usage-keys** keyword is not used, general-purpose keys are generated. If no RSA label is specified, the key is generated as the default RSA key.

Command Modes

Config mode

Command History

Release	Modification
Cisco IOS XR Release 25.2.1	This command was introduced.

Usage Guidelines

Use the **crypto key generate rsa** command to generate RSA key pairs for NCS 1004.

RSA keys are generated in pairs—one public RSA key and one private RSA key.

If NCS 1014 already has RSA keys when you issue this command, you are warned and prompted to replace the existing keys with new keys. The keys generated by this command are saved in the secure NVRAM (which is not displayed to the user or backed up to another device).

To remove an RSA key generated in Config mode, use **no** form of this command in Config mode.

To remove an RSA key generated in EXEC mode, use the **crypto key zeroize rsa** command.

Examples

This example shows how to generate an RSA key pair.

```
RP/0/RP0/CPU0:ios#crypto key generate rsa ioxRsa-key
Mon Jun 23 12:21:53.514 UTC
The name for the keys will be: ioxRsa-key
Choose the size of the key modulus in the range of 512 to 4096 for your General Purpose
Keypair. Choosing a key modulus greater than 512 may take a few minutes.

How many bits in the modulus [2048]: yes
% A decimal number between 512 and 4096.
How many bits in the modulus [2048]:
Generating RSA keys ...

Done w/ crypto generate keypair
[OK]
```

dir

To display the list of files on a file system or in a specific directory, use the **dir** command.

dir [*filesystem:*] [*filename*]

Syntax Description

filesystem:	Name of the directory containing the files to be displayed. Include the file system alias for the *filesystem* argument, followed by a colon, and, optionally, the name of a directory.
filename	Name of the files to display. The files can be of any type.

Command Default

When the **dir** command is entered without keywords or arguments, the contents of the present working directory are displayed.

Command Modes

IOS XR EXEC

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

None

Example

The following example checks for core files of NCS 1014:

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

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

dwdm-carrier

To configure the wavelength on the trunk port, use the **dwdm-carrier** command in optics controller configuration mode. To return the wavelength to its default value, use the **no** form of this command.

dwdm-carrier { **100MHz-grid** **frequency** *frequency* } | { **50GHz-grid** **frequency** *frequency* }

Syntax Description

50Ghz-grid | **100MHz-grid**	Configures the wavelength in 50GHz grid and 100MHz (0.1GHz) grid spacing respectively in accordance with ITU definition.
frequency *frequency*	Specifies the frequency for the optics controller.

Command Default

None

Command Modes

Optics controller configuration

Usage Guidelines

The controller must be in the shutdown state before you can use the **wavelength** command.

Example

The following example shows how to configure the frequency in 100MHz grid spacing.

```
RP/0/RP0/CPU0:ios# config
RP/0/RP0/CPU0:ios(config)# controller optics 0/0/0/0
RP0/0/CPU0:ios(config-optics)# dwdm-carrier 100MHz-grid frequency 1865000
```

pm

To configure or view the performance monitoring parameters for the controllers, use the **pm** command in the controller configuration mode.

For more information about PM threshold values for the controllers, see the section, Monitor performance.

pm [**flex-bin | 15-min | 30-sec | 24-hour**] [**ots | ots-och | osc | dfb | fec | optics | ether**] [**bucket** *value*] [**report | threshold**] [**eagn** | **eatl** | **iagn** | **iatl** | **opbr** | **opr** | **opr-cl** | **opt** | **opt-s**] [**max-tca** | **min-tca**] [**enable** | *value*]

Syntax Description

flex-bin| 15-min | 30-sec | 24-hour	Displays the performance monitoring parameters for 10 seconds, 15 minutes, 30 seconds, or 24-hour intervals.
ots | ots-och | osc | dfb | fec | optics	Displays the performance monitoring parameters for the OTS, OTS-OCH, OSC, or DFB controllers.

bucket *value*	Displays the performance monitoring parameters from the past 1 to 7 days. Valid values: 1 to 7 **Note** This keyword is only valid for the **24-hour** bucket.
history	Displays the historical values of the **pm** command.
report	Configures the TCA reporting status for optics (OTS-OCH, OSC, or DFB) or OTS parameters.
threshold	Configures thresholds on optics (OTS-OCH, OSC, or DFB) or OTS parameters.
iagn | eagn	Configures thresholds for ingress or egress amplifier gain.
iatl |eatl	Configures the thresholds for ingress or egress amplifier tilt.
opr | opr-cl |opr-s	Configures thresholds for total Rx power, total Rx power for C and L band, or total C band signal power.
opbr	Configures thresholds for back reflection power.
opt |opt-s	Configures thresholds for total Tx power or total C band signal power.
raman-1 | raman-2 | raman-3 | raman-4 | raman-5 | raman-tot	Configures thresholds for Raman power (1, 2, 3, 4, or 5) or total Raman pump power.
max-tca | **min-tca enable**	Enable the maximum or minimum TCA reporting status.
value	Value of the thresholds.

Command Default

None

Command Modes

Controller configuration

Command History

Release	Modification
Release 24.4.10	The keyword **bucket** was added.

Usage Guidelines

None

Examples

To view the current PM parameters on an OTS controller for a 15 minute interval, use the following command:

```
RP/0/RP0/CPU0:ios#show controllers ots 0/0/0/0 pm current 15-min optics 1
Tue May 17 06:37:00.529 UTC
```

```
Optics in the current interval [06:30:00 - 06:37:00 Tue May 17 2022]

Optics current bucket type : Valid
             MIN       AVG       MAX     Operational  Configured    TCA   Operational
Configured  TCA
                                        Threshold(min)Threshold(min(min)
Threshold(max)Threshold(max(max)
OPT[dBm]     : 20.00     20.00     20.00    -20.00     NA           NO   40.00         NA
          NO
OPR[dBm]     : 20.00     20.00     20.00    -30.00     NA           NO   18.00         NA
          NO
OPT(C+L)[dBm] : 20.00     20.00     20.00    -20.00    NA           NO   60.85         NA
          NO
OPR(C+L)[dBm] : -10.00    -10.00    -10.00   -30.00    NA           NO   36.00         NA
          NO
OPT(S)[dBm]   : 20.00     20.00     20.00    -5.00     NA           NO   28.00         NA
          NO
OPR(S)[dBm]   : 20.00     20.00     20.00    -30.00    NA           NO   18.00         NA
          NO
OPBR[dBm]     : -30.00    -30.00    -30.00   -30.00    NA           NO   -14.09        NA
          NO
EAGN[dB]      : 30.00     30.00     30.00    16.00     NA           NO   20.00         20.00
        YES
EATL[dB]      : -4.80     -4.80     -4.80    -5.00     NA           NO   5.00          NA
          NO
IAGN[dB]      : 25.00     25.00     25.00    12.00     NA           NO   25.00         NA
          NO
IATL[dB]      : -2.40     -2.40     -2.40    -5.00     NA           NO   5.00          NA
          NO           NO

Last clearing of "show controllers OPTICS" counters never
```

To view the historical PM parameters on an OTS controller for a 15 minute interval, use the following command:

```
RP/0/RP0/CPU0:ios#show controllers ots 0/0/0/0 pm history 15-min optics  1 bucket 1
Tue May 17 07:02:26.911 UTC

Optics in interval 1 [06:45:00 - 07:00:00 Tue May 17 2022]

Optics history bucket type : Valid
                MIN       AVG       MAX
OPT[dBm]    :   20.00      20.00     20.00
OPR[dBm]    :   20.00      20.00     20.00
OPT(C+L)[dBm]: 20.00      20.00     20.00
OPR(C+L)[dBm]: -10.00    -10.00    -10.00
OPT(S)[dBm]  : 20.00      20.00     20.00
OPR(S)[dBm]  : 20.00      20.00     20.00
OPBR[dBm]    : -30.00    -30.00    -30.00
EAGN[dB]     : 30.00     30.00     30.00
EATL[dB]     : -4.80     -4.80     -4.80
IAGN[dB]     : 25.00     25.00     25.00
IATL[dB]     : -2.40     -2.40     -2.40
RAMAN-TOT[mW]: 300.00    300.00    300.00
RAMAN-1 [mW] : 45.00     45.00     45.00
RAMAN-2 [mW] : 40.00     40.00     40.00
RAMAN-3 [mW] : 40.00     40.00     40.00
RAMAN-4 [mW] : 40.00     40.00     40.00
RAMAN-1 [mW] : 35.00     35.00     35.00
```

The following example shows how to view the historical PM parameters on an coherentDSP controller for a past 1 day.

```
RP/0/RP0/CPU0:Node164#show  controllers coherentDSP 0/2/0/0 pm history 24-hour fec bucket
1
```

```
Wed Nov 27 04:53:53.022 UTC

g709 FEC in interval 1 [00:00:00 - 24:00:00 Tue Nov 26 2024]

FEC history bucket type : valid
EC-BITS   : 10121314105194            UC-WORDS  : 0

                              MIN                           AVG                           MAX

PreFEC BER              :    1.43E-04                      1.51E-04                      1.59E-04
PostFEC BER             :    0E-15                         0E-15                         0E-15
Q                       :    11.10                         11.19                         11.20
Q_margin                :    4.70                          4.79                          4.80
Instantaneous Q_margin  :    4.69                          4.79                          4.80

Last clearing of "show controllers OTU" counters never
```

otdr auto-scan

Use the **otdr auto-scan** command to enable or disable the auto otdr scan.

otdr auto-scan { **enable | disable** }

Syntax Description

enable	Enables OTDR auto scan.
disable	Disables OTDR auto scan.

Command Default

None

Command Modes

Controller configuration mode

Command History

Release	Modification
Cisco IOS XR Release 25.2.1	This command was introduced.

Example

These are sample configurations that enable and disable automatic OTDR scan.

```
RP/0/RP0/CPU0:ios#configure
Mon Sep 18 13:11:53.812 UTC
RP/0/RP0/CPU0:IOS(config)#optical-line-control controller Ots 0/0/0/0
RP/0/RP0/CPU0:IOS(config-olc-ots)#otdr auto-scan enable
RP/0/RP0/CPU0:IOS(config-olc-ots)#commit
```

```
RP/0/RP0/CPU0:ios#configure
Mon Sep 3 13:28:34.631 UTC
RP/0/RP0/CPU0:IOS(config)#optical-line-control controller Ots 0/0/0/0
RP/0/RP0/CPU0:IOS(config-olc-ots)#otdr auto-scan disable
RP/0/RP0/CPU0:IOS(config-olc-ots)#commit
```

otdr start

Use the **otdr-start controller ots** command to start the otdr operation.

otdr-start controller ots *R/S/I/P direction* [**force**]

Syntax Description

R/S/I/P	Rack/Slot/Instance/Port of the OTS controller.
direction	Scan direction (RX or TX)
force	Use this keyword to start the OTDR scan without negotiation.

Command Default

None

Command Modes

Controller configuration mode

Command History

Release	Modification
Cisco IOS XR Release 25.1.1	This command was introduced.
Cisco IOS XR Release 25.2.1	The keyword *force* was added.

Example

This is a sample configuration to start OTDR scan manually.

```
RP/0/RP0/CPU0:ios#otdr-start controller ots 0/0/0/0 rx
Wed Feb 9 05:49:39.178 UTC
OTS OTDR Scan Started at RX
RP/0/RP0/CPU0:ios#
```

This is a sample configuration to start OTDR scan manually without negotiation.

```
RP/0/RP0/CPU0:ios#otdr-start controller ots 0/0/0/0 rx force
Wed Sep 4 08:78:34.186 UTC
OTS OTDR Scan Started at RX
RP/0/RP0/CPU0:ios#
```

otdr stop

Use the **otdr-stop controller ots** command to stop the otdr operation.

otdr-stop controller ots *R/S/I/P direction*

Syntax Description

R/S/I/P	Rack/Slot/Instance/Port of the OTS controller.
otdr-stop controller ots	Use this parameter to stop the otdr operation in a particular direction.
direction	Scan direction (RX or TX)

Command Default None

Command Modes Controller configuration mode

Command History

Release	Modification
Cisco IOS XR Release 25.1.1	This command was introduced.

Example

```
RP/0/RP0/CPU0:ios#otdr-stop controller ots 0/3/0/0 rx
OTS OTDR Scan Stopped at RX
```

otdr save baseline controller ots

Use the **otdr save baseline controller ots** to set the current OTDR scan results as the baseline.

otdr save baseline controller ots *R/S/I/P direction*

Syntax Description

R/S/I/P	Rack/Slot/Instance/Port of the OTS controller.
direction	Scan direction (RX or TX)

Command Default None

Command Modes Controller configuration mode

Command History

Release	Modification
Cisco IOS XR Release 25.2.1	This command was introduced.

Usage Guidelines None

Example

This sample sets the current OTDR scan results as the baseline.

```
RP/0/RP0/CPU0:ios#otdr save baseline controller ots 0/0/0/0 rx
```

show olc otdr-status

Use the **show olc otdr-status** command to display the status of OTDR scan.

show olc otdr-status [**details**]

Syntax Description

details	Displays detailed OTDR scan status information.

Command Modes

Controller configuration mode

Command History

Release	Modification
Cisco IOS XR Release 25.2.1	This command was introduced.

Example

This sample display the various status of OTDR automatic scan during span fault.

```
RP/0/RP0/CPU0:R1#show olc otdr-status
Tue Oct 10 20:15:57.359 UTC

Controller                : Ots0/0/0/0
OTDR Auto-scan Status     : RUNNING
Status Detail : Completed on Span Down.
Auto-scan Rx Start Time   : 2023-10-10 20:12:01
Rx Status Detail          : Completed on Span Down
Auto-scan Tx Start Time   : 2023-10-10 20:14:31
Tx Status Detail          : Waiting for OTDR Resource
Optical Span Status       : Up
Trigger Event             : Manual
Last Trigger Event        : Manual
```

fpd auto-upgrade

To enable or disable automatic FPD upgrade, use the **fpd auto-upgrade** command in Cisco IOS XR Configuration mode.

fpd auto-upgrade { **enable | disable** }

To enable automatic FPD upgrade of the power module, use the **fpd auto-upgrade include pm** command in Cisco IOS XR Configuration mode.

fpd auto-upgrade [{ **include | exclude** } **pm**]

Syntax Description

enable	Enables automatic FPD upgrade.
disable	Disables automatic FPD upgrade.
include	Includes power module FPDs in automatic FPD upgrade.
exclude	Excludes power module FPDs in automatic FPD upgrade.

Command Default

Automatic FPD upgrade is enabled.

Command Modes

IOS XR EXEC

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.
Cisco IOS XR Release 24.3.1	The keyword include or exclude pm was added.

Example

The following examples show how to enable or disable automatic power module FPD upgrade.

```
RP/0/RP0/CPU0:ios(config)#fpd auto-upgrade include pm
RP/0/RP0/CPU0:ios(config)#commit
```

```
RP/0/RP0/CPU0:ios(config)#fpd auto-upgrade exclude pm
RP/0/RP0/CPU0:ios(config)#commit
```

hw-module

To configure the card modes and turn on LEDs in the 1.2T, 2.4T, 2.4TX, and QXP, use the **hw-module** command in Cisco IOS XR configuration mode.

Muxponder Slice Mode Keywords
Muxponder Slice Mode Keywords
hw-module location *location* **mxponder-slice** *mxponder-slice-number* **trunk-rate** [**400G** | **500G** | **600G** | **700G** | **800G** | **900G** | **1000G** | **1100G** | **1200G**] **client-port-rate** *client-port-number* [**client-type 400GE** | **lane** *lane-number* **client-type 100GE**]
Muxponder Mode Keywords
hw-module location *location* **mxponder trunk-rate** [**600G** | **1000G**] **client-port-rate** *client-port-number* **client-type 400GE**
Port LED Keywords
hw-module location *location* **attention-led** [**all-ports** | **port** *port-number*]
ARP Snoop Keywords
hw-module location *location* **mxponder arp-snoop**
OLS-Port and EDFA Mode Keywords
hw-module location *location* **ols-port** *port number* **mode edfa**

Syntax Description

location *location*	Specifies the location of the optics controller.
mxponder-slice *mxponder-slice-number*	Configures the card in muxponder slice mode. Slice numbers can be 0 or 1.
mxponder	Configures the card in muxponder module mode. Activates the split client ports 2 and 3.
client-type [100GE | 400GE]	Specifies the traffic rate on the client ports. The supported client rates are 100GE and 400GE.

trunk-rate [**400G | 500G | 600G | 700G | 800G | 900G | 1000G | 1100G | 1200G**]	Specifies the traffic rate on the trunk ports. The supported trunk rates are 400G, 500G, 600G, 700G, 800G, 900G, 1000G, 1100G, and 1200G.
client-port-ains-soak hours *hours* **minutes** *minutes*	Specifies the AINS configuration in hours and minutes.
arp-snoop	Configures MAC address or ARP snoop on the client ports.
attention-led [**all-ports** | **port***port-number*]	Turns on the attention LED on all the ports or on a specific port of the line card.
client-port-rate*client-port-number*	Specifies client port number. • Mxponder-slice 0—Client ports 1, 2, and 3 are mapped to the trunk port 0. • Mxponder-slice 1—Client ports 4, 5, and 6 are mapped to the trunk port 1.
lane*lane-number*	Specifies the lane number for each breakout channel.
ols-port *port number***mode edfa**	Specifies the OLS port location in the EDFA mode. Port 0 through 15 is supported in the EDFA mode.

Command Default

NONE

Command Modes

Cisco IOS XR Configuration

Command History

Release	Modification
Release 7.11.1	This command was introduced.
Release 24.1.1	The following items were introduced • **mxponder** keyword. • 500G and 1200G trunk rate support.
Release 24.2.11	The trunk rates 700G, 900G and 1100G were introduced.
Release 25.2.1	These keywords were introduced **ols-port** *port number* **mode edfa** keyword.

Example

The following is a sample in which the 2.4T card is configured with *400G* trunk rate on the *mxponder-slice 0* mode on port 1 QDD-4x100G client pluggable.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#hw-module location 0/1/NXR0 mxponder-slice 0
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#trunk-rate 400G
```

```
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#client-port-rate 1 lane 1 client-type 100GE
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#client-port-rate 1 lane 2 client-type 100GE
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#client-port-rate 1 lane 3 client-type 100GE
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#client-port-rate 1 lane 4 client-type 100GE
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#commit
```

The following is a sample in which the 2.4T card is configured for *600G* trunk rate with mixed client rate on the *mxponder-slice 1* mode. The client rate is configured with 400GE in port 4 and 2x100GE in port 5.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#hw-module location 0/1/NXR0 mxponder-slice 1
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#trunk-rate 600G
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#client-port-rate 4 client-type 400GE
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#client-port-rate 5 lane 1 client-type 100GE
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#client-port-rate 5 lane 2 client-type 100GE
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#commit
```

The following is a sample in which the 2.4T card is configured with *800G* trunk rate on the *mxponder-slice 0* mode. The client rate is configured with 400GE each in port 1and port 2.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#hw-module location 0/1/NXR0 mxponder-slice 0
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#trunk-rate 800G
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#client-port-rate 1 client-type 400GE
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#client-port-rate 2 client-type 400GE
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#commit
```

The following is a sample in which the 2.4TX card is configured with *600G* trunk rate in the *mxponder* mode on ports 1, 2, and 4.

```
RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#hw-module location 0/2/NXR0
RP/0/RP0/CPU0:ios(config-hwmod)#mxponder
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#trunk-rate 600G
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#client-port-rate 1 client-type 400GE
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#client-port-rate 2 client-type 400GE
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#client-port-rate 4 client-type 400GE
RP/0/RP0/CPU0:ios(config-hwmod-mxp)#commit
```

This is a sample to configure the ONS-QDD-OLS pluggable ols-port 14 and slot 2, in the EDFA mode.

```
RP/0/RP0/CPU0:ios#configure
Fri Feb 28 22:36:59.927 IST
RP/0/RP0/CPU0:ios(config)#hw-module location 0/2/NXR0 ols-port 14
RP/0/RP0/CPU0:ios(config-ols)#mode edfa
RP/0/RP0/CPU0:ios(config-ols)#commit
Fri Feb 28 22:37:26.891 IST
RP/0/RP0/CPU0:ios(config-ols)#end
RP/0/RP0/CPU0:ios#
```

ipv4-access-group

To control access to an interface, use the **ipv4 access-group** command in interface configuration mode. To remove the specified access group, use the **no** form of this command.

ipv4 access-group *access-list-name* { **ingress** | **egress** } [**compress level** *compression-level*]

Syntax Description

access-list-name	Name of an IPv4 access list as specified by an **ipv4 access-list** command.
ingress	Filters on inbound packets.
egress	Filters on outbound packets.
compress level *compression-level*	Configures compression level for interface ACLs. Compression level values range from zero and two.

Command Default

The interface does not have an IPv4 access list applied to it.

Command Modes

Interface configuration

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

Use the **ipv4 access-group** command to control access to an interface. To remove the specified access group, use the **no** form of the command. Use the *access-list-name* argument to specify a particular IPv4 access list.

If the access list permits the addresses, the software continues to process the packet. If the access list denies the address, the software discards the packet and returns an Internet Control Message Protocol (ICMP) host unreachable message.

If the specified access list does not exist, all packets are passed.

Task ID

Task ID	Operations
acl	read, write

Examples

The following example shows how to apply the access list named IPV4-ACL to the management interface:

```
RP/0/RP0/CPU0:ios(config)# interface mgmtEth 0/RP0/CPU0/0
RP/0/RP0/CPU0:ios(config-if)# ipv4 access-group IPV4-ACL ingress
RP/0/RP0/CPU0:ios(config-if)# commit
```

ipv6-access-group

To control access to an interface, use the **ipv6 access-group** command in interface configuration mode. To remove the specified access group, use the **no** form of this command.

ipv6 access-group *access-list-name* { **ingress** | **egress** } [**compress level** *compression-level*]

Syntax Description

access-list-name	Name of an IPv6 access list as specified by an **ipv6 access-list** command.
ingress	Filters on inbound packets.
egress	Filters on outbound packets.
compress level *compression-level*	Configures compression level for interface ACLs. Compression level values range from zero and two.

Command Default

The interface does not have an IPv6 access list applied to it.

Command Modes

Interface configuration

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

Use compression level two to create Hybrid ACLs with an ACE that uses IPv6 extension headers to filter ingress and egress IPv6 packets.

Task ID

Task ID	Operations
acl	read, write

Examples

The following example shows how to apply the access list named IPV6-ACL to the management interface:

```
RP/0/RP0/CPU0:ios(config)# interface mgmtEth 0/RP0/CPU0/0
RP/0/RP0/CPU0:ios(config-if)# ipv6 access-group IPV6-ACL ingress
RP/0/RP0/CPU0:ios(config-if)# commit
```

ipv4-access-list

To define an IPv4 access list by name, use the **ipv4 access-list** command in IOS XR Config mode. To remove all entries in an IPv4 access list, use the **no** form of this command.

ipv4 access-list *name*
no ipv4 access-list *name*

Syntax Description

name	Name of the access list. Names cannot contain a space or quotation marks.

Command Default

No IPv4 access list is defined.

Command Modes

IOS XR Config mode

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

Use the **ipv4 access-list** command to configure an IPv4 access list. This command places the system in access list configuration mode, in which the denied or permitted access conditions must be defined with the **deny** or **permit** command.

Use the **ipv4 access-group** command to apply the access list to an interface.

Task ID

Task ID	Operations
acl	read, write

Examples

This example shows how to define a standard access list named ACL:

```
RP/0/RP0/CPU0:ios(config)# ipv4 access-list ACL
RP/0/RP0/CPU0:ios(config-ipv4-acl)# 10 permit tcp 192.0.2.2 255.255.255.0 any
RP/0/RP0/CPU0:ios(config-ipv4-acl)# 20 deny udp any any
RP/0/RP0/CPU0:ios(config-ipv4-acl)# 30 permit ipv4 192.0.2.64 255.255.255.0 any
RP/0/RP0/CPU0:ios(config-ipv4-acl)# commit
```

ipv6-access-list

To define an IPv6 access list by name, use the **ipv6 access-list** command in IOS XR Config mode. To remove all entries in an IPv6 access list, use the **no** form of this command.

ipv6 access-list *name*
no ipv6 access-list *name*

Syntax Description

name	Name of the access list. Names cannot contain a space or quotation mark, or begin with a numeric.

Command Default

No IPv6 access list is defined.

Command Modes

IOS XR Config mode

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

The IPv6 access lists are used for traffic filtering based on source and destination addresses, IPv6 option headers, and optional, upper-layer protocol type information for finer granularity of control. IPv6 access lists are defined by using the **ipv6 access-list** command in XR Config mode mode and their permit and deny

conditions are set by using the **deny** and **permit** commands in IPv6 access list configuration mode. From IPv6 access list configuration mode, permit and deny conditions can be set for the defined IPv6 access list.

The **ipv6 access-list** command is similar to the **ipv4 access-list** command, except that it is IPv6-specific.

Use the **ipv6 access-group** command to apply the access list to an interface.

Every IPv6 access list has an implicit **deny ipv6 any any** statement as its last match condition. An IPv6 access list must contain at least one entry for the implicit **deny ipv6 any any** statement to take effect.

Task ID

Task ID	Operations
acl	read, write

Examples

This example shows how to define a standard access list named ACL:

```
RP/0/RP0/CPU0:ios(config)# ipv6 access-list ACL
RP/0/RP0/CPU0:ios(config-ipv6-acl)# 10 permit ipv6 any any
RP/0/RP0/CPU0:ios(config-ipv6-acl)# 20 deny udp any any
RP/0/RP0/CPU0:ios(config-ipv6-acl)# commit
```

license smart deregister

To deregister smart license, use the **license smart deregister**

license smart deregister

Syntax Description

None	-

Command Default

None

Command Modes

IOS XR Config mode

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

Use the **license smart deregister** command to deregister smart license command.

Task ID

Task ID	Operations
acl	read, write

Examples

This example shows how to deregester smart license:

```
RP/0/RP0/CPU0:iso#license smart deregister
```

license smart register

To register smart license, use the **license smart register**

license smart register

Syntax Description

None	-

Command Default

None

Command Modes

IOS XR Config mode

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

Use the **license smart register** command to register smart license command.

Task ID

Task ID	Operations
acl	read, write

Examples

This example shows how to deregester smart license:

```
RP/0/RP0/CPU0:iso#license smart register
```

lldp holdtime

Use the **lldp holdtime** command to specify the hold time for the receiving device to hold the information from an LLDP packet before aging and removing it. To return to the default, use the **no** form of this command.

lldp holdtime *seconds*

no lldp holdtime

Syntax Description		
	seconds	Specify the time in seconds to hold the packet information. Default value: 120

Command Default None

Command Modes Config mode

Usage Guidelines None

Task ID

Task ID	Operation
ethernet-services	read, write

Example

The following example shows how to specify the hold time:

```
RP/0/RP0:hostname(config)# lldp holdtime 60
```

lldp reinit

Use the **lldp reinit** command to specify the time to delay the initialization of LLDP on an interface. To return to the default, use the **no** form of this command.

lldp reinit *seconds*

no lldp reinit

Syntax Description		
	seconds	Specify the time in seconds for which LLDP should delay initialization. Default value: 2

Command Default None

Command Modes Config mode

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	Operation
ethernet-services	read, write

Example

The following example shows how to specify the time to delay the initialization of LLDP on an interface:

```
RP/0/RP0:hostname(config)# lldp reinit 4
```

lldp timer

Use the **lldp timer** command to specify the interval at which the device sends LLDP packets to neighboring devices. To return to the default, use the **no** form of this command.

lldp timer *seconds*

no lldp timer

Syntax Description

seconds	Specify the interval in seconds. Default value: 30

Command Default

None

Command Modes

Config mode

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	Operation
ethernet-services	read, write

Example

The following example shows how to LLDP time interval:

```
RP/0/RP0:hostname(config)# lldp timer 60
```

receive disable

Use the **lldp receive disable** command to disable the reception of LLDP packets on an interface. To return to the default, use the **no** form of this command.

receive disable

no receive disable

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

LLDP configuration

Usage Guidelines

None

Task ID

Task ID	Operation
ethernet-services	read, write

Example

The following example shows how to disable LLDP receive operations on an interface:

```
RP/0/RP0:hostname(config-if)# lldp
RP/0/RP0:hostname(config-if-lldp)# receive disable
```

keyring

To configure the keying details of an OTNSec profile, use the **keyring** command in configuration mode.

keyring *name* **peer** *name* { **address** *ip* | **pre-shared-key** { **clear** | **local** | **password** } *key* }

Syntax Description

keyring *name*	Specifies the name for the keyring profile
peer *name*	Specifies the name of the peer interface
address *ip*	Specifies the ip address of the peer interface along with the prefix.
clear	Specifies that the preshared key for OTNSec communication is in cleartext format.
local	Specifies that the preshared key for OTNSec communication is a local passphrase.
password	Specifies that the preshared key for OTNSec communication is an encrypted string in hexadecimal format.
key	Specifies the preshared key for OTNSec communication.

Command Default

None

Command Modes

Config mode

Command History

Release	Modification
Cisco IOS XR Release 25.2.1	This command was introduced.

Usage Guidelines

None

Examples

This example shows how to configure the keyring parameters for OTNSec:

```
RP/0/RP0/CPU0:ios(config)#keyring KR1
RP/0/RP0/CPU0:ios(config-keyring-KR1)#peer Node-B
RP/0/RP0/CPU0:ios(config-keyring-KR1-peer-Node-B)#address 10.1.1.1 255.255.255.0
RP/0/RP0/CPU0:ios(config-keyring-KR1-peer-Node-B)#pre-shared-key password cisco123!cisco123
RP/0/RP0/CPU0:ios(config-keyring-KR1-peer-Node-B)#commit
RP/0/RP0/CPU0:ios(config-keyring-KR1-peer-Node-B)#exit
RP/0/RP0/CPU0:ios(config-keyring-KR1)#exit
```

ikev2 profile

To configure the parameters of an IKEv2 profile, use the **ikev2 profile** command in configuration mode.

ikev2 profile name { **lifetime seconds** | **match** { **identity remote address** } | **authentication** { **local** | **remote** } { **pre-shared** | **rsa-signature** } | **pki trustpoint** *name* }

Syntax Description

name	Specifies the name of the IKEv2 profile
`keyring` *name*	Configures the trustpoints used for user certificate validation
lifetime *seconds*	Specifies the name of the trustpoint
match	Specifies that a match type follows
authentication	Specifies that the OTNSec Peer authentication method follows
local	Specifies that the authentication occurs on the source router.
remote	Specifies that the authentication occurs on the peer router.
pre-shared	Specifies that the authentication uses the pre-shared key available in the router
rsa-signature	Specifies that the authentication is X.509v3 certificate based on rsa signature
identity remote	Specifies that the identity match for the IKEv2 profile is via the remote identity
`pki trustpoint` *name*	Specifies the public key infrastructure trustpoint name in the OTNSec profile

Command Default

None

Command Modes

Config mode

Command History

Release	Modification
Cisco IOS XR Release 25.2.1	This command was introduced.

Usage Guidelines

Before creating an IKEv2 profile, A keyring profile must be available in your device.

This example shows how to configure an IKEv2 profile:

```
RP/0/1/CPU0:ios(config)#ikev2 profile profile1
RP/0/1/CPU0:ios(config-ikev2-profile-profile1)#keyring KR1
RP/0/RP0/CPU0:ios(config-ikev2-profile-profile1)#lifetime 86400
RP/0/RP0/CPU0:ios(config-ikev2-profile-profile1)#match address 10.1.1.1 255.255.255.0
RP/0/RP0/CPU0:ios(config-ikev2-profile-profile1)#commit
```

```
RP/0/RP0/CPU0:ios(config-ikev2-profile-profile_all_0_3)# match fvrf vrf2
RP/0/RP0/CPU0:ios(config-ikev2-profile-profile_all_0_3)# match identity remote address
10.1.1.2
255.255.255.0
RP/0/RP0/CPU0:ios(config-ikev2-profile-profile_all_0_3)# pki trustpoint trust_all_R1
RP/0/RP0/CPU0:ios(config-ikev2-profile-profile_all_0_3)# lifetime 86400
RP/0/RP0/CPU0:ios(config-ikev2-profile-profile_all_0_3)# authentication local rsa-signature
RP/0/RP0/CPU0:ios(config-ikev2-profile-profile_all_0_3)# authentication remote rsa-signature
RP/0/RP0/CPU0:ios(config-ikev2-profile-profile_all_0_3)#commit
```

ikev2 policy

To configure any parameters for the IKEv2 policy, use the **ikev2 policy** command in configuration mode.

ikev2 policy *name* { **match** { **address local** *address* } | **proposal** *name* }

Syntax Description

name	Specifies the name for the IKEv2 policy
match	Specifies that a match type follows
address local *address*	Specifies the ip address of the local interface to be associated with this IKEv2 profile
proposal *name*	Specifies the IKEv2 proposal for the IKEv2 policy

Command Default

None

Command Modes

Config mode

Command History

Release	Modification
Cisco IOS XR Release 25.2.1	This command was introduced.

Usage Guidelines

Before configuring IKEv2 policy, an IKEv2 proposal must be available in your device.

Examples

This example shows how to create a IKEv2 policy:

```
RP/0/RP0/CPU0:ios(config)#ikev2 policy ikev2_policy_all_0_3
RP/0/RP0/CPU0:ios(config-ikev2-policy-ikev2_policy_all_0_)# match address local 10.1.1.1
RP/0/RP0/CPU0:ios(config-ikev2-policy-ikev2_policy_all_0_)# proposal ikev2_proposal_all_0_3
RP/0/RP0/CPU0:ios(config-ikev2-policy-ikev2_policy_all_0_)#commit
```

ikev2 proposal

To configure the parameters for an Internet Key Exchange Version 2 (IKEv2) proposal, use the **ikev2 proposal** command in configuration mode.

ikev2 proposal *name* { **dh-group** { **19** | **20** | **21** } | **encryption** { **aes-gcm-128** | **aes-gcm-256** | **aes-cbc-128** | **aes-cbc-192** | **aes-cbc-256** } | **integrity** { **sha-1** | **sha-256** | **sha-384** | **sha-512** } | **prf** { **sha-1** | **sha-256** | **sha-384** | **sha-512** } }

Syntax Description

name	Specifies the name for the IKEv2 proposal
dh-group	Specifies that the transform of the DH group follows. **Note** You can configure one or more DH groups by separating them by a comma.
19	Specifies the ECP group type DH Group-19 (256-bit)
20	Specifies the ECP group type DH Group-20 (384-bit)
21	Specifies the ECP group type DH Group-21 (512-bit)
encryption	Specifies that the type of encryption algorithm follows. **Note** You can configure one or more encryption algorithms by separating them by a comma.
aes-gcm-128	Specifies 128 bits encryption using the Advanced Encryption Standard (AES) with Galois/Counter Mode (AES-GCM).
aes-gcm-256	Specifies 256 bits encryption using the Advanced Encryption Standard (AES) with Galois/Counter Mode (AES-GCM).
aes-cbc-128	Specifies 128 bits encryption using the Advanced Encryption Standard (AES) with cipher-block chaining (CBC).
aes-cbc-192	Specifies 192 bits encryption using the Advanced Encryption Standard (AES) with cipher-block chaining (CBC).
aes-cbc-256	Specifies 256 bits encryption using the Advanced Encryption Standard (AES) with cipher-block chaining (CBC).
integrity	Specifies that the type of algorithm used to authenticate packets in OTNSec follows. **Note** You can configure one or more integrity algorithms by separating them by a comma.

sha-1	Specifies that SHA-1 algorithm is used to authenticate in OTNSec packets.
sha-256	Specifies that SHA-256 algorithm is used to authenticate in OTNSec packets.
sha-384	Specifies that SHA-384 algorithm is used to authenticate in OTNSec packets.
sha-512	Specifies that SHA-512 algorithm is used to authenticate in OTNSec packets.
prf	Specifies the type of algorithm used to provide randomness for keying information in OTNSec follows. **Note** You can configure one or more PRF algorithms by separating them by a comma.
sha-1	Specifies that SHA-1 algorithm is used to provide randomness for keying information.
sha-256	Specifies that SHA-256 algorithm is used to provide randomness for keying information.
sha-384	Specifies that SHA-384 algorithm is used to provide randomness for keying information.
sha-512	Specifies that SHA-512 algorithm is used to provide randomness for keying information.

Command Default

Note None

Command Modes

Cisco IOS XR Configuration

Command History

Release	Modification
Cisco IOS XR Release 25.2.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Examples

This example shows how to configure a IKEv2 profile:

```
RP/0/RP0/CPU0:Node-A(config)#ikev2 proposal ikev2_proposal_all_0_3
RP/0/RP0/CPU0:Node-A(config-ikev2-proposal-ikev2_proposal_al)# prf sha-1
RP/0/RP0/CPU0:Node-A(config-ikev2-proposal-ikev2_proposal_al)# dh-group 19
RP/0/RP0/CPU0:Node-A(config-ikev2-proposal-ikev2_proposal_al)# encryption aes-gcm-128
RP/0/RP0/CPU0:Node-A(config-ikev2-proposal-ikev2_proposal_al)#commit
Thu Mar 7 19:20:30.916 UTC
RP/0/RP0/CPU0:Node-A(config-ikev2-proposal-proposal1)#exit
RP/0/RP0/CPU0:Node-A(config)#exit
```

transmit disable

Use the **transmit disable** command to disable the transmission of LLDP packets from an interface. To return to the default, use the **no** form of this command.

transmit disable

no transmit disable

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

LLDP configuration

Usage Guidelines

None

Command History

Release	Modification
Release 7.11.1	This command was introduced.

Task ID

Task ID	Operation
ethernet-services	read, write

Example

The following example shows how to disable LLDP receive operations on an interface:

```
RP/0/RP0:hostname(config-if)# lldp
RP/0/RP0:hostname(config-if-lldp)# transmit disable
```

ntp

To enter Network Time Protocol (NTP) configuration mode and run NTP configuration commands, use the **ntp** command in global configuration mode.

ntp

Syntax Description

This command has no keywords or arguments.

Command Default

No default behavior or values.

Command Modes

Global configuration

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Task ID

Task ID	Operations
ip-services	read, write

The following example shows how to enter NTP configuration mode:

```
RP/0/RP0/CPU0:ios(config)#ntp
RP/0/RP0/CPU0:ios(config-ntp)#
```

reload

To perform a reload operation on the NCS 1014 unit and its modules, use the **reload** command.

This command is not traffic affecting, but service affecting.

reload location *location*

Syntax Description

location | *location*	(Optional) Location for the unit or module which you want to reload.

Command Default

All slots are reloaded.

Command Modes

Cisco IOS XR

Command History

Release	Modification
Release 7.11.1	This command was introduced.

Usage Guidelines

None

Example

To reboot the Cisco NCS 1014 system, use the following command.

This command is not traffic affecting.

```
RP/0/RP0/CPU0:ios#reload
Fri Oct 27 08:34:15.416 UTC
Proceed with reload? [confirm]
RP/0/RP0/CPU0:ios#
Preparing system for backup. This may take a few minutes especially for large configurations.
Status report: node0_RP0_CPU0: BACKUP INPROGRESS
Status report: node0_RP0_CPU0: BACKUP HAS COMPLETED SUCCESSFULLY
[Done]
```

To reboot the entire Cisco NCS 1014 system along with its modules, use the following command.

This command is service affecting.

```
RP/0/RP0/CPU0:ios#reload location all noprompt
Mon Sep 25 12:40:35.755 UTC
RP/0/RP0/CPU0:ios#yes
% Invalid input detected at '^' marker.
RP/0/RP0/CPU0:ios#
********Completed Card Reload of all ********
##### Rack reload : all######
################## Iteration under Test : 7 ##############
Waiting for 1000 seconds...
Waiting for 990 seconds...
Waiting for 980 seconds...
Waiting for 970 seconds...
.
.
output snipped
.
.
Waiting for 110 seconds...
Waiting for 100 seconds...
Waiting for 90 seconds...
Waiting for 80 seconds...
Waiting for 70 seconds...
Waiting for 60 seconds...
Waiting for 50 seconds...
Waiting for 40 seconds...
Waiting for 30 seconds...
Waiting for 20 seconds...
Waiting for 10 seconds...
XR Prompt =  RP/0/RP0/CPU0:P2A_DT_08#
Login sucessfull

type is <class 'telnetlib.Telnet'>
clear logging
Mon Sep 25 13:10:21.480 UTC
Clear logging buffer [confirm]
[y/n] :y
RP/0/RP0/CPU0:ios#
********XR Logging Cleared********
********Started Sanity Verification Tests ********
The term length 0 op is term length 0
Mon Sep 25 13:11:20.125 UTC
```

To perform cold reboot of the Cisco NCS 1014 RP, use the following command.

This command is not traffic affecting.

```
RP/0/RP0/CPU0:ios#reload location 0/RP0 noprompt
Mon Sep 25 20:31:15.168 UTC
RP/0/RP0/CPU0:ios#yes
% Invalid input detected at '^' marker.
RP/0/RP0/CPU0:ios#
********Completed Card Reload of 0/RP0 ********
##### Rack reload : 0/RP0######
################## Iteration under Test : 1 ##############
Waiting for 900 seconds...
Waiting for 890 seconds...
.
.
output snipped
.
.
```

```
Waiting for 110 seconds...
Waiting for 100 seconds...
Waiting for 90 seconds...
Waiting for 80 seconds...
Waiting for 70 seconds...
Waiting for 60 seconds...
Waiting for 50 seconds...
Waiting for 40 seconds...
Waiting for 30 seconds...
Waiting for 20 seconds...
Waiting for 10 seconds...
XR Prompt =  RP/0/RP0/CPU0:ios#
Login sucessfull

type is <class 'telnetlib.Telnet'>
clear logging
Mon Sep 25 20:40:35.134 UTC
Clear logging buffer [confirm]
[y/n] :y
RP/0/RP0/CPU0:ios#
********XR Logging Cleared********
********Started Sanity Verification Tests ********
The term length 0 op is term length 0
Mon Sep 25 20:40:36.045 UTC

RP/0/RP0/CPU0:ios#reload location 0/0/NXR0 noprompt
Wed Sep 27 09:07:45.340 UTC
RP/0/RP0/CPU0:ios#yes
% Invalid input detected at '^' marker.
RP/0/RP0/CPU0:ios#
********Completed Card Reload of 0/0/NXR0 ********
##### Rack reload : 0/0/NXR0######
################## Iteration under Test : 1 #############
Waiting for 900 seconds...
Waiting for 890 seconds...
Waiting for 880 seconds...
Waiting for 870 seconds...
.
.
output snipped
.
.
Waiting for 40 seconds...
Waiting for 30 seconds...
Waiting for 20 seconds...
Waiting for 10 seconds...
XR Prompt =  RP/0/RP0/CPU0:ios#
Login sucessfull

type is <class 'telnetlib.Telnet'>
clear logging
Wed Sep 27 09:30:24.432 UTC
Clear logging buffer [confirm]
[y/n] :y\
RP/0/RP0/CPU0:ios#
********XR Logging Cleared********
********Started Sanity Verification Tests ********
The term length 0 op is term length 0
Wed Sep 27 07:43:24.240 UTC
```

To perform cold reboot of the Cisco NCS 1014 line card, use the following command.

This command is traffic affecting.

```
RP/0/RP0/CPU0:ios#reload location 0/0 noprompt
Mon Sep 25 14:16:53.322 UTC
RP/0/RP0/CPU0:ios#yes
% Invalid input detected at '^' marker.
RP/0/RP0/CPU0:ios#
********Completed Card Reload of 0/0 ********
##### Rack reload : 0/0######
################## Iteration under Test : 1 ##############
Waiting for 900 seconds...
Waiting for 890 seconds...
Waiting for 880 seconds...
Waiting for 870 seconds...
.
.
output snipped
.
.
Waiting for 80 seconds...
Waiting for 70 seconds...
Waiting for 60 seconds...
Waiting for 50 seconds...
Waiting for 40 seconds...
Waiting for 30 seconds...
Waiting for 20 seconds...
Waiting for 10 seconds...
XR Prompt =  RP/0/RP0/CPU0:ios#
Login sucessfull

type is <class 'telnetlib.Telnet'>
clear logging
Mon Sep 25 14:46:44.124 UTC
Clear logging buffer [confirm]
[y/n] :y
RP/0/RP0/CPU0:ios#
********XR Logging Cleared********
********Started Sanity Verification Tests ********
The term length 0 op is term length 0
Mon Sep 25 22:40:52.228 UTC
```

To perform warm reboot of the Cisco NCS 1014 RP card, use the following command.

This command is not traffic affecting.

```
RP/0/RP0/CPU0:ios#reload location 0/RP0/CPU0 noprompt
Wed Sep 27 11:15:20.002 UTC
RP/0/RP0/CPU0:ios#yes
% Invalid input detected at '^' marker.
RP/0/RP0/CPU0:ios#
********Completed Card Reload of 0/RP0/CPU0 ********
##### Rack reload : 0/RP0/CPU0######
################## Iteration under Test : 1 ##############
Waiting for 900 seconds...
Waiting for 890 seconds...
Waiting for 880 seconds...
Waiting for 870 seconds...
Waiting for 860 seconds...

.
.
output snipped
.
.
Waiting for 70 seconds...
Waiting for 60 seconds...
Waiting for 50 seconds...
```

```
Waiting for 40 seconds...
Waiting for 30 seconds...
Waiting for 20 seconds...
Waiting for 10 seconds...
XR Prompt =  RP/0/RP0/CPU0:P2A_DT_08#
Login sucessfull

type is <class 'telnetlib.Telnet'>
clear logging
Wed Sep 27 13:16:20.265 UTC
Clear logging buffer [confirm]
[y/n] :y
RP/0/RP0/CPU0:ios#
********XR Logging Cleared********
********Started Sanity Verification Tests ********
The term length 0 op is term length 0
Wed Sep 27 15:34:45.765 UTC
```

server

To allow the system clock to be synchronized by a NTP time server, use the **server** command in one of the NTP configuration modes. To remove the **server** command from the configuration file and restore the system to its default condition with respect to this command, use the **no** form of this command.

server
[**ipv4** | **ipv6**] *ip-address* [**version** *number*] [**key** *key-id*] [**minpoll** *interval*] [**maxpoll** *interval*] [**source** *type* *interface-path-id*] [**prefer**] [**burst**] [**iburst**]
no server
[**ipv4** | **ipv6**] *ip-address*

Syntax Description

ipv4	(Optional) Specifies an IPv4 IP address.
ipv6	(Optional) Specifies an IPv6 IP address.
ip-address	IPv4 or IPv6 address of the time server providing the clock synchronization.
version *number*	(Optional) Defines the Network Time Protocol (NTP) version number, where the *number* argument is a value from 1 to 4. The default is 4.
key *key-id*	(Optional) Defines the authentication key, where the *key-id* argument is the authentication key to use when packets are sent to this peer. By default, no authentication key is used.
minpoll *interval*	(Optional) Defines the shortest polling interval, where the *interval* argument is specified in powers of two seconds. Range is from 4 to 17. The default value is 6.
maxpoll *interval*	(Optional) Defines the longest polling interval, where the *interval* argument is specified in powers of two seconds. Range is from 4 to 17. The default value is 10.
source	(Optional) Specifies the IP source address. The default is the outgoing interface.
type	(Optional) Interface type. For more information, use the question mark (**?**) online help function.

interface-path-id	(Optional) Physical interface or virtual interface. **Note** Use the **show interfaces** command to see a list of all interfaces currently configured on the device.
prefer	(Optional) Makes this peer the preferred server that provides synchronization.
burst	(Optional) Sends a series of packets instead of a single packet within each synchronization interval to achieve faster synchronization.
iburst	(Optional) Sends a series of packets instead of a single packet within the initial synchronization interval to achieve faster initial synchronization.

Command Default

No servers are configured by default.

Command Modes

NTP configuration

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

The value for the **minpoll** keyword must be less than or equal to the value for the **maxpoll** keyword. If this is not the case, the system issues an error message.

Using the **prefer** keyword reduces switching back and forth among servers.

Task ID

Task ID	Operations
ip-services	read, write

The following example shows how to configure the device to allow its system clock to be synchronized with the clock of the peer at IP address 203.0.113.51 using NTP.

```
RP/0/RP0/CPU0:ios(config)#ntp
RP/0/RP0/CPU0:ios(config-ntp)#server 203.0.113.51 minpoll 8 maxpoll 12 prefer iburst
```

show access-lists-ipv4

To display the contents of current IPv4 access lists, use the **show access-lists ipv4** command in IOS XR EXEC mode.

show access-lists ipv4 [*access-list-name* **hardware** { **ingress** | **egress** } [**interface** *type interface-path-id*] { **sequence** *number* | **location** *node-id* | [**usage pfilter** { **location** *node-id* }] }]

Syntax Description

access-list-name	(Optional) Name of a particular IPv4 access list. The name cannot contain spaces or quotation marks, but can include numbers.
hardware	(Optional) Identifies the access list as an access list for an interface.
ingress	(Optional) Specifies an inbound interface.
interface	(Optional) Displays interface statistics.
type	(Optional) Interface type.
interface-path-id	Physical interface or virtual interface. **Note** Use the **show interfaces** command to see a list of all interfaces currently configured on the router.
sequence *number*	(Optional) Sequence number of a particular IPv4 access list. Range is 1 to 2147483644.
location *node-id*	(Optional) Location of a particular IPv4 access list. The *node-id* argument is entered in the *rack/slot/module* notation.
summary	(Optional) Displays a summary of all current IPv4 access lists.
sequence-number	(Optional) Sequence number of a particular IPv4 access list. Range is 1 to 2147483644.
usage	(Optional) Displays the usage of the access list on a given line card.
pfilter	(Optional) Displays the packet filtering usage for the specified line card.

Command Default

The default displays all IPv4 access lists.

Command Modes

IOS XR EXEC

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

Use the **show access-lists ipv4** command to display the contents of all IPv4 access lists. To display the contents of a specific IPv4 access list, use the *name* argument. Use the *sequence-number* argument to specify the sequence number of the access list.

Use the **hardware , ingress** and **location** keywords to display the access list hardware contents and counters for all interfaces that use the specified access list in a given direction. To display the contents of a specific access list entry, use the **sequence** *number* keyword and argument. The access group for an interface must be configured using the **ipv4 access-group** command for access list hardware counters to be enabled.

Use the **show access-lists ipv4 summary** command to display a summary of all current IPv4 access lists. To display a summary of a specific IPv4 access list, use the *name* argument.

Use the **show access-list ipv4 usage** command to display a summary of all interfaces and access lists programmed on the specified line card.

Task ID

Task ID	Operations
acl	read

Examples

In the following example, the contents of all IPv4 access lists are displayed:

```
RP/0/RP0/CPU0:ios# show access-lists ipv4 acl_1
Fri Oct 20 06:22:17.223 UTC
ipv4 access-list acl_1
10 permit ipv4 172.16.0.0 0.0.255.255 any
20 deny ipv4 192.168.34.0 0.0.0.255 any
```

show access-lists ipv6

To display the contents of current IPv6 access lists, use the **show access-lists ipv6** command in IOS XR EXEC mode.

show access-lists ipv6 [*access-list-name* **hardware** { **ingress** | **egress** } [**interface** *type interface-path-id*] { **sequence** *number* | **location** *node-id* | [**usage pfilter** { **location** *node-id* }] }]

Syntax Description

access-list-name	(Optional) Name of a particular IPv6 access list. The name cannot contain a spaces or quotation marks, but can include numbers.
hardware	(Optional) Identifies the access list as an access list for an interface.
ingress	(Optional) Specifies an inbound interface.
interface	(Optional) Displays interface statistics.

type	(Optional) Interface type.
interface-path-id	(Optional) Either a physical interface instance or a virtual interface instance as follows: • Physical interface instance. Naming notation is *rack/slot/instance/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. • *instance*: Module number. • *port*: Physical port number of the interface. • Virtual interface instance. Number range varies depending on interface type.
sequence *number*	(Optional) Sequence number of a particular IPv6 access list. Range is 1 to 2147483644.
location *node-id*	(Optional) Location of a particular IPv6 access list. The *node-id* argument is entered in the *rack/slot/instance* notation.
summary	(Optional) Displays a summary of all current IPv6 access lists.
sequence-number	(Optional) Sequence number of a particular IPv6 access list. Range is 1 to 2147483644.
usage	(Optional) Displays the usage of the access list on a given line card.
pfilter	(Optional) Displays the packet filtering usage for the specified line card.
all	(Optional) Displays the location of all the line cards.

Command Default

Displays all IPv6 access lists.

Command Modes

IOS XR EXEC

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

The **show access-lists ipv6** command is similar to the **show access-lists ipv4** command, except that it is IPv6 specific.

Use the **show access-lists ipv6** command to display the contents of all IPv6 access lists. To display the contents of a specific IPv6 access list, use the *name* argument. Use the *sequence-number* argument to specify the sequence number of the access list.

Use the **hardware , ingress** and **location** keywords to display the access list hardware contents and counters for all interfaces that use the specified access list in a given direction. To display the contents of a specific access list entry, use the **sequence** *number* keyword and argument. The access group for an interface must be configured using the **ipv6 access-group** command for access list hardware counters to be enabled.

Use the **show access-lists ipv6 summary** command to display a summary of all current IPv6 access lists. To display a summary of a specific IPv6 access list, use the *name* argument.

Use the **show access-list ipv6 usage** command to display a summary of all interfaces and access lists programmed on the specified line card.

Task ID

Task ID	Operations
acl	read

Examples

In the following example, the contents of all IPv6 access lists are displayed:

```
RP/0/RP0/CPU0:ios# show access-lists ipv6
Fri Oct 20 05:29:01.125 UTC
ipv6 access-list V6-INGRESS-ACL
10 permit ipv6 any any
20 deny udp any any
```

show alarms

To display alarms in brief or detail, use the **show alarms** command.

show alarms brief [card [location *location* **] [active]]**

Syntax Description

brief	Displays alarms in brief.
active	Displays active alarms.
location	Specifies the target location.
card	Displays card scope alarms related data.

Command Default

None

Command Modes

IOS XR EXEC

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

None

Example

The following example shows the output of the **show alarms** command:

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

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

```
Location        Severity     Group            Set Time                    Description


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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

show context

To display core dump context information, use the **show context** command.

show context

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

IOS XR EXEC

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

None

Example

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

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

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

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

Process:
Core was generated by `opt_terminal_device'.

Build information:
### XR Information

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

### Leaba Information


Platform information:
card_product_id: NCS1014
platform: ncs1010

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

Faulting thread: 6232

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

```
fs:     0x0
gs:     0x0


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

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


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

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

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

Build information:
### XR Information

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

### Leaba Information


Registers for Thread (LWP 5155)
rax:    0xfffffffffffffffc
rbx:    0x5570ec6edd60
rcx:    0x7f0239431cd6
rdx:    0x20
rsi:    0x5570ec6ee060
rdi:    0x1b
rbp:    0x7ffca2a8b690
rsp:    0x7ffca2a8b4e0
r8:     0x0
r9:     0x436
r10:    0xffffffff
r11:    0x293
r12:    0x5570ec6ee020
r13:    0x5570ec6ede70
r14:    0x5570ec6ee060
```

```
r15:    0x5570ec6edd60
rip:    0x7f0239431cd6
eflags: 0x293
cs:     0x33
ss:     0x2b
ds:     0x0
es:     0x0
fs:     0x0
gs:     0x0


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

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

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

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

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

Build information:
### XR Information

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

### Leaba Information


Registers for Thread (LWP 4316)
rax:    0xfffffffffffffffc
rbx:    0x0
rcx:    0x7f46904eca92
rdx:    0x0
rsi:    0x0
rdi:    0x7ffd281477c0
rbp:    0x7ffd28147a00
rsp:    0x7ffd281476e0
r8:     0x0
r9:     0x0
r10:    0x8
r11:    0x293
r12:    0x1
r13:    0x0
r14:    0x0
```

```
r15:    0x7ffd281477c0
rip:    0x7f46904eca92
eflags: 0x293
cs:     0x33
ss:     0x2b
ds:     0x0
es:     0x0
fs:     0x0
gs:     0x0


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

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

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

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

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

Build information:
### XR Information

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

### Leaba Information


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

```
cs:     0x33
ss:     0x2b
ds:     0x0
es:     0x0
fs:     0x0
gs:     0x0


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

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

show controllers

To display status and configuration information about the interfaces on a specific node, use the **show controllers** command in configuration mode.

Show controllers *Controller-type R/S/I/P* [**tone-info | prbs-details**] [**prbs-details**] [**otdr-info** *direction* [**baseline**]] [**otnsec**]

Syntax Description

Controller-type R/S/I/P	Rack/Slot/Instance/Port of the controller.
spectrum-info	Displays the Optical Channel Monitoring (OCM) raw data at slice level, such as Tx-power and Rx-power.
tone-info	Displays the Tone Generation parameters that are set for connection verification and the status of the connection verification operation.
prbs-details	Displays the PRBS details configured on the controller.
otdr-info	Displays the OTDR scan status and location of the SOR file, and the OTDR events.
direction	Scan direction (RX or TX)
baseline	Displays the baseline OTDR information.
otnsec	Displays the OTNSec configuration on the odu-flex controller.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.
Cisco IOS XR Release 25.1.1	The keyword *otdr-info* was added.

Release	Modification
Cisco IOS XR Release 25.2.1	The keywords *baseline* and *otnsec* weres added.

Usage Guidelines

None

Example

This sample displays the parameter values set for Tone Generation and the status of connection verification on the OMS controller

```
RP/0/RP0/CPU0:#show controllers oms 0/1/0/0 tone-info
Fri Sep 22 06:04:03.787 UTC
Tone Info:
Tone Rate : 2 bits/second
Tone Pattern Expected(Hex value) : aabbccdd
Tone Pattern Received(Hex value) : aabbccdd
Tone Detected OOB :  Enabled
Detection State: Success
```

This sample displays the OTDR parameters.

```
RP/0/RP0/CPU0:R1#show controllers ots 0/3/0/0 otdr-info rx
                   Tue Jan  7 04:37:46.711 UTC
                   Scan Direction: RX
                   Scan Status: Data Ready
                   Optical Return Loss: -90.6 dB
                   SOR file: /harddisk:/otdr/R1_OTDR_Ots0_3_0_0_RX_20250107-043559.sor
                   Total Events detected: 1
                   Scan Timestamp: Tue Jan  7 04:33:33 2025 UTC
                   Event Type Legend:  NR:Non-Reflective  R:Reflective  FE:Fiber-End
ER:Excess-Reflection EA:Excess-Attenuation
                  Event#      |  Detected Event(s)       |  Location(m)     |  Accuracy(m)
     |  Magnitude(dB)   |  Attenuation/km(dB)
                   1          |  NR FE                   |  11.9100         |  34.44
```

This sample displays the OTNSec configuration.

```
RP/0/RP0/CPU0:Node-A#show  controllers odu-flEX 0/3/0/7/4 otnsec
Tue Apr 29 13:50:50.360 UTC
Controller Name          : ODU-FLEX 0/3/0/7/4
Source ip                : 10.1.1.1
Destination ip           : 10.1.1.2
Session id               : 60
IKEv2 profile            : profile_all_0_3
Session State            : SECURED

Otnsec policy name       : otnsec_policy_all_0_3
  cipher-suite           : AES-GCM-256
  security-policy        : Must Secure
  sak-rekey-interval     : 28800
Time to rekey            : 28117
Time to Expire           : 1283445

Programming Status       :
  Inbound SA(Rx)         :
    AN[1]                :
        SPI              : 0x3c01
  Outbound SA(Tx)        :
    AN[1]                :
        SPI              : 0x3c01
```

show environment

To display environmental monitor parameters for the system, including fans, power supply voltage, current information, temperatures, and altitude, use the **show environment** command.

show environment [**all** | **altitude** | **current** | **fan** | **power** | **voltages** [**location** | *location*] | **temperature** [**location** | *location*]]

Syntax Description

all	Displays information for all the environmental monitor parameters.
altitude	Displays information about the altitude.
current	Displays current sensor information.
fan	Displays information about the fans.
power	Displays power supply voltage and current information.
temperature	Displays system temperature information.
voltages	Displays system voltage information.
location	Enter the location for which the environmental information needs to be displayed.

Command Default

All environmental monitor parameters are displayed.

Command Modes

IOS XR EXEC

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

None

Example

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

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

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

The following example shows sample output from the **show environment** command with the **temperature** keyword:

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

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

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

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

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

              80       85       90
          RP_TEMP_HOT_SPOT                     38      -10       -5        0

              80       85       90
          RP_TEMP_LTM4638_0                    38      -10       -5        0

              85       90       95
          RP_TEMP_LTM4644_0                    37      -10       -5        0

              85       90       95
          RP_TEMP_LTM4644_1                    38      -10       -5        0

              85       90       95
          RP_TEMP_LTM4638_1                    37      -10       -5        0

              80       90       95
          RP_TEMP_LTM4644_2                    38      -10       -5        0

              85       90       95
          RP_TEMP_LTM4638_2                    38      -10       -5        0

              80       90       95
          TEMP_CPU_DIE                         39      -10       -5        0

              80       85       90
          TEMP_DDR_DIMM                        39      -10       -5        0

              80       85       90
          TEMP_CPU_SSD                         48      -10       -5        0

              70       75       80
          TEMP_EITU_SSD                        39      -10       -5        0

              70       75       80
```

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

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

```
   Total power input                               :     741W
   Total power output                              :     653W

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

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

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

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

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

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

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

```
          RP_ADM1266_2V5_FPGA                 2505     2330     2430     2580     2680
          RP_ADM1266_1V2_FPGA                 1196     1120     1160     1240     1280
          RP_ADM1266_3V3_CPU                  3332     3070     3200     3400     3530
          RP_ADM1266_2V5_CPU                  2498     2330     2430     2580     2680
```

The following example shows a sample output of the **show environment current** command:

```
RP/0/RP0/CPU0:ios#show environment current
=============================================================================================================
Location  CURRENT                                Value
          Sensor                                 (mA)
-------------------------------------------------------------------------------------------------------------
0/RP0/CPU0
          RP_JMAC_1V0_VCCP_IMON                    0
          RP_JMAC_1V0_VNN_IMON                    93
          RP_JMAC_1V0_VCC_RAM_IMON                 0
          RP_JMAC_1V2_DDR_VDDQ_IMON              156
          RP_CURRMON_LTM4638_0                   345
          RP_CURRMON_LTM4644_0                   145
          RP_CURRMON_LTM4644_1                   250
          RP_CURRMON_LTM4638_1                   199
          RP_CURRMON_DB                          455
0/0/NXR0
          IMON_CLI                              2979
          IMON_CTLPL                             974
          IMON_MODULE                          11270
          IMON_CDR                              3357
          SA_ADM1275_12V_IMON_LC               18624
0/1/NXR0
          IMON_CTLPL                             887
          IMON_CLI                              4587
          IMON_META0_IN0                         807
          IMON_META0_CORE_IOUT0                 5648
          IMON_META0_CORE_IOUT1                 4570
          IMON_META0_IN2                         669
          IMON_META0_CORE_IOUT2                 3726
          IMON_META0_AVD_IOUT                   5085
          IMON_META1_IN0                         326
          IMON_META1_CORE_IOUT0                 2566
          IMON_META1_CORE_IOUT1                 1578
          IMON_META1_IN2                         650
          IMON_META1_CORE_IOUT2                 3718
          IMON_META1_AVD_IOUT                   4593
          SA_ADM1275_12V_IMON_LC                9433
0/2/NXR0
          IMON_OPTM                              867
          IMON_CTLPL                             512
          SA_ADM1275_12V_IMON_LC                1209
0/3/NXR0
          IMON_CLI                              2867
          IMON_CTLPL                            1017
          IMON_MODULE                          11153
          IMON_CDR                              3457
          SA_ADM1275_12V_IMON_LC               17582
0/Rack
          SA_ADM1275_12V_IMON_CPU               1843
 --More--
```

The following example shows sample output from the **show environment** command with the **altitude** keyword:

```
RP/0/RP0/CPU0:ios#sh environment altitude
Location     Altitude Value (Meters)    Source
0                  0                    config
RP/0/RP0/CPU0:ios#
```

show fpd package

To determine the FPDs that are supported with the current software release and the minimum hardware requirements for each FPD, use the **show fpd package** command.

show fpd package

Syntax Description

This command has no keywords or arguments.

Command Default

Firmware information of all the hardware components are displayed.

Command Modes

Cisco IOS XR EXEC

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

None

Example

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

```
RP/0/RP0/CPU0:Node164#show fpd package
Wed Jul 17 11:44:07.258 IST

================================ ================================================
                                        Field Programmable Device Package
                                 ================================================
                                                 Req     SW      Min Req   Min Req
Card Type            FPD Description             Reload  Ver     SW Ver  Board Ver
================== ========================== ====== ======= ======== =========
--------------------------------------------------------------------------------
NCS1014              ADM-CHASSIS                 NO      0.21      0.21      0.0
                     IoFpga                      NO      1.19      1.19      0.0
                     IoFpgaGolden                NO      1.05      1.05      0.0
                     SsdIntelSC2KB               YES     1.20      1.20      0.0
                     SsdMicron5400               YES     0.02      0.02      0.0
--------------------------------------------------------------------------------
NCS1K-MD-32E-C       MD-32-ACC                   NO      2.18      2.18      0.0
                     MD-32-NEO                   NO      2.02      2.02      0.0
--------------------------------------------------------------------------------
NCS1K-MD-32E-CE      MD-32-ACC                   NO      1.04      1.04      0.0
                     MD-32-LUM                   NO      2.12      2.12      0.0
--------------------------------------------------------------------------------
NCS1K-MD-32O-C       MD-32-ACC                   NO      2.18      2.18      0.0
                     MD-32-NEO                   NO      2.02      2.02      0.0
--------------------------------------------------------------------------------
NCS1K-MD-32O-CE      MD-32-ACC                   NO      1.04      1.04      0.0
                     MD-32-LUM                   NO      2.12      2.12      0.0
--------------------------------------------------------------------------------
NCS1K14-2.4T-K9      CIMFw                       NO    180.13019 180.13019   0.0
                     CpuModFw                    NO     43.27     43.27      0.0
--------------------------------------------------------------------------------
```

```
NCS1K14-2.4T-L-K9    CIMFw                    NO    180.13019 180.13019   0.0
                     CpuModFw                 NO     43.27     43.27      0.0
--------------------------------------------------------------------------------
NCS1K14-2.4T-X-K9    CIMFw                    NO    180.13019 180.13019   0.0
                     CpuModFw                 NO     43.27     43.27      0.0
--------------------------------------------------------------------------------
NCS1K14-2.4TXL-K9    CIMFw                    NO    180.13019 180.13019   0.0
                     CpuModFw                 NO     43.27     43.27      0.0
--------------------------------------------------------------------------------
NCS1K14-CCMD-16-C    CpuModFw                 NO     43.26     43.26      0.0
                     OptModFw                 NO     20.02     20.02      0.0
--------------------------------------------------------------------------------
NCS1K14-CCMD-16-L    CpuModFw                 NO     43.26     43.26      0.0
                     OptModFw                 NO     20.02     20.02      0.0
--------------------------------------------------------------------------------
NCS1K14-CNTLR-K9     ADM-DB                   NO      2.10      2.10      0.2
                     ADM-MB                   NO      2.30      2.30      0.2
                     BIOS                     YES     4.80      4.80      0.0
                     BIOS-Golden              YES     4.70      0.01      0.0
```

show hw-module

To display the muxponder slice and firmware information of various hardware components of NCS 1014, use the **show hw-module** command.

show hw-module fpd [*fpd-name*]
show hw-module location *location* { **mxponder-slice** *mxponder-slice-number* }

Syntax Description

fpd-name	Name of the FPD.
location *location*	Specifies the location of the optics controller.
mxponder-slice *mxponder-slice-number*	Displays information for a specific slice of the muxponder. The valid values of *slicenumber* are 0 and 1.

Command Default

NONE

Command Modes

Cisco IOS XR EXEC

Command History

Release	Modification
Release 7.11.1	This command was introduced.

Usage Guidelines

None

Example

The following example shows sample output from the **show hw-module fpd** command.

```
RP/0/RP0/CPU0:ios#show hw-module fpd
Wed Nov 15 19:29:37.061 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 NCS1K14-CNTLR-K9  0.2   ADM-DB             CURRENT    2.10  2.10    NOT REQ
0/RP0/CPU0 NCS1K14-CNTLR-K9  0.2   ADM-MB             CURRENT    2.30  2.30    NOT REQ
0/RP0/CPU0 NCS1K14-CNTLR-K9  0.2   BIOS S             CURRENT    4.70  4.70    0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9  0.2   BIOS-Golden      BS CURRENT          4.70    0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9  0.2   CpuFpga           S CURRENT    1.09  1.09    0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9  0.2   CpuFpgaGolden    BS CURRENT          1.09    0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9  0.2   SsdMicron5300     S CURRENT    0.01  0.01    0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9  0.2   TamFw             S CURRENT    9.04  9.04    0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9  0.2   TamFwGolden      BS CURRENT          9.04    0/RP0
0/PM0      NCS1K4-AC-PSU     0.1   PO-PriMCU          CURRENT    2.04  2.04    NOT REQ
0/PM0      NCS1K4-AC-PSU     0.1   PO-SecMCU          CURRENT    2.06  2.06    NOT REQ
0/PM1      NCS1K4-AC-PSU     0.1   PO-PriMCU          CURRENT    2.04  2.04    NOT REQ
0/PM1      NCS1K4-AC-PSU     0.1   PO-SecMCU          CURRENT    2.06  2.06    NOT REQ
0/0/NXR0   NCS1K4-1.2T-K9    0.1   CpuModFw           CURRENT   234.10 234.10  NOT REQ
0/0/NXR0   NCS1K4-1.2T-K9    0.1   OptModFw           CURRENT    1.38  1.38    NOT REQ
0/1/NXR0   NCS1K14-2.4T-K9   0.1   CpuModFw           CURRENT   234.10 234.10  NOT REQ
0/2/NXR0   NCS1K14-CCMD-16-C 0.1   CpuModFw           CURRENT   234.10 234.10  NOT REQ
0/2/NXR0   NCS1K14-CCMD-16-C 0.1   OptModFw           CURRENT     1.38 1.38    NOT REQ
0/3/NXR0   NCS1K4-1.2T-K9    0.1   CpuModFw           CURRENT   234.10 234.10  NOT REQ
0/3/NXR0   NCS1K4-1.2T-K9    0.1   OptModFw           CURRENT     1.38 1.38    NOT REQ
0/Rack     NCS1014           0.1   ADM-CHASSIS          CURRENT     0.21 0.21    NOT REQ
0/Rack     NCS1014           0.1   IoFpga             CURRENT     1.10 1.10    NOT REQ
0/Rack     NCS1014           0.1   IoFpgaGolden     BS CURRENT          1.05    NOT REQ
0/Rack     NCS1014           0.1   SsdIntelSC2KB     S CURRENT     1.20 1.20    0/Rack
```

The following is a sample to verify the 800G muxponder mode with 400GE client rate configured on slice 1:

```
RP/0/RP0/CPU0:ios#show hw-module location 0/1/NXR0 mxponder-slice 1
Thu Nov 16 14:50:32.407 UTC

Location:             0/1/NXR0
Slice ID:             1
Client Bitrate:       400GE
Trunk  Bitrate:       800G
Status:               Provisioned
LLDP Drop Enabled:    FALSE
ARP Snoop Enabled:    FALSE
Client Port                     Mapper/Trunk Port          CoherentDSP0/1/0/7
                                Traffic Split Percentage

FourHundredGigECtrlr0/1/0/4     ODU-FLEX0/1/0/7/4                             100
FourHundredGigECtrlr0/1/0/5     ODU-FLEX0/1/0/7/5                             100
```

The following is a sample to verify the 1000G muxponder mode with mixed client rate configured on slice 0:

```
RP/0/RP0/CPU0:ios#show hw-module location 0/1/nXR0 mxponder-slice 0
Thu Nov 16 15:17:14.082 UTC

Location:             0/1/NXR0
Slice ID:             0
Client Bitrate:       MIXED
Trunk  Bitrate:       1000G
Status:               Provisioned
LLDP Drop Enabled:    FALSE
ARP Snoop Enabled:    FALSE
Client Port                     Mapper/Trunk Port          CoherentDSP0/1/0/0
```

```
                                    Traffic Split Percentage

HundredGigECtrlr0/1/0/3/1           ODU-FLEX0/1/0/0/3/1                      100
HundredGigECtrlr0/1/0/3/2           ODU-FLEX0/1/0/0/3/2                      100
FourHundredGigECtrlr0/1/0/1         ODU-FLEX0/1/0/0/1                       100
FourHundredGigECtrlr0/1/0/2         ODU-FLEX0/1/0/0/2                       100
```

show ikev2 session

To display the statistics of an IKEv2 session in thr router, use the **show ikev2 session** command in configuration mode.

show ikev2 session [detail]

Syntax Description

detail	Displays detailed information about the IKEv2 sessions

Command Default

None

Command Modes

Cisco IOS XR Configuration

Command History

Release	Modification
Cisco IOS XR Release 25.2.1	This command was introduced.

Usage Guidelines

None

Examples

This example shows the sample output of the **show ikev2 session** command:

```
RP/0/RP0/CPU0:Node-A#show ikev2 session detail
Tue Apr 29 13:49:08.907 UTC
Session ID : 9
================================================================================
Status : UP-ACTIVE
IKE Count : 1
Child Count : 1
IKE SA ID : 24219
--------------------------------------------------------------------------------
Local : 10.1.1.1/500
Remote : 10.1.1.2/500
Status(Description) : READY (Negotiation done)
Role : Initiator
Fvrf : Default
Encryption/Keysize : AES-GCM/128
PRF/Hash/DH Group : SHA1/None/19
Authentication(Sign/Verify) : RSA/RSA
Life/Active Time(sec) : 86400/732
Session ID : 9
Local SPI : B8F3F6B99303FAEC
Remote SPI : 88942BBDE8EC692C
Local ID : 10.1.1.1
Remote ID : 10.1.1.2
Quantum resistance : Disabled
Child SA
```

```
--------------------------------------------------------------------------------
Local Selector : 10.1.1.1/60 - 10.1.1.1/60
Remote Selector : 10.1.1.2/60 - 10.1.1.2/60
ESP SPI IN/OUT : 0x3c01 / 0x3c01
Encryption : AES-GCM
Keysize : 256
ESP HMAC : None\\\\\
```

show ikev2 summary

To display the IKEv2 session summary of your router, use the **show ikev2 summary** command in configaration mode.

show ikev2 summary

Command Default

Note None

Command Modes Cisco IOS XR Configuration

Command History

Release	Modification
Cisco IOS XR Release 25.2.1	This command was introduced.

Usage Guidelines None

Examples This example shows the sample output of the **show ikev2 summary** command:

show install active summary

To display the summary of the installation in the NCS 1014 platform, use the **show install active summary** command.

show install active summary

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes Administration for Cisco IOS XR

Command History

Release	Modification
Release 7.11.1	This command was introduced.

Usage Guidelines

None.

This example shows you how to use the **show install active summary** command, and the sample output.

```
RP/0/RP0/CPU0:ios#show install active summary
Wed Nov 15 18:20:38.783 UTC
Active Packages: XR: 160 All: 1318
Label: 7.11.1.48I-Weekly
Software Hash: ec69dcceb81c0da69b297aa7de1d00f56b8aef52403c5e0ffe6e5db098bd83b8

Optional Packages                                   Version
--------------------------------------------------- ----------------------------
xr-bgp 7.11.1.48I                                   v1.0.0-1
xr-cdp 7.11.1.48I                                   v1.0.0-1
xr-cosm 7.11.1.48I                                  v1.0.0-1
xr-dt-sit 7.11.1.48I                                v1.0.0-1
xr-eigrp 7.11.1.48I                                 v1.0.0-1
xr-healthcheck 7.11.1.48I                           v1.0.0-1
xr-ipsla 7.11.1.48I                                 v1.0.0-1
xr-is-is 7.11.1.48I                                 v1.0.0-1
xr-k9sec 7.11.1.48I                                 v1.0.0-1
xr-license-util 7.11.1.48I                          v1.0.0-1
xr-lldp 7.11.1.48I                                  v1.0.0-1
xr-mpls-oam 7.11.1.48I                              v1.0.0-1
xr-netsim 7.11.1.48I                                v1.0.0-1
xr-olc 7.11.1.48I                                   v1.0.0-1
xr-ospf 7.11.1.48I                                  v1.0.0-1
xr-perfmgmt 7.11.1.48I                              v1.0.0-1
xr-rip 7.11.1.48I                                   v1.0.0-1
xr-telnet 7.11.1.48I                                v1.0.0-1
xr-tftp 7.11.1.48I                                  v1.0.0-1
xr-track 7.11.1.48I                                 v1.0.0-1
```

show install committed summary

To display the summary committed installation in the NCS 1014 platform, use the **show install committed summary** command.

show install committed summary

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

Administration for Cisco IOS XR

Command History

Release	Modification
Release 7.11.1	This command was introduced.

Usage Guidelines

None.

This example shows you how to use the **show install committed summary** command, and the sample output.

```
RP/0/RP0/CPU0:ios#show install committed summary

Wed Nov 15 18:21:35.919 UTC
Committed Packages: XR: 160 All: 1318
Label: 7.11.1.48I-Weekly
Software Hash: ec69dcceb81c0da69b297aa7de1d00f56b8aef52403c5e0ffe6e5db098bd83b8

Optional Packages                     Version
----------------------------------------------------- ----------------------------
xr-bgp 7.11.1.48I                     v1.0.0-1
xr-cdp 7.11.1.48I                     v1.0.0-1
xr-cosm 7.11.1.48I                    v1.0.0-1
xr-dt-sit 7.11.1.48I                  v1.0.0-1
xr-eigrp 7.11.1.48I                   v1.0.0-1
xr-healthcheck 7.11.1.48I             v1.0.0-1
xr-ipsla 7.11.1.48I                   v1.0.0-1
xr-is-is 7.11.1.48I                   v1.0.0-1
xr-k9sec 7.11.1.48I                   v1.0.0-1
xr-license-util 7.11.1.48I            v1.0.0-1
xr-lldp 7.11.1.48I                    v1.0.0-1
xr-mpls-oam 7.11.1.48I                v1.0.0-1
xr-netsim 7.11.1.48I                  v1.0.0-1
xr-olc 7.11.1.48I                     v1.0.0-1
xr-ospf 7.11.1.48I                    v1.0.0-1
xr-perfmgmt 7.11.1.48I                v1.0.0-1
xr-rip 7.11.1.48I                     v1.0.0-1
xr-telnet 7.11.1.48I                  v1.0.0-1
xr-tftp 7.11.1.48I                    v1.0.0-1
xr-track 7.11.1.48I                   v1.0.0-1

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

show install request

To display the current status of the install operation in the NCS 1014 platform, use the **show install request** command.

show install request

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

Administration for Cisco IOS XR

Command History

Release	Modification
Release 7.11.1	This command was introduced.

Usage Guidelines

None.

This example shows you how to use the **show install request** command, and the sample output.

```
RP/0/RP0/CPU0:ios#show install request
Wed Nov 15 10:00:35.713 UTC
User request: install replace /harddisk:/ncs1010-golden-x86_64-7.11.1.48I-Weekly.iso
Operation ID: 1.1
State:In progress since 2023-11-15 09:50:23 UTC
Current activity:    Package add or other package operation
Next activity:       Apply
Time started:        2023-11-15 09:55:24 UTC
Timeout in:          84m 43s
Locations responded: 0/1
Location          Packaging operation stage Notification Phase Clients responded
----------------- ------------------------- ------------------ ------------------
0/RP0/CPU0        Package operations        None in progress                 N/A
```

show inventory

To retrieve and display the physical inventory information, use the **show inventory** command in XR EXEC or administration EXEC mode.

XR EXEC Mode

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

Administration EXEC Mode

show inventory [**all** | **chassis** | **fan** | **power** | **raw** | **location** *location*]

Syntax Description

all	(Optional) Displays inventory information for all the physical entities.
fan	(Optional) Displays inventory information for the fans.
power	(Optional) Displays inventory information for the power supply.
raw	(Optional) Displays raw information about the chassis for diagnostic purposes.
chassis	(Optional) Displays inventory information for the entire chassis.
location *location*	(Optional) Displays inventory information for a specific node, or for all nodes in the chassis.
word	(Optional) Displays partially qualified location specification.

Command Default

All hardware inventory information is displayed.

Command Modes

XR EXEC

Administration EXEC

Command History

Release	Modification
Release 7.11.1	This command was introduced.

Usage Guidelines

Enter the **show inventory** command with the **raw** keyword to display every RFC 2737 entity installed in NCS 1014, including those without a PID, unique device identifier (UDI), or other physical identification. The **raw** keyword is primarily intended for troubleshooting problems with the **show inventory** command itself.

Example

The following examples show sample output from the **show inventory** command in both EXEC and Administration EXEC modes.

sysadmin-vm:0_RP0# **show inventory**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

show license platform summary

To display the summary of FCM licenses in the NCS 1014 platform, use the **show license platform summary** command.

show license platform summary

Syntax Description

This command has no keywords or arguments.

Command Default None

Command Modes Administration for Cisco IOS XR

Command History

Release	Modification
Release 7.11.1	This command was introduced.

Usage Guidelines None.

This example shows you how to use the **show license platform summary** command, and the sample output.

```
RP/0/RP0/CPU0:ios#show license platform summary
Mon Jul 18 10:50:59.263 UTC
Collection: LAST: Mon Jul 18 2022 10:50:07 UTC
            NEXT: Mon Jul 18 2022 10:52:07 UTC
Reporting:  LAST: Mon Jul 18 2022 10:50:07 UTC
            NEXT: Mon Jul 18 2022 10:52:07 UTC
**********************************IMPORTANT************************************
SIA Status: Out of Compliance(Remaining Grace Period: 89 days, 23 hours)
            Device is in Authorization Expired state.
            SW Upgrade will still be allowed as SIA Grace Period is remaining
*******************************************************************************
                                                                      Count
Feature/Area     Entitlement                                      Last Next
============ ================================================== ==== ====
FCM           NCS1014 - Essentials Tier - Optical Line Terminal R    9    0
FCM           NCS1014 - Essentials Subscription - Optical Line Te    9    0
```

show license status

To display the license usage count, use the **show license usage** command.

show license status

Syntax Description

This command has no keywords or arguments.

Command Default None

Command Modes Administration for Cisco IOS XR

Command History

Release	Modification
Release 7.11.1	This command was introduced.

Usage Guidelines None.

This example shows you how to use the **show license status** command, and the sample output.

```
 RP/0/RP0/CPU0:iso#show license status
Thu Jul 19 15:45:27.137 UTC
Smart Licensing
7
Smart Licensing
Reserve Specific Licenses for NCS 1014
REVIEW DRAFT - CISCO CONFIDENTIAL
Smart Licensing is ENABLED
Utility:
Status: DISABLED
License Reservation is ENABLED
Data Privacy:
Sending Hostname: yes
Callhome hostname privacy: DISABLED
Smart Licensing hostname privacy: DISABLED
Version privacy: DISABLED
Transport:
Type: Transport Off
Registration:
Status: REGISTERED - SPECIFIC LICENSE RESERVATION
Export-Controlled Functionality: ALLOWED
Initial Registration: SUCCEEDED on Jul 19 2022 15:21:24 UTC
License Authorization:
Status: AUTHORIZED - RESERVED on Jul 19 2022 15:21:24 UTC
Export Authorization Key:
Features Authorized:
<none>
Miscellaneous:
Custom Id: <empty>
```

show license usage

To display the license usage count, use the **show license usage** command.

show license usage

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

Administration for Cisco IOS XR

Command History

Release	Modification
Release 7.11.1	This command was introduced.

Usage Guidelines

None.

This example shows you how to use the **show license usage** command, and the sample output.

```
 RP/0/RP0/CPU0:iso#show license usage
Fri Jul 15 08:17:40.048 UTC
License Authorization:
Status: OUT OF COMPLIANCE on Jul 15 2022 07:01:00 UTC
NCS1014 - Essentials - OLT RTU (NCS1014_ESS_OLT_RTU):
```

```
Description: NCS1014 - Essentials Tier - Optical Line Terminal RTU (Per Port)
Count: 32
Version: 1.0
Status: OUT OF COMPLIANCE
Export status: NOT RESTRICTED
NCS1014 - Essentials - OLT SIA (NCS1014_ESS_OLT_SIA):
Description: NCS1014 - Essentials Subscription - Optical Line Terminal - SIA
(Per Port)
Count: 32
Version: 1.0
Status: OUT OF COMPLIANCE
Export status: NOT RESTRICTED
```

show lldp

Use the **show lldp** command to display the global LLDP configuration status and the operational characteristics of the system.

show lldp

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

LLDP configuration

Command History

Release	Modification
Release 7.11.1	This command was introduced.

Usage Guidelines

The **show lldp** command displays the LLDP status and operational characteristics when LLDP is enabled globally on the system using the **lldp** command. The settings for the following commands are displayed:

- **lldp timer**
- **lldp holdtime**
- **lldp reinit**

Task ID

Task ID	Operation
ethernet-services	read, write

Example

The following example shows how to display the default LLDP operational characteristics when LLDP is enabled globally on the system:

```
RP/0/RP0:hostname# show lldp
Wed Dec 13 06:16:45.510 DST
    Global LLDP information:
    Status: ACTIVE
    LLDP advertisements are sent every 30 seconds
    LLDP hold time advertised is 120 seconds
    LLDP interface reinitialisation delay is 2 seconds
```

show lldp interface

Use the **show lldp interface** display LLDP configuration and status information on an interface.

show lldp interface { *type* } { *interface-path-id* }

Syntax Description

type	Specify the interface type.
interface-path-id	Specify the physical interface or virtual interface ID in the rack/slot/module notation. **Note** Use the **show interfaces** command to see a list of all interfaces currently configured on the router.

Command Default

LLDP configuration and status information for all interfaces is displayed.

Command Modes

EXEC mode

Task ID

Task ID	Operation
ethernet-services	read

Example

The following example shows sample output for the **show lldp interface** command:

```
RP/0/RP0/CPU0:regen#show lldp interface
Thu Nov  7 08:45:22.934 UTC


MgmtEth0/RP0/CPU0/0:
        Tx: enabled
        Rx: enabled
        Tx state: IDLE
        Rx state: WAIT FOR FRAME


MgmtEth0/RP0/CPU0/1:
        Tx: enabled
        Rx: enabled
        Tx state: IDLE
        Rx state: WAIT FOR FRAME
```

Table 1: show lldp interface Field Descriptions

Field	Description
Tx:	Configuration status of the interface to transmit LLDP advertisements.
Rx:	Configuration status of the interface to receive LLDP advertisements.
Tx state:	Status of the LLDP transmit process on the interface.
Rx state:	Status of the LLDP receive process on the interface.

show lldp neighbors

Use the **show lldp neighbors** command to display the basic details of the neighbor devices.

show lldp neighbors

Syntax Description

This command has no arguments or keywords.

Command Default

Basic device information for LLDP neighbors is displayed.

Command Modes

EXEC mode

Command History

Release	Modification
Release 7.11.1	This command was introduced.

Task ID

Task ID	Operation
ethernet-services	read

Example

The following example shows sample output for the **show lldp neighbors** command:

```
RP/0/RP0:ios#show lldp neighbors
Capability codes:
    (R) Router, (B) Bridge, (T) Telephone, (C) DOCSIS Cable Device
    (W) WLAN Access Point, (P) Repeater, (S) Station, (O) Other

    Device ID      Local Intf         Hold-time     Capability         Port ID
    R1         TenGigECtrlr0/5/0/4/1     150            R        TenGigECtrlr0/5/0/4/1
    Total entries displayed: 1
```

Table 2: show lldp neighbor Field Descriptions

Field	Description
Device ID	Name of the neighbor device.
Local Interface	Displays the interface on which the LLDP packet is received.
Hold Time	Time (in seconds) that the local device will hold the LLDP advertisement from a sending device before discarding it.
Capability	Name of the system capability advertised by the neighbor. Capabilities are represented in a bitmap that defines the system's primary functions.
Port ID	Displays the Port identifier that identifies the port component of the endpoint identifier associated with the transmitting LLDP agent.

show lldp neighbors detail

Use the **show lldp neighbors detail** command to display the neighbor devices details such as system description, name, and capabilities.

show lldp neighbors detail

Syntax Description

This command has no arguments or keywords.

Command Default

Detailed device information for LLDP neighbors is displayed.

Command Modes

EXEC mode

Command History

Release	Modification
Release 7.11.1	This command was introduced.

Task ID

Task ID	Operation
ethernet-services	read

Example

The following example shows sample output for the **show lldp neighbors detail** command:

```
RP/0/RP0:ios#show lldp neighbors detail
Capability codes:
```

```
(R) Router, (B) Bridge, (T) Telephone, (C) DOCSIS Cable Device
(W) WLAN Access Point, (P) Repeater, (S) Station, (O) Other
------------------------------------------------
Local Interface: TenGigECtrlr0/5/0/4/1
Chassis id: 22 33
Port id:
Port Description - not advertised
System Name - not advertised
System Description - not advertised
Time remaining: 16 seconds
Hold Time: 17 seconds
System Capabilities: N/A
Enabled Capabilities: N/A
Management Addresses - not advertised
Peer MAC Address: 10:02:03:04:05:06
Total entries displayed: 1
```

Table 3: show lldp neighbor details Field Descriptions

Field	Description
Local Interface	Displays the interface on which the LLDP packet is received.
Chassis id	Displays the chassis component of the endpoint identifier associated with the transmitting LLDP agent.
Port id	Displays the port ID that identifies the port component of the endpoint identifier associated with the transmitting LLDP agent.
Port Description	Displays the description of the port associated with the interface on which the LLDP agent is transmitting.
System Name	Displays the system's administratively assigned name.
System Description	Displays the description of the network entity.
Time remaining	Displays the remaining time.
Hold Time	Displays the time or duration in seconds that an LLDP device maintains the neighbor information before discarding.
System Capabilities	Displays a bit-map of the capabilities that define the primary functions of the system. A system may advertise more than one capability.
Enabled Capabilities	Indicates whether the corresponding system capability is enabled on the neighbor.
Management Addresses	Displays a network address of the remote device.
Peer MAC Address	Displays the source MAC address in the received LLDP packet.

show ntp associations

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

show ntp associations [**detail**] [**location** *node-id*]

Syntax Description

detail	(Optional) Displays detailed information about each NTP association.
location *node-id*	(Optional) Displays the status of NTP associations from the designated node. The *node-id* argument is entered in the *rack/slot* notation.

Command Default

None

Command Modes

EXEC

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

Output for the **show ntp associations** command is displayed only if NTP is configured.

Task ID

Task ID	Operations
ip-services	read

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

```
RP/0/RP0/CPU0:ios#show ntp associations
Sun Nov 5 15:14:44.128 UTC

address ref clock st when poll reach delay offset disp
*~203.0.113.51 10.64.58.50 2 81 128 377 1.84 7.802 2.129
* sys_peer, # selected, + candidate, - outlayer, x falseticker, ~ configured
```

Table 4: show ntp associations Field Descriptions

Field	Description
*	Peer has been declared the system peer and lends its variables to the system variables.

Field	Description
#	A pound sign (#) displayed next to a configured peer indicates that the router does not synchronize with the peer even though NTP request and response packets are exchanged. In this case, check the output of the **show ntp associations detail** command or the NTP debugs to see why the clocks are not synchronized. Use the **show ntp associations detail** and **show ntp status** commands to obtain additional information about the state of NTP. One possible reason for the # sign is that the NTP client clock differs by more than 4000 seconds from the NTP server clock. On Cisco routers, a time difference of greater than 4000 seconds is considered out of range and prevents the router from synchronization to the server. This does not apply when you first configure an NTP peer on a Cisco router or on reload. In this case, the NTP client clock is changed to match the NTP server clock. Verify the time zone of the client clock; local time is displayed, but time values in NTP messages are in UTC (GMT) time zone. You can manually change the client clock to within a few minutes of the NTP server clock.
+	Peer is a survivor and a candidate for the combining algorithm.
-	Peer is discarded by the clustering algorithm as an outlier.
x	Peer is discarded by the intersection algorithm as a falseticker.
~	Indicates peer is statically configured.
address	IPv4 or IPv6 address of the peer. If a nondefault VRF is configured for the peer, the VRF follows the address.
ref clock	Reference clock type or address for the peer.
st	Stratum setting for the peer.
when	Time since last NTP packet was received from peer, in milliseconds.
poll	Polling interval between NTP poll packets, in seconds. As the NTP server and client are better synced (and there are no dropped packets), this number increases to a maximum of 1024.
reach	Peer reachability (bit string, in octal). The reach field is a circular bit buffer. It gives you the status of the last eight NTP messages (eight bits in octal is 377, so you want to see a reach field value of 377). If an NTP response packet is lost, the lost packet is tracked over the next eight NTP update intervals in the reach field.
delay	Round-trip delay to peer, in milliseconds.

Field	Description
offset	Relative time difference between the client time and server time, in milliseconds. The client slows down or speeds up its clock to match the server time value. The offset decreases toward zero over time. It likely never reaches zero since the packet delay between the client and server is never exactly the same. Therefore, the client NTP cannot ever exactly match its clock with the server. If there is an asterisk (*) next to a configured peer, then you are syncronized to this peer and use them as the primary clock.
disp	Dispersion.

This example shows sample output from the **show ntp associations** command with the **detail** keyword:

```
RP/0/RP0/CPU0:ios#show ntp associations detail
Sun Nov 5 15:14:48.763 UTC

203.0.113.51 configured, our_master, stratum 2
ref ID 10.64.58.50, time E8F22BB9.79D4A841 (14:56:57.475 UTC Sun Nov 5 2023)
our mode client, peer mode server, our poll intvl 128, peer poll intvl 128
root delay 0.6866 msec, root disp 1.04, reach 377, sync dist 6.2590
delay 1.84 msec, offset 7.802 msec, dispersion 2.129
precision 2**23, version 4
org time E8F22F92.B647E8FC (15:13:22.712 UTC Sun Nov 5 2023)
rcv time E8F22F92.B88F303C (15:13:22.720 UTC Sun Nov 5 2023)
xmt time E8F22F92.B88F303C (15:13:22.720 UTC Sun Nov 5 2023)
filtdelay = 1.844 1.772 1.983 1.954 1.945 2.000 1.902 1.778
filtoffset = 7.857 7.802 8.065 8.063 8.332 8.397 8.664 8.684
filterror = 0.000 0.060 1.995 2.055 4.050 4.110 6.060 6.120
```

Table 5: show ntp associations detail Field Descriptions

Field	Descriptions
vrf	Nondefault VRF, if specified for this peer.
configured	Statically configured peer.
dynamic	Dynamically discovered peer.
our_master	Synchronization of the local machine to this peer.
sane	Passing of basic sanity checks by this peer.
ref ID	Address of machine to which the peer is synchronized.
time	Last time stamp that the peer received from its master.
our mode	`Mode relative to peer (active/passive/client/server/bdcast/bdcast client).`
peer mode	Mode of peer relative.
our poll intvl	Poll interval to peer.

Field	Descriptions
peer poll intvl	Poll interval of interval.
root delay	Delay along path to root (ultimate stratum 1 time source).
root disp	Dispersion of path to root.
reach	Peer reachability (bit string in octal).
sync dist	Peer synchronization distance.
delay	Round-trip delay to peer.
offset	Offset of peer clock relative to this clock.
dispersion	Dispersion of peer clock.
precision	Precision of peer clock in (Hertz) Hz.
version	NTP version number that peer is using.
org time	Originate time stamp.
rcv time	Receive time stamp.
xmt time	Transmit time stamp.
filtdelay	Round-trip delay of each sample, in milliseconds.
filtoffset	Clock offset of each sample, in milliseconds.
filterror	Approximate error of each sample.

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
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

None

Task ID

Task ID	Operations
ip-services	read

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

```
RP/0/RP0/CPU0:ios#show ntp status
Sun Nov 5 15:14:36.949 UTC

Clock is synchronized, stratum 3, reference is 203.0.113..51
nominal freq is 1000000000.0000 Hz, actual freq is 44881851.3383 Hz, precision is 2**24
reference time is E8F22D7A.AB020D97 (15:04:26.668 UTC Sun Nov 5 2023)
clock offset is 9.690 msec, root delay is 2.553 msec
root dispersion is 24.15 msec, peer dispersion is 2.13 msec
loopfilter state is 'CTRL' (Normal Controlled Loop), drift is 0.0000212807 s/s
system poll interval is 128, last update was 610 sec ago
authenticate is disabled, panic handling is disabled,
hostname resolution retry interval is 1440 minutes.
```

Table 6: 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.
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.

Field	Description
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 platform

To display information and status for each node in the network, use the **show platform** command.

show platform

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

IOS XR EXEC

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

None

Example

To view the information of the node, use the following command:

```
RP/0/RP0/CPU0:ios#show platform
Fri Sep 22 06:56:28.653 UTC
Node              Type                      State                 Config state
--------------------------------------------------------------------------------
0/RP0/CPU0        NCS1K14-CNTLR-K9(Active)  IOS XR RUN            NSHUT,NMON
0/PM0             NCS1K4-AC-PSU             OPERATIONAL           NSHUT,NMON
0/FT0             NCS1K14-FAN               OPERATIONAL           NSHUT,NMON
0/FT1             NCS1K14-FAN               OPERATIONAL           NSHUT,NMON
0/FT2             NCS1K14-FAN               OPERATIONAL           NSHUT,NMON
0/0/NXR0          NCS1K14-CCMD-16-L         OPERATIONAL           NSHUT,NMON
0/2/NXR0          NCS1K14-CCMD-16-C         OPERATIONAL           NSHUT,NMON
0/3/NXR0          NCS1K14-CCMD-16-C         OPERATIONAL           NSHUT,NMON
```

show route ipv4

To display status and configuration information about the routes of a psecific IPv4 address, use the **show route ipv4** command.

show route ipv4

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

Administration for Cisco IOS XR

Command History

Release	Modification
Release 7.11.1	This command was introduced.

Usage Guidelines

None.

This example shows you how to use the **show route ipv4**command, and the sample output.

```
P/0/RP0/CPU0:BGP_ROUTER_HOP1#show route ipv4
Fri Apr 21 07:16:58.381 UTC

Codes: C - connected, S - static, R - RIP, B - BGP, (>) - Diversion path
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - ISIS, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, su - IS-IS summary null, * - candidate default
       U - per-user static route, o - ODR, L - local, G  - DAGR, l - LISP
       A - access/subscriber, a - Application route
       M - mobile route, r - RPL, t - Traffic Engineering, (!) - FRR Backup path

Gateway of last resort is 203.0.113.1 to network 0.0.0.0

S*   209.165.200.225/27 [1/0] via 203.0.113.1, 1d00h
B    209.165.200.227/27 [200/0] via 203.0.113.8, 17:14:55
L    209.165.200.232/27 is directly connected, 1d17h, Loopback1
C    209.165.201.1/27 is directly connected, 1d15h, MgmtEth0/RP0/CPU0/2
L    209.165.201.4/27 is directly connected, 1d15h, MgmtEth0/RP0/CPU0/2
B    209.165.201.10/27 [200/2] via 203.0.113.8, 17:14:51
C    209.165.202.130/27 is directly connected, 1d00h, MgmtEth0/RP0/CPU0/1
L    209.165.202.134/27 is directly connected, 1d00h, MgmtEth0/RP0/CPU0/1
B    209.165.202.141/27 [200/0] via 209.165.202.133, 1d00h
C    203.0.113.0/16 is directly connected, 1d17h, MgmtEth0/RP0/CPU0/0
L    203.0.113.104/32 is directly connected, 1d17h, MgmtEth0/RP0/CPU0/0
```

show running-config lldp

Use the **show running-config lldp** command to display the LLDP configuration details.

show running-config lldp

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes LLDP configuration

Command History

Release	Modification
Release 7.11.1	This command was introduced.

Example

The following example shows how to display the LLDP configuration using the `show running-config lldp` command:

```
RP/0/RP0/CPU0:regen#show running-config lldp
Tue Dec 10 10:36:11.567 UTC
lldp
timer 30
reinit 2
holdtime 120
management enable
```

show tcp dump-file

To display the details of the PCB state from a dump file, use the **show tcp dump-file** command in in EXEC mode.

show tcp dump-file { *dump-file-name* | | **all** | | **list** | { *ipv4-address-of-dumpfiles* | *ipv6-address-of-dumpfiles* | | **all** } } { **location** *node-id* }

Syntax Description

all	Displays all connections information.
location *node-id*	Displays RAW statistics for the designated node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default No default behavior or values

Command Modes EXEC

Command History

Release	Modification
Release R24.2.1	This command was introduced.

Usage Guidelines The basic use of this command is to provide information about the list of all TCP dump files, details of any specific or all TCP dumpfile file. You can also use this command for debugging purpose or to monitor the flow of TCP packets for a TCP connection.

Task ID

Task ID	Operations
transport	read

Examples

The following is sample output from the **show tcp dumpfile all location 0/RP0/CPU0** command:

```
RP/0/RP0/CPU0:ios# show tcp dumpfile list all location 0/RP0/CPU0

total 4
-rw-r--r-- 1 rpathark eng 3884 May 11 20:16 80_80_80_80.26355.179.cl.15892
```

show interface MgmtEth

To display the list of all interfaces currently configured for the system, use the **show interfaces MgmtEth** command.

show interface MgmtEth

Syntax Description

This command has no keywords or arguments.

Command Default

No default behavior or values

Command Modes

IOS XR EXEC

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

None

Examples

The following example shows interfaces currently configured for the system :

```
RP/0/RP0/CPU0:ios#show interfaces MgmtEth 0/RP0/CPU0/0
MgmtEth0/RP0/CPU0/0 is up, line protocol is up
  Interface state transitions: 3
  Hardware is Management Ethernet, address is 4014.82ba.d26e (bia 4014.82ba.d26e)
  Internet address is 10.105.57.37/25
  MTU 1514 bytes, BW 1000000 Kbit (Max: 1000000 Kbit)
     reliability 255/255, txload 0/255, rxload 0/255
  Encapsulation ARPA,
  Full-duplex, 1000Mb/s, CX, link type is autonegotiation
  loopback not set,
  Last link flapped 00:09:12
  ARP type ARPA, ARP timeout 04:00:00
  Last input 00:00:00, output 00:00:00
  Last clearing of "show interface" counters never
  5 minute input rate 1000 bits/sec, 2 packets/sec
  5 minute output rate 5000 bits/sec, 1 packets/sec
     6715 packets input, 640515 bytes, 0 total input drops
     0 drops for unrecognized upper-level protocol
     Received 2213 broadcast packets, 4430 multicast packets
              0 runts, 0 giants, 0 throttles, 0 parity
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     944 packets output, 355004 bytes, 0 total output drops
     Output 94 broadcast packets, 114 multicast packets
     0 output errors, 0 underruns, 0 applique, 0 resets
```

```
     0 output buffer failures, 0 output buffers swapped out
     3 carrier transitions
```

show version

To display the software version and details such as system uptime, use the **show version** command.

show version

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

Cisco IOS XR

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

None

Example

The following example shows a sample output from the **show version** command.

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

Build Information:
 Built By     : sajshah
 Built On     : Sun Nov 19 20:31:06 UTC 2023
 Build Host   : iox-ucs-077
 Workspace    :
/auto/ioxdepot6/GISO/giso_build_lindt/giso_eng_create/yshivapp_2023-11-20_04-28-49_UTC
 Version      : 7.11.1.49I
 Label        : 7.11.1.49I-Weekly

cisco NCS1010 (C3758R @ 2.40GHz)
cisco NCS1014 (C3758R @ 2.40GHz) processor with 32GB of memory
KEPLER_PF6 uptime is 1 hour, 40 minutes
NCS 1014 - Chassis
```

tcp dump-file convert

Use the **tcp dump-file convert** command in EXEC mode to convert the TCP dump packet traces files to other readable formats such as pcap, text, or both.

tcp dump-file convert { *pcap* | *text* | *all-formats* } { *all* | *binary_file_name* | *ipaddress* } **location** { *node-id* } **file** { *absolute file path* }

Syntax Description

pcap	Converts TCP dump packet files to packet capture (pcap) format.
text	Converts TCP dump packet traces files to text format.
all-format	Converts TCP dump packet traces files to both pcap and text format.
all	Collects TCP dump file data from all peers and nodes.
binary_file_name	Specifies the name of the dump file to be converted.
ipaddress	Specifies the IP address of the peer node.
location {*node-id*}	(Optional) Specifies the node to store the converted TCP dump file. The *node-id* is entered in the *rack/slot/module* notation, for example **location** *0/RP0/CPU0*. By default, the files are stored in the current node where the CLI command is executed.
file {*absolute file path* }	(Optional) Specifies the absolute file path where you want to store the converted TCP dump files. The file path is entertered in the *node/filename* notation, for example */harddisk:/demo1*. By default, the converted files are stored inside the file "decoded_dumpfiles" in the current node where the CLI command is executed or if you have provided the location the files are stored in that location.

Command Default

By default, the converted files are stored inside the *decoded_dumpfiles* file.

Command Modes

EXEC

Command History

Release	Modification
Release R24.2.1	This command was introduced.

Usage Guidelines

Use this command to convert TCP dump packet traces files into text, pcap, or both readable formats.

Examples

The following example shows how to convert TCP packet traces files into text and pcap readable formats:

```
RP/0/RP0/CPU0:ios# tcp dump-file convert all-formats all
ascii file is saved at :
/harddisk:/decoded_dumpfiles/text_tcpdump_peer_all_node0_RP0_CPU0_2024_3_19_10_8_53.462070.txt
pcap file is saved at :
/harddisk:/decoded_dumpfiles/pcap_tcpdump_peer_all_node0_RP0_CPU0_2024_3_19_10_8_40.154838.pcap
[OK]
```

The following example shows how to filter TCP dump packet traces by IP address and convert them into text and pcap readable format:

```
RP/0/RP0/CPU0:ios# tcp dump-file convert all-formats ipaddress 192.0.2.121
ascii file is saved at :
/harddisk:/decoded_dumpfiles/text_tcpdump_peer_1_1_1_2_node0_RSP0_CPU0_2024_3_19_10_9_20.539021.txt
pcap file is saved at :
/harddisk:/decoded_dumpfiles/pcap_tcpdump_peer_1_1_1_2_node0_RSP0_CPU0_2024_3_19_10_9_20.539021.pcap
[OK]
```

The following example specifies a location where you want to store the converted TCP dump file:

```
RP/0/RP0/CPU0:ios# tcp dump-file convert all-formats all location 0/RP0/CPU0
ascii file is saved at :
/harddisk:/decoded_dumpfiles/text_tcpdump_peer_all_node0_RP0_CPU0_2024_3_19_12_53_35.12323.txt
pcap file is saved at :
/harddisk:/decoded_dumpfiles/pcap_tcpdump_peer_all_node0_RP0_CPU0_2024_3_19_12_53_35.12323.pcap
[OK]
```

The following example specifies the absolute file path where you want to store the converted TCP dump files:

```
RP/0/RP0/CPU0:ios# tcp dump-file convert text all file /harddisk:/demo2
ascii file is saved at : /harddisk:/demo2.txt
[OK]
```

tone-pattern-detect controller

Use the **tone-pattern-detect controller** command to start or stop detecting the tone pattern that is initiated from the OTS controller.

tone-pattern-detect controller *controllertype R/S/I/P* [**start** | **stop**]

Syntax Description

tone-pattern-detect controller	Use this parameter to stop or start the tone-pattern detect operation in a particular controller.
controllertype R/S/I/P	Rack/Slot/Instance/Port of the controller.
start	Use this parameter to start the tone-pattern detect operation in a particular controller.
stop	Use this parameter to stop the tone-pattern detect operation in a particular controller.

Command Default

None

Command Modes

controller configuration mode

Command History

Release	Modification
Cisco IOS XR Release 7.11.1	This command was introduced.

Usage Guidelines

None

Example

The following is a sample configuration of the **tone-pattern-detect controller** command that starts the tone pattern detection on the OMS controller.

```
RP/0/RP0/CPU0:ios#tone-pattern-detect controller oms 0/1/0/0 start
Wed May 25 12:00:03.271 UTC
Tone pattern detect started
```

The following is a sample configuration of the **tone-pattern-detect controller** command that stops the tone pattern detection on the OMS controller.

```
RP/0/RP0/CPU0:ios#tone-pattern-detect controller oms 0/1/0/0 stop
Wed May 25 12:00:03.271 UTC
Tone pattern detect started
```

ztp clean

To remove all Zero Touch Provisioning (ZTP) logs and settings that are saved on the node, use the **ztp clean** command in EXEC mode.

ztp clean

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

Cisco IOS XR Configuration

Command History

Release	Modification
Release 7.11.1	This command was introduced.

Usage Guidelines

None

To remove all the ZTP logs and saved settings, use the following command:

```
RP/0/RP0/CPU0:ios#ztp clean
Fri Sep 15 17:12:33.477 IST
This would remove all ZTP temporary files.
Would you like to proceed? [no]: yes
All ZTP operation files have been removed.
ZTP logs are present in /var/log/ztp*.log for logrotate.
Please remove manually if needed.
If you now wish ZTP to run again from boot, do 'conf t/commit replace' followed by reload.
RP/0/RP0/CPU0:ios#
```

ztp initiate

To invoke a new ZTP DHCP session, use the **ztp initiate** command in EXEC mode. Logs can be found in **/disk0:/ztp/ztp.log**.

ztp initiate

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes Cisco IOS XR Configuration

Command History

Release	Modification
Release 7.11.1	This command was introduced.

Usage Guidelines None

Example

To initiate the ZTP, use the following command:

```
RP/0/RP0/CPU0:ios#ztp initiate
Fri Sep 15 17:13:28.580 IST
Inititaing ZTP may change your configuration.
Interfaces might be brought up if they are in shutdown state
Would you like to proceed? [no]: yes
ZTP will now run in the background.
Please use "show logging" or look at /var/log/ztp.log to check progress.
RP/0/RP0/CPU0:ios#
```

ztp terminate

To terminate all existing Zero Touch Provisioning (ZTP) processes, use the **ztp terminate** command in EXEC mode.

ztp terminate

Syntax Description

This command has no keywords or arguments.

Command Default None

Command Modes Cisco IOS XR Configuration

Command History

Release	Modification
Release 7.11.1	This command was introduced.

Usage Guidelines None

Example

To terminate the ZTP process, use the following command:

```
RP/0/RP0/CPU0:ios#ztp terminate
Fri Sep 15 17:15:04.592 IST
This would terminate active ZTP session if any (this may leave your system in a partially
configured state)
Would you like to proceed? [no]: yes
```

```
Terminating ZTP
RP/0/RP0/CPU0:ios#
```