

Programmability Command Reference, Cisco IOS XE Gibraltar 16.10.x

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boot ipxe

To configure iPXE boot, use the **boot ipxe** command in global configuration mode. To disable the configuration, use the **no** form of this command.

boot ipxe {**forever** | **timeout** *seconds*} **switch** *switch-number*
no boot ipxe {**forever** | **timeout** *seconds*} **switch** *switch-number*

Syntax Description

forever	Attempts iPXE boot forever.
timeout *seconds*	Configures a timeout in seconds for iPXE network boot. Valid values are from 1 to 2147483647.
switch *switch-number*	Enables iPXE boot for switches in the stack. Valid values are from 0 to 9.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Denali 16.3.2	This command was introduced on Cisco Catalyst 3650 and 3850 Series Switches.
Cisco IOS XE Everest 16.6.1	This command was implemented on Cisco Catalyst 9300 and 9500 Series Switches

Usage Guidelines

iPXE is an open source implementation of the Preboot eXecution Environment (PXE). Bootloaders boot an image located on a File Transfer Protocol (FTP), Hypertext Transfer Protocol (HTTP), or Trivial File Transfer Protocol (TFTP) server.

If the **forever** keyword is configured, the switch sends Dynamic Host Configuration Protcol (DHCP) requests forever. If the **timeout** keyword is configured, DHCP requests are sent for the specified amount of time, and when the timeout expires, the switch reverts to device boot.

Example

The following example shows how to configure an iPXE boot timeout for switch 2:

```
Device(config)# boot ipxe timeout 240 switch 2
```

boot manual

To configure manual boot, use the **boot manual** command in global configuration mode. To remove the configuration, use the **no** form of this command.

boot manual switch *switch-number*
no boot manual switch *switch-number*

Syntax Description

switch *switch-number*	Configures manual boot for the switches in the stack.

Command Default

Manual boot is enabled.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Denali 16.3.2	This command was introduced on Cisco Catalyst 3650 and 3850 Series Switches.
Cisco IOS XE Everest 16.6.1	This command was implemented on Cisco Catalyst 9300 and 9500 Series Switches

Usage Guidelines

When manual boot is disabled, and the switch reloads, the boot process starts automatically. When manual boot is disabled, the bootloader determines whether to execute a device boot or a network boot based on the configured value of the iPXE ROMMON variable.

Example

The following example shows how to configure manual boot for switch 2:

```
Device(config)# boot manual switch 2
```

boot system

To enable a system image boot, use the **boot system** command in global configuration mode. To disable the configuration, use the **no** form of this command.

boot system switch {**all** *number*} {**flash:** | **ftp:** | **http:** | **tftp:**}

no boot system [{**switch** | {**all** *number*}}] [{**flash:** | **ftp:** | **http:** | **tftp:**}]

Syntax Description

flash:	Specifies the flash filesytem to boot an image.
ftp:	Specifies a File Transfer Protocol (FTP) location to boot an image.
http:	Specifies a Hypertext Transfer Protocol (HTTP) location to boot an image.
tftp:	Specifies a Trivial File Transfer Protocol (TFTP) location to boot an image.
switch *number*	Enables booting for switches in a stack. Valid values are from 0 to 9.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Denali 16.3.2	This command was introduced on Cisco Catalyst 3650 and 3850 Series Switches.
Cisco IOS XE Everest 16.6.1	This command was implemented on Cisco Catalyst 9300 and 9500 Series Switches

Usage Guidelines

You can either use an IPv4 or an IPv6 address for the remote FTP/HTTP/TFTP servers. When using an IPv6 address, you must enter the IPv6 address inside square brackets (as per RFC 2732); otherwise, the device will not boot.

Note IPv6 is not supported on Catalyst 9000 Series Switches.

Example

The following example shows how to boot an image from an IPv4 HTTP server:

```
Device(config)# boot system switch 1 http://192.0.2.42/image-filename
```

The following example shows how to boot an image from an IPv6 HTTP server:

```
Device(config)# boot system switch 1 http://[2001:db8::1]/image-filename
```

clear configuration lock

To clear the configuration session lock, use the **clear configuration lock** in privileged EXEC mode.

clear configuration lock

This command has no arguments or keywords.

Command Default

Session lock times out after 10 minutes.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Release Fuji 16.8.1	This command was introduced.

Usage Guidelines

Use this command to remove the configuration lock on a session. A full synchronization of the database is triggered when a lock is cleared.

Read operation is allowed by any NETCONF/RESTCONF sessions during the global lock. However, write operation is only allowed by the NETCONF session that owns the lock.

Example

The following example shows how to clear a configuration lock:

```
Device# clear configuration lock
```

clear netconf-yang session

To clear NETCONF-YANG sessions, use the **clear netconf-yang session** command in privileged EXEC mode.

clear netconf-yang session *session-id*
[{**R0** | **R1** | **RP** {**active** | **standby**}}]

Syntax Description

session-id	Clears the specified session. Valid values are from 1 to 4294967295.
R0	(Optional) Clears the Route Processor (RP) slot 0.
R1	(Optional) Clears the RP slot 1.
RP	(Optional) Clears the RP.
active	(Optional) Clears the active instance of the RP.
standby	(Optional) Clears the standby instance of the RP.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Fuji 16.8.1	This command was introduced.

Usage Guidelines

You can use this command to unlock a datastore by killing the locked session that has the ownership of the datastore lock. When a global lock is cleared by using the **clear netconf-yang session** command, a full synchronization of the datastore is triggered. However; clearing a session while the global lock is in place, only schedules a full synchronization.

Examples

The following example shows how to clear a NETCONF-YANG session:

```
Device# clear netconf-yang session 2 RP active
```

controller (OpenFlow)

To connect to an OpenFlow controller, use the **controller** command in OpenFlow switch configuration mode. To disconnect an OpenFlow controller, use the **no** form of this command.

controller ipv4 *controller-address* [{**port** [{*port-number*}]}][{**security** {**none** | **tls**}}][{**vrf** [{*vrf-name*}]}]
no controller ipv4 *controller-address* [{**port** [{*port-number*}]}][{**security** {**none** | **tls**}}][{**vrf** [{*vrf-name*}]}]

Syntax Description

ipv4 *controller-address*	Configures the IP address of the OpenFlow controller.
port *port-number*	(Optional) Configures the OpenFlow controller TCP port. The default is 6653.
security	(Optional) Configures the OpenFlow controller connection security.
none	(Optional) Configures no authentication or encryption for the controller.
tls	(Optional) Configures the Transport Layer Security (TLS) protocol for the controller.
vrf *vrf-name*	(Optional) Configures a virtual routing and forwarding (VRF) instance for the OpenFlow controller.

Command Default

The controller is not configured.

Command Modes

OpenFlow switch configuration (config-openflow-switch)

Release	Modification
Cisco IOS XE Fuji 16.9.1	This command was introduced.

Usage Guidelines

The OpenFlow controller is an entity that interacts with the OpenFlow switch using the OpenFlow protocol. In most cases, an OpenFlow controller is a software that controls many OpenFlow logical switches. OpenFlow controllers offer a centralized view of the network, and enable administrators to dictate to the underlying systems (switches and routers) on how to handle the network traffic.

Example

The following example shows how to configure an OpenFlow controller:

```
Device# configure terminal
Device(config)# feature openflow
Device(config)# openflow
Device(config-openflow)# switch 1 pipeline 1
```

```
Device(config-openflow-switch)# controller ipv4
10.2.2.2 port 6633 vrf Mgmt-vrf security none
```

Related Commands

Command	Description
feature openflow	Enables the OpenFlow feature.
openflow	Enables OpenFlow configuration and enters OpenFlow configuration mode.
switch	Configures a logical switch and enters OpenFlow switch configuration mode.

debug netconf-yang

To log NETCONF-YANG debug messages, use the **debug netconf-yang** command in privileged EXEC mode.

debug netconf-yang [{**level** {**debug** | **emergency** | **error** | **info** | **noise** | **notice** | **verbose** | **warning**}}]

no debug netconf-yang [{**level** {**debug** | **emergency** | **error** | **info** | **noise** | **notice** | **verbose** | **warning**}}]

Syntax Description

level	(Optional) Specifies the log level of NETCONG-YANG processes.
debug	(Optional) Logs debug messages.
emergency	(Optional) Logs emergency messages.
error	(Optional) Logs error messages.
info	(Optional) Logs information messages.
noise	(Optional) Specifies the maximum log level setting. This setting includes all logs in the output such as, emergency, alert, critical, error, warning, notice, debug, verbose and so on.
notice	(Optional) Logs notice messages.
verbose	(Optional) Logs debug messages in detail.
warning	(Optional) Logs warning messages.

Command Default

Debug logs are not enabled.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Fuji 16.8.1	This command was introduced.

Usage Guidelines

The last enabled debug logging level is used for logging debug messages. For example, if **warning** level is enabled by NETCONF-YANG, and it is followed by **debug** level by RESTCONF; then debug messages are logged.

The last enabled debug logging level will remain persistent for data model interface (DMI) processes.

Examples

The following is sample output from the **debug netconf-yang level debug** command:

```
Device# debug netconf-yang level debug

Jan 24 13:33:20.441 EST: yang-infra: netconf-yang server log level set to debug
```

debug restconf

To log RESTCONF debug messages, use the **debug restconf** command in privileged EXEC mode.

debug restconf [{**level** {**debug** | **emergency** | **error** | **info** | **noise** | **notice** | **verbose** | **warning**}}]

no debug restconf [{**level** {**debug** | **emergency** | **error** | **info** | **noise** | **notice** | **verbose** | **warning**}}]

Syntax Description

level	(Optional) Specifies the log level of RESTCONF processes.
debug	(Optional) Logs debug messages.
emergency	(Optional) Logs emergency messages.
error	(Optional) Logs error messages.
info	(Optional) Logs information messages.
noise	(Optional) Specifies the maximum log level setting. This setting includes all logs in the output such as, emergency, alert, critical, error, warning, notice, debug, verbose and so on.
notice	(Optional) Logs notice messages.
verbose	(Optional) Logs debug messages in detail.
warning	(Optional) Logs warning messages.

Command Default

Debug logs are not enabled.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Fuji 16.8.1	This command was introduced.

Usage Guidelines

The last enabled debug logging level will be used for logging debug messages. For example, if **warning** level is enabled by NETCONF-YANG, and it is followed by **debug** level by RESTCONF; then debug level messages will be logged.

The last enabled debug logging level will remain persistent for data model interface (DMI) processes.

Examples

The following is sample output from the **debug restconf** command:

```
Device# debug restconf

Device# show debug

IOSXE Conditional Debug Configs:

Conditional Debug Global State: Stop

IOSXE Packet Tracing Configs:
```

```
license policy manager client:
  platform software policy_manager_error debugging is on

Packet Infra debugs:

Ip Address                                                Port
------------------------------------------------------|----------
```

```
netconf-yang:
  netconf-yang debugging is on at level debug

restconf:
  restconf debugging is on at level debug
```

default boot

To modify the default boot system parameters, use the **defaut boot** command in global configuration mode.

default boot {**ipxe** {**forever** | **timeout** | **seconds**} | **manual** | **system** {**flash:** | **ftp:** | **http:** | **tftp:**}}**switch** *number*

Syntax Description

ipxe	Enables iPXE boot.
forever	Attempts iPXE boot forever.
timeout *seconds*	Configures a boot timeout in seconds. Valid values are from 1 to 2147483647.
manual	Enables manual boot.
system	Enables a system image boot.
flash:	Specifies the flash filesytem to boot an image.
ftp:	Specifies an File Transfer Protocol (FTP) location to boot an image.
http:	Specifies an Hypertext Transfer Protocol (HTTP) location to boot an image.
tftp:	Specifies a Trivial File Transfer Protocol (TFTP) location to boot an image.
switch *number*	Enables booting for switches in a stack. Valid values are from 0 to 9.

Command Default

Device boot is enabled.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Denali 16.3.2	This command was introduced on Cisco Catalyst 3650 and 3850 Series Switches.
Cisco IOS XE Everest 16.6.1	This command was implemented on Cisco Catalyst 9300 and 9500 Series Switches

Usage Guidelines

You can either use the **no boot ipxe** or the **default boot ipxe**command to configure device boot.

If the **forever** keyword is configured, the switch sends Dynamic Host Configuration Protocol (DHCP) requests forever. If the **timeout** keyword is configured, DHCP requests are sent for the specified amount of time, and when the timeout expires, the switch reverts to device boot.

Examples

The following example shows how to enable the default boot mode:

```
Device(config)# default boot ipxe
```

dig

To do a lookup of the Domain Name System (DNS) server, use the **dig** command in rommon mode.

dig *hostname* {*v4 v6*} [{*dns-server-address*}]

Syntax Description

hostname	DNS host name
v4	IPv4 address.
v6	IPv6 address.
dns-server-address	(Optional) DNS Server IP address.

Command Modes

Rommon

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

This command does a look up of the DNS name and displays the IP/IPv6 address of the DNS server.

Example

The following is sample output from the **dig** *hostname* command:

```
Device: dig example.org

DNS lookup using 2001:DB8::1
addr = 2001:DB8:0000:0000:0000:0000:0000:0001
```

The following is sample output from the **dig** *hostname v4* command:

```
Device: dig example.org v4

DNS lookup using 10.29.27.5
addr = 172.16.0.1
```

The following is sample output from the **dig** *hostname v4 dns-server-address* command:

```
Device: dig example.org v4 10.29.27.5

DNS lookup using 10.29.27.5
addr = 172.16.0.1
```

The following is sample output from the **dig** *hostname v6* command:

```
Device: dig example.org v6

DNS lookup using 2001:DB::1
addr = 2001:DB8:0000:0000:0000:0000:0000:0001
```

Related Commands

Command	Description
net-debug	Displays or changes the network debug values.

encoding

To configure telemetry encoding for the subscription, use the **encoding** command in telemetry-subscription configuration mode. To disable the configuration, use the **no** form of this command.

encoding encode-kvgpb
no encoding encode-kvgpb

Syntax Description

encode-kvgpb	Configures Key-value Google Protocol Buffers (kvGPB) encoding.

Command Modes

Telemetry-subscription configuration (config)

Command History

Release	Modification
Cisco IOS XE Gibraltor 16.10.1	This command was introduced.

Example

The following example shows how to configure a telemetry encoding for the subscription:

```
Device(config)# telemetry ietf subscription 101
Device(config-mdt-subs)# encoding encode-kvGPB
```

feature openflow

To enable the OpenFlow feature, use the **feature openflow** command in global configuration mode. To disable the OpenFlow feature, use the **no** form of this command.

feature openflow
no feature openflow

This command has no arguments or keywords.

Command Default

OpenFlow is not configured.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Fuji 16.9.1	This command was introduced.

Usage Guidelines

Before configuring this command, you must configure the **boot mode openflow** command to enable OpenFlow forwarding mode on your device.

Example

The following example shows how to enable the OpenFlow configuration:

```
Device# configure terminal
Device(config)# feature openflow
Device(config)#
```

Related Commands

Command	Description
boot mode openflow	Enables OpenFlow forwarding mode.

filter xpath

To configure XPath filter, use the **filter xpath** command in telemetry-subscription configuration mode. To disable the configuration, use the **no** form of this command.

filter xpath *path*
nofilter xpath *path*

Syntax Description

path	Specifies XPath filter.

Command Modes

Telemetry-subscription configuration (config)

Command History

Release	Modification
Cisco IOS XE Gibraltor 16.10.1	This command was introduced.

Usage Guidelines

The set of events from a stream are filtered. Different filter types are used for different stream types. Cisco IOS XE supports the yang-push stream.

The dataset within the yang-push stream to be subscribed to is specified by the use of an XPath filter.

Example

The following example shows how to configure XPath filter for subscription:

```
Device(config)# telemetry ietf subscription 101
Device(config-mdt-subs)# filter xpath /memory-ios-xe-oper:memory-statistics/memory-statistic
```

guestshell

To configure the Guest Shell infastructure functionality, use the **guestshell** command in privileged EXEC mode.

guestshell {**destroy** | **disable** | **enable** | **run** [{*linux-executable*}]}

Syntax Description

destroy	Deactivates and uninstalls the Guest Shell service.
disable	Disables the Guest Shell service.
enable	Disables the Guest Shell service.
run [*linux-executable*]	Executes or runs a Linux program in the Guest Shell .

Command Default

Guest Shell is not enabled.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Guest Shell is an embedded Linux environment that allows customers to develop and run custom Python applications for automated control and management of Cisco switches. Guest Shell is packaged as a Cisco application hosting framework (CAF)-formatted tar file (guest_shell.tar) into the Cisco IOS XE Everest 16.5.x release image read-only file system.

Configure the **iox** command in global configuration mode, before configuring this command. IOx is the Cisco-developed framework for hosting customer-deployed Linux applications on Cisco networking systems.

Examples

The following example shows how to enable and run the Guest Shell:

```
Device# configure terminal
Device(config)# iox
Device(config)# exit
Device# guestshell enable
Device# guestshell run
```

Related Commands

Command	Description
iox	Configure IOx services.

guestshell portforwarding

To enable Guest Shell port forwarding, use the **guestshell portforwarding** command in privileged EXEC mode.

guestshell portforwarding {**add table-entry** *entry-name* **service** {**tcp** | **udp** }**source-port** *port-number* **destination-port** *port-number* | **delete table-entry** *entry-name* }

Syntax Description

add	Adds an IP table entry.
table-entry *entry-name*	Specifies the IP table name. The *table-name* argument must be unique, and it can be alphanumeric characters.
service	Specifies the service protocol.
tcp	Specifies TCP as the service protocol.
udp	Specifies UDP as the service protocol.
source-port *port-number*	Specifies the source port. Valid values for the *port-number* argument are from 1 to 65535.
destination-port *port-number*	Specifies the destination port. Valid values for the *port-number* argument are from 1 to 65535.
delete	Deletes an IP table entry.

Command Default

Port forwarding is not enabled.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

Use this command to enable port forwarding for Guest Shell, when it connected through the GigabitEthernet 0/0 management interface

Examples

The following example shows how to enable port forwarding for Guest Shell:

```
Device# configure terminal
Device(config)# iox
```

```
Device(config)# exit
Device# guestshell portforwarding add table-entry table1 service tcp
 source-port 32 destination-port 9
Device#
```

The following example shows how to disable port forwarding for Guest Shell:

```
Device# guestshell portforwarding delete table-entry table1
Device#
```

Related Commands

Command	Description
guestshell	Configures the Guest Shell infrastructure functionality.

install

To install data model update packages, use the **install** command in privileged EXEC mode.

install {**activate** | **file** {**bootflash:** | **flash:** | **webui:**} [{**prompt-level** {**all** | **none**}}] | **add file** {**bootflash:** | **flash:** | **ftp:** | **http:** | **https:** | **rcp:** | **scp:** | **tftp:** | **webui:**} [{**activate** [{**prompt-level** {**all** | **none**}}]}] | **commit** | **deactivate file** {**bootflash:** | **flash:** | **webui:**} [{**prompt-level** {**all** | **none**}}] | **remove** {**file** {**bootflash:** | **flash:** | **ftp:** | **http:** | **https:** | **rcp:** | **scp:** | **tftp:** | **webui:**} | **inactive** } | **rollback to** {**base** | **committed** | **id** *install-ID* }}

Syntax Description

activate	Validates whether the model update package is added through the **install add** command, and restarts NETCONF processes (confd and opdatamgrd). This keyword runs a compatibility check, updates package status, and if the package can be restarted, it triggers post-install scripts to restart the necessary processes, or triggers a reload for non-restartable packages.
file	Specifies the package to be activated.
{**bootflash:** | **flash:** | **http:** | **https:** | **rcp:** | **scp:** | **tftp:webui:**}	Specifies the location of the installed package.
prompt-level {**all** | **none**}	(Optional) Prompts the user about installation activities. For example, the **activate** keyword, automatically triggers a reload for packages that require a reload. Before activating the package, a message will prompt users as to whether they want to continue. The **all** keyword allows you to enable prompts. The **none** keyword disables prompts.
add	Copies files from a remote location (via FTP, TFTP) to a device, and performs a compatibility check for the platform and image versions. This keyword runs base compatibility checks to ensure that a specified package is supported on a platform. It also adds an entry in the package file, so that the status can be monitored and maintained.
{**http:** | **https:** | **rcp:** | **scp:** | **tftp:**}	Specifies the package to be added.

commit	Makes changes persistent over reloads. You can do a commit after activating a package, while the system is up, or after the first reload. If a package is activated, but not committed, it remains active after the first reload, but not after the second reload.
deactivate	Deactivates an installed package. Deactivating a package also updates the package status and triggers a process restart or a reload.
remove	Remove installed packages. The package file is removed from the file system. The **remove** keyword can only be used on packages that are currently inactive.
inactive	Removes all inactive packages from the device.
rollback	Rolls back the data model update package to the base version, the last committed version, or a known commit ID, and restarts NECONF processes.
to base	Returns to the base image.
committed	Returns to the installation state when the last commit operation was performed.
id *install-ID*	Returns to the specific install point ID. Valid values are from 1 to 4294967295.

Command Default

Model update packages are not installed.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced on the following platforms: • Cisco 4000 Series Integrated Services Routers • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9500 Series Switches • Cisco Cloud Services Router 1000v • Cisco Integrated Services Virtual Routers (ISRv)

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was implemented on the following platforms: • Cisco Catalyst 3650 Series Switches • Cisco Catalyst 3850 Series Switches

Usage Guidelines

In Service Model Update adds new data models or extend functionality to existing data models. The update package provides YANG model enhancements outside of a release cycle. The update package is a superset of all existing models; it includes all existing models as well as updated YANG models.

A model update package must be added prior to activating the update package. A package must be deactivated, before it is removed from the bootflash.

Cisco 4000 Series Integrated Services Routers

The following example shows how to add an install package on a device:

```
Device# install add file tftp://172.16.0.1//tftpboot/folder1/isr4300-
universalk9.2017-01-10_13.15.1.CSCxxxxxxx.dmp.bin

install_add: START Sun Feb 26 05:57:04 UTC 2017
Downloading file tftp://172.16.0.1//tftpboot/folder1/isr4300-universalk9.2017-01-10_13.15.1.
CSCxxxxxxx.dmp.bin
Finished downloading file
tftp://172.16.0.1//tftpboot/folder1/isr4300-universalk9.2017-01-10_13.15.1.
CSCxxxxxxx.dmp.bin to bootflash:isr4300-universalk9.2017-01-10_13.15.1.CSCxxxxxxx.dmp.bin
SUCCESS: install_add /bootflash/isr4300-universalk9.2017-01-10_13.15.1.CSCxxxxxxx.dmp.bin
Sun Feb 26 05:57:22 UTC 2017
```

The following example shows how to activate an install package:

```
Device# install activate file bootflash:
isr4300-universalk9.2017-01-10_13.15.1.CSCxxxxxxx.dmp.bin

install_activate: START Sun Feb 26 05:58:41 UTC 2017
DMP package.
Netconf processes stopped
SUCCESS: install_activate /bootflash/isr4300-universalk9.2017-01-10_13.15.1.CSCxxxxxxx.dmp.bin

Sun Feb 26 05:58:58 UTC 2017
*Feb 26 05:58:47.655: %DMI-4-CONTROL_SOCKET_CLOSED:  SIP0: nesd:
Confd control socket closed Lost connection to ConfD (45): EOF on socket to ConfD.
*Feb 26 05:58:47.661: %DMI-4-SUB_READ_FAIL:  SIP0: vtyserverutild:
Confd subscription socket read failed Lost connection to ConfD (45):
EOF on socket to ConfD.
*Feb 26 05:58:47.667: %DMI-4-CONTROL_SOCKET_CLOSED:  SIP0: syncfd:
Confd control socket closed Lost connection to ConfD (45): EOF on socket to ConfD.
*Feb 26 05:59:43.269: %DMI-5-SYNC_START:  SIP0: syncfd:
External change to running configuration detected.
The running configuration will be synchronized to the NETCONF running data store.
*Feb 26 05:59:44.624: %DMI-5-SYNC_COMPLETE:  SIP0: syncfd:
The running configuration has been synchronized to the NETCONF running data store.
```

The following example shows how to commit an installed package:

```
Device# install commit

install_commit: START Sun Feb 26 06:46:48 UTC 2017
SUCCESS: install_commit  Sun Feb 26 06:46:52 UTC 2017
```

The following example shows how to rollback to the base package:

```
Device# install rollback to base

install_rollback: START Sun Feb 26 06:50:29 UTC 2017
7 install_rollback: Restarting impacted processes to take effect
7 install_rollback: restarting confd

*Feb 26 06:50:34.957: %DMI-4-CONTROL_SOCKET_CLOSED:  SIP0: syncfd:
Confd control socket closed Lost connection to ConfD (45): EOF on socket to ConfD.
*Feb 26 06:50:34.962: %DMI-4-CONTROL_SOCKET_CLOSED:  SIP0: nesd:
Confd control socket closed Lost connection to ConfD (45): EOF on socket to ConfD.
*Feb 26 06:50:34.963: %DMI-4-SUB_READ_FAIL:  SIP0: vtyserverutild:
Confd subscription socket read failed Lost connection to ConfD (45):
EOF on socket to ConfD.Netconf processes stopped
7 install_rollback: DMP activate complete
SUCCESS: install_rollback  Sun Feb 26 06:50:41 UTC 2017
*Feb 26 06:51:28.901: %DMI-5-SYNC_START:  SIP0: syncfd:
External change to running configuration detected.
The running configuration will be synchronized to the NETCONF running data store.
*Feb 26 06:51:30.339: %DMI-5-SYNC_COMPLETE:  SIP0: syncfd:
The running configuration has been synchronized to the NETCONF running data store.
```

Cisco Catalyst 3000 Series Switches

The following example shows how to add an install package on a device:

```
Device# install add file tftp://172.16.0.1//tftpboot/folder1/i
cat3k_caa-universalk9.16.06.01.CSCxxxxxxx.dmp.bin

install_add: START Sat Jul 29 05:57:04 UTC 2017
Downloading file tftp://172.16.0.1//tftpboot/folder1/
cat3k_caa-universalk9.16.06.01.CSCxxxxxxx.dmp.bin
Finished downloading file tftp://172.16.0.1//tftpboot/folder1/
cat3k_caa-universalk9.16.06.01.CSCxxxxxxx.Sdmp.bin to
bootflash:cat3k_caa-universalk9.16.06.01.CSCxxxxxxx.dmp.bin
SUCCESS: install_add /bootflash/
cat3k_caa-universalk9.16.06.01.CSCxxxxxxx.dmp.bin
Sat Jul 29 05:57:22 UTC 2017
```

The following sample output from the **show install summary** command displays that the update package is now committed, and that it will be persistent across reloads:

```
Device# show install summary

Active Packages:
bootflash:cat3k_caa-universalk9.16.06.01.CSCxxxxxxx.dmp.bin
Inactive Packages:
No packages
Committed Packages:
bootflash:cat3k_caa-universalk9.16.06.01.CSCxxxxxxx.dmp.bin
Uncommitted Packages:
No packages
Device#
```

Related Commands

Command	Description
show install	Displays information about model update packages.

iox

To configure IOx services, use the **iox** command in global configuration mode. To remove the configuration, use the **no** form of this command.

iox
no iox

This command has no arguments or keywords.

Command Default

IOx services are not configured.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

IOx is the Cisco-developed framework for hosting customer-deployed Linux applications on Cisco networking systems. IOx facilitates the life-cycle management of app and data exchange by providing a set of services that helps developers to package pre-built apps, and host them on a target device. IOx life-cycle management includes distribution, deployment, hosting, starting, stopping (management), and monitoring of apps and data. IOx services also include app distribution and management tools that help users discover and deploy apps to the IOx framework.

Examples

The following example shows how to configure IOx services:

```
Device# configure terminal
Device(config)# iox
Device(config)# exit
```

Related Commands

Command	Description
guestshell	Configures Guest Shell infrastructure functionality.

mlog

To direct log messages to a memory buffer instead of the serial port, use the **mlog** command in rommon mode.

mlog [{**show** | **reset** | **ctrl** [{**on** | **off** | **toggle**}]}]

Syntax Description

show	(Optional) Displays memory log messages.
reset	(Optional) Resets the logging of messages to the memory log.
ctrl	(Optional)
on	(Optional)
off	(Optional)
toggle	(Optional)

Command Modes

Rommon

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

This command directs protocol log (that is all logs controlled by the **net-debug** command) messages to a memory buffer instead of the serial port.

With memory logging, log messages are displayed after a test is run. For example, HTTP debugs can be enabled through memory logging. Log messages are displayed in the memory buffer after running a copy from http://server/name to null: command.

Example

The following example shows how to direct log messages to the memory buffer:

```
Device: mlog show
```

Related Commands

Command	Description
net-debug	Displays or changes the network debug values.

monitor log profile netconf-yang

To display debug logs for NETCONF-YANG processes, use the **monitor log profile netconf-yang** command in privileged EXEC mode.

monitor log profile netconf-yang internal

Syntax Description

internal	Displays all debug logs.

Note This keyword is mainly used by customer support.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Fuji 16.8.1	This command was introduced.

Usage Guidelines

Logs generated by this command are rendered on the device console.

Example

The following example shows how to enable the **monitor log profile netconf-yang internal** command:

```
Device# monitor log profile netconf-yang internal

2018/01/24 15:58:50.356 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  gdb port
 9919 allocated
2018/01/24 15:58:50.365 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  swift_repl
 port 8019 allocated
2018/01/24 15:58:50.430 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  process
 scoreboard /tmp/rp/
 process/pttcd%rp_0_0%0 pttcd%rp_0_0%0.pid is 12040
2018/01/24 15:58:50.430 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
pttcd%rp_0_0%0.gdbport is 9919
2018/01/24 15:58:50.430 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
pttcd%rp_0_0%0.swift_replport is 8019
2018/01/24 15:58:50.439 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  Launching
 pttcd  on fru rp slot 0
 bay 0 instance 0 log /tmp/rp/trace/pttcd_pmanlog
2018/01/24 15:58:50.439 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  Hold
failures 2, hold interval 1800
2018/01/24 15:58:50.439 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  PATH is
 /tmp/sw/rp/0/0/rp_daemons/

mount/bin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/bin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/conf:/tmp/sw/rp/0/0/


rp_daemons/mount/usr/binos/sbin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/bin:/tmp/sw/rp/0/0/rp_daemons/mount/


usr/cpp/bin:/usr/bin:/bin:/sbin:/usr/binos/conf:/usr/binos/bin:/sbin:/bin:/usr/bin:/usr/sbin:/usr/binos/conf:
```

```
 /sbin:/bin:/usr/bin:/usr/sbin:/usr/binos/conf
2018/01/24 15:58:50.439 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
LD_LIBRARY_PATH is
2018/01/24 15:58:50.441 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
PREPROC_OPTIONS ==
2018/01/24 15:58:50.441 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  command
 line used   pttcd  >>
 /tmp/rp/trace/pttcd_pmanlog_cmd 2&>1 &
2018/01/24 15:58:50.444 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  full_path
 is /tmp/sw/rp/0/0
 /rp_daemons/mount/usr/binos/bin/pttcd
2018/01/24 15:58:50.446 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  Resolved
 readlink process

/tmp/sw/mount/asr1000rpx86-rpcontrol.BLD_V168_THROTTLE_LATEST_20180122_164958_V16_8_0_177.SSA.pkg/usr/binos/bin/pttcd
2018/01/24 15:58:50.446 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  Full
path used to spawn the process:
 /tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/bin/pttcd
2018/01/24 15:58:50.452 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  Binary_arch
 set to: [x86_64_cge7]
2018/01/24 15:58:50.461 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  actual
pttcd pid is 12542
2018/01/24 15:58:50.461 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  Checking
 for cgroup for PID 12542
2018/01/24 15:58:50.461 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
 /tmp/rp/pvp/process_state/pttcd%rp_0_0%0#12040_state marked up
2018/01/24 15:58:50.474 {pttcd_R0-0}{1}: [pttcd] [12542]: (ERR): init_callhome() failed
2018/01/24 15:58:50.475 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  oom score
 adj value is 399
2018/01/24 15:58:50.475 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  Wait for
 signal or process exit: 12542
2018/01/24 15:58:52.077 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):  gdb port
9920 allocated
2018/01/24 15:58:52.085 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):  swift_repl
 port 8020 allocated
2018/01/24 15:58:52.157 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):  process
scoreboard /tmp/rp/process
 /pubd%rp_0_0%0 pubd%rp_0_0%0.pid is 14416
2018/01/24 15:58:52.157 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):
pubd%rp_0_0%0.gdbport is 9920
2018/01/24 15:58:52.157 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):
pubd%rp_0_0%0.swift_replport is 8020
2018/01/24 15:58:52.166 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):  Launching
 pubd  on fru rp slot 0 bay 0
 instance 0 log /tmp/rp/trace/pubd_pmanlog
2018/01/24 15:58:52.166 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):  Hold
failures 2, hold interval 1800
2018/01/24 15:58:52.166 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):  PATH is
/tmp/sw/rp/0/0/rp_daemons

/mount/bin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/bin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/conf:/tmp/sw/rp/0/0


/rp_daemons/mount/usr/binos/sbin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/bin:/tmp/sw/rp/0/0/rp_daemons/mount/usr


/cpp/bin:/usr/bin:/bin:/sbin:/usr/binos/conf:/usr/binos/bin:/sbin:/bin:/usr/bin:/usr/sbin:/usr/binos/conf:/sbin:/bin:

 /usr/bin:/usr/sbin:/usr/binos/conf
2018/01/24 15:58:52.166 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):
LD_LIBRARY_PATH is
2018/01/24 15:58:52.167 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):
PREPROC_OPTIONS ==
```

```
2018/01/24 15:58:52.167 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):  command
line used   pubd  >>
 /tmp/rp/trace/pubd_pmanlog_cmd 2&>1 &
2018/01/24 15:58:52.170 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):  full_path
 is /tmp/sw/rp/0/0
 /rp_daemons/mount/usr/binos/bin/pubd
2018/01/24 15:58:52.172 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):  Resolved
readlink process

/tmp/sw/mount/asr1000rpx86-rpcontrol.BLD_V168_THROTTLE_LATEST_20180122_164958_V16_8_0_177.SSA.pkg/usr/binos/bin/pubd
2018/01/24 15:58:52.172 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):  Full path
 used to spawn the process:
 /tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/bin/pubd
2018/01/24 15:58:52.177 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):  Binary_arch
 set to: [x86_64_cge7]
2018/01/24 15:58:52.184 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):  actual
pubd pid is 14920
2018/01/24 15:58:52.184 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):  Checking
for cgroup for PID 14920
2018/01/24 15:58:52.184 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):  Setting
cgroup iosxe_control_processes
 /iosxe_mgmt_processes for PID 14920 and PID 14416
2018/01/24 15:58:52.188 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):
 /tmp/rp/pvp/process_state/pubd%rp_0_0%0#14416_state marked up
2018/01/24 15:58:52.193 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):  oom score
 adj value is 399
2018/01/24 15:58:52.194 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):  Wait for
signal or process exit: 14920
2018/01/24 15:58:52.540 {pttcd_R0-0}{1}: [pttcd] [12542]: (ERR): PPTCD_1_abcdefghi
transaction id = 1
2018/01/24 15:58:57.133 {syncfd_pmanlog_R0-0}{1}: [syncfd_pmanlog] [19542]: (note):  gdb
port 9922 allocated
2018/01/24 15:58:57.147 {syncfd_pmanlog_R0-0}{1}: [syncfd_pmanlog] [19542]: (note):
swift_repl port 8022 allocated
2018/01/24 15:58:57.296 {syncfd_pmanlog_R0-0}{1}: [syncfd_pmanlog] [19542]: (note):
 process scoreboard /tmp/rp/process/syncfd%rp_0_0%0 syncfd%rp_0_0%0.pid is 19470
```

monitor log profile restconf

To display debug logs for RESTCONF processes, use the **monitor log profile restconf** command in privileged EXEC mode.

monitor log profile netconf-yang internal

Syntax Description

internal Displays all debug logs.

Note This keyword is used by customer support.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Fuji 16.8.1	This command was introduced.

Usage Guidelines

Logs generated by this command are rendered on the device console.

Example

The following example shows how to enable the **monitor log profile restconf internal** command:

```
Device# monitor log profile restconf internal

Displaying traces starting from 2018/03/23 09:10:02.000.  If no traces are present, the
command will wait until one is.

2018/03/23 13:05:13.945 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  gdb port
 9908 allocated
2018/03/23 13:05:13.962 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  swift_repl
 port 8008 allocated
2018/03/23 13:05:14.050 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):
  process scoreboard /tmp/rp/process/pttcd%rp_0_0%0 pttcd%rp_0_0%0.pid is 2550
2018/03/23 13:05:14.050 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):
pttcd%rp_0_0%0.gdbport is 9908
2018/03/23 13:05:14.050 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):
pttcd%rp_0_0%0.swift_replport is 8008
2018/03/23 13:05:14.060 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):
 Launching pttcd  on fru rp slot 0 bay 0 instance 0 log /tmp/rp/trace/pttcd_pmanlog
2018/03/23 13:05:14.060 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  Hold
failures 2, hold interval 1800
2018/03/23 13:05:14.060 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):
 PATH is /tmp/sw/rp/0/0/rp_daemons/mount/bin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/bin:

/tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/conf:/tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/sbin:

 /tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/bin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/cpp/bin:


/usr/bin:/bin:/sbin:/usr/binos/conf:/usr/binos/bin:/sbin:/bin:/usr/bin:/usr/sbin:/usr/binos/conf:/sbin:/bin:

 /usr/bin:/usr/sbin:/usr/binos/conf
```

```
2018/03/23 13:05:14.060 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):
LD_LIBRARY_PATH is
2018/03/23 13:05:14.063 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):
PREPROC_OPTIONS ==
2018/03/23 13:05:14.063 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  command
line used   pttcd  >>
 /tmp/rp/trace/pttcd_pmanlog_cmd 2&>1 &
2018/03/23 13:05:14.068 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):
 full_path is /tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/bin/pttcd
2018/03/23 13:05:14.069 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):
 Resolved readlink process /tmp/sw/mount/asr1000rpx86-rpcontrol.2018-03-07_18.30_rifu.SSA.pkg

 /usr/binos/bin/pttcd
2018/03/23 13:05:14.069 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  Full path
 used to spawn the process:
 /tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/bin/pttcd
2018/03/23 13:05:14.076 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  Binary_arch
 set to: [x86_64_cge7]
2018/03/23 13:05:14.088 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  actual
pttcd pid is 2936
2018/03/23 13:05:14.088 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  Checking
 for cgroup for PID 2936
2018/03/23 13:05:14.088 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):
 /tmp/rp/pvp/process_state/pttcd%rp_0_0%0#2550_state marked up
2018/03/23 13:05:14.097 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  oom score
 adj value is 399
2018/03/23 13:05:14.102 {pttcd_R0-0}{1}: [pttcd] [2936]: (ERR): init_callhome() failed
2018/03/23 13:05:14.102 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  Wait for
 signal or process exit: 2936
2018/03/23 13:05:16.895 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):  gdb port
9920 allocated
2018/03/23 13:05:16.904 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):  swift_repl
 port 8020 allocated
2018/03/23 13:05:16.987 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):  process
scoreboard
 /tmp/rp/process/pubd%rp_0_0%0 pubd%rp_0_0%0.pid is 4922
2018/03/23 13:05:16.987 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):
pubd%rp_0_0%0.gdbport is 9920
2018/03/23 13:05:16.987 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):
pubd%rp_0_0%0.swift_replport is 8020
2018/03/23 13:05:16.997 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):
 Launching pubd  on fru rp slot 0 bay 0 instance 0 log /tmp/rp/trace/pubd_pmanlog
2018/03/23 13:05:16.997 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):  Hold failures
 2, hold interval 1800
2018/03/23 13:05:16.997 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):  PATH is
 /tmp/sw/rp/0/0/rp_daemons/mount/bin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/bin:/tmp/sw/rp/0/0/


rp_daemons/mount/usr/binos/conf:/tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/sbin:/tmp/sw/rp/0/0/


rp_daemons/mount/usr/binos/bin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/cpp/bin:/usr/bin:/bin:/sbin:


/usr/binos/conf:/usr/binos/bin:/sbin:/bin:/usr/bin:/usr/sbin:/usr/binos/conf:/sbin:/bin:/usr/bin:

 /usr/sbin:/usr/binos/conf
2018/03/23 13:05:16.997 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):
LD_LIBRARY_PATH is
2018/03/23 13:05:17.001 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):
PREPROC_OPTIONS ==
2018/03/23 13:05:17.001 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):  command
line used   pubd  >>
 /tmp/rp/trace/pubd_pmanlog_cmd 2&>1 &
```

```
2018/03/23 13:05:17.007 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):
 full_path is /tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/bin/pubd
2018/03/23 13:05:17.009 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):  Resolved
readlink process
 /tmp/sw/mount/asr1000rpx86-rpcontrol.2018-03-07_18.30_rifu.SSA.pkg/usr/binos/bin/pubd
2018/03/23 13:05:17.009 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):  Full path
used to spawn the process:
 /tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/bin/pubd
2018/03/23 13:05:17.017 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):  Binary_arch
 set to: [x86_64_cge7]
2018/03/23 13:05:17.031 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):  actual pubd
 pid is 5303
2018/03/23 13:05:17.031 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):  Checking
for cgroup for PID 5303
2018/03/23 13:05:17.031 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):
 Setting cgroup iosxe_control_processes/iosxe_mgmt_processes for PID 5303 and PID 4922
2018/03/23 13:05:17.045 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):
 /tmp/rp/pvp/process_state/pubd%rp_0_0%0#4922_state marked up
2018/03/23 13:05:17.047 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note): oom score
adj value is 399
```

netconf legacy

To enable legacy NETCONF protocol, use the **netconf legacy** command in global configuration mode. To disable the legacy NETCONF protoocol, use the **no** form of this command.

netconf legacy
no netconf legacy

This command has no arguments or keywords.

Command Default

Legacy NETCONF protocol is not enabled.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Denali 16.3.1	This command was introduced.

Usage Guidelines

If this command is enabled, the RFC-compliant NETCONF client (ncclient) does not work. This command enables the legacy NETCONF protocol that is non-RFC-compliant.

Example

The following example shows how to disable the legacy NETCONF protocol:

```
Device> enable
Devcie# configure terminal
Device(config)# no netconf legacy
```

net-dhcp

To initiate an IPv4 Dynamic Host Control Protocol (DHCP) request for remote configuration, use the **net-dhcp** command in rommon mode.

net-dhcp [{**timeout**}]

Syntax Description

timeout	(Optional) Timeout in seconds.

Command Modes

Rommon

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

This command initiates an IPv4 DHCP request and processes the reply.

Example

The following example shows how to enable the **net-dhcp** command:

```
Device: net-dhcp
```

Related Commands

Command	Description
net-debug	Displays or changes the network debug values.
net-show	Displays network parameters.
net6-dhcp	Initiates an IPv6 DHCP request for remote configuration.

net-debug

To display or change the network debug values use the **net-debug** command in rommon mode.

net-debug [{*new-value*}]

Syntax Description

new-value	(Optional) New debug value to use.

Command Modes

Rommon

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

This command enables or disables log levels for each of the following functional areas:

- Domain Name System (DNS)
- Dynamic Host Control Protocol (DHCP)
- File Transfer Protocol (FTP)
- Hypertext Transfer Protocol (HTTP)
- IP
- TCP
- UDP
- Uniform Resource Identifier (URI)

Example

This following is sample output from the **net-debug** command:

```
Device: net-debug

 ether: 0
    ip: 0
  dhcp: 0
  udp:  0
  tcp: 0
 http: 0
  dns: 0
  uri: 0
t/ftp: 2
  ip6: 0
dhcp6: 0:000 200 000 000
```

Related Commands

Command	Description
mlog	Directs log messages to a memory buffer instead of the serial port.

net-show

To display network parameters, use the **net-show** command in rommon mode.

net-show

This command has no arguments or keywords.

Command Modes

Rommon

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

This command displays network configuration such as IP address, gateway, MAC address and so on.

Example

The following is sample output from the **net-show** command:

```
Device:  net-show
Network params:
IPv4:
         ip addr 10.29.27.150
         netmask 255.255.0.0
         gateway 10.29.0.1
IPv6:
link-local addr fe80::366f:90ff:feb8:cb80
site-local addr fec0::366f:90ff:feb8:cb80
       DHCP addr 2001:dead:beef:cafe::9999
     router addr fe80::7ada:6eff:fe13:8580
      SLAAC addr 2001:dead:beef:cafe:366f:90ff:feb8:cb80 /64
      SLAAC addr f00d::366f:90ff:feb8:cb80 /64
      SLAAC addr feed::366f:90ff:feb8:cb80 /64
Common:
         macaddr 34:6f:90:b8:cb:80
             dns 2001:dead:beef:cafe::5
        bootfile http://www.example.org/ed10m
          domain ip6.example.org
```

Command	Description
net6-show	Displays IPv6 network parameters.

net-tcp-bufs

To display TCP buffers, use the **net-tcp-bufs** command in rommon mode.

net-tcp-bufs [{*mss*}]

Syntax Description

mss	(Optional) The Maximum Segment Size (MSS) of TCP buffers.

Command Modes

Rommon

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

You can set the MSS of TCP buffers using the *mss* argument.

Example

The following is sample output from the **net-tcp-bufs** command:

```
Device: net tcp-bufs

tcp_num_buffs 4
```

Related Commands

Command	Description
net-tcp-mss	View or set the TCP MSS.

net-tcp-mss

To view or set the TCP Maximum Segment Size (MSS), use the **net-tcp-mss** command in rommon mode.

net-tcp-mss [{*mss*}]

Syntax Description

mss	(Optional) The Maximum Segment Size (MSS) of TCP buffers.

Command Modes

Rommon

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use the *mss* argument to change the MSS size.

Example

The following is sample output from the **net-tcp-mss** command:

```
Device: net-tcp-mss

switch: net-tcp-mss
tcp_segment_size 1024
```

The following is sample output from the **net-tcp-mss** *mss* command:

```
Device: net-tcp-mss 700

switch: net-tcp-mss 700
tcp_segment_size 700
```

Related Commands

Command	Description
net-tcp-bufs	Displays TCP buffers.

net6-dhcp

To initiate an IPv6 Dynamic Host Control Protocol (DHCP) request for remote configuration, use the **net6-dhcp** command in rommon mode.

net6-dhcp [{**timeout**}]

Syntax Description

timeout	(Optional) Timeout in seconds.

Command Modes

Rommon

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

You can change the timeout by specifying a time in seconds

Example

The following example shows how to enable the **net6-dhcp** command:

```
Device: net6-dhcp
```

Related Commands

Command	Description
net-debug	Displays or changes the network debug values.
net-dhcp	Initiates an IPv4 DHCP request and processes the reply.
net-show	Displays network parameters.

net6-show

To display IPv6 network parameters, use the **net6-show** command in rommon mode.

net6-show

This command has no arguments or keywords.

Command Modes

Rommon

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Example

The following is sample output from the **net6-show** command:

```
Device: net6-show

switch: net6-show
IP6 addresses
link-local addr fe80::366f:90ff:feb8:cb80
site-local addr fec0::366f:90ff:feb8:cb80
       DHCP addr 2001:dead:beef:cafe::9999
     router addr fe80::7ada:6eff:fe13:8580
      SLAAC addr 2001:dead:beef:cafe:366f:90ff:feb8:cb80 /64
      SLAAC addr f00d::366f:90ff:feb8:cb80 /64
      SLAAC addr feed::366f:90ff:feb8:cb80 /64
--
       null addr ::
  all-nodes addr ff02::1
all-routers addr ff02::2
   all-dhcp addr ff02::1:2
  Slct-node addr ff02::1:ffb8:cb80
    ll mmac addr 33:33:00:00:00:01
    sl mmac addr 33:33:00:00:00:02
    sn mmac addr 33:33:ff:b8:cb:80
  dhcp mmac addr 33:33:ff:00:99:99
router mac addr 78:da:6e:13:85:80

IP6 neighbour table
0: ip6 fec0::366f:90ff:feb8:cb80 MAC 34:6f:90:b8:cb:80
1: ip6 fe80::366f:90ff:feb8:cb80 MAC 34:6f:90:b8:cb:80
2: ip6 fe80::7ada:6eff:fe13:8580 MAC 78:da:6e:13:85:80
3: ip6 2001:dead:beef:cafe::5 MAC 30:f7:0d:08:7e:bd
4: ip6 fe80::32f7:dff:fe08:7ebd MAC 30:f7:0d:08:7e:bd
```

Related Commands

Command	Description
net-show	Displays network parameters.

ping

To diagnose basic network connectivity, use the **ping** command in rommon mode.

ping [{*host_ip_address*}] [{*retries*}]

Syntax Description

host_ip_address	(Optional) IP address of the host.
retries	(Optional) Number of retries.

Command Modes

Rommon

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

The **ping** and **ping4** commands are the same.

The **ping** command is a very common method for troubleshooting the accessibility of devices

A timeout is implemented at the bootloader device prompt, that allows the bootloader to poll the TCP stack every 200 ms. As a result, the bootloader may take up to 200 ms to respond to pings. However, when the bootloader is downloading a file, and thus actively polling for new packets, it responds to ping quickly.

Example

The following is sample output from the **ping** command:

```
Device: ping 10.29.27.5

Ping 10.29.27.5 with 32 bytes of data ...
Host 10.29.27.5 is alive.
```

The following is sample output from the **ping** *host_ip_address retries* command:

```
Device: ping 10 6.29.27.5 6

Ping 10.29.27.5 with 32 bytes of data ... reply received in 0 ms
Ping 10.29.27.5 with 32 bytes of data ... reply received in 0 ms
Ping 10.29.27.5 with 32 bytes of data ... reply received in 0 ms
Ping 10.29.27.5 with 32 bytes of data ... reply received in 1 ms
Ping 10.29.27.5 with 32 bytes of data ... reply received in 0 ms
Ping 10.29.27.5 with 32 bytes of data ... reply received in 0 ms
```

Related Commands

Command	Description
ping4	Diagnoses basic network connectivity.
ping6	Determines the network connectivity to another device using IPv6 addressing.

ping4

To diagnose basic network connectivity, use the **ping4** command in rommon mode.

ping4 [{*host_ip_address* }][{*retries*}]

Syntax Description

host_ip_address	(Optional) IP address of the host to be pinged.
retries	(Optional) Number of retries.

Command Modes

Rommon

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

The **ping** and **ping4** commands are the same

A timeout is implemented at the bootloader device prompt, that allows the bootloader to poll the TCP stack every 200 ms. As a result, the bootloader may take up to 200 ms to respond to pings. However, when the bootloader is downloading a file, and thus actively polling for new packets, it responds to ping quickly.

Example

The following is sample output from the **ping4** *host_ip_address* command:

```
Device: ping4 10.29.27.5

Ping 10.29.27.5 with 32 bytes of data ...
Host 10.29.27.5 is alive.
```

Related Commands

Command	Description
ping	Diagnoses basic network connectivity.
ping6	Determines the network connectivity to another device using IPv6 addressing.

ping6

To determine the network connectivity to another device using IPv6 addressing, use the **ping6** command, rommon mode.

ping6 [{*host*}] [{*repeats*}] [{*len*}]

Syntax Description

host	(Optional) IP address of the host to be pinged.
repeats	(Optional) Number of times to repeat the ping.
len	

Command Modes

Rommon

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

A timeout is implemented at the bootloader device prompt, that allows the bootloader to poll the TCP stack every 200 ms. As a result, the bootloader may take up to 200 ms to respond to pings. However, when the bootloader is downloading a file, and thus actively polling for new packets, it responds to ping quickly.

Example

The following is sample output from the **ping6** *host retries len* command:

```
Device: ping6 2001:dead:beef:cafe::5 6 1000

Ping host 2001:dead:beef:cafe::5, 6 times, 1000 bytes
Pinging 2001:dead:beef:cafe::5 ... reply in 0 ms
Pinging 2001:dead:beef:cafe::5 ... reply in 1 ms
Pinging 2001:dead:beef:cafe::5 ... reply in 1 ms
Pinging 2001:dead:beef:cafe::5 ... reply in 0 ms
Pinging 2001:dead:beef:cafe::5 ... reply in 0 ms
Pinging 2001:dead:beef:cafe::5 ... reply in 0 ms
```

Related Commands

Command	Description
ping	Diagnoses basic network connectivity.
ping4	Diagnoses basic network connectivity.

receiver

To configure receiver to receive update notifications, use the **receiver** command in telemetry-subscription configuration mode. To disable the configuration, use the **no** form of this command.

receiver ip address {*ipv4-address* | *ipv6-address* } *port* **protocol** *protocol*
no receiver ip address {*ipv4-address* | *ipv6-address* } *port* **protocol** *protocol*

Syntax Description

ip address	Configures receiver IP address.
ipv4-address | *ipv6-address*	IPv4 or IPv6 receiver adress.
port	Configures receiver port.
protocol*protocol*	Configures protocol for notification. The following protocol is supported: • **grpc-tcp**

Command Modes

Telemetry-subscription configuration (config)

Command History

Release	Modification
Cisco IOS XE Gibraltor 16.10.1	This command was introduced.

Usage Guidelines

A receiver is a network element that receives the telemetry data. Configured subscriptions are created by management operations on the publisher by controllers, and explicitly include the specification of the receiver of the telemetry data defined by the subscription. These subscriptions persist across reboots of the publisher.

Configured subscriptions can be configured with multiple receivers, however; only the first valid receiver is used. Other receivers are not be tried, if a receiver is already connected, or in the process of being connected. If that receiver is deleted, another receiver is connected.

Example

The following example shows how to configure receiver information for receiving notifications:

```
Device(config)# telemetry ietf subscription 101
Device(config-mdt-subs)# receiver ip address 10.28.35.45 57555 protocol grpc-tcp
```

show install

To display information about data model update packages, use the **show install** command in privileged EXEC mode.

show install {**active** | **committed** | **inactive** | **log** | **package** {**bootflash:** | **flash:** | **webui:**} | **rollback** | **summary** | **uncommitted**}

Syntax Description

active	Displays information about active packages.
committed	Displays package activations that are persistent.
inactive	Displays inactive packages.
log	Displays entries stored in the logging installation buffer.
package	Displays metadata information about the package, including description, restart information, components in the package, and so on.
{**bootflash:** | **flash:** | **webui:**}	Specifies the location of the model update package.
rollback	Displays the software set associated with a saved installation.
summmary	Displays information about the list of active, inactive, committed, and superseded packages.
uncommitted	Displays package activations that are non persistent.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced on the following platforms: • Cisco 4000 Series Integrated Services Routers • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9500 Series Switches • Cisco Cloud Services Router 1000v • Cisco Integrated Services Virtual Routers (ISRv)
Cisco IOS XE Everest 16.6.1	This command was implemented on the following platforms: • Cisco Catalyst 3650 Series Switches • Cisco Catalyst 3850 Series Switches

Usage Guidelines

Use the show commands to view the status of an installed model update package.

Cisco 4000 Series Integrated Services Routers

The following is sample output from the **show install package** command:

```
Device# show install package bootflash:
isr4300-universalk9.16.05.01.CSCxxxxxxx.dmp.bin

Name: isr4300-universalk9.16.05.01.CSCxxxxxxx.dmp.bin
Version: 16.5.1.0.199.1484082952..Everest
Platform: ISR4300
Package Type: dmp
Defect ID: CSCxxxxxxx
Package State: Added
Supersedes List: {}
Smu ID: 1
Device#
```

The following is sample output from the **show install summary** command:

```
Device# show install summary

Active Packages:
bootflash:isr4300-universalk9.16.05.01.CSCxxxxxxx.dmp.bin
Inactive Packages:
No packages
Committed Packages:
No packages
Uncommitted Packages:
bootflash:isr4300-universalk9.16.05.01.CSCxxxxxxx.dmp.bin
Device#
```

The following is sample output from the **show install log** command:

```
Device# show install log

[0|install_op_boot]: START Fri Feb 24 19:20:19 Universal 2017
[0|install_op_boot]: END SUCCESS  Fri Feb 24 19:20:23 Universal 2017
[3|install_add]: START Sun Feb 26 05:55:31 UTC 2017
[3|install_add( FATAL)]: File path (scp) is not yet supported for this command
[4|install_add]: START Sun Feb 26 05:57:04 UTC 2017
[4|install_add]: END SUCCESS /bootflash/isr4300-universalk9.16.05.01.CSCxxxxxxx.dmp.bin
Sun Feb 26 05:57:22 UTC 2017
[5|install_activate]: START Sun Feb 26 05:58:41 UTC 2017
```

The table below lists the significant fields shown in the display.

Table 1: show install summary Field Descriptions

Field	Description
Active Packages	Name of the active model update package.
Inactive Packages	List of inactive packages.
Committed Packages	Installed model update packages that have saved or committed changes to the hard disk, so that the changes become persistent across reloads.

Field	Description
Uncommitted Packages	Model update package activations that are non persistent.

Cisco Catalyst 3000 Series Switches

The following sample output from the **show install summary** command displays that the update package is now committed, and that it will be persistent across reloads:

```
Device# show install summary

Active Packages:
bootflash:cat3k_caa-universalk9.16.06.01.CSCxxxxxxx.dmp.bin
Inactive Packages:
No packages
Committed Packages:
bootflash:cat3k_caa-universalk9.16.06.01.CSCxxxxxxx.dmp.bin
Uncommitted Packages:
No packages
Device#
```

Related Commands

Command	Description
install	Installs data model update packages.

show iox-service

To display the status of all IOx services, use the **show iox-service** command in privileged EXEC mode.

show iox-service [{**detail**}]

Syntax Description

detail	(Optional) Displays detailed information about the application/appliance.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

IOx is a Cisco-developed end-to-end application framework that provides application hosting capabilities fordifferent application types on Cisco network platforms. Cisco application hosting framework (CAF) is an IOx Python process that manages virtualized and container applications that run on devices. To enable IOx, configure the **iox** command.

IOXMAN is a process that establishes a tracing infrastructure to provide logging or tracing services for guest applications, except Libvirt, that emulates serial devices.

After configuring this command, you can update the application hosting configuration.

Example

The following is sample output from the **show iox-service** command:

```
Device# show iox-service

IOx Infrastructure   Summary:
------------------------------
IOx service (CAF)    : Running
IOx service (HA)     : Running
IOx service (IOxman) : Running
Libvirtd             : Running
```

The table below lists the fields shown in the display.

Table 2: show iox-service Field Descriptions

Field	Description
IOx service (CAF)	Status of the Cisco Application Framework (CAF).
IOx service (HA)	Status of high availability. High availability must be running, if you have redundant hardware, like a redundant route processor (RP).
IOx service (IOxman)	Status of the IOx Manager.

Field	Description
Libvirtd	Status of the Linux Library Virtual daemon.

The following is sample output from the **show iox-service detail** command:

```
Device# show iox-service detail

IOx Infrastructure Summary:
---------------------------
IOx service (CAF)    : Running
IOx service (HA)     : Running
IOx service (IOxman) : Running
Libvirtd             : Running


------------------ show platform software process list switch active r0 name caf
------------------
Name: run_ioxn_caf.sh
  Process id       : 28445
  Parent process id: 28155
  Group id         : 28445
  Status           : S
  Session id       : 9123
  User time        : 5
  Kernel time      : 2
  Priority         : 20
  Virtual bytes    : 19939328
  Resident pages   : 1036
  Resident limit   : 18446744073709551615
  Minor page faults: 4833
  Major page faults: 0



------------------ show platform software process list switch active r0 name libvirtd
------------------
Name: libvirtd.sh
  Process id       : 5757
  Parent process id: 1
  Group id         : 5757
  Status           : S
  Session id       : 5757
  User time        : 0
  Kernel time      : 0
  Priority         : 20
  Virtual bytes    : 18661376
  Resident pages   : 692
  Resident limit   : 18446744073709551615
  Minor page faults: 208
  Major page faults: 0

Name: libvirtd
  Process id       : 5782
  Parent process id: 5757
  Group id         : 5757
  Status           : S
  Session id       : 5757
  User time        : 6
  Kernel time      : 74
  Priority         : 20
```

```
Virtual bytes    : 883945472
Resident pages   : 2122
Resident limit   : 18446744073709551615
Minor page faults: 2398
Major page faults: 59
```

Related Commands

Command	Description
iox	Configure IOx services.

show log profile netconf-yang

To write NETCONF-YANG process logs to a file, use the **show log profile netconf-yang** command in privileged EXEC mode.

show log profile netconf-yang internal

Syntax Description

internal	Selects all debug logs.

Note This keyword for use by customer support.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Fuji 16.8.1	This command was introduced.

Usage Guidelines

Logs are displayed on the device console when the command is executed.

Example

The following is sample output from the **show log profile netconf-yang internal** command:

```
Device# show log profile netconf-yang internal

excuting cmd on chassis local ...
Collecting files on current[local] chassis.


DECODER ERROR: NOTE: Tracelog may not be generated from clang binary, and is not encoded.
Please use native linux tools (vi/less/more/cat...) to read the file

2018/01/24 15:58:50.356 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  gdb port
 9919 allocated
2018/01/24 15:58:50.365 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  swift_repl
 port 8019 allocated
2018/01/24 15:58:50.422 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (info): (std):
cat: /tmp/sw/boot/boot_debug.conf: No such file or directory
2018/01/24 15:58:50.427 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (info): (std):
/usr/binos/conf/pman.sh: line 424: sigusr1_func: readonly function
2018/01/24 15:58:50.430 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
process scoreboard /tmp/rp/process/pttcd%rp_0_0%0 pttcd%rp_0_0%0.pid is 12040
2018/01/24 15:58:50.430 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
pttcd%rp_0_0%0.gdbport is 9919
2018/01/24 15:58:50.430 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
pttcd%rp_0_0%0.swift_replport is 8019
2018/01/24 15:58:50.439 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (info): (std):
12040 (process ID) old priority 0, new priority 0
2018/01/24 15:58:50.439 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
Launching pttcd  on fru rp slot 0 bay 0 instance 0 log /tmp/rp/trace/pttcd_pmanlog
2018/01/24 15:58:50.439 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
Hold failures 2, hold interval 1800
2018/01/24 15:58:50.439 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
```

```
PATH is
/tmp/sw/rp/0/0/rp_daemons/mount/bin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/bin:/tmp/sw/rp/0/0
/rp_daemons/mount/usr/binos/conf:/tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/sbin:/tmp/sw/rp/0/0
/rp_daemons/mount/usr/binos/bin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/cpp/bin:/usr/bin:/bin:/sbin:
/usr/binos/conf:/usr/binos/bin:/sbin:/bin:/usr/bin:/usr/sbin:/usr/binos
/conf:/sbin:/bin:/usr/bin:/usr/sbin:/usr/binos/conf
2018/01/24 15:58:50.439 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
LD_LIBRARY_PATH is
2018/01/24 15:58:50.441 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
PREPROC_OPTIONS ==
2018/01/24 15:58:50.441 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
command line used   pttcd  >> /tmp/rp/trace/pttcd_pmanlog_cmd 2&>1 &
2018/01/24 15:58:50.444 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
full_path is /tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/bin/pttcd
2018/01/24 15:58:50.446 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
Resolved readlink process /tmp/sw/mount
/asr1000rpx86-rpcontrol.BLD_V168_THROTTLE_LATEST_20180122_164958_V16_8_0_177.SSA.pkg
/usr/binos/bin/pttcd
2018/01/24 15:58:50.446 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
Full path used to spawn the process: /tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/bin/pttcd
2018/01/24 15:58:50.452 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
Binary_arch set to: [x86_64_cge7]
2018/01/24 15:58:50.460 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (info): (std):
chmod: cannot access '/tmp/tmppub/tracekey_cache//tmp/sw/mount
/asr1000rpx86-rpcontrol.BLD_V16_8_0_177.SSA.pkg/usr/binos/bin/pttcd':
No such file or directory
2018/01/24 15:58:50.461 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  actual
pttcd pid is 12542
2018/01/24 15:58:50.461 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
Checking for cgroup for PID 12542
2018/01/24 15:58:50.461 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
/tmp/rp/pvp/process_state/pttcd%rp_0_0%0#12040_state marked up
2018/01/24 15:58:50.474 {pttcd_R0-0}{1}: [pttcd] [12542]: (ERR): init_callhome() failed
2018/01/24 15:58:50.475 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):  oom score
 adj value is 399
2018/01/24 15:58:50.475 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (info): (std):
12040 (process ID) old priority 0, new priority -6
2018/01/24 15:58:50.475 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [12142]: (note):
Wait for signal or process exit: 12542
/harddisk/tracelogs/tmp_trace/pttcd_pmanlog_R0-0.12142_0.20180124155850.bin: DECODE(25:25:0:1)
2018/01/24 15:58:52.077 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):  gdb port
9920 allocated
2018/01/24 15:58:52.085 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):  swift_repl
 port 8020 allocated
2018/01/24 15:58:52.150 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (info): (std):
cat: /tmp/sw/boot/boot_debug.conf: No such file or directory
2018/01/24 15:58:52.153 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (info): (std):
/usr/binos/conf/pman.sh: line 424: sigusr1_func: readonly function
2018/01/24 15:58:52.157 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):
process scoreboard /tmp/rp/process/pubd%rp_0_0%0 pubd%rp_0_0%0.pid is 14416
2018/01/24 15:58:52.157 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):
pubd%rp_0_0%0.gdbport is 9920
2018/01/24 15:58:52.157 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):
pubd%rp_0_0%0.swift_replport is 8020
2018/01/24 15:58:52.165 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (info): (std):
14416 (process ID) old priority 0, new priority 0
2018/01/24 15:58:52.166 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):
Launching pubd  on fru rp slot 0 bay 0 instance 0 log /tmp/rp/trace/pubd_pmanlog
2018/01/24 15:58:52.166 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):
Hold failures 2, hold interval 1800
2018/01/24 15:58:52.166 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [14520]: (note):
PATH is
/tmp/sw/rp/0/0/rp_daemons/mount/bin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/bin:/tmp/sw/rp/0/0
/rp_daemons/mount/usr/binos/conf:/tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/sbin:/tmp/sw/rp/0/0/rp_daemons/mount
```

```
/usr/binos/bin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/cpp/bin:/usr/bin:/bin:/sbin:/usr/binos/conf:/usr/binos/bin:
/sbin:/bin:/usr/bin:/usr/sbin:/usr/binos/conf:/sbin:/bin:/usr/bin:/usr/sbin:/usr/binos/conf
```

show log profile restconf

To write RESTCONF process logs to a file, use the **show log profile restconf** command in privileged EXEC mode.

show log profile restconf internal

Syntax Description

internal	Selects all debug logs.

Note This keyword for use by customer support.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Fuji 16.8.1	This command was introduced.

Usage Guidelines

Logs are displayed on the device console when he command is executed.

Example

The following is sample output from the **show log profile restconf** command:

```
Device# show log profile restconf internal


excuting cmd on chassis local ...
Collecting files on current[local] chassis.
Total # of files collected = 17
Decoding files:
DECODER ERROR: NOTE: Tracelog may not be generated from clang binary, and is not encoded.
Please use native linux tools (vi/less/more/cat...) to read the file

2018/03/23 13:05:13.945 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  gdb port
 9908 allocated
2018/03/23 13:05:13.962 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  swift_repl
 port 8008 allocated
2018/03/23 13:05:14.041 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (info): (std):
cat:
 /tmp/sw/boot/boot_debug.conf: No such file or directory
2018/03/23 13:05:14.046 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (info): (std):
 /usr/binos/conf/pman.sh: line 424: sigusr1_func: readonly function
2018/03/23 13:05:14.050 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  process
scoreboard
 /tmp/rp/process/pttcd%rp_0_0%0 pttcd%rp_0_0%0.pid is 2550
2018/03/23 13:05:14.050 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):
pttcd%rp_0_0%0.gdbport is 9908
2018/03/23 13:05:14.050 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):
 pttcd%rp_0_0%0.swift_replport is 8008
2018/03/23 13:05:14.059 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (info): (std):
2550
 (process ID) old priority 0, new priority 0
2018/03/23 13:05:14.060 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  Launching
```

```
 pttcd
 on fru rp slot 0 bay 0 instance 0 log /tmp/rp/trace/pttcd_pmanlog
2018/03/23 13:05:14.060 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  Hold
failures 2,
 hold interval 1800
2018/03/23 13:05:14.060 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  PATH is

/tmp/sw/rp/0/0/rp_daemons/mount/bin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/bin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/conf:

 /tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/sbin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/bin:


/tmp/sw/rp/0/0/rp_daemons/mount/usr/cpp/bin:/usr/bin:/bin:/sbin:/usr/binos/conf:/usr/binos/bin:/sbin:/bin:/usr/bin:

 /usr/sbin:/usr/binos/conf:/sbin:/bin:/usr/bin:/usr/sbin:/usr/binos/conf
2018/03/23 13:05:14.060 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):
LD_LIBRARY_PATH is
2018/03/23 13:05:14.063 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):
PREPROC_OPTIONS ==
2018/03/23 13:05:14.063 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  command
line used   pttcd  >>
 /tmp/rp/trace/pttcd_pmanlog_cmd 2&>1 &
2018/03/23 13:05:14.068 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  full_path
 is
 /tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/bin/pttcd
2018/03/23 13:05:14.069 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  Resolved
 readlink process
 /tmp/sw/mount/asr1000rpx86-rpcontrol.2018-03-07_18.30_rifu.SSA.pkg/usr/binos/bin/pttcd
2018/03/23 13:05:14.069 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  Full path
 used to spawn the process:
 /tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/bin/pttcd
2018/03/23 13:05:14.076 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  Binary_arch
 set to: [x86_64_cge7]
2018/03/23 13:05:14.087 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (info): (std):
chmod: cannot access

'/tmp/tmppub/tracekey_cache//tmp/sw/mount/asr1000rpx86-rpcontrol.2018-03-07_18.30_rifu.SSA.pkg

 /usr/binos/bin/pttcd': No such file or directory
2018/03/23 13:05:14.088 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  actual
pttcd pid is 2936
2018/03/23 13:05:14.088 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  Checking
 for cgroup for PID 2936
2018/03/23 1 3:05:14.088 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):
/tmp/rp/pvp/process_state/pttcd%rp_0_0%0#2550_state marked up
2018/03/23 13:05:14.097 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  oom score
 adj value is 399
2018/03/23 13:05:14.102 {pttcd_R0-0}{1}: [pttcd] [2936]: (ERR): init_callhome() failed
2018/03/23 13:05:14.102 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (info): (std):
 2550 (process ID) old priority 0, new priority -6
2018/03/23 13:05:14.102 {pttcd_pmanlog_R0-0}{1}: [pttcd_pmanlog] [2628]: (note):  Wait for
 signal or process exit: 2936
/harddisk/tracelogs/tmp_trace/pttcd_pmanlog_R0-0.2628_0.20180323130513.bin: DECODE(25:25:0:1)
2018/03/23 13:05:16.895 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):  gdb port
9920 allocated
2018/03/23 13:05:16.904 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):  swift_repl
 port 8020 allocated
2018/03/23 13:05:16.978 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (info): (std):
 cat: /tmp/sw/boot/boot_debug.conf: No such file or directory
2018/03/23 13:05:16.983 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (info): (std):
 /usr/binos/conf/pman.sh: line 424: sigusr1_func: readonly function
2018/03/23 13:05:16.987 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):  process
scoreboard
 /tmp/rp/process/pubd%rp_0_0%0 pubd%rp_0_0%0.pid is 4922
```

```
2018/03/23 13:05:16.987 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):
pubd%rp_0_0%0.gdbport is 9920
2018/03/23 13:05:16.987 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):
pubd%rp_0_0%0.swift_replport is 8020
2018/03/23 13:05:16.996 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (info): (std):
 4922 (process ID) old priority 0, new priority 0
2018/03/23 13:05:16.997 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):
 Launching pubd  on fru rp slot 0 bay 0 instance 0 log /tmp/rp/trace/pubd_pmanlog
2018/03/23 13:05:16.997 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):  Hold failures
 2, hold interval 1800
2018/03/23 13:05:16.997 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):  PATH is
 /tmp/sw/rp/0/0/rp_daemons/mount/bin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/bin:/tmp/sw/rp/0/0/


rp_daemons/mount/usr/binos/conf:/tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/sbin:/tmp/sw/rp/0/0/

 rp_daemons/mount/usr/binos/bin:/tmp/sw/rp/0/0/rp_daemons/mount/usr/cpp/bin:/usr/bin:/

bin:/sbin:/usr/binos/conf:/usr/binos/bin:/sbin:/bin:/usr/bin:/usr/sbin:/usr/binos/conf:/sbin:/bin:

 /usr/bin:/usr/sbin:/usr/binos/conf
2018/03/23 13:05:16.997 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):
LD_LIBRARY_PATH is
2018/03/23 13:05:17.001 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):
PREPROC_OPTIONS ==
2018/03/23 13:05:17.001 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):  command
line used   pubd  >>
 /tmp/rp/trace/pubd_pmanlog_cmd 2&>1 &
2018/03/23 13:05:17.007 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):  full_path
is
/tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/bin/pubd
2018/03/23 13:05:17.009 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):
 Resolved readlink process /tmp/sw/mount/asr1000rpx86-rpcontrol.2018-03-07_18.30_rifu.SSA.pkg/

 usr/binos/bin/pubd
2018/03/23 13:05:17.009 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):
 Full path used to spawn the process: /tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/bin/pubd
2018/03/23 13:05:17.017 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (note):
 Binary_arch set to: [x86_64_cge7]
2018/03/23 13:05:17.030 {pubd_pmanlog_R0-0}{1}: [pubd_pmanlog] [4998]: (info): (std): chmod:

 cannot access
!
!
!
```

show netconf-yang

To display information about NETCONF-YANG processes, use the **show netconf-yang** command in privileged EXEC mode.

show netconf-yang {**datastores** | **sessions** [{**detail** | **session-id** *session-id*}] | **statistics**} [{**R0** | **R1** | **RP** {**active** | **standby**}}]

Syntax Description

datastores	Displays information about NETCONF-YANG datastores.
sessions	Displays information about NETCONF-YANG sessions.
detail	(Optional) Displays detailed information about NETCONF-YANG sessions.
session-id *session-id*	(Optional) Displays information about the specified session. Valid values are from 1 to 4294967295.
statistics	Displays information about NETCONF-YANG statistics.
R0	(Optional) Displays information about the Route Processor (RP) slot 0.
R1	(Optional) Displays information about the RP slot 1.
RP	(Optional) Displays information about the RP.
active	(Optional) Displays information about the active instance of the RP.
standby	(Optional) Displays information about the standby instance of the RP.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Fuji 16.8.1	This command was introduced.

Usage Guidelines

This command displays information about global locks applied on the running datastore, candidate datastore, and startup datastore.

The **active** and **standby** keywords are only applicable to devices that supports both active and redundant route processors.

Example

This sample output from the **show netconf-yang datastores** commands displays the sessions that have global locks:

```
Device# show netconf-yang datastores

Datastore Name             : running
Globally Locked By Session : 42
```

```
Globally Locked Time       : 2018-01-15T14:25:14-05:00
```

The table below lists the significant fields shown in the display.

Table 3: show netconf-yang datastores Field Descriptions

Field	Description
Datastore Name	Name of the datastore supported by the device.
Globally Locked By Session	Number of NETCONF-YANG sessions that have the lock on the running datastore.
Globally Locked Time	Time when a NETCONF-YANG session acquires the lock.

The following is sample output from the **show netconf-yang sessions** command:

```
Device# show netconf-yang sessions

R: Global-lock on running datastore
C: Global-lock on candidate datastore
S: Global-lock on startup datastore

Number of sessions : 10

session-id  transport     username           source-host           global-lock
--------------------------------------------------------------------------------
40          netconf-ssh   admin              10.85.70.224          None
42          netconf-ssh   admin              10.85.70.224          None
44          netconf-ssh   admin              10.85.70.224          None
46          netconf-ssh   admin              10.85.70.224          None
48          netconf-ssh   admin              10.85.70.224          None
50          netconf-ssh   admin              10.85.70.224          None
52          netconf-ssh   admin              10.85.70.224          None
54          netconf-ssh   admin              10.85.70.224          None
56          netconf-ssh   admin              10.85.70.224          None
58          netconf-ssh   admin              10.85.70.224          None
```

The table below lists the significant fields shown in the display.

Table 4: show netconf-yang sessions Field Descriptions

Field	Description
session-id	Session identifier.
transport	Transport protocol used for session.
username	Client that is authenticated by the NETCONF-YANG system.
source-host	IP address of the client.
global-lock	True for sessions holding a global lock, and NONE, if there are no global locks.

This is sample output from the **show netconf-yang statistics** command:

```
Device# show netconf-yang statistics

netconf-start-time  : 2018-01-15T12:51:14-05:00
in-rpcs             : 0
in-bad-rpcs         : 0
out-rpc-errors      : 0
out-notifications   : 0
in-sessions         : 10
dropped-sessions    : 0
in-bad-hellos       : 0
```

The table below lists the significant fields shown in the display.

Table 5: show netconf-yang statistics Field Descriptions

Field	Description
netconf-start-time	Session establishment time.
in-rpcs	Total number of correct incoming RPCs.
in-bad-rpcs	Total number of incorrect incoming RPCs.
out-rpc-errors	Total number of RPC reply messages that indicate RPC errors.
out-notifications	Total number of outgoing notifications.
in-sessions	Total number of active NETCONF sessions.
dropped-sessions	Total number of dropped NETCONF sessions.

show platform yang-management process

To display the status of the software processes required to support NETCONF-YANG, use the **show platform yang management process** in privileged EXEC mode.

show platform yang-management process [{**monitor** [{**switch** {*switch-number* | **active** | **standby** }**R0**}] | **switch** | {*switch-number* | **active** | **standby** } | **R0**}]

Syntax Description

monitor	(Optional) Displays detailed information about processes that are running.
switch *switch-number*	(Optional) Displays information about the specified switch.
active	(Optional) Displays information about the active instance of the switch.
standby	(Optional) Displays information about the standby instance of the switch.
R0	(Optional) Displays information about the Route Processor (RP) slot zero.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.3.1	This command was introduced.

Usage Guidelines

Examples

The following is sample output from the **show platform software yang-management process** command:

```
Device# show platform software yang-management process

confd            : Running
nesd             : Running
syncfd           : Running
ncsshd           : Running
dmiauthd         : Running
vtyserverutild   : Running
opdatamgrd       : Running
nginx            : Running
ndbmand          : Running
```

The table below lists the significant fields shown in the display.

Table 6: show platform software yang-management process Field Descriptions

Field	Description
confd	Configuration daemon
nesd	Network element synchronizer daemon
syncfd	Sync from daemon
ncsshd	NETCONF Secure Shell (SSH) daemon
dmiauthd	Device management inteface (DMI) authentication daemon
vtyserverutild	VTY server util daemon
opdatamgrd	Operational Data Manager daemon
nginx	NGINX web server
ndbmand	NETCONF database manager

The following is sample output from the **show platform software yang-management process monitor** command:

```
Device# show platform software yang-management process monitor

COMMAND           PID S    VSZ   RSS %CPU %MEM     ELAPSED
nginx           24689 S 139328 11996  0.0  0.2 24-02:00:55
nginx           24695 S 146544  6824  0.0  0.1 24-02:00:55
```

The table below lists the significant fields shown in the display.

Table 7: show platform software yang-management process monitor Field Descriptions

Field	Description
COMMAND	Command name
PID	Process ID
S	Process state
VSZ	Virtual memory size (in KB)
RSS	Resident set size (in KB)
%CPU	CPU usage percentage
%MEM	Memory usage percentage
ELAPSED	Elapsed execution time

show openflow hardware capabilities

To display information about OpenFlow hardware capabilities, use the **show openflow hardware capabilities** command in privileged EXEC mode.

show openflow hardware capabilities [{**pipeline 1**}]

Syntax Description

pipeline 1	Displays information about the OpenFlow pipeline ID.

Command Modes

Privileged EXEC (#)

Release	Modification
Cisco IOS XE Fuji 16.9.1	This command was introduced.

Usage Guidelines

Example

The following is sample output from the **show openflow hardware capabilities** command:

```
Device# show openflow hardware capabilities

Max Interfaces: 1000
Aggregated Statistics: YES
Pipeline ID: 1
Pipeline Max Flows: 2322
Max Flow Batch Size: 100
Statistics Max Polling Rate (flows/sec): 10000
Pipeline Default Statistics Collect Interval: 5
Flow table ID: 0
Max Flow Batch Size: 100
Max Flows: 1022
Bind Subintfs: FALSE
Primary Table: TRUE
Table Programmable: TRUE
Miss Programmable: TRUE
Number of goto tables: 1
Goto table id: 1
Number of miss goto tables: 1
Miss Goto table id: 1
Stats collection time for full table (sec): 1
!
!
!
```

The following is sample output from the **show openflow hardware capabilities pipeline 1** command:

```
Device# show openflow hardware capabilities pipeline 1

  Max Interfaces: 1000
  Aggregated Statistics: YES

  Pipeline ID: 1
    Pipeline Max Flows: 128
    Max Flow Batch Size: 100
    Statistics Max Polling Rate (flows/sec): 10000
```

```
   Pipeline Default Statistics Collect Interval: 5

   Flow table ID: 0

   Max Flow Batch Size: 100
   Max Flows: 32
   Bind Subintfs: FALSE
   Primary Table: TRUE
   Table Programmable: TRUE
   Miss Programmable: TRUE
   Number of goto tables: 1
   Goto table id: 1
   Number of miss goto tables: 1
   Miss Goto table id: 1
   Stats collection time for full table (sec): 1

       Match Capabilities   Match Types
-------------------------------------  -----------
                     ethernet mac destination      bitmask
                                ethernet type     optional
                                      VLAN ID     optional
               in port (virtual or physical)     optional

Actions              Count Limit  Order
-------------------------------------  -----------  -----
                                set vlan id          1           10
                               push vlan tag         1           10
                                pop vlan tag         1           10
                                  drop packet        1           10
perform another lookup in the specified table        1           10
           forward pkt via the specific group        1           10
                           specified interface      64           10
                                    controller        1           10
                               set input port         1           10

Miss actions         Count Limit  Order
-------------------------------------  -----------  -----
                                set vlan id          1           10
                               push vlan tag         1           10
                                pop vlan tag         1           10
                                  drop packet        1           10
perform another lookup in the specified table        1           10
           forward pkt via the specific group        1           10
                           specified interface      64           10
                                    controller        1           10
                               set input port         1           10


   Flow table ID: 1

   Max Flow Batch Size: 100
   Max Flows: 32
   Bind Subintfs: FALSE
   Primary Table: FALSE
   Table Programmable: TRUE
   Miss Programmable: TRUE
   Number of goto tables: 2
   Goto table id: 2 3
   Number of miss goto tables: 1
   Miss Goto table id: 2
   Stats collection time for full table (sec): 1

       Match Capabilities   Match Types
-------------------------------------  -----------
```

```
                     ethernet mac destination      bitmask
                          ethernet mac source     optional
                                ethernet type     optional
                                      VLAN ID     optional
                  in port (virtual or physical)     optional

 Actions              Count Limit  Order
 -------------------------------------  -----------  -----
                       set eth destination mac          1           10
                                   set vlan id          1           10
                                 push vlan tag          1           10
                                  pop vlan tag          1           10
                                   drop packet          1           10
 perform another lookup in the specified table          1           10
            forward pkt via the specific group          1           10
                          specified interface         64           10
                                   controller          1           10
                                set input port          1           10
!
!
!
```

The output fields are self-explanatory.

show openflow interface

To display information about OpenFlow interfaces, use the **show openflow interface** command in privileged EXEC mode.

show openflow interface{[**detail**]}

Syntax Description

detail	Displays detailed administrative and operational state information.

Command Modes

Privileged EXEC(#)

Release	Modification
Cisco IOS XE Fuji 16.9.1	This command was introduced.

Usage Guidelines

Example

The following is sample output from the **show openfow interface detail** command:

```
Device# show openflow interface detail

GigabitEthernet1/0/1, admin up, oper up
 GigabitEthernet1/0/2, admin up, oper up
 GigabitEthernet1/0/3, admin up, oper up
 GigabitEthernet1/0/4, admin up, oper up
 GigabitEthernet1/0/5, admin up, oper down
 GigabitEthernet1/0/6, admin up, oper down
 GigabitEthernet1/0/7, admin up, oper down
 GigabitEthernet1/0/8, admin up, oper down
 GigabitEthernet1/0/9, admin up, oper up
 GigabitEthernet1/0/10, admin up, oper up
 GigabitEthernet1/0/11, admin up, oper up
 GigabitEthernet1/0/12, admin up, oper up
 GigabitEthernet1/0/13, admin up, oper down
 GigabitEthernet1/0/14, admin up, oper down
 GigabitEthernet1/0/15, admin up, oper down
 GigabitEthernet1/0/16, admin up, oper down
 GigabitEthernet1/0/17, admin up, oper down
 GigabitEthernet1/0/18, admin up, oper down
 GigabitEthernet1/0/19, admin up, oper up
 GigabitEthernet1/0/20, admin up, oper up
 GigabitEthernet1/0/21, admin up, oper up
 GigabitEthernet1/0/22, admin up, oper up
 GigabitEthernet1/0/23, admin up, oper down
 GigabitEthernet1/0/24, admin up, oper down
 GigabitEthernet1/1/1, admin up, oper down
 GigabitEthernet1/1/2, admin up, oper down
 GigabitEthernet1/1/3, admin up, oper down
 GigabitEthernet1/1/4, admin up, oper down
 TenGigabitEthernet1/1/1, admin up, oper down
 TenGigabitEthernet1/1/2, admin up, oper down
 TenGigabitEthernet1/1/3, admin up, oper down
 TenGigabitEthernet1/1/4, admin up, oper down
 TenGigabitEthernet1/1/5, admin up, oper down
 TenGigabitEthernet1/1/6, admin up, oper down
```

```
TenGigabitEthernet1/1/7, admin up, oper down
TenGigabitEthernet1/1/8, admin up, oper down
FortyGigabitEthernet1/1/1, admin up, oper down
FortyGigabitEthernet1/1/2, admin up, oper down
TwentyFiveGigE1/1/1, admin up, oper down
TwentyFiveGigE1/1/2, admin up, oper down
```

The output fields are self-explanatory.

show openflow switch flows

To display OpenFlow switch flows, use the **show openflow switch flows** command in privileged EXEC mode.

show openflow switch *number* **flows** [{**brief** | **list** | **summary** }][{{[**controller**] | **default** | **del-pending** | **fixed** | **pending**} | [{**brief** | **list** | **summary** }]}]

Syntax Description

number	OpenFlow switch number.
brief	(Optional) Displays brief information about OpenFlow switch flows.
list	Displays all flows; one flow entry per line.
summary	Displays the count of flows.
configured	Displays information about the configured flows.
controller	Displayed information about the controller-programmed flows.
default	Displays information about the default flows.
del-pending	Displays information about flows that are scheduled to be deleted.
fixed	Displays information about fixed flows.
pending	Displays all pending flows.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Fuji 16.9.1	This command was introduced.

Example

The following is sample output from the **show openflow switch** *number* **flows brief** command:

```
Device# show openflow switch 1 flows brief

Logical Switch Id: 1
Total flows: 10

Flow: 1 Match: any Actions: drop
```

```
      Priority: 0, Table: 0, Cookie: 0x0, Duration: 140.088s, Packets: 2, Bytes: 500

Flow: 2 Match: tcp,in_port=0,tp_src=1 Actions: output:1
      Priority: 11111, Table: 0, Cookie: 0x1, Duration: 130.642s, Packets: 0, Bytes: 0

Flow: 3 Match: any Actions: drop
      Priority: 0, Table: 1, Cookie: 0x0, Duration: 140.088s, Packets: 0, Bytes: 0

Flow: 4 Match: any Actions: drop
      Priority: 0, Table: 2, Cookie: 0x0, Duration: 140.088s, Packets: 0, Bytes: 0

Flow: 5 Match: any Actions: drop
      Priority: 0, Table: 3, Cookie: 0x0, Duration: 140.087s, Packets: 0, Bytes: 0

Flow: 6 Match: any Actions: drop
      Priority: 0, Table: 4, Cookie: 0x0, Duration: 140.087s, Packets: 0, Bytes: 0

Flow: 7 Match: any Actions: drop
      Priority: 0, Table: 5, Cookie: 0x0, Duration: 140.086s, Packets: 0, Bytes: 0

Flow: 8 Match: any Actions: drop
      Priority: 0, Table: 6, Cookie: 0x0, Duration: 140.086s, Packets: 0, Bytes: 0

Flow: 9 Match: any Actions: drop
      Priority: 0, Table: 7, Cookie: 0x0, Duration: 140.085s, Packets: 0, Bytes: 0

Flow: 10 Match: any Actions: drop
      Priority: 0, Table: 8, Cookie: 0x0, Duration: 140.085s, Packets: 0, Bytes: 0

Device#
```

The following is sample from the **show openflow switch** *number* **flows summary** command:

```
Device# show openflow switch 1 flows summary

Logical Switch Id: 1
Switch flow count: 10
```

The output fields are self-explanatory.

Related Commands

Command	Description
feature openflow	Enables the OpenFlow feature.
openflow	Enables OpenFlow configuration and enters OpenFlow configuration mode.

show telemetry ietf subscription

To display information about telemetry subscriptions on a device, use the **show telemetry ietf subscription** command in user EXEC or privileged EXEC mode.

show telemetry ietf subscription {*subscription-ID* | **all** | **configured** | **dynamic**} [{**brief** | **detail**}]

Syntax Description

subscription-ID	Subscription ID. Valid values are from 0 to 4294967295.
all	Displays all subscription information.
configured	Displays a list of subscriptions configured via CLI or NETCONF set config.
dynamic	Displays information about dynamic subscriptions created using the <establish-subscription> RPC.
brief	(Optional) Displays a brief summary of the subscription information.
detail	(Optional) Displays the subscription information in detail.

Command Modes

User EXEC (>)

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

Use the **show telemetry ietf subscription** command or the <get> RPC to retrieve the list of current subscription details on a device.

Example

The following is sample output from the **show telemetry ietf subscription** *subscription-ID***detail** command:

```
Device#  telemetry ietf subscription 2147483667 detail

Telemetry subscription detail:

  Subscription ID: 2147483667
  State: Valid
  Stream: yang-push
  Encoding: encode-xml
  Filter:
    Filter type: xpath
```

```
    XPath: /mdt-oper:mdt-oper-data/mdt-subscriptions
  Update policy:
    Update Trigger: periodic
    Period: 1000
  Notes:
```

The following is sample output from the **show telemetry ietf subscription dynamic brief** command:

```
Device# show telemetry ietf subscription dynamic brief

Telemetry subscription brief

  ID               Type        State       Filter type
  ------------------------------------------------------
  2147483667       Dynamic     Valid       xpath
  2147483668       Dynamic     Valid       xpath
  2147483669       Dynamic     Valid       xpath
```

The table below lists the significant fields shown in the display.

Table 8: show telemetry ietf subscription Field Descriptions

Field	Description
Subscription ID	Subscription identifier
State	Validity of a configured subscription. State will always be valid for dynamic subscriptions. For example, a configured subscription can be in a half-configured state, and therefore invalid. However, if a dynamic establish subscription is invalid, an error RPC response is sent back, and the subscription will not appear in this table.
Stream	Type of streaming used for subscriptions. Only YANG-push is supported.
Encoding	Specifies encode-xml as the encoding type.
Filter Type	Type of filter used for subscriptions. Only XPath is supported.
XPath	XPath filter type or how the subscribed information was selected.
Update Trigger	Type of trigger to update subscriptions.
Period	Periodic timer configured to trigger an update. Values are specified in centiseconds (1/100 of a second).
Notes	A brief explanation about why a subscription is invalid. But for dynamic subscriptions, this field is always be empty.

Field	Description
ID	Subscription ID.

switch (OpenFlow)

To configure a logical switch and enter OpenFlow switch configuration mode, use the **switch** command in OpenFlow configuration mode. To disable the logical switch configuration, use the **no** form of this command.

switch 1 pipeline 1
no switch 1 pipeline 1

Syntax Description

1	Configures the OpenFlow logical switch ID.
pipeline 1	Configures the OpenFlow pipeline ID.

Command Default

The OpenFlow logical switch is not configured.

Command Modes

OpenFlow configuration (config-openflow)

Command History

Release	Modification
Cisco IOS XE Fuji 16.9.1	This command was introduced.

Example

The following example shows how to configure a logical switch and pipeline:

```
Device# configure terminal
Device(config)# feature openflow
Device(config)# openflow
Device(config-openflow)# switch 1 pipeline 1
Device(config-openflow-switch)#
```

Related Commands

Command	Description
feature openflow	Enables the OpenFlow feature.
openflow	Enables OpenFlow configuration and enters OpenFlow configuration mode.

stream

To configure telemetry stream for the subscription, use the **stream** command in telemetry-subscription configuration mode. To disable the configuration, use the **no** form of this command.

stream yang-push
no stream yang-push

Syntax Description

yang-push	Configures a yang-push stream.

Command Modes

Telemetry-subscription configuration (config)

Command History

Release	Modification
Cisco IOS XE Gibraltor 16.10.1	This command was introduced.

Usage Guidelines

Sources of telemetry data in a subscription are specified by the use of a stream and a filter. The term stream refers to a related set of events. RFC 5277 defines an event stream as a set of event notifications matching some forwarding criteria.

The yang-push stream is the data in configuration and operational databases that is described by a supported YANG model. This stream supports an XPath filter to specify what data is of interest within the stream, and where the XPath expression is based on the YANG model that defines the data of interest. Update notifications for this stream may be sent either when data changes or at fixed periods, but not for both, for a given subscription. Subscriptions for data that does not currently exist are permitted, and these run as normal subscriptions.

Example

The following example shows how to configure telemetry stream for the subscription:

```
Device(config)# telemetry ietf subscription 101
Device(config-mdt-subs)# stream yang-push
```

telemetry ietf subscription

To configure telemetry subscription, use the **telemetry ietf subscriptiom** command in global configuration mode. To disable the configuration, use the **no** form of this command.

telemetry ietf {**subscriptiom** *sub-id*}
no telemetry ietf {**subscriptiom** *sub-id*}

Syntax Description

subscriptiom *sub-id*	Configures a telemetry subscription. Valid values are from 0 to 2147483647.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Gibraltor 16.10.1	This command was introduced.

Example

The following example shows how to configure an telemetry subscription:

```
Device(config)# telemetry ietf subscription 101
```

update-policy

To configure update policy for subscription, use the **update-policy** command in telemetry-subscription configuration mode. To disable the configuration, use the **no** form of this command.

update-policy{**on-change** | **periodic** *period*}
no update-policy{**on-change** | **periodic** *period*}

Syntax Description

on-change	Enables on-change updates.
periodic *period*	Enable on-change updates. Valid values are from 100 to 4294967295.

Command Modes

Telemetry-subscription configuration (config)

Command History

Release	Modification
Cisco IOS XE Gibraltor 16.10.1	This command was introduced.

Usage Guidelines

Example

The following example shows how to configure a periodic update policy for a subscription:

```
Device(config)# telemetry ietf subscription 101
Device(config-mdt-subs)# update-policy periodic 6000
```