



General Administration Command Reference for Cisco ASR 9000 Series Routers

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cdp

To enable the Cisco Discovery Protocol (CDP) globally or on an interface, use the **cdp** command in the appropriate configuration mode. To disable CDP globally or on an interface, use the **no** form of this command.

cdp
no cdp

Syntax Description This command has no keywords or arguments.

Command Default CDP is disabled.

Command Modes Interface configuration

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

By default, CDP is disabled globally. To enable CDP, CDP must be enabled globally and then enabled for each interface.

To enable CDP globally, use the **cdp** command in global configuration mode. To disable CDP globally, use the **no** form of this command in global configuration mode.

To enable CDP on a specific interface, use the **cdp** command in interface configuration mode. To disable CDP on a specific interface, use the **no** form of this command in interface configuration mode.

Task ID	Task ID	Operations
	cdp	read, write

The following example shows how to globally enable CDP:

```
RP/0/RSP0/CPU0:router(config)# cdp
```

The following example shows how to enable CDP on an interface:

```
RP/0/RSP0/CPU0:router(config-if)# cdp
```

Related Topics

[show cdp](#), on page 11

cdp advertise v1

To change the version of Cisco Discovery Protocol (CDP) that is used to communicate with neighboring devices to version 1 (CDPv1), use the **cdp advertise v1** command in the appropriate configuration mode. To remove the **cdp advertise v1** command from the configuration file and restore the system to its default condition with respect to this command, use the **no** form of this command.

cdp advertise v1
no cdp advertise [v1]

Syntax Description This command has no keywords or arguments.

Command Default Version 2 is enabled.

Command Modes Global Configuration mode

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

CDPv2 packets are sent by default. CDP also sends and receives CDPv1 packets if the device with which CDP is interacting does not process CDPv2 packets.

CDPv2 adds device information over CDPv1. The additional information that is contained in the CDPv2 messages relates to Native VLAN, VLAN Trunking Protocol (VTP) Management Domain, Ethernet Duplex, and other features.

Task ID	Task ID	Operations
	cdp	read, write

The following example shows how to set a networking device to send and receive only CDPv1 advertisements:

```
RP/0/RSP0/CPU0:router(config)# cdp advertise v1
```

The following example shows how to restore the default condition (sending and receiving CDPv2 advertisements):

```
RP/0/RSP0/CPU0:router(config)# no cdp advertise
```

Related Topics

[cdp](#), on page 2

[show cdp](#), on page 11

cdp holdtime

To specify the time for which the receiving device should hold a Cisco Discovery Protocol (CDP) packet from your networking device before discarding it, use the **cdp holdtime** command in the appropriate configuration mode. To remove the **cdp holdtime** command from the configuration file and restore the system to its default condition with respect to this command, use the **no** form of this command.

cdp holdtime *seconds*
no cdp holdtime

Syntax Description

seconds Holdtime to be sent in the CDP update packets, in seconds. Range is 10 to 255.

Command Default

seconds : 180

Command Modes

Global configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

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

CDP packets are sent with a time-to-live value or holdtime, that is nonzero after an interface is enabled.

The CDP holdtime must be set to a higher number of seconds than the time between CDP transmissions, which is set using the **cdp time** command.

Task ID

Task ID	Operations
cdp	read, write

The following example shows how to specify that the CDP packets sent from the networking device are held by the receiving device for 60 seconds before being discarded. You might want to set the holdtime lower than the default setting of 180 seconds if information about your networking device changes often and you want the receiving devices to purge this information more quickly.

```
RP/0/RSP0/CPU0:router(config)# cdp holdtime 60
```

Related Topics

[cdp timer](#), on page 7

[show cdp](#), on page 11

cdp log adjacency changes

To log changes to the Cisco Discovery Protocol (CDP) adjacency table, use the **cdp log adjacency changes** command in the appropriate configuration mode. To disable the logging, use the **no** form of this command.

cdp log adjacency changes
no cdp log adjacency changes

Syntax Description This command has no keywords or arguments.

Command Default CDP adjacency table logging is disabled.

Command Modes Global Configuration mode

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

When CDP adjacency table logging is enabled, a syslog is generated each time a CDP neighbor is added or removed.

Task ID	Task ID	Operations
	cdp	read, write

The following example shows how to enable CDP adjacency table logging:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# cdp log adjacency changes
```

When CDP adjacency table logging is enabled, a syslog is generated each time a CDP neighbor is added or removed. The following is an example of the log entry:

```
LC/0/5/CPU0:Jun 5 10:51:18.081 : cdp[109]: %L2-CDP-6-DELETED_NEIGHBOR :
CDP Neighbour TBA04110127 on interface GigabitEthernet0/5/0/0
has been deleted, remote interface 3/2

LC/0/5/CPU0:Jun 5 10:51:33.120 : cdp[109]: %L2-CDP-6-NEW_NEIGHBOR :
New CDP neighbor TBA04110127 detected on interface GigabitEthernet0/5/0/0,
remote interface 3/2
```

Related Topics

[show cdp](#), on page 11

cdp timer

To specify how often the software sends Cisco Discovery Protocol (CDP) updates, use the **cdp timer** command in the appropriate configuration mode. To remove the **cdp timer** configuration command from the configuration file and restore the system to its default condition with respect to this command, use the **no** form of this command.

cdp timer *seconds*
no cdp timer

Syntax Description	<i>seconds</i> Frequency with which the Cisco IOS XR software sends CDP updates, in seconds. Range is 5 to 254. The default is 60.
---------------------------	--

Command Default	<i>seconds</i> : 60
------------------------	---------------------

Command Modes	Global Configuration mode
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Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

A lower timer setting causes CDP updates to be sent more frequently.

Task ID	Task ID	Operations
	cdp	read, write

The following example shows how to set the CDP timer to 80 seconds, which is less frequent than the default setting of 60 seconds:

```
RP/0/RSP0/CPU0:router(config)# cdp timer 80
```

Related Topics

[cdp holdtime](#), on page 5

[show cdp](#), on page 11

clear cdp counters

To reset Cisco Discovery Protocol (CDP) traffic counters to zero (0), use the **clear cdp counters** command in EXEC mode.

clear cdp counters location *node-id*

Syntax Description	location <i>node-id</i> Clears CDP traffic counters for the designated node. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation.
---------------------------	---

Command Default	The counters are set to zero.
------------------------	-------------------------------

Command Modes	EXEC
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Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

The following example shows how to clear CDP counters. The **show cdp traffic** output shows that all traffic counters have been reset to zero (0).

```
RP/0/RSP0/CPU0:router# clear cdp counters
RP/0/RSP0/CPU0:router# show cdp traffic

CDP counters:
  Packets output: 0, Input: 0
  Hdr syntax: 0, Chksum error: 0, Encaps failed: 0
  No memory: 0, Invalid packet: 0, Truncated: 0
  CDP version 1 advertisements output: 0, Input: 0
  CDP version 2 advertisements output: 0, Input: 0
  Unrecognize Hdr version: 0, File open failed: 0
```

Related Topics

[show cdp traffic](#), on page 20

[clear cdp table](#), on page 9

clear cdp table

To clear and automatically resize the table that contains Cisco Discovery Protocol (CDP) information about neighbors, use the **clear cdp table** command in EXEC mode.

clear cdp table location *node-id*

Syntax Description	location <i>node-id</i> Clears and resizes the CDP table for the designated node. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation.				
Command Default	No default behavior or values				
Command Modes	EXEC				
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Release 3.7.2</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	Release 3.7.2	This command was introduced.
Release	Modification				
Release 3.7.2	This command was introduced.				

Usage Guidelines

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

Use the **clear cdp table** command to clear and resize the CDP table that contains the neighbor entries. The new table size is calculated according to the recommended hash table size, as seen in the **show cdp** command output.

Task ID	Task ID	Operations
	cdp	read, write

The following example shows how to clear and resize the CDP table. The output of the **show cdp neighbors** command before and after use of the **clear cdp table** command shows that all information has been deleted from the table:

```
RP/0/RSP0/CPU0:router# show cdp neighbors

Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater

Device ID         Local Intrfce   Holdtme    Capability  Platform  Port ID
TBA04341195(151a Mg0/RP1/CPU0/0  171         T S         WS-C2924  0/1

RP/0/RSP0/CPU0:router# clear cdp table
RP/0/RSP0/CPU0:router# show cdp neighbors

Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater

Device ID         Local Intrfce   Holdtme    Capability  Platform  Port ID
```

The **show cdp** command shows that the table has been resized:

```
RP/0/RSP0/CPU0:router# show cdp

Global CDP information:
  Sending CDP packets every 60 seconds
  Sending a holdtime value of 180 seconds
  Sending CDPv2 advertisements is enabled
```

Related Topics

[show cdp](#), on page 11

[show cdp neighbors](#), on page 17

show cdp

To display global Cisco Discovery Protocol (CDP) information, including CDP version, timer, and holdtime information, use the **show cdp** command in

EXEC

mode.

show cdp

Syntax Description

This command has no keywords or arguments.

Command Default

No default behavior or values

Command Modes

EXEC

Release	Modification
Release 3.7.2	This command was introduced.
Release 3.9.0	No modification.

Usage Guidelines

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

Use the **show cdp** command to display CDP version, timer, and holdtime information relative to CDP operations.

Task ID

Task ID	Operations
cdp	read

The following example shows how to use the **show cdp** command to verify the CDP global settings:

```
RP/0/RSP0/CPU0:router# show cdp
```

```
Global CDP information:
  Sending CDP packets every 20 seconds
  Sending a holdtime value of 30 seconds
  Sending CDPv2 advertisements is not enabled
```

Table 1: show cdp Field Descriptions

Field	Definition
Sending CDP packets every 20 seconds	Interval between transmissions of CDP advertisements. This field is controlled by the cdp timer command.

Field	Definition
Sending a holdtime value of 30 seconds	Time for which the device directs the neighbor to hold a CDP advertisement before discarding it. This field is controlled by the cdp holdtime command.
Sending CDPv2 advertisements is not enabled	State of being enabled or disabled for the transmission of CDP version 2-type advertisements. This field is controlled by the cdp advertise v1 command.

Related Topics

- [cdp advertise v1](#), on page 3
- [cdp holdtime](#), on page 5
- [cdp timer](#), on page 7
- [show cdp entry](#), on page 13
- [show cdp neighbors](#), on page 17
- [show cdp traffic](#), on page 20
- [clear cdp table](#), on page 9
- [show cdp interface](#), on page 15

show cdp entry

To display information about a specific neighboring device or all neighboring devices discovered using Cisco Discovery Protocol (CDP), use the **show cdp entry** command in

EXEC

mode.

```
show cdp entry [*entry-name] [{protocol | version}]
```

Syntax Description

*	Displays all CDP neighbors.
<i>entry-name</i>	Name of a neighbor about which you want information.
protocol	(Optional) Displays protocol information associated with CDP neighbor entries.
version	(Optional) Displays version information associated with CDP neighbor entries.

Command Default

This command displays information about a particular device that has been discovered by CDP.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

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

Task ID

Task ID	Operations
cdp	read, write

The following example shows sample output from the **show cdp entry** command. Information about device ID, address, platform, interface, holdtime, and version is displayed.

```
RP/0/RSP0/CPU0:router# show cdp entry TBA04341195

-----
Device ID: TBA04341195(sys-235)
SysName : sys-235
Entry address(es):
  IP address: 172.16.23.9
Platform: WS-C6006, Capabilities: Trans-Bridge Switch
Interface: MgmtEth0/RP1/CPU0/0
Port ID (outgoing port): 4/18
Holdtime : 157 sec
```

```

Version :
WS-C6006 Software, Version McpSW: 7.2(2) NmpSW: 7.2(2)
Copyright (c) 1995-2002 by Cisco Systems

advertisement version: 2
VTP Management Domain: 'sys'
Native VLAN: 125
Duplex: full

```

Table 2: show cdp entry Field Descriptions

Field	Description
Device ID	ID code assigned during installation of the router.
Entry address(es)	Addresses of the platform, selected interface, and port ID.
Platform	Platform name.
Capabilities	Special functions that the platform can perform (in this case the platform is a trans-bridge switch).
Interface	Interface location expressed in <i>rack / slot / module / port</i> notation.
Port ID (outgoing port)	Location of the port in use by the interface.
Holdtime	Time (in seconds) for which the device directs the neighbor to hold a CDP advertisement before discarding it. This field is controlled by the cdp holdtime command.
Version	Software version.
advertisement version	Version number of the advertising protocol.
VTP Management Domain	VLAN Trunking Protocol (VTP) domain name of neighbor device.
Native VLAN	VLAN ID.
Duplex	Duplex setting: half or full.

Related Topics

- [show cdp](#), on page 11
- [show cdp neighbors](#), on page 17
- [show cdp traffic](#), on page 20
- [show cdp interface](#), on page 15

show cdp interface

To display information about the interfaces on which Cisco Discovery Protocol (CDP) is enabled, use the **show cdp interface** command in the appropriate mode.

```
show cdp interface [{type interface-path-id | location node-id}]
```

Syntax Description	<p><i>type</i> (Optional) Interface type. For more information, use the question mark (?) online help function.</p> <hr/> <p><i>interface-path-id</i> (Optional) Physical interface or virtual interface.</p> <p>Note Use the show interfaces command to see a list of all interfaces currently configured on the router.</p> <p>For more information about the syntax for the router, use the question mark (?) online help function.</p> <hr/> <p>location node-id (Optional) Displays detailed CDP information for the designated node. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation.</p>
---------------------------	---

Command Default This command displays information about the interfaces on which CDP has been enabled.

Command Modes EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **show cdp interface** command to display information about any CDP interfaces. When an interface is specified in the command syntax, information is displayed about the specific interface. Not specifying the interface displays information about all interfaces.

Task ID	Task ID	Operations
	cdp	read, write

The following example shows sample output from the **show cdp interface** command. Information about the status, CDP timer, and holdtime settings is displayed for all interfaces on which CDP is enabled.

```
RP/0/RSP0/CPU0:router# show cdp interface
```

```

POS0/2/0/0 is Up
  Encapsulation HDLC
  Sending CDP packets every 120 seconds
  Holdtime is 240 seconds
POS0/2/0/1 is Up
  Encapsulation HDLC
  Sending CDP packets every 120 seconds
  Holdtime is 240 seconds
POS0/2/0/2 is Up
  Encapsulation HDLC
  Sending CDP packets every 120 seconds
  Holdtime is 240 seconds
POS0/2/0/3 is Up
  Encapsulation HDLC
  Sending CDP packets every 120 seconds
  Holdtime is 240 seconds
MgmtEth0/RP1/CPU0/0 is Up
  Encapsulation ARPA
  Sending CDP packets every 120 seconds
  Holdtime is 240 seconds

```

The following example shows sample output from the **show cdp interface** command with an interface specified. Information about the status, CDP timer, and holdtime settings is displayed for Packet-over-SONET/SDH (POS) interface 0/2/0/1 only.

```

RP/0/RSP0/CPU0:router# show cdp interface pos 0/2/0/1

POS0/2/0/1 is Up
  Encapsulation HDLC
  Sending CDP packets every 60 seconds
  Holdtime is 180 seconds

```

Table 3: show cdp interface Field Descriptions

Field	Description
POS0/2/0/1 is Up	Current condition of POS interface 0/0/2/1.
Encapsulation HDLC	Interface is encoding packets using the Cisco HDLC Layer 2 encapsulation.
Sending CDP packets every 60 seconds	Interval between transmissions of CDP advertisements. This field is controlled by the cdp timer command.
Holdtime is 180 seconds	Time for which the device directs the neighbor to hold a CDP advertisement before discarding it. This field is controlled by the cdp holdtime command.

Related Topics

- [show cdp](#), on page 11
- [show cdp entry](#), on page 13
- [show cdp neighbors](#), on page 17
- [show cdp traffic](#), on page 20

show cdp neighbors

To display detailed information about neighboring devices discovered using Cisco Discovery Protocol (CDP), use the **show cdp neighbors** command in

EXEC

mode.

show cdp neighbors [*{type interface-path-id | location node-id}*] [**detail**]

Syntax Description	
<i>type</i>	(Optional) Interface type. For more information, use the question mark (?) online help function.
<i>interface-path-id</i>	(Optional) Physical interface or virtual interface.
Note	Use the show interfaces command to see a list of all interfaces currently configured on the router.
	For more information about the syntax for the router, use the question mark (?) online help function.
location <i>node-id</i>	(Optional) Displays detailed CDP information for the designated node. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation.
detail	(Optional) Displays detailed information about a neighbor or neighbors, including network address, enabled protocols, holdtime, and software version. The output includes information about both IPv4 and IPv6 addresses.

Command Default No default behavior or values

Command Modes EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **show cdp neighbors** command to display information about any CDP neighbors. When a location is specified in the command syntax, information about the neighbor is displayed for the specified node. Not specifying the location displays information about the neighbor for all interfaces.

Use the command with the **detail** keyword to display additional information, including IPv6 neighbors.

Task ID	Task ID	Operations
	cdp	read

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

```
RP/0/RSP0/CPU0:router# show cdp neighbors

Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater

Device ID          Local Intrfce   Holdtme  Capability  Platform  Port ID
TBA04110127       Gi0/7/0/0       173      T S          WS-C6506  3/9
cisco_1            Gi0/7/0/2       171      R
ASR9K
    Gi0/4/0/2
```

Table 4: show cdp neighbors Field Descriptions

Field	Description
Capability Codes	Type of device that can be discovered.
Device ID	Name of the neighbor device.
Local Intrfce	Protocol being used by the connectivity media and the interface number.
Holdtme	Remaining time, in seconds, for which the current device holds the CDP advertisement from a sending router before discarding it.
Capability	Type of the device listed in the CDP Neighbors table. Values are as follows: R—Router T—Transparent bridge B—Source-routing bridge S—Switch H—Host I—Internet Group Management Protocol (IGMP) device r—Repeater
Platform	Product number of the device.
Port ID	Protocol and port number of the device.

The following examples illustrates sample output for IPv4 and IPv6 neighbors from the **show cdp neighbors** command with the **detail** keyword:

```
RP/0/RSP0/CPU0:router# show cdp neighbor detail

-----
Device ID: uut-user
SysName : uut-user
Entry address(es):
IPv4 address: 10.0.0.1
```

```
IPv6 address: 1::1
IPv6 address: 2::2
Platform: cisco 12008/GRP, Capabilities: Router
Interface: Gi0/4/0/3
Port ID (outgoing port): Gi0/2/0/3
Holdtime : 177 sec
```

```
Version :
Cisco IOS XR Software, Version 0.0.0[Default]
Copyright (c) 2005 by cisco Systems, Inc.
```

```
advertisement version: 2
```

Table 5: show cdp neighbors detail Field Descriptions

Field	Definition
Device ID	Name of the neighbor device.
Entry address(es)	List of network addresses of neighbor devices. The address can be in IP or in Connectionless Network Service (CLNS) protocol conventions.
Platform	Product name and number of the neighbor device.
Capabilities	Device type of the neighbor. This device can be a router, a bridge, a transparent bridge, a source-routing bridge, a switch, a host, an IGMP device, or a repeater.
Interface	Interface being used by the connectivity medium.
Port ID	Port number of the port on the current device.
Holdtime	Remaining time (in seconds) for which the current device holds the CDP advertisement from a sending router before discarding it.
Version	Software version of the neighbor device.
advertisement version	Version number of the advertising protocol.

Related Topics

- [show cdp](#), on page 11
- [show cdp entry](#), on page 13
- [show cdp traffic](#), on page 20
- [show cdp interface](#), on page 15

show cdp traffic

To display information about the traffic gathered between devices using Cisco Discovery Protocol (CDP), use the **show cdp traffic** command in

EXEC

mode.

show cdp traffic [**location** *node-id*]

Syntax Description	location <i>node-id</i> (Optional) Displays CDP information for the CDP packets sent and received on the designated node only. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation.
---------------------------	---

Command Default	Displays CDP information aggregated across all nodes.
------------------------	---

Command Modes	EXEC
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Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Task ID	Task ID	Operations
	cdp	read

The following example illustrates sample output from the **show cdp traffic** command:

```
RP/0/RSP0/CPU0:router# show cdp traffic

CDP counters :
  Packets output: 50662, Input: 40414
  Hdr syntax: 0, Chksum error: 0, Encaps failed: 0
  No memory: 0, Invalid packet: 0, Truncated: 0
  CDP version 1 advertisements output: 0, Input: 0
  CDP version 2 advertisements output: 50662, Input: 40414
  Unrecognize Hdr version: 0, File open failed: 0
```

Table 6: show cdp traffic Field Descriptions

Field	Definition
Packets output	Number of CDP advertisements sent by the local device. Note that this value is the sum of the CDP version 1 advertisements output field and the CDP version 2 advertisements output field.
Input	Number of CDP advertisements received by the local device. Note that this value is the sum of the CDP version 1 advertisements input field and the CDP version 2 advertisements input field.
Hdr syntax	Number of CDP advertisements having bad headers that have been received by the local device.
Chksum error	Number of times the checksum (verifying) operation failed on incoming CDP advertisements.
Encaps failed	Number of times CDP failed to send advertisements on an interface because of a failure caused by the bridge port of the local device.
No memory	Number of times that the local device did not have enough memory to store the CDP advertisements in the advertisement cache table when the device was attempting to assemble advertisement packets for transmission and parse them when receiving them.
Invalid packet	Number of invalid CDP advertisements received and sent by the local device.
Truncated	Number of times truncated CDP advertisements were sent because there was not enough space in the CDP packet to hold all CDP type-length-values (TLVs).
CDP version 1 advertisements output	Number of CDP version 1 advertisements sent by the local device.
Input	Number of CDP version 1 advertisements received by the local device.
CDP version 2 advertisements output	Number of CDP version 2 advertisements sent by the local device.
Input	Number of CDP version 2 advertisements received by the local device.
Unrecognize Hdr version	Number of packets received from a CDP version that was outside the current configuration.
File open failed	Number of times that CDP failed to connect to one of the underlying services it uses.

Related Topics

[show cdp](#), on page 11

[show cdp entry](#), on page 13

[show cdp neighbors](#), on page 17

[show cdp interface](#), on page 15

■ show cdp traffic



Disk Mirroring Commands

- [mirror](#), on page 24
- [mirror resume](#), on page 26
- [mirror verify](#), on page 27
- [mirror pause](#), on page 28
- [show mirror](#), on page 29

mirror

To configure disk mirroring on a node, use the **mirror** command in global configuration mode. To disable disk mirroring, use the **no** form of this command.

mirror location [**preconfigure**] *node-id primary-device:secondary-device*
no mirror location

Syntax Description

location <i>node-id</i>	Specifies the node of the RP. It can be a node that is not yet installed if the preconfigure keyword is used. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation.
preconfigure	(Optional) Enables you to specify a node that is not yet installed.
<i>primary-device</i> :	Specifies the primary boot device used to store installation packages and configuration files. Supported devices are: <ul style="list-style-type: none"> • disk0: • disk1: (if installed) • compactflash: (if installed)
<i>secondary-device</i> :	Storage device on the same RP as the <i>primary-device</i> , to where critical data is replicated. Supported devices are the same as for <i>primary-device</i> :, but <i>secondary-device</i> : must be different than the <i>primary-device</i> :.

Command Default

None

Command Modes

Global configuration

Command History

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

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

The **mirror** command replicates all critical data contained in the primary partition of the primary boot device, onto a second storage device on the same RSP. Therefore, if the primary boot device fails, applications continue to be serviced transparently by the secondary device, without having to switch control to a standby RSP.

Before the **mirror** command can be used, the secondary storage device must be partitioned using the **format** command. If the primary boot device is not partitioned, once mirroring is enabled and all data on the primary boot device is replicated to the secondary device, the primary boot device is partitioned automatically. This guarantees that only critical data on the primary boot device is mirrored to the secondary device. Noncritical

data, such as logging data, should not be mirrored and should, therefore, be saved to the secondary partition on the storage device.

To temporarily suspend disk mirroring without changing the configuration, use the **mirror pause** command in EXEC mode.

Task ID	Task ID	Operations
	root-lr	read, write

The following example shows how to configure disk mirroring from the primary boot device (disk0:) to the secondary storage device (disk1:):

```
RP/0/RSP0/CPU0:(config)# mirror location 0/rp0/cpu0 disk0: disk1:
```

mirror resume

To resume disk mirroring on a node after it has been temporarily stopped, use the **mirror resume** command in EXEC or administration EXEC mode.

```
mirror resume [location {node-id | all}]
```

Syntax Description	location { <i>node-id</i> all } (Optional) Specifies the node of the RSP. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation. The all keyword specifies all RSP nodes.
---------------------------	---

Command Modes	EXEC Administration EXEC
----------------------	-----------------------------

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

The **mirror resume** command resumes the mirroring of the primary boot device after it has been temporarily paused with the **mirror pause** command.

The **mirror resume** command has no affect if the **mirror** configuration command is not enabled and the **mirror pause** command has not been used.

Task ID	Task ID	Operations
	root-lr	read, write

The following example shows how to resume disk mirroring on the active RSP:

```
RP/0/RSP0/CPU0:router# mirror resume
```

mirror verify

To verify disk synchronization for disk mirroring on a node, use the **mirror verify** command in EXEC or administration EXEC mode.

mirror verify [**location** *node-id*]

Syntax Description	location <i>node-id</i> (Optional) Specifies the node of the RSP. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation.	
Command Default	If no node is specified, the verification is done on the active RSP.	
Command Modes	EXEC Administration EXEC	
Command History	Release	Modification
	Release 3.7.2	This command was introduced.
Usage Guidelines	<p>To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.</p> <p>The mirror verify command verifies the synchronization consistency between the primary and secondary media devices being used in mirroring. The command verifies that the full contents are identical between the mirrored devices and reports any inconsistencies found.</p>	
Task ID	Task ID	Operations
	root-lr	read, write

The following example shows how to verify the disk mirroring on the active RSP:

```
RP/0/RSP0/CPU0:router# mirror verify
```

```
Mirror Verify Information for 0/RSP0/CPU0.
=====
Primary device and secondary device are fully synchronized.
```

mirror pause

To temporarily pause disk mirroring on a node, use the **mirror pause** command in EXEC or administration EXEC mode.

mirror pause [**location** {*node-id* | **all**}]

Syntax Description

location {*node-id* | **all**} (Optional) Specifies the node of the RSP. The *node-id* argument is entered in the *rack/slot/module* notation. The **all** keyword specifies all RSP nodes.

Command Default

If no node is specified, disk mirroring is paused on the active RSP.

Command Modes

EXEC

Administration EXEC

Command History

Usage Guidelines

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

The **mirror pause** command temporarily pauses the mirroring of the primary boot device. This command is primarily useful during an installation operation to prevent significant performance degradation on single CPU boards. The **mirror pause** command does not change the configured state of mirroring, but rather causes the mirroring to be suspended until the **mirror resume** command is used.

The **mirror pause** command has no affect if the **mirror** configuration command is not enabled.

Task ID

Task ID	Operations
root-lr	read, write

The following example shows how to pause disk mirroring on the active RSP:

```
RP/0/RSP0/CPU0: # mirror pause
```

show mirror

To display disk mirroring information, use the **show mirror** command in EXEC or administration EXEC mode.

```
show mirror [location {node-id | all}]
```

Syntax Description	location { <i>node-id</i> all } (Optional) Specifies the node of the RSP for which to display the mirroring information. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation. The all keyword specifies all RSP nodes.				
Command Default	No default behavior or values				
Command Modes	EXEC Administration EXEC				
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Release 3.7.2</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	Release 3.7.2	This command was introduced.
Release	Modification				
Release 3.7.2	This command was introduced.				
Usage Guidelines	To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.				
Task ID	<table border="1"> <thead> <tr> <th>Task ID</th> <th>Operations</th> </tr> </thead> <tbody> <tr> <td>filesystem</td> <td>read</td> </tr> </tbody> </table>	Task ID	Operations	filesystem	read
Task ID	Operations				
filesystem	read				

The following is sample output from the **show mirror** command:

```
RP/0/RSP0/CPU0:router# show mirror

Mirror Information for 0/RSP0/CPU0.
=====
Mirroring Enabled
  Configured Primary:      disk0:
  Configured Secondary:   disk1:

Current Mirroring State:   Syncing Files
  Current Physical Primary: disk1:
  Current Physical Secondary: disk0:

Mirroring Logical Device:  disk0:

Physical Device      State      Flags
-----
disk0:               Available  Enabled Formatted
disk1:               Available  Enabled Formatted
compactflash:        Not Present
```

```

disk0a:          Available   Formatted
disk1a:          Available   Formatted
compactflasha:  Not Present

Mirroring Rommon Variable
BOOT_DEV_SEQ_CONF = disk0::disk1:
BOOT_DEV_SEQ_OPER = disk1:
MIRROR_ENABLE = Y

```

Table 7: show mirror Field Descriptions

Field	Description
Mirroring Enabled	Indicates whether mirroring is enabled or disabled.
Configured Primary	If mirroring is enabled, the configured primary disk for mirroring.
Configured Secondary	If mirroring is enabled, the configured secondary disk for mirroring.
Current Mirroring State	Current status of mirroring. Possible values are as follows: Syncing files—Files are being synchronized between the primary and secondary disks. Not Configured—Mirroring is not configured. Mirroring Paused—In this state, no mirroring is being done to the secondary device and the disk redundancy has been removed. The values of the BOOT_DEV_SEQ_OPER and MIRROR_ENABLE variables reflect this. Redundant—The primary and secondary disks are totally in synchronization. Any read or write failure on the primary device results in disk redundancy switchover such that all operations are performed on the secondary device.
Current Physical Primary	Current primary disk.
Current Physical Secondary	Current secondary disk.
Mirroring Logical Device	Device name used by the mirroring process to intercept all application requests to that named device before passing them through to one of the mirrored physical devices.
Physical Device	Physical disk in router.
State	Status of the disk. Possible values are as follows: Available—Disk exists in router and is available. Not present—Disk does not exist in router. Partitioning of disks is available only after the disk has been formatted with the partition keyword.
Flags	Enabled—Disk mirroring has been enabled on this device and the device is part of the mirroring process. Repaired—During the boot, some minor inconsistencies were discovered on the disk and were repaired to make the file system consistent. Formatted—Disk was formatted before mirroring was enabled.

Field	Description
BOOT_DEV_SEQ_CONF=	<p>ROM Monitor environmental variable for the boot disk sequence. This variable is set when mirroring is enabled through the mirror configuration command. The devices in this ROMMON variable declare the primary and the secondary devices of the mirroring process. The first device is the primary device and the second device is the secondary device in the mirroring process.</p> <p>Note This variable is also shared by the disk backup feature. This variable can also be set or unset using the system boot-sequence command of the disk backup feature. But the use of system boot-sequence and system backup commands is blocked, if mirroring is enabled.</p>
BOOT_DEV_SEQ_OPER=	<p>ROM Monitor environmental variable that reflects the state of the disk redundancy status. When mirroring is enabled and the state is redundant, this variable is set to the primary device followed by the secondary device. When mirroring is not in the redundancy state, then this variable is updated to contain only the primary device.</p>
MIRROR_ENABLE	<p>ROM Monitor environmental variable whose value reflects the mirroring status. If it is set to Y, then mirroring is enabled. If it is set to P, then mirroring is paused. If empty, mirroring is not enabled.</p>



Call Home Commands

- [active](#), on page 34
- [alert-group disable](#), on page 35
- [call-home](#), on page 36
- [call-home request](#), on page 37
- [call-home send](#), on page 39
- [call-home send alert-group inventory](#), on page 41
- [call-home test](#), on page 42
- [contact smart-licensing](#), on page 43
- [contact-email-addr](#), on page 44
- [contract-id](#), on page 45
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- [subscribe-to-alert-group environment](#), on page 70
- [subscribe-to-alert-group inventory](#), on page 72
- [subscribe-to-alert-group syslog](#), on page 74

active

To enable a Call Home profile, use the **active** command in call home profile configuration mode. To disable a profile, use the **no active** form of this command.

active
no active

Syntax Description This command has no keywords or arguments.

Command Default A profile is disabled by default.

Command Modes Call home configuration

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

You must enable a profile using the **active** command so that call home messages can be triggered.

Task ID	Task ID	Operation
	call-home	read, write

The following example shows how to activate a profile:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config) call-home
RP/0/RSP0/CPU0:router(config-call-home) # profile my-profile
RP/0/RSP0/CPU0:router(config-call-home-profile) # active
```

Related Topics

- [call-home](#), on page 36
- [profile \(call home\)](#), on page 54

alert-group disable

To disable an individual Call Home alert-group, use the **alert group disable** command in call home configuration mode. To enable an individual Call Home alert-group, use the **no** form of this command.

alert-group *alert-group-name* **disable**
no alert-group *alert-group-name* **disable**

Syntax Description

alert-group-name A keyword that identifies an alert group. Valid values are:

- syslog
- environment
- inventory

Command Default

Alert groups are enabled by default.

Command Modes

Call home configuration

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

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

By default, alert groups are enabled. Use the **alert-group disable** command to disable alert groups.

Task ID

Task ID	Operation
call-home	read, write

Example

The following example shows how to disable the inventory alert group:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config) call-home
RP/0/RSP0/CPU0:router(config-call-home)# alert-group inventory disable
```

Related Commands

Command	Description
call-home, on page 36	Enters call home configuration mode to configure the call home feature.

call-home

To enter call home configuration mode to configure Call Home, use the **call-home** command in global configuration mode. To remove all Call Home settings and set the technical assistance center (TAC) profile as the default, use the **no** form of this command.

call-home
no call-home

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes Global configuration

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

Task ID	Task ID	Operation
	call-home	read, write

The following example shows how to enter call home configuration mode:

```
RP/0/RSP0/CPU0:router(config)# call-home
RP/0/RSP0/CPU0:router(config-call-home)#
```

Related Commands	Command	Description
	show call-home, on page 58	Displays information regarding the Call Home configuration.

call-home request

To send a customer request to Cisco, use the **call-home request** command in EXEC mode.

```
call-home request {bugs-list | command-reference | config-sanity | output-analysis "show-command" | product-advisory} {ccoid ccoid | profile profile-name}
```

Syntax	Description
bugs-list	Sends output of the following commands: <ul style="list-style-type: none"> • show running-config sanitized • show version • show diag
command-reference	Sends output of the following commands: <ul style="list-style-type: none"> • show running-config sanitized • show version • show diag
config-sanity	Sends output of the following commands: <ul style="list-style-type: none"> • show running-config sanitized • show version
output-analysis <i>show-command</i>	Sends output from the specified show command. The <i>show-command</i> argument should be enclosed in quotes ("").
product-advisory	Sends output of all commands included in the inventory message in addition to the output from the show running-config sanitized command.
ccoid <i>ccoid</i>	Specifies the Smart Call Home user registered ID.
profile <i>profile-name</i>	Specifies the profile to which to send the message.

Command Default None

Command Modes EXEC

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

Usage Guidelines

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

The message uses the specified profile or the CiscoTAC-1 profile if no profile name is specified to send out the request the the Cisco backend. This ensures that users who use a transport gateway can use a different profile than the CiscoTAC-1 profile to send the request to their email server first before forwarding to the Cisco backend. CiscoTAC-1 or any profile specified needs to be enabled before you can send out the request.

If the CCO ID is not specified, the contact email address of the device is used.

Each message sent includes the CLI command output specified for each subcommand. After the message is sent, a syslog message is displayed indicating whether the request was sent successfully or not.

Task ID**Task ID Operation**

call-home	read, write
-----------	----------------

The following example shows how to send a message with output from the **show version** command to engineer@cisco.com:

```
RP/0/RSP0/CPU0:router(config)# call-home request config-sanity ccoid
xyz
RP/0/RSP0/CPU0:router(config)# call-home request bugs-list
RP/0/RSP0/CPU0:router(config)# call-home request output-analysis "show log"
profile TG
RP/0/RSP0/CPU0:router(config)# call-home request output-analysis "show
running-config"
```

Related Commands

Command	Description
call-home, on page 36	Enters call home configuration mode to configure the call home feature.
show call-home, on page 58	Displays information regarding the Call Home configuration.

call-home send

To send the output from a specific command as a Call Home message, use the **call-home send** command in EXEC mode.

```
call-home send "cli-command" {email email-address | tac-service-request service-number}
```

Syntax Description		
<i>cli-command</i>		Any CLI command that can be run at the prompt.
email <i>email-address</i>		Specifies the email address to which to send the call home message.
tac-service-request <i>service-number</i>		Specifies the Technical Assistance Center (TAC) service request number.

Command Default If no email address is specified, attach@cisco.com is used.

Command Modes EXEC

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

The specified CLI command is generally a show command with output that is required by the TAC to analyze a specific issue. The CLI command must be enclosed in quotes. The CLI command output is sent to the specified email address in long text format with the service request number in the subject of the email. If no email address is specified, the TAC service request number must be specified. By default, messages are sent to attach@cisco.com. If no TAC service request number is specified, TAC email is rejected.

Task ID	Task ID	Operation
	call-home	read, write

The following example shows how to send a message with output from the **show version** command to engineer@cisco.com:

```
RP/0/RSP0/CPU0:router(config)# call-home send "show version" engineer@cisco.com
```

Related Commands	Command	Description
	call-home , on page 36	Enters call home configuration mode to configure the call home feature.

Command	Description
show call-home, on page 58	Displays information regarding the Call Home configuration.

call-home send alert-group inventory

To send an inventory Call Home message to all subscribed profiles or the specified profile, use the **call-home send alert-group inventory** command in EXEC mode.

call-home send alert-group inventory [**profile** *profile-name*]

Syntax Description	profile <i>profile-name</i>	Specifies the profile to which to send the inventory Call Home message.						
Command Default	If no profile is specified, the message is sent to all subscribed profiles.							
Command Modes	EXEC							
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Release 4.1.0</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	Release 4.1.0	This command was introduced.			
Release	Modification							
Release 4.1.0	This command was introduced.							
Usage Guidelines	<p>To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.</p> <p>The profile specified by the <i>profile-name</i> argument does not need to be subscribed to the inventory alert-group.</p>							
Task ID	<table border="1"> <thead> <tr> <th>Task ID</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>call-home</td> <td>read, write</td> </tr> </tbody> </table>	Task ID	Operation	call-home	read, write			
Task ID	Operation							
call-home	read, write							
	<p>The following example shows how to send an inventory message to the myprofile profile:</p> <pre>RP/0/RSP0/CPU0:router(config)# call-home send alert-group inventory profile myprofile</pre>							
Related Commands	<table border="1"> <thead> <tr> <th>Command</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>call-home, on page 36</td> <td>Enters call home configuration mode to configure the call home feature.</td> </tr> <tr> <td>show call-home, on page 58</td> <td>Displays information regarding the Call Home configuration.</td> </tr> </tbody> </table>	Command	Description	call-home, on page 36	Enters call home configuration mode to configure the call home feature.	show call-home, on page 58	Displays information regarding the Call Home configuration.	
Command	Description							
call-home, on page 36	Enters call home configuration mode to configure the call home feature.							
show call-home, on page 58	Displays information regarding the Call Home configuration.							

call-home test

To send a test Call Home message to the specified profile, use the **call-home test** command in EXEC mode.

call-home test [*test-message-text*] **profile** *profile-name*

Syntax Description	<i>test-message-text</i>	Text to be sent in the test message. If the message text is not specified, a default message is sent.
	profile <i>profile-name</i>	Specifies the profile to which to send the test call home message.

Command Default None

Command Modes EXEC

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

Task ID	Task ID	Operation
	call-home	read, write

The following example shows how to send a test Call Home message:

```
RP/0/RSP0/CPU0:router (config)# call-home test "this is a test message" profile myprofile
```

Related Commands	Command	Description
	call-home, on page 36	Enters call home configuration mode to configure the call home feature.
	show call-home, on page 58	Displays information regarding the Call Home configuration.

contact smart-licensing

To send notification emails to your Smart Licensing account, use **contact smart-licensing** command in the **call-home** configuration mode. To disable the contact, use the **no** form of this command.

contact smart-licensing
no contact smart-licensing

Syntax Description This command has no keywords or arguments.

Command Default **contact smart-licensing** is not configured.

Command Modes **call-home** configuration mode.

Command History	Release	Modification
	Release 6.1.2	This command was introduced.

Usage Guidelines The Smart Call Home back-end service uses the email address configured in your Smart Licensing account as the destination address for the notification mails. Enabling Smart Licensing also enables call-home which changes several mandatory configurations in call-home. **contact smart-licensing** is one of the configurations that is automatically added when you enable smart-licensing.



Note The **contact-email-addr** command and the **contact smart-licensing** command cannot be configured simultaneously.

Task ID	Task ID	Operation
	call-home	Read, Write

Example

This example shows how to configure the contact email address:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# call-home
RP/0/RSP0/CPU0:router(config-call-home)# contact smart-licensing
```

contact-email-addr

To specify a contact email address for the system, use the **contact-email-addr** command in call home configuration mode. To disable the contact email address, use the **no** form of this command.

contact-email-addr *email-addr*
no contact-email-addr *email-addr*

Syntax Description *email-addr* The email address of the system contact.

Command Default No contact email address is defined.

Command Modes Call home configuration

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

The contact email address is a mandatory user-configurable field that must be configured before Call Home messages are triggered.

Task ID	Task ID	Operation
	call-home	read, write

The following example shows how to configure the contact email address:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router (config) call-home
RP/0/RSP0/CPU0:router (config-call-home) # contact-email-addr contact@cisco.com
```

contract-id

To specify a contract identifier for the system, use the **contract-id** command in call home configuration mode. To disable the contract identifier, use the **no** form of this command.

contract-id *contract-id-string*
no contract-id *contract-id-string*

Syntax Description

contract-id-string A string that identifies a service contract.

Command Default

No contract ID is defined.

Command Modes

Call home configuration

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

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

The contract ID is an optional user-configurable field that can be used for contract information or any other identification information for the support service.

Task ID

Task ID	Operation
call-home	read, write

The following example shows how to configure the contract ID:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config) call-home
RP/0/RSP0/CPU0:router(config-call-home) # contract-id contract
```

customer-id

To specify a customer identifier for the system, use the **customer-id** command in call home configuration mode. To disable the customer identifier, use the **no** form of this command.

customer-id *contract-id-string*
no customer-id *contract-id-string*

Syntax Description *customer-id-string* A string that identifies the customer.

Command Default No customer ID is defined.

Command Modes Call home configuration

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

The customer ID is an optional user-configurable field that can be used for contract information or any other identification information of a support service.

Task ID	Task ID	Operation
	call-home	read, write

The following example shows how to configure the customer ID:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config) call-home
RP/0/RSP0/CPU0:router(config-call-home) # customer-id cisco
```


destination address

To specify an email address to which Call Home messages are sent, use the **destination address** command in call home profile configuration mode. To disable the contract identifier, use the **no** form of this command.

destination address *email-address*
no destination address *email-address*

Syntax Description	<i>email-address</i> Email address to which short-text and long-text Call Home messages and XML-based Call Home messages are to be sent.
---------------------------	--

Command Default	No destination email address is defined.
------------------------	--

Command Modes	Call home profile configuration
----------------------	---------------------------------

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

You must define a destination email address to send out Call Home messages.

Task ID	Task ID	Operation
	call-home	read, write

The following example shows how to configure the destination email address:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config) call-home
RP/0/RSP0/CPU0:router(config-call-home)# profile my-profile
RP/0/RSP0/CPU0:router(config-call-home-profile)# destination address user@cisco.com
```

Related Commands	Command	Description
	profile (call home), on page 54	Enters call home profile configuration mode to create or configure a Call Home profile.

destination message-size-limit

To specify the message size limit for call home messages for a specific profile, use the **destination message-size-limit** command in Call Home profile configuration mode. To disable the message size limit, use the **no** form of this command.

destination message-size-limit *maximum-size*
no destination message-size-limit *maximum-size*

Syntax Description	<i>maximum-size</i> Maximum message size in bytes.
---------------------------	--

Command Default	The default maximum message size is 3 Mbytes.
------------------------	---

Command Modes	Call home profile configuration
----------------------	---------------------------------

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

The destination maximum message size can be optionally set to limit the size of Call Home messages.

Task ID	Task ID	Operation
	call-home	read, write

The following example shows how to configure the contract ID:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config) call-home
RP/0/RSP0/CPU0:router(config-call-home)# profile my-profile
RP/0/RSP0/CPU0:router(config-call-home-profile)# destination maximum-message-size 2000
```

Related Commands	Command	Description
	profile (call home), on page 54	Enters call home profile configuration mode to create or configure a Call Home profile.

destination preferred-msg-format

To specify the message format for a profile, use the **destination preferred-msg-format** command in call home profile configuration mode. To revert to the default message format, use the **no** form of this command.

```
destination preferred-msg-format {long-text | short-text | xml}
no destination preferred-msg-format {long-text | short-text | xml}
```

Syntax Description

long-text	Specifies to send clear text long Call Home messages, that contain formatting to enable easy readability.
short-text	Specifies to send clear text short Call Home messages, that are designed for use with text pagers.
xml	Specifies to send the same text as the long text messages, with the addition of XML tagging and Adaptive Messaging Language (AML) specific transport information to allow machine-readable parsing and correct routing of the message.

Command Default

The default message format is xml.

Command Modes

Call home profile configuration

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

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

Task ID

Task ID	Operation
call-home	read, write

The following example shows how to configure the message format to short text:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config) call-home
RP/0/RSP0/CPU0:router(config-call-home)# profile my-profile
RP/0/RSP0/CPU0:router(config-call-home-profile)# destination preferred-msg-format short-text
```

Related Commands

Command	Description
profile (call home), on page 54	Enters call home profile configuration mode to create or configure a Call Home profile.

destination transport-method

To specify the transport method for Call Home messages for a specific profile, use the **destination transport-method** command in call home profile configuration mode. To disable the transport method, use the **no** form of this command.

destination transport-method email
no destination transport-method email

Syntax Description	email Email is used to send call home messages.
---------------------------	--

Command Default	The default transport method is email.
------------------------	--

Command Modes	Call home profile configuration
----------------------	---------------------------------

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

The only transport method supported in this release is email.

Task ID	Task ID	Operation
	call-home	read, write

The following example shows how to configure the transport method to be email:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router (config) call-home
RP/0/RSP0/CPU0:router (config-call-home) # profile my-profile
RP/0/RSP0/CPU0:router (config-call-home-profile) # destination transport-method email
```

Related Commands	Command	Description
	profile (call home), on page 54	Enters call home profile configuration mode to create or configure a Call Home profile.

mail-server

To specify and configure the various mail servers for sending Call Home messages, use the **mail-server** command in call home configuration mode. To remove the mail server configuration, use the **no** form of this command.

mail-server *{ip-addressname}* **priority** *priority*
no mail-server *{ip-addressname}* **priority** *priority*

Syntax	Description
<i>ip-address</i>	An IPv4 address to use as the mail server.
<i>name</i>	Name of server to use as the mail server.
priority <i>priority</i>	Priority to be used to determine which of multiple configured servers to use as the mail server. Values can be from 1 to 100. A server with a lower priority is tried first.

Command Default No mail server is defined.

Command Modes Call home configuration

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

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

You must configure a mail server if the user profile is configured to send email messages only. Only IPv4 addresses are supported.

Up to five mail servers can be configured. Specify a priority for each mail server so the system knows which to try first.

Task ID

Task ID	Operation
call-home	read, write

The following example shows how to configure a mail server:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config) call-home
RP/0/RSP0/CPU0:router(config-call-home)# email-server 209.165.200.225
```

Related Commands	Command	Description
	call-home, on page 36	Enters call home configuration mode to configure the call home feature.

phone-number

To specify a phone number to contact regarding the system, use the **phone-number** command in call home configuration mode. To remove the configured phone number, use the **no** form of this command.

phone-number *phone-number-string*
no phone-number *phone-number-string*

Syntax Description

phone-number-string Phone number of the contact for the system. The number should always begin with a plus sign (+).

Command Default

No phone number is defined.

Command Modes

Call home configuration

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

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

The phone number is an optional user-configurable field.

Task ID

Task ID	Operation
call-home	read, write

The following example shows how to configure the phone number of the system contact:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config) call-home
RP/0/RSP0/CPU0:router(config-call-home) # phone-number +15435432101
```

profile (call home)

To enter call home profile configuration mode to create a user-defined profile or configure an existing Call Home profile, use the **profile** command in call home configuration mode. To delete a user-defined profile, use the **no profile** form of this command.

profile *profile-name*
no profile *profile-name*

Syntax Description	<i>profile-name</i> A string that identifies the name of profile to create or configure.
---------------------------	--

Command Default	The tac profile exists by default.
------------------------	------------------------------------

Command Modes	Call home configuration
----------------------	-------------------------

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

Use the profile command to create a new profile or modify an existing profile. When you use the **no profile** command, the user-defined profile is deleted and the CiscoTAC-1 profile is set to default. A warning message is displayed when the CiscoTAC-1 profile is set to default.

Task ID	Task ID	Operation
	call-home	read, write

The following example shows how to create a profile called new-profile:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config) call-home
RP/0/RSP0/CPU0:router(config-call-home) # profile new-profile
RP/0/RSP0/CPU0:router(config-call-home-profile) #
```

Related Commands	Command	Description
	active, on page 34	Enables a Call Home profile.
	destination address, on page 47	Specifies an email address to which Call Home messages are sent.

rate-limit

To specify a Call Home event trigger rate limit, use the **rate-limit** command in call home configuration mode. To disable the configured rate limit, use the **no** form of this command.

rate-limit *events-count*
no rate-limit *events-count*

Syntax Description	<i>events-count</i> Number of events that can be triggered per minute. The default is five events. The maximum is five events.
---------------------------	--

Command Default	5 events per minute
------------------------	---------------------

Command Modes	Call home configuration
----------------------	-------------------------

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

Task ID	Task ID	Operation
	call-home	read, write

Example

The following example shows how to configure the rate limit to be 3 events per minute:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config) call-home
RP/0/RSP0/CPU0:router(config-call-home)# rate-limit 3
```

sender

To specify the from and reply-to email addresses for Call Home email messages, use the **sender** command in call-home configuration mode. To remove these email addresses from the configuration, use the **no** form of this command.

sender {**from** | **reply-to**} *email-address*

no sender {**from** | **reply-to**} *email-address*

Syntax Description		
	from	Specifies the email address to be used as the from field in Call Home email messages.
	reply-to	Specifies the email address to be used as the reply-to field in Call Home email messages.
	<i>email-address</i>	A string that identifies a valid email address.

Command Default No sender email is configured.

Command Modes Call-home configuration

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

Task ID	Task ID	Operation
	call-home	read, write

The following example shows how to configure the from and reply-to email addresses:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config) call-home
RP/0/RSP0/CPU0:router(config-call-home) # sender from user1@cisco.com
RP/0/RSP0/CPU0:router(config-call-home) # sender reply-to user1@cisco.com
```

service active

To enable the Call Home capability, use the **service active** command in call home configuration mode. To disable the Call Home capability, use the **no** form of this command.

service active
no service active

Syntax Description This command has no keywords or arguments.

Command Default Call Home is disabled by default.

Command Modes Call home configuration

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

It is mandatory to enable the Call Home capability using the **service active** command to allow events to get triggered and send out Call Home messages.

Task ID	Task ID	Operation
	call-home	read, write

The following example shows how to enable the Call Home capability:

```
RP/0/RSP0/CPU0:router(config-call-home)# service active
```

show call-home

To display information regarding the Call Home configuration, use the **show call-home** command in EXEC mode.

show call-home [**detail**]

Syntax Description	detail	Displays Call Home general settings, alert group settings, and all available profiles.
Command Default	None	
Command Modes	EXEC	
Command History	Release	Modification
	Release 4.1.0	This command was introduced.
Usage Guidelines	To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.	
Task ID	Task ID	Operation
	call-home	read

The following example shows how to display detailed call home configuration information:

```
RP/0/RSP0/CPU0:router# show call-home detail

Wed Apr  6 02:00:27.789 DST

Current call home settings:
  call home feature : disable
  call home message's from address: Not yet set up
  call home message's reply-to address: Not yet set up

  contact person's email address: Not yet set up

  contact person's phone number: Not yet set up
  street address: Not yet set up
  customer ID: Not yet set up
  contract ID: Not yet set up
  site ID: Not yet set up

Mail-server: Not yet set up
Rate-limit: 5 event(s) per minute

Available alert groups:
  Keyword                State  Description
  -----
  environment             Enable environmental info
```

```

inventory          Enable  inventory info
syslog             Enable  syslog info

```

Profiles:

```

Profile Name: CiscoTAC-1
Profile status: INACTIVE
Preferred Message Format: xml
Message Size Limit: 3145728 Bytes
Transport Method: email
Email address(es): callhome@cisco.com

```

Periodic inventory info message is scheduled every 24 day of the month at 16:35

```

Alert-group          Severity
-----
environment          minor
inventory            normal

Syslog-Pattern      Severity
-----
.*                   major

```

Related Commands

Command	Description
call-home, on page 36	Enters call home configuration mode to configure the call home feature.

show call-home alert-group

To display available Call Home alert groups, use the **show call-home alert-group** command in EXEC mode.

show call-home alert-group

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes EXEC

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

Task ID	Task ID	Operation
	call-home	read, write

The following example shows how to display Call Home alert group information:

```
RP/0/RSP0/CPU0:router# show call-home alert-group
```

```
Tue Apr 5 06:51:02.860 DST
```

```
Available alert groups:
```

Keyword	State	Description
environment	Enable	environmental info
inventory	Enable	inventory info
syslog	Enable	syslog info

show call-home mail-server status

To displays the status of the configured mail servers, use the **show call-home mail-server status** command in EXEC mode.

show call-home mail-server status

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes EXEC

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

Task ID	Task ID	Operation
	call-home	read

The following example shows sample output from the **show call-home mail-server status** command:

```
RP/0/RSP0/CPU0:router# show call-home mail-server status
Please wait. Checking for mail server status ...
Mail-server[1]: Address: 64.102.124.15 Priority: 50 [Available]
```

Related Commands	Command	Description
	call-home, on page 36	Enters call home configuration mode to configure the call home feature.

show call-home profile

To display the Call Home profiles, use the **show call-home profile** command in EXEC mode.

show call-home profile {*all**profile-name*}

Syntax Description	all	Displays information for all profiles.
	<i>profile-name</i>	Name of the profile for which to display information.

Command Default None

Command Modes EXEC

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

Task ID	Task ID	Operation
	call-home	read

The following example shows sample output from the **show call-home profile** command:

```
RP/0/RSP0/CPU0:router# show call-home profile CiscoTAC-1

Profile Name: CiscoTAC-1
  Profile status: INACTIVE
  Preferred Message Format: xml
  Message Size Limit: 3145728 Bytes
  Transport Method: email
  Email address(es): callhome@cisco.com

Periodic inventory info message is scheduled every 4 day of the month at 12:19

Alert-group          Severity
-----
environment          minor

Syslog-Pattern       Severity
-----
.*                   major
```


Related Commands	Command	Description
	call-home, on page 36	Enters call home configuration mode to configure the call home feature.

show call-home statistics

To display Call Home statistics, use the **show call-home statistics** command in EXEC mode.

show call-home statistics

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes EXEC

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

Task ID	Task ID	Operation
	call-home	read

The following example shows sample output from the **show call-home statistics** command:

```
RP/0/RSP0/CPU0:router# show call-home statistics
```

Message Types	Total	Email
Total Success	2	2
Environment	0	0
Inventory	2	2
SysLog	0	0
Test	0	0
Request	0	0
Send-CLI	0	0
Total In-Queue	0	0
Environment	0	0
Inventory	0	0
SysLog	0	0
Test	0	0
Request	0	0
Send-CLI	0	0
Total Failed	0	0
Environment	0	0
Inventory	0	0
SysLog	0	0
Test	0	0
Request	0	0
Send-CLI	0	0

```
Total Ratelimit
  -dropped 0          0
Environment 0          0
Inventory 0           0
SysLog 0             0
Test 0               0
Request 0            0
Send-CLI 0           0
```

Last call-home message sent time: 2010-04-21 01:06:44 GMT+00:00

Related Commands

Command	Description
call-home, on page 36	Enters call home configuration mode to configure the call home feature.

show call-home trace

To display Call Home trace information, use the **show call-home trace** command in EXEC mode.

show call-home trace {**all** | **error** | **event**} {**file** *filename* **original location** *node-id* | **hexdump** | **last** *n* | **location** {*node-id* | **all**} | **reverse** | **stats** | **tailf** | **unique** | **verbose** | **wrapping**}

Syntax Description	
all	(Optional) Displays both error and event traces.
error	(Optional) Displays error trace entries.
event	(Optional) Displays event trace entries.
file <i>filename</i> original location <i>node-id</i>	(Optional) Specifies a filename and original location of the file to display.
hexdump	(Optional) Displays traces in hexadecimal format.
last <i>n</i>	(Optional) Displays the last <i>n</i> number of traces only.
location { <i>node-id</i> all }	Specifies the RP node for which to display the execution path monitoring information. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> notation. The all keyword specifies all RP nodes.
reverse	(Optional) Displays the most recent traces first.
stats	(Optional) Displays execution path statistics.
tailf	(Optional) Displays new traces as they are added.
unique	(Optional) Displays unique entries only, along with the count of the number of times this entry appears.
verbose	(Optional) Displays additional internal debugging information.
wrapping	(Optional) Displays wrapping entries.

Command Default None

Command Modes EXEC

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

Task ID	Task ID	Operation
	call-home	read

The following example shows how to display Call Home trace information:

```
RP/0/RSP0/CPU0:router# show call-home trace event last 15 stats
```

```
Wed Apr 6 05:11:59.984 DST
/dev/shmem/ltrace/call_home/trace wrapping: 28.672 Mbytes/sec for 512 entries
59 wrapping entries (512 possible, 0 filtered, 59 total)
Mar 3 13:26:20.281 call_home/trace 0/RSP0/CPU0 t14 Checking mail server access during
boot-up
Mar 3 13:26:20.281 call_home/trace 0/RSP0/CPU0 t9 processing mail server status checking
event: data1 0x5005784c, str1
Mar 3 13:27:20.283 call_home/trace 0/RSP0/CPU0 t9 Checking mail server access during
boot-up
Mar 3 13:27:20.283 call_home/trace 0/RSP0/CPU0 t14 processing mail server status checking
event: data1 0x5005784c, str1
Mar 3 13:28:20.285 call_home/trace 0/RSP0/CPU0 t14 Checking mail server access during
boot-up
Mar 3 13:28:20.285 call_home/trace 0/RSP0/CPU0 t9 processing mail server status checking
event: data1 0x5005784c, str1
Mar 3 13:29:20.287 call_home/trace 0/RSP0/CPU0 t9 Checking mail server access during
boot-up
Mar 3 13:29:20.287 call_home/trace 0/RSP0/CPU0 t14 processing mail server status checking
event: data1 0x5005784c, str1
Mar 3 13:30:20.289 call_home/trace 0/RSP0/CPU0 t14 Checking mail server access during
boot-up
Mar 3 13:30:20.289 call_home/trace 0/RSP0/CPU0 t9 processing mail server status checking
event: data1 0x5005784c, str1
Mar 3 13:31:20.290 call_home/trace 0/RSP0/CPU0 t9 Checking mail server access during
boot-up
Mar 3 13:31:20.290 call_home/trace 0/RSP0/CPU0 t14 processing mail server status checking
event: data1 0x5005784c, str1
Mar 3 13:32:21.067 call_home/trace 0/RSP0/CPU0 t14 Checking mail server access during
boot-up
Mar 3 13:32:21.067 call_home/trace 0/RSP0/CPU0 t9 processing mail server status checking
event: data1 0x5005784c, str1
Mar 3 13:33:21.069 call_home/trace 0/RSP0/CPU0 t9 Checking mail server access during
boot-up
```

Related Commands	Command	Description
	call-home, on page 36	Enters call home configuration mode to configure the call home feature.

site-id

To specify a site identifier for the system, use the **site-id** command in call-home configuration mode. To disable the site identifier, use the **no** form of this command.

site-id *site-id-string*
no site-id *site-id-string*

Syntax Description

site-id-string A string that identifies the site.

Command Default

No site ID is defined.

Command Modes

Call-home configuration

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

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

The site ID is an optional user-configurable field that can be used to specify a Cisco-supplied site ID or other data meaningful to the support service.

Task ID

Task ID	Operation
call-home	read, write

This example shows how to configure the site ID:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config) call-home
RP/0/RSP0/CPU0:router(config-call-home) # site-id Cisco-site
```

street-address

To specify the street address of the system, use the **street-address** command in call home configuration mode. To remove the street address configuration, use the **no** form of this command.

street-address *street-address*
no street-address *street-address*

Syntax Description

street address A string that identifies the street address of the system.

Command Default

No street address is defined.

Command Modes

Call home configuration

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

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

The street address is an optional user-configurable field that can be used to provide the address of the system to the support service.

Task ID

Task ID	Operation
call-home	read, write

This example shows how to configure the street address:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config) call-home
RP/0/RSP0/CPU0:router(config-call-home)# street-address 170 West Tasman Dr.
San Jose, CA 95134 USA
```

subscribe-to-alert-group environment

To configure a destination profile to receive messages for the environment alert group, use the **subscribe-to-alert-group environment** command in call home profile configuration mode. To disable the subscription, use the **no** form of this command.

subscribe-to-alert-group environment severity *severity-level*

no subscribe-to-alert-group environment severity *severity-level*

Syntax Description

severity Specifies the the lowest level of severity events to include in an environment alert.

- severity-level*
- **catastrophic**—Includes network-wide catastrophic events in the alert. This is the highest severity.
 - **critical**—Includes events requiring immediate attention (system log level 1).
 - **debugging**—Includes debug events (system log level 7). This is the lowest severity.
 - **disaster**—Includes events with significant network impact.
 - **fatal**—Includes events where the system is unusable (system log level 0).
 - **major**—Includes events classified as major conditions (system log level 2).
 - **minor**—Includes events classified as minor conditions (system log level 3)
 - **normal**—Specifies the normal state and includes events classified as informational (system log level 6). This is the default.
 - **notification**—Includes events informational message events (system log level 5).
 - **warning**—Includes events classified as warning conditions (system log level 4).

Command Default

The environment alert group is disabled by default. The default severity for the environment alert group is debugging.

Command Modes

Call home profile configuration

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

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

At least one alert group subscription is mandatory for a profile so that a valid event can be triggered.

Task ID	Task ID	Operation
	call-home	read, write

The following example shows how to configure the environment alert group to include severity major:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config) call-home
RP/0/RSP0/CPU0:router(config-call-home)# profile my-profile
RP/0/RSP0/CPU0:router(config-call-home-profile)# subscribe-to-alert-group environment major
```

Related Commands	Command	Description
	profile (call home), on page 54	Enters call home profile configuration mode to create or configure a Call Home profile.
	subscribe-to-alert-group syslog, on page 74	Configures a destination profile to receive messages for the syslog alert group.
	subscribe-to-alert-group inventory, on page 72	Configures a destination profile to receive messages for the inventory alert group.

subscribe-to-alert-group inventory

To configure a destination profile to receive messages for the inventory alert group, use the **subscribe-to-alert-group inventory** command in call home profile configuration mode. To disable the subscription, use the **no** form of this command.

subscribe-to-alert-group inventory [**periodic** {**daily** | **monthly** *day-of-month* | **weekly** *day-of-week*} *time*]

no subscribe-to-alert-group inventory [**periodic** {**daily** | **monthly** *day-of-month* | **weekly** *day-of-week*} *time*]

Syntax Description		
periodic		Specifies to send an inventory message periodically.
daily		Sends daily inventory messages.
monthly <i>day-of-month</i>		Sends monthly inventory messages on the day of the month specified.
weekly <i>day-of-week</i>		Sends weekly inventory messages on the day of the week specified.
<i>time</i>		Time to send the inventory message, in the format <code>hour:minutes</code> .

Command Default The inventory alert group is disabled by default. The default severity for the inventory alert group is normal.

Command Modes Call home profile configuration

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

At least one alert group subscription is mandatory for a profile so that a valid event can be triggered.

There are two types of subscription for an inventory alert group. One is normal subscription, meaning that the severity is set to normal, and any (online insertion and removal) OIR event triggers the event. The second is periodic subscription, using the **periodic** keyword, meaning that an event is triggered only when the specified time arrives.

Task ID	Task ID	Operation
	call-home	read, write

This example shows how to configure the sending of inventory messages every Monday:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config) call-home
```

```
RP/0/RSP0/CPU0:router(config-call-home)# profile my-profile  
RP/0/RSP0/CPU0:router(config-call-home-profile)# subscribe-to-alert-group inventory periodic  
weekly monday
```

Related Commands

Command	Description
profile (call home), on page 54	Enters call home profile configuration mode to create or configure a Call Home profile.
subscribe-to-alert-group environment, on page 70	Configures a destination profile to receive messages for the environment alert group.
subscribe-to-alert-group syslog, on page 74	Configures a destination profile to receive messages for the syslog alert group.

subscribe-to-alert-group syslog

To configure a destination profile to receive messages for the syslog alert group, use the **subscribe-to-alert-group syslog** command in call home profile configuration mode. To disable the subscription, use the **no** form of this command.

subscribe-to-alert-group syslog severity severity-level pattern match
no subscribe-to-alert-group syslog severity severity-level pattern match

Syntax Description

severity	Specifies the the lowest level of severity events to include in a syslog alert.
<i>severity-level</i>	<ul style="list-style-type: none"> • catastrophic—Includes network-wide catastrophic events in the alert. This is the highest severity. • critical—Includes events requiring immediate attention (system log level 1). • debugging—Includes debug events (system log level 7). This is the lowest severity. • disaster—Includes events with significant network impact. • fatal—Includes events where the system is unusable (system log level 0). • major—Includes events classified as major conditions (system log level 2). • minor—Includes events classified as minor conditions (system log level 3) • normal—Specifies the normal state and includes events classified as informational (system log level 6). This is the default. • notification—Includes events informational message events (system log level 5). • warning—Includes events classified as warning conditions (system log level 4).
pattern	Specifies a syslog string pattern to match.
<i>match</i>	A string that when matched in the syslog message, is included in the alert notification. If the pattern contains spaces, you must enclose it in quotes (" ").

Command Default

The syslog alert group is disabled by default. The default severity for the syslog alert group is debugging.

Command Modes

Call home profile configuration

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

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

At least one alert group subscription is mandatory for a profile so that a valid event can be triggered.

Task ID	Task ID	Operation
	call-home	read, write

The following example shows how to configure the syslog alert group to include severity notification:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config) call-home
RP/0/RSP0/CPU0:router(config-call-home) # profile my-profile
RP/0/RSP0/CPU0:router(config-call-home-profile) # subscribe-to-alert-group syslog severity
notification pattern "UPDOWN"
```

Related Commands	Command	Description
	profile (call home), on page 54	Enters call home profile configuration mode to create or configure a Call Home profile.
	subscribe-to-alert-group environment, on page 70	Configures a destination profile to receive messages for the environment alert group.

■ subscribe-to-alert-group syslog



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abort

To terminate a configuration session and discard all uncommitted changes without system confirmations, use the **abort** command in any configuration mode.

abort

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes Any configuration mode

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **abort** command to terminate a configuration session and return to EXEC mode from any configuration mode. This command discards all uncommitted configuration changes. You are prompted to commit the changes.

Task ID	Task ID	Operations
	Task ID for the feature or mode impacted by the command	Operation for the feature or mode impacted by the command

The following example shows how to use the **abort** command to discard all changes made during a configuration session:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface gigabitethernet 0/2/0/0
RP/0/RSP0/CPU0:router(config-if)# ipv4 address 10.0.0.1 255.0.0.0
RP/0/RSP0/CPU0:router(config-if)# abort
RP/0/RSP0/CPU0:router#
```

Related Topics

[end](#), on page 109

[exit](#), on page 114

admin

To enter Admin EXEC mode, use the **admin** command in EXEC mode.

admin

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes EXEC mode

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

Usage Guidelines Use the **admin** command to enter Admin EXEC mode mode. Administration commands are used to execute various administration plane commands.



Note Administration commands can be run only by entering administration mode and not by prefixing the **admin** command with the keyword in EXEC mode mode.

Task ID	Task ID	Operations
	admin	read, write, execute

The following example shows how to enter Admin EXEC mode mode:

```
RP/0/RSP0/CPU0:router# admin
RP/0/RSP0/CPU0:router (admin) #
```

To use administration configuration mode, use the **configure** command in Admin EXEC mode mode:

```
RP/0/RSP0/CPU0:router# admin
RP/0/RSP0/CPU0:router (admin) # configure
RP/0/RSP0/CPU0:router (admin-config) #
```

Related Topics

[configure](#), on page 105

activate advanced

To enable access to advanced system admin commands and configurations, use the **activate advanced** command in Admin EXEC mode mode. These commands and configurations allow access to the advanced functionalities of the system admin services.

activate advanced

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes Admin EXEC

Command History	Release	Modification
	Release 6.2.1	This command was introduced.

Usage Guidelines This command should not be used unless specifically requested by Cisco TAC or another Cisco support representative.

This example shows sample output from the **activate advanced** command:

```
# activate advanced
Advanced commands must be used carefully. Continue? [yes,NO] yes
Tue Aug 29 20:05:16.635 UTC
```

alias

To create a command alias, use the **alias** command in Global Configuration mode. To delete an alias, use the **no** form of this command.

alias *alias-name*[(*param-list*)]*content*
no alias *alias-name*

Syntax Description

<i>alias-name</i>	Name of the command alias. Alias names can be a single word or multiple words joined by a hyphen (-) or an underscore (_).
<i>param-list</i>	(Optional) Parameters assigned to the alias. These parameters are filled in at execution time.
<i>content</i>	Original command syntax. Valid abbreviations of the original command syntax can be entered for the <i>content</i> argument.

Command Default

No command aliases are configured.

Command Modes

Global Configuration mode
 Admin EXEC mode

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

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

Cisco IOS XR software supports generic alias definitions for various entities. Any physical or logical entity can have an alias as a reference. For example, an alias can refer to a command, a partial command, a group of commands, a location, or an IP address.

An alias must first be defined. The alias can then be used in command lines in place of the defined entity.

Following is a list of properties for an alias:

- An alias can be used anywhere and in any mode.
- An alias can have zero, one, or many parameters.
- An alias can refer to those parameters with the \$ sign.
- If an alias refers to more than one command, the commands must be separated by a semicolon (;).
- The size of the **alias** command is limited to 1024 characters.

The alias command can be used anywhere. If the content referenced by the alias is invalid or inappropriate in that context or mode, the system issues a warning message containing the substituted content.

An alias name should not be a subset of the keywords that it represents as alias. Substitution is done only when the entered input match fails completely. For instance, the attempt to define an alias with “config?” as the alias name fails, as shown in the following example:

```
RP/0/RSP0/CPU0:router(config)# alias config set_host hostname router
```

```
RP/0/RSP0/CPU0:router(config)# show configuration
alias set_host hostname router
```

Use the **show aliases** command to display all command aliases or the command aliases in a specified mode.

Task ID	Task ID	Operations
		logging read, write

The following example shows how to create an alias named ipbr for the **show ipv4 interface brief** command, commit the configuration, enter EXEC mode and then enter the configured alias:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# alias ipbr show ipv4 interface brief
RP/0/RSP0/CPU0:router(config)# show configuration

Building configuration...
alias ipbr show ipv4 interface brief
end
RP/0/RSP0/CPU0:router(config)# commit
RP/0/RSP0/CPU0:Feb 21 04:42:57.017 : config[65689]: %MGBL-LIBTARCFG-6-COMMIT :
Configuration committed by user 'lab'. Use 'show configuration commit changes 100000022'
to view the changes.
RP/0/RSP0/CPU0:router(config)# end
RP/0/RP0/CPU0:Mar 27 22:19:05 : config[65739]: %SYS-5-CONFIG_I : Configured from console
by lab
RP/0/RSP0/CPU0:router# ipbr
RP/0/RSP0/CPU0:router# show ipv4 interface brief

Interface                IP-Address      Status          Protocol
Loopback0                10.0.0.1        Up              Up
Loopback999              unassigned      Up              Up
MgmtEth0/0/CPU0/0       12.29.56.21    Up              Up
RP/0/RSP0/CPU0:router#
```

The following example shows how to define an alias, mycompany-10ge, for POS interface 1/0/2/3 and then how to use that alias to shut down the interface:

```
RP/0/RSP0/CPU0:router(config)# alias mycompany-10ge gigabitethernet1/0/2/3
RP/0/RSP0/CPU0:router(config)# interface mycompany-10ge
RP/0/RSP0/CPU0:router(config-if)# shutdown
RP/0/RSP0/CPU0:router(config-if)# exit
RP/0/RSP0/CPU0:router(config)#
```

The following example shows the use of a parameter name in an alias definition:

```
RP/0/RSP0/CPU0:router(config)# alias shint (intname) show interface $intname
```

The following example shows an alias defined with one parameter and two commands:

```
RP/0/RSP0/CPU0:router(config)# alias shint_both (intname) show interface $intname;show run
```

```
interface $intname
```

The following example shows the use of the alias `shint_both` in EXEC mode:

```
RP/0/RSP0/CPU0:router(exec)# shint_both(gigabitethernet1/2/3/4)
```

Two commands are issued, as follows:

```
RP/0/RSP0/CPU0:router(exec)# show interface gigabitethernet1/2/3/4; show run interface  
gigabitethernet1/2/3/4
```

Related Topics

[show aliases](#), on page 162

apply-group

To cause the configuration commands contained in a group or multiple groups to be inherited by the router configuration within which it is applied, use the **apply-group** command in the appropriate configuration mode. To remove a group configuration, use the **no** form of this command.

apply-group *group-name* [*group-name*]
no apply-group

Syntax Description	<i>group-name</i> Name of the configuration group to apply. The group must be previously defined. Up to eight group names can be specified at one time.
---------------------------	---

Command Default	None
------------------------	------

Command Modes	Any configuration mode
----------------------	------------------------

Command History	Release	Modification
	Release 4.3.1	This command was introduced.

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

Configuration statements in configuration groups come into effect only when the configuration groups are applied in the system configuration, and the configuration statements have the correct context and inheritance priority in the mode in which the configuration groups are applied. The maximum number of configuration groups that can be specified in a single **apply-group** command is eight.

To change the composition of an **apply-group** command, you must specify all desired groups. For example, if you used the command `apply-group g10 g20 g30`, and now you want to add the group g15, use the command `apply-group g10 g15 g20 g30`. If you now want to delete group g20, use the command `apply-group g10 g15 g30`. If you use the **no apply-group** command, all groups are removed from the configuration.



Note From the Release 6.3.1 onwards, you are able to enter the Flexible CLI config group definition, **apply-group** and **exclude-group** command in any order as long as the entire commit has all the group definitions needed.



Note Use multi-line configuration style to configure Flexible CLI configuration groups by entering each configuration mode in a separate line, one configuration per line. This is important so that the configuration properties are fully inherited and for better readability during troubleshooting.

Task ID	Task ID	Operation
	config-services	read, write

This example applies a configuration group to a specific OSPF instance:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# router ospf 0
RP/0/RSP0/CPU0:router(config-ospf)# apply-group G-OSPF-B
```

Related Topics

[group \(configuration\)](#), on page 116

apply-group-remove

To remove one or more configuration groups from an existing apply-group, use the **apply-group-remove** command in the same configuration mode in which the group was applied.

apply-group-remove *group-name**existing-group-name*

Syntax Description	group-name	existing-group-name
	Name of the group you want to remove from an existing group. Up to eight group names can be specified in this command at a time.	Name of the applied (pre-defined) group from which a group will be removed.

Command Default None

Command Modes Global configuration or any configuration mode

Command History	Release	Modification
	Release 5.1.1	This command was introduced.

Usage Guidelines Consider, you have configured four groups, g10 g20 g30 g40 using the **apply-group** command. To remove g20, you can use the **apply-group-remove** command to edit the **apply-group** command configuration.



Note This command is not a configuration command and will not be seen in **show configuration** or **show run** commands.



Note This command has to be executed in the same configuration mode as the **apply-group** command used to configure the groups.

Task ID	Task ID	Operation
	config-services	read, write

Example

This example shows how to remove the group, G-OSPF-B, using this command:

```
RP/0/RSP0/CPU0:router configure
RP/0/RSP0/CPU0:router (config)# router ospf 0
RP/0/RSP0/CPU0:router (config-ospf)# apply-group-remove G-OSPF-B
```

apply-template

To apply a template to the target configuration, use the **apply-template** command in Global Configuration mode.

apply-template *template-name* [(*param-list*)]

Syntax Description	
<i>template-name</i>	Name of the template to be applied to the running configuration. Use the template command to define a template.
<i>param-list</i>	(Optional) Up to five template parameters.

Command Default No templates are applied to the target configuration.

Command Modes Global Configuration mode

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **apply-template** command to apply a template to the target configuration. Templates allow you to create a template name that represents a group of configuration commands.

Use the **template** command to define a template. Use the **end-template** command to exit template configuration mode and return to global configuration mode. Use the **show-running** command with the optional **template** *template-name* keyword and argument to display the contents of a template.

Task ID	Task ID	Operations
	config-services	read, write

The following example shows how to define a template and then apply the template to the target configuration:

```
RP/0/RSP0/CPU0:router(config)# template hostname-template
RP/0/RSP0/CPU0:router(config-TPL)# hostname router1
RP/0/RSP0/CPU0:router(config-TPL)# end-template
RP/0/RSP0/CPU0:router(config)# apply-template hostname-template
```

Related Topics

- [end-template](#), on page 112
- [show running-config](#), on page 206
- [template](#), on page 210

clear comment

To discard a comment associated with a configuration, use the **clear comment** command in any configuration or Global Configuration mode.

clear comment

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes Any configuration mode
Global Configuration mode

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

Usage Guidelines The **clear comment** command clears any comments that were added for a specific configuration in the configuration file. After you enter the **clear comment** command, enter the configuration for which you want to delete the comment on a separate line.

To enter configuration comments, enter ! followed by the comment. The comment you enter is associated with the next configuration entered. For example:

```
RP/0/RSP0/CPU0:router#!router1 is located in xxx
RP/0/RSP0/CPU0:router# hostname router1
RP/0/RSP0/CPU0:router# commit
```

The comment is displayed in the output of the **show running-config** command:

```
RP/0/RSP0/CPU0:router# show running-config
...
!router1 is located in xxx
hostname router1
...
```

Task ID	Task ID	Operations
	Task ID for the feature or configuration mode impacted by the command	Operation for the feature or configuration mode impacted by the command

The following example shows how to discard the comment associated with the configuration ipv4 address 10.0.0.1 255.0.0.0.

```
RP/0/RSP0/CPU0:router(config-if)# clear comment
RP/0/RSP0/CPU0:router(config-if)# ipv4 address 10.0.0.1 255.0.0.0
```

clear configuration commits

To delete old commit IDs from the commit database to free up disk space, use the **clear configuration commits** command in Admin EXEC mode or EXEC mode.

clear configuration commits {**diskspace** *kilobytes* | **oldest** *number-of-commits*}

Syntax Description		
diskspace <i>kilobytes</i>	Deletes as many commit IDs (beginning with the oldest available commit ID) from the commit database as required to free the number of kilobytes (KB) specified for the <i>kilobytes</i> argument. The range for the number of kilobytes of disk space to free is 1 to 4194304.	Note The amount of disk space freed may vary depending on the size and number of commits present in the commit database.
oldest <i>number-of-commits</i>	Deletes the number of commit IDs specified for the <i>number-of-commits</i> argument.	Note Use the online help (?) function to display the range of commit IDs available for deletion.

Command Default None

Command Modes EXEC mode
Admin EXEC mode

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **clear configuration commits** command to delete the number of commit IDs available for rollback operations. The most recent 100 commits are retained by the system. As new commit IDs are added, the oldest commit IDs are discarded and are no longer available for rollback operations.



Note The **clear configuration commits** command deletes commits from the commit database only. The running configuration, thus, is not changed.



Note When a commit ID is deleted from the commit database, it is no longer available for rollback and can no longer be used to display commit changes (with the **show configuration rollback changes** command).

Use the **rollback configuration** command to roll back the current running configuration to a previous configuration. Use the **show configuration rollback changes** command to display a list of the commit IDs available for rollback operations or to display the changes that would be made by the **rollback configuration** command.

Task ID	Task ID	Operations
	config-services	execute

The following example shows how to delete the oldest 16 commit IDs to free up disk space. After entering this command, you will be prompted to confirm the deletion.

```
RP/0/RSP0/CPU0:router# clear configuration commits oldest 16

Deleting 16 rollback points '1000000021' to '1000000036'
256 KB of disk space will be freed. Continue with deletion?[confirm] y
```

Related Topics

[rollback configuration](#), on page 137

[show configuration rollback changes](#), on page 194

clear configuration inconsistency

To clear an inconsistency alarm for a router configuration or admin plane configuration, use the **clear configuration inconsistency** command in Admin EXEC mode or EXEC mode.

clear configuration inconsistency

Syntax Description

This command has no keywords or arguments.

Command Default

Administration EXEC mode: Clears the inconsistency alarms for the admin plane configuration.

EXEC mode: Clears the inconsistency alarms for an SDR configuration.

Command Modes

Admin EXEC mode

EXEC mode

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

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

An inconsistency alarm is set when there is a failure to restore the configuration; this can occur during router startup, or when a line card or route switch processor (RSP) card is inserted or removed.

If an inconsistency alarm is set, a message similar to the following example is displayed:

```
RP/0/0/CPU0:May 26 11:58:40.662 : cfgmgr-rp[130]: %MGBL-CONFIGCLI-3
  BATCH_CONFIG_FAIL : 28 config(s) failed during startup. To view
  failed config(s) use the command - "show configuration failed startup"

RP/0/0/CPU0:May 26 11:58:41.731 : cfgmgr-rp[130]:
  %MGBL-CONFIG-3-ADMIN_INCONSISTENCY_ALARM : Admin plane configuration
  inconsistency alarm has been raised. Configuration commits will be
  blocked until an ADMIN plane 'clear configuration inconsistency' command
  has been run to synchronize persisted admin plane configuration with
  running admin configuration.
```

When the inconsistency alarm is set, all configuration commit operations fail until the alarm is cleared using the **clear configuration inconsistency** command. This command clears the alarm and removes the failed configuration.

For example, the following configuration commit fails to finish due to an existing inconsistency alarm:

```
RP/0/RSP0/CPU0:router# configure

ADMIN plane running configuration is inconsistent with persistent
configuration.
No configuration commits will be allowed until an admin plane
'clear configuration inconsistency' command is performed.
RP/0/RSP0/CPU0:router(config)# hostname router2
RP/0/RSP0/CPU0:router(config)#commit
```

ADMIN plane running configuration is inconsistent with persistent configuration.
No configuration commits will be allowed until an admin plane 'clear configuration inconsistency' command is performed.

Enter the **clear configuration inconsistency** command to clear the alarm and allow commit operations to continue.



Note To reapply the failed configuration, you must reapply and recommit the configuration. Use the **load configuration failed** command with the **startup** keyword to populate the target configuration with the contents of the previous failed configuration from the startup configuration.

Use the **show configuration history** command with the **alarm** keyword to view the inconsistency alarm set and alarm clear events in the configuration history log.

Command Modes

To clear the inconsistency alarms for the admin plane configuration, enter the **clear configuration inconsistency** command in administration EXEC mode.

To clear the inconsistency alarms for the router, enter the **clear configuration inconsistency** command in EXEC mode.

Task ID

Task ID	Operations
config-services	execute

The following example shows how to clear the inconsistency alarms for the admin plane configuration by entering the **clear configuration inconsistency** command in administration EXEC mode:

```
RP/0/RSP0/CPU0:router# admin
RP/0/RSP0/CPU0:router(admin)# clear configuration inconsistency

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

The following example shows how to clear the inconsistency alarms for a router configuration. The command is entered in EXEC mode.

```
RP/0/RSP0/CPU0:router# clear configuration inconsistency

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

In the following example, a history of the inconsistency alarms set and cleared for the router configuration are displayed using the **show configuration history** command with the **alarm** keyword:

```
RP/0/RSP0/CPU0:router# show configuration history alarm
```

Sno.	Event	Info	Time Stamp
~~~~	~~~~~	~~~~~	~~~~~
1	alarm	inconsistency alarm raised	Thu Jun 22 15:23:15 2009
2	alarm	inconsistency alarm cleared	Thu Jun 22 15:42:30 2009
3	alarm	inconsistency alarm raised	Sun Jul 9 13:39:57 2009
4	alarm	inconsistency alarm cleared	Sun Jul 9 14:15:48 2009
5	alarm	inconsistency alarm raised	Sat Jul 15 18:18:26 2009
6	alarm	inconsistency alarm cleared	Sat Jul 15 19:21:03 2009

### Related Topics

- [load configuration failed](#), on page 126
- [show configuration history](#), on page 184
- [show configuration failed startup](#), on page 183



# clear configuration inconsistency replica

To resolve configuration inconsistencies on a replica node, use the **clear configuration inconsistency replica** command in administration EXEC or EXEC mode.

**clear configuration inconsistency replica location** *node-id*

<b>Syntax Description</b>	<b>location</b> <i>node-id</i> Resolves the configuration inconsistencies on the designated node. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> notation.				
<b>Command Default</b>	Administration EXEC mode: Resolves any configuration inconsistencies for the admin plane configuration. EXEC mode: Resolves any configuration inconsistencies for the router configuration.				
<b>Command Modes</b>	Admin EXEC mode EXEC mode				
<b>Command History</b>	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Release 3.7.2</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	Release 3.7.2	This command was introduced.
Release	Modification				
Release 3.7.2	This command was introduced.				
<b>Usage Guidelines</b>	<p>To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.</p> <p>In administration EXEC mode, the replica node for the <b>clear configuration inconsistency replica</b> command is the standby designated system controller (DSC). In EXEC mode, the replica nodes are the route switch processors (RSPs) that can become the designated shelf controller (DSC).</p> <p>Use the <b>clear configuration inconsistency replica</b> command if there is a configuration inconsistency between the standby DSC and the current active DSC; or alternatively, if the configuration on any nodes that could become the DSC is not the same as the configuration on the current DSC. To determine if you have a configuration inconsistency, use the <b>show configuration inconsistency replica</b> command.</p> <p>To clear configuration inconsistencies for the admin plane configuration, enter the <b>clear configuration inconsistency replica</b> command in administration EXEC mode.</p> <p>To clear configuration inconsistencies for an SDR configuration, enter the <b>clear configuration inconsistency replica</b> command in EXEC mode for that SDR.</p>				

Task ID	Task ID	Operations
	config-services	execute

The following example shows how to clear any configuration inconsistencies for the DSC configuration by using the **clear configuration inconsistency replica** command in EXEC mode:

```
RP/0/RSP0/CPU0:router# clear configuration inconsistency replica location 0/rp1/cpu0
```

The replica has been repaired.

**Related Topics**

[show configuration inconsistency replica](#), on page 188

# clear configuration sessions

To clear (end) an active configuration session, use the **clear configuration sessions** command in administration EXEC or EXEC mode.

**clear configuration sessions** *session-id*

<b>Syntax Description</b>	<i>session-id</i> Identifier for the configuration session to be terminated.
---------------------------	------------------------------------------------------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	Administration EXEC EXEC mode
----------------------	----------------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.

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

Use the **clear configuration sessions** command to clear a configuration session. This command can be used to end the configuration sessions of another user. Any uncommitted changes to a user's target configuration are discarded.

Use the **show configuration sessions** command to identify active configuration sessions.

When a configuration session is cleared, a message is displayed on the terminal of the terminated user. For example:

```
RP/0/RSP0/CPU0:router(config)# This configuration session was terminated by user 'user_a'
from line 'aux0_0_CPU0'
```

<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	config-services	execute

The following example shows how to clear an active configuration session. In this example, the **show configuration sessions** command displays the active configuration session. The **clear configuration sessions** command clears the active configuration session.

```
RP/0/RSP0/CPU0:router# show configuration sessions

Current Configuration Session  Line          User          Date          Lock
00000211-002c409b-00000000    con0_RSPs1_CPU0  UNKNOWN      Mon Feb  2 01:02:09 2009

RP/0/RSP0/CPU0:router# clear configuration sessions 00000211-002c409b-00000000
```

```
session ID '00000211-002cb09b-00000000' terminated
```

**Related Topics**

[show configuration sessions](#), on page 200

# commit

To commit the target configuration to the active (running) configuration, use the **commit** command in any configuration Global Configuration mode Admin Configuration mode.

**commit** [**best-effort**] [**comment** *line*] [**confirmed** [{*seconds* | **minutes** *minutes*}] ] [**force**] [**label** *line*] [**replace**] [**save-running filename** *file_path*]

Syntax Description		
<b>best-effort</b>		(Optional) Merges the target configuration with the running configuration and commits only valid changes (best effort). Some configuration changes might fail due to semantic errors.
<b>comment</b> <i>line</i>		(Optional) Assigns a comment to a commit. This text comment is displayed in the commit entry displayed in the output for the <b>show configuration commit list</b> command with the optional <b>detail</b> keyword.
<b>confirmed</b> [ <i>seconds</i>   <b>minutes</b> <i>minutes</i> ]		(Optional) Commits the configuration on a trial basis for the time specified in seconds or minutes.  <b>Note</b> The <b>confirmed</b> option is not available in administration configuration mode.
<b>force</b>		(Optional) Forces a commit operation in low-memory conditions.
<b>label</b> <i>line</i>		(Optional) Assigns a meaningful label. This label is displayed (instead of the autogenerated commit ID) in the output for the <b>show configuration commit list</b> .
<b>replace</b>		(Optional) Replaces the entire running configuration with the contents of the target configuration.
<b>save-running filename</b> <i>file_path</i>		(Optional) Saves the running configuration to a specified file.

**Command Default** The default behavior is *pseudo-atomic*, meaning that all changes must succeed for the entire commit operation to succeed. If any errors are found, none of the configuration changes take effect.

**Command Modes** Any configuration mode  
Global Configuration mode  
Admin Configuration mode

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

**Usage Guidelines**

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

Changes made during a configuration session are inactive until the **commit** command is entered. By default, the commit operation is *pseudo-atomic*, meaning that all changes must succeed for the entire commit operation to succeed. If any errors are found, none of the configuration changes takes effect.

To replace the default numeric ID for the commit, use the optional **label** keyword. This label is displayed (instead of the autogenerated commit ID) in the output for the **show configuration commit list** command.

Enter an optional comment with the **comment** keyword to provide additional information about the commit action. This comment is displayed in the output for the **show configuration commit list** command with the **detail** keyword.

Use the optional **confirmed minutes** keyword and argument to commit a configuration on a trial basis for a minimum of 30 seconds and a maximum of 300 seconds (5 minutes). During the trial configuration period, enter the **commit** command to confirm the configuration. If the **commit** command is not entered, then the system reverts to the previous configuration when the trial time period expires. The confirmed option is not available in administration configuration mode.

You can use the **commit** command in conjunction with the **load** command. Load a new configuration with the **load** command, and use the **commit** command with the **replace** keyword to have the loaded configuration become the active (running) configuration.

Use the optional **save-running filename file_path** keywords and argument to save the running configuration to a specified file. To configure automatic saving of the configuration file on every commit, use the **configuration commit auto-save** command. If automatic saving of the configuration file is already enabled, specifying **save-running filename file_path** with the **commit** command has no additional effect.

In pseudo-atomic commit, if an error occurs on one or more of the configurations in a commit, other configurations which are already part of the running configuration in the same commit are reverted.



**Caution** Saving the running configuration to a file is CPU intensive.

---



**Note** If you use the **commit** command without previously loading a target configuration, a blank configuration is committed.

---



**Note** If you use the **commit** command with the **replace** keyword, it does not affect the mode of an 8-port E1/T1 SPA. If the mode is E1 before using the **commit replace** command, it remains E1. However, since the default mode is T1, the router does not recognize that the mode is E1. To change the mode to T1, you must first use the **hw-module subslot cardtype e1** command to add the E1 mode into the configuration so that it correlates with the system. Then manually reload the router and it boots in T1 mode.

For more information regarding the **hw-module subslot cardtype** command, refer to *Interface and Hardware Component Command Reference for Cisco ASR 9000 Series Routers*.

---

Task ID	Task ID	Operations
	Task ID for the feature or configuration mode impacted by the command	Operation for the feature or configuration mode impacted by the command

### Committing the Target Configuration to the Active Running Configuration

The following example shows how to commit the target configuration to the active running configuration. In this example, the **commit** command saves changes to the router hostname.

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# hostname router1
RP/0/RSP0/CPU0:router(config)# commit

RP/0/RSP0/CPU0:Feb 21 04:42:57.017 : config[65689]: %MGBL-LIBTARCFG-6-COMMIT :
Configuration committed by user 'user_a'.
Use 'show configuration commit changes 1000000033' to view the changes.
```

### Adding a Comment to a Configuration Commit

The following example shows how to use the **commit** command with the optional **comment line** keyword and argument to assign a text description to the commit operation. The comment is then displayed in the output of the **show configuration commit list** command with the **detail** keyword.

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# hostname router2
RP/0/RSP0/CPU0:router(config)# commit comment new name for router

RP/0/RP0/CPU0:Feb 21 04:42:57.017 : config[65689]: %MGBL-LIBTARCFG-6-COMMIT :
Configuration committed by user 'user_a'. Use 'show configuration commit
changes 1000000226' to view the changes.

RP/0/RSP0/CPU0:router2(config)# end
RP/0/RSP0/CPU0:router2# show configuration commit list detail

1) CommitId: 1000000226                Label: NONE
   UserId:   user_a                    Line:   con0_RP1_CPU0
   Client:   CLI                        Time:   12:59:26 UTC Wed Feb 04 2004
   Comment:  new name for router

2) CommitId: 1000000225                Label: NONE
   UserId:   user_a                    Line:   con0_RP1_CPU0
   Client:   CLI                        Time:   12:58:32 UTC Wed Feb 04 2004
   Comment:  NONE
```

### Changing the Commit ID to a Text Label

The following example shows how to use the **commit** command with the optional **label line** keyword and argument to change the commit ID to a text label for easier identification. The label is then displayed in the output of the **show configuration commit list** command.

```
RP/0/RSP0/CPU0:router2# configure
```

```
RP/0/RSP0/CPU0:router2(config)# hostname router3
RP/0/RSP0/CPU0:router2(config)# commit label new_name

RP/0/RP0/CPU0:Feb 21 04:42:57.017 : config[65689]: %MGBL-LIBTARCFG-6-COMMIT :
Configuration committed by user 'user_a'.
Use 'show configuration commit changes 1000000227' to view the changes.
```

```
RP/0/RSP0/CPU0:router3(config)# end
RP/0/RSP0/CPU0:router3# show configuration commit list
```

SNo.	Label/ID	User	Line	Client	Time Stamp
~~~~	~~~~~	~~~~	~~~~	~~~~~	~~~~~
1	new_name	user_a	con0_RSPs1_C	CLI	13:00:53 UTC Wed Feb 04 2004
2	1000000226	user_a	con0_RSPs1_C	CLI	12:59:26 UTC Wed Feb 04 2004
3	1000000225	user_a	con0_RSPs1_C	CLI	12:58:32 UTC Wed Feb 04 2004

Commit a Configuration for a Specified Time

The following example shows how to use the **commit** command with the optional **confirmed** keyword and number *argument*. The configuration changes are committed only for the specified number of seconds. You can then either confirm the commit operation or discard the changes.

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# hostname router3
RP/0/RSP0/CPU0:router(config)# commit confirmed 30
RP/0/RSP0/CPU0:router3(config)# end
```

Related Topics

- [abort](#), on page 79
- [end](#), on page 109
- [exit](#), on page 114
- [configuration commit auto-save](#), on page 103
- [load](#), on page 123
- [show configuration rollback changes](#), on page 194

configuration commit auto-save

To enable automatic saving of the running configuration to a specified file on every commit, use the **configuration commit auto-save** command in Global Configuration mode. To disable automatic saving of the running configuration to a specified file on every commit, use the **no** form of the command.



Caution Saving the running configuration to a file is CPU intensive.

```
configuration commit auto-save [{ filename file_path | password { clear { encryption-aes
| encryption-default } password | encrypted | { encryption-aes | encryption-default } password } |
maximum number | timestamp | wait-time duration }]
```

Syntax Description

filename <i>file_path</i>	Specifies the location to which to save the running configuration.
password <i>password</i>	Specifies the password of the remote URL.
clear	Specifies an unencrypted password.
encryption-aes	Saves the password in aes encrypted form.
encryption-default	Saves password in default encrypted form.
encrypted	Specifies an encrypted password.
maximum <i>number</i>	Specifies how many maximum auto-saves are possible.
timestamp	Includes the timestamp in the auto-save filename.
wait-time <i>duration</i>	Specifies how long to wait to auto-save after the commit done to start the next auto-save. The <i>duration</i> can be specified as: days <i>days</i> hours <i>hours</i> minutes <i>minutes</i> seconds <i>seconds</i>

Command Default

None

Command Modes

Global Configuration mode
Admin Configuration mode

Command History

Release	Modification
Release 7.10.1	This command was modified to support public key authentication.
Release 7.9.1	This command was modified to include, scp , sftp , password , wait-time , timestamp , and maximum keywords.
Release 6.1.2	The command was enhanced to save the copy of your config with unique filename

Release	Modification
Release 3.7.2	This command was introduced

Usage Guidelines

The **configuration commit auto-save** command configures the system to save the running configuration to the specified file and location every time a **commit** command is run. Alternatively, you can save the configuration on a one-time basis by specifying the **save-running** keyword when you run the **commit** command. Use the following syntax when using **tftp**, **ftp**, **scp**, **sftp** or **rcp** as options.

```
[ tftp/ftp/rcp/scp/sftp ]
```



Caution Saving the running configuration to a file is CPU intensive.

Task ID

Task ID	Operations
config-services	write

The following example shows how to configure the system to save the running configuration to the file `//test-folder/test_123`, backup encrypted password, append time-stamp, configure maximum number of auto-save files possible, and specify wait-time before backing up the files whenever the configuration is committed:

```
Router#configure
Router(config)#configuration commit auto-save
Router(config-cfg-autosave)#filename sftp://user1@server1://test-folder/test_123
Router(config-cfg-autosave)#password clear encryption-default cisco
Router(config-cfg-autosave)#timestamp
Router(config-cfg-autosave)#maximum 10
Router(config-cfg-autosave)#wait-time days 0 hours 0 minutes 0 seconds 5
Router(config-cfg-autosave)#commit
```

While you are using public key authentication to save the running configuration, you don't need to mention password.

Related Topics

[commit](#), on page 99

configure

To enter global configuration mode or administration configuration mode, use the **configure** command in EXEC mode or Admin EXEC mode.

configure [{**exclusive** | **terminal**}]

Syntax Description

exclusive (Optional) Locks the router configuration. The system configuration can be made only from the login terminal.

terminal (Optional) Configures the system from the login terminal. This is the default.

Command Default

If the **configure** command is entered without a keyword, the system is configured from the login terminal.

Command Modes

EXEC mode
Admin EXEC mode

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

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

Configuration modes are used to enter changes to a target configuration session and commit those changes to the running configuration. A router running Cisco IOS XR software contains multiple configurations:

- The configuration for a router. This mode is used to configure router-specific features such as routing protocols.
- The administration configuration for system-wide resources and settings. Some features can be configured only in administration configuration mode.

Global Configuration mode

Use the **configure** command in EXEC mode to enter Global Configuration mode and create a new target configuration for an SDR. From global configuration mode, you can enter any configuration mode. Configuration changes entered in global configuration mode impact the SDR to which the user is currently logged in.

Admin Configuration mode

Use the **configure** command in Admin EXEC mode to enter Admin Configuration mode and create a new target configuration. From Admin EXEC mode, you can enter any configuration mode. Configuration changes entered in Admin EXEC mode can impact resources for the entire router. See the command reference documentation for a specific command to determine the impact of commands entered in Admin EXEC mode.

Router Prompt

After you enter the **configure** command, the system appends “(config)” to the router prompt, indicating that the router is in a configuration mode. For example:

- The following prompt indicates that you are in global configuration mode for an SDR:

```
RP/0/RSP0/CPU0:router (config) #
```

- The following prompt indicates that you are in administration configuration mode:

```
RP/0/RSP0/CPU0:router (admin-config) #
```

Locking a Configuration Session

To lock the configuration so that no other user can commit changes to the running configuration during your configuration session, issue the **configure** command with the **exclusive** keyword.

Committing Changes and Returning to EXEC mode or Admin EXEC mode

Changes to the target configuration remain inactive until the **commit** command is entered. To leave global configuration or administration configuration mode and return to the EXEC mode or Admin EXEC mode prompt, issue the **end** or **exit** command; you are prompted to commit any uncommitted changes.

To leave configuration mode and return directly to EXEC mode or Admin EXEC mode without being prompted to commit changes and without saving changes to the target configuration, enter the **abort** command in any configuration mode.

The following example shows how to enter global configuration mode from EXEC mode and then enter interface configuration mode to configure an IPv4 address, the **configure** command commits the configuration, and the **end** command terminates the configuration session and return the router to EXEC mode.

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router (config)# interface tengige 0/1/0/0
RP/0/RSP0/CPU0:router (config-if)# ipv4 address 10.0.0.1 255.0.0.0
RP/0/RSP0/CPU0:router (config-if)# commit
RP/0/RSP0/CPU0:router (config-if)# end
RP/0/RSP0/CPU0:router#
```

Related Topics

- [abort](#), on page 79
- [end](#), on page 109
- [exit](#), on page 114
- [show configuration \(config\)](#), on page 167
- [show running-config](#), on page 206

description (interface)

To add a description to an interface configuration, use the **description** command in interface configuration mode. To remove the description, use the **no** form of this command.

description *comment*
no description

Syntax Description

comment Comment or a description applied to the interface. The maximum number of characters is 1022.

Command Default

No description is configured.

Command Modes

Interface configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

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

Use the **description** command to add a description to an interface configuration. The maximum number of characters is 1022.

Task ID

Task ID	Operations
interface	read, write

The following example shows how to add a description to an interface configuration. In this example, the **description** command names a Management Ethernet interface.

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface mgmteth 0/
RSP
1/CPU0/0
RP/0/RSP0/CPU0:router(config-if)# description Management Ethernet Interface
```

Related Topics

[show interfaces](#)

do

To execute an EXEC mode command from a configuration mode, use the **do** command in any configuration mode.

do *exec-command*

Syntax Description *exec-command* EXEC mode command to be executed.

Command Default None

Command Modes Any configuration mode

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

To display the various EXEC mode commands that are available to execute with the **do** command, use the online help (?) function at the configuration mode prompt.



Note The **configure** and **describe** commands are not supported with the **do** command.

Task ID	Task ID	Operations
	Task ID for the EXEC command that you are using	read

The following example shows how to execute an EXEC command from interface configuration mode. In this example, the **do** command displays output from the **show protocols** command within interface configuration mode:

```
RP/0/RSP0/CPU0:router(config)# interface tengige 0/1/0/1
RP/0/RSP0/CPU0:router(config-if)# do show protocols

Routing Protocol "BGP 1"

Address Family IPv4 Unicast:
  Distance: external 20 internal 200 local 200
```

end

To terminate a configuration session and return directly to EXEC modeAdmin EXEC mode , use the **end** command in any configuration mode.

end

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes Any configuration mode

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

Usage Guidelines Use the **end** command to exit any configuration mode and return directly to EXEC mode Admin EXEC mode. If you enter this command without committing the changes to the target configuration, you are prompted to do so:

```
Uncommitted changes found, commit them before exiting(yes/no/cancel)?[cancel]:
```

- Entering **yes** saves configuration changes to the running configuration file, exits the configuration session, and returns the router to EXEC mode Admin EXEC mode.

If errors are found in the running configuration, the configuration session does not end. To view the errors, enter the **show configuration** (config) command with the **failed** keyword.

- Entering **no** exits the configuration session and returns the router to EXEC mode Admin EXEC mode without committing the configuration changes.
- Entering **cancel** leaves the router in the current configuration session without exiting or committing the configuration changes.



Note Entering **Ctrl-Z** is functionally equivalent to entering the **end** command.

Use the **abort** command to exit the configuration session and return to EXEC mode Admin EXEC mode without being prompted to commit changes and without saving changes to the target configuration.

Task ID	Task ID	Operations
	config-services	read, write

The following example shows how to use the **end** command to end a configuration session. Changes stored in the target configuration are committed by answering **yes**.

```
RP/0/RSP0/CPU0:router# configure
```

```
RP/0/RSP0/CPU0:router(config)# interface tengige 0/2/0/0  
RP/0/RSP0/CPU0:router(config-if)# ipv4 address 10.0.0.1 255.0.0.0  
RP/0/RSP0/CPU0:router(config-if)# end
```

```
Uncommitted changes found, commit them before exiting(yes/no/cancel)? [cancel]: yes  
RP/0/RSP0/CPU0:router#
```

Related Topics

[abort](#), on page 79

[exit](#), on page 114

[show configuration \(config\)](#), on page 167

[commit](#), on page 99

end-group

To exit from configuration group submode and return to global configuration mode, use the `end-group` command in group configuration mode.

end-group

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes Group configuration

Command History	Release	Modification
	Release 4.3.1	This command was introduced.

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

After you have included all configuration statements that you want in a particular configuration group, use the **end-group** command to exit group configuration mode.

Task ID	Task ID	Operation
	config-services	read, write

This example shows how to complete the configuration of a configuration group and exit group configuration mode:

```
RP/0/RSP0/CPU0:router(config)# group g-int-gige
RP/0/RSP0/CPU0:router(config-GRP)# interface 'GigabitEthernet.*'
RP/0/RSP0/CPU0:router(config-GRP-if)# mtu 1514
RP/0/RSP0/CPU0:router(config-GRP-if)# end-group
RP/0/RSP0/CPU0:router(config)#
```

Related Topics

[group \(configuration\)](#), on page 116

end-template

To exit template configuration mode and return to Global Configuration mode, use the **end-template** command in template configuration mode.

end-template

Syntax Description This command has no keywords or arguments.

Command Default No default behavior or values.

Command Modes Template configuration

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

Usage Guidelines Use the **end-template** command to exit template configuration mode after you have completed the template definition.

To define a template, use the **template** command. To apply a template to the target configuration, use the **apply-template** command. To view the contents of a template, use the **show running-config** command with the optional **template** *template-name* keyword and argument.

Task ID	Task ID	Operations
	config-services	read, write

The following example shows how to enter template configuration mode, define a template named “hostname-template” and then exit from template configuration mode:

```
RP/0/RSP0/CPU0:router(config)# template hostname-template
RP/0/RSP0/CPU0:router(config-TPL)# hostname router-cs1
RP/0/RSP0/CPU0:router(config-TPL)# end-template
RP/0/RSP0/CPU0:router(config)#
```

Related Topics

[end](#), on page 109

exclude-group

To exclude (or override) a configuration group (or groups) to be inherited by the router configuration, use the **exclude-group** command in the appropriate configuration mode. To delete the set exclusion, use the **no** form of this command.

exclude-group *group-name*

Syntax Description	<i>group-name</i> Configuration group name that needs to be excluded.
---------------------------	---

Command Default	None
------------------------	------

Command Modes	Global configuration
----------------------	----------------------

Command History	Release	Modification
	Release 5.1.1	This command was introduced.

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

More than one configuration group can be excluded simultaneously. A maximum of eight groups can be specified at one time.



Note	From Release 6.3.1 onwards, you can enter Flexible CLI config groups, apply-group and exclude-group command in any order as long as the entire commit has all the group definitions needed.
-------------	---

Task ID	Task ID	Operation
	config-services	read, write

Example

This example shows how to delete the group G_interface using the **exclude-group** command:

```
RP/0/RSP0/CPU0:router (config) # exclude-group G_interface

exclude-group G_INTERFACE
ipv4 address 12.21.50.100 255.255.0.0
!
interface GigabitEthernet0/0/0/1
ipv4 address 12.21.51.100 255.255.0.0
```

exit

To close an active terminal session and log off the router, use the **exit** command in EXEC mode Admin EXEC mode.

To return the router to the next higher configuration mode, use the **exit** command in any configuration mode.

exit

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes EXEC mode
Any configuration

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

To log off from a terminal session, enter the **exit** command in EXEC mode Admin EXEC mode.

When exiting from global or administration configuration mode to EXEC mode Admin EXEC mode, you are prompted to commit any uncommitted configuration changes.

```
Uncommitted changes found, commit them before exiting(yes/no/cancel)?[cancel]:
```

- Entering **yes** saves configuration changes to the running configuration file, exits the configuration session, and returns the router to EXEC mode Admin EXEC mode.
If errors are found in the running configuration, the configuration session does not end. To view the errors, enter the **show configuration** (config) command with the **failed** keyword.
- Entering **no** exits the configuration session and returns the router to EXEC mode Admin EXEC mode without committing the configuration changes.
- Entering **cancel** leaves the router in the current configuration session without exiting or committing the configuration changes.



Note Entering the **exit** command from global configuration is functionally equivalent to entering the **end** command.

Task ID	Task ID	Operations
	config-services	read, write

The following example shows how to return the router to the next higher command mode. In this example, the **exit** command exits from interface configuration mode and returns to global configuration mode. The **exit** command is entered a second time to exit from global configuration mode and return to EXEC mode. Because the configuration has not been committed explicitly (with the **commit** command), the system prompts to commit the configuration changes made during the session.

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface tengige 0/2/0/0
RP/0/RSP0/CPU0:router(config-if)# ipv4 address 10.0.0.1 255.0.0.0
RP/0/RSP0/CPU0:router(config-if)# exit
RP/0/RSP0/CPU0:router(config)# exit
Uncommitted changes found, commit them before exiting(yes/no/cancel)?[cancel]: yes
```

The following example shows how to use the **exit** command from EXEC mode to log off from a terminal session:

```
RP/0/RSP0/CPU0:router# exit

router con0_RP1_CPU0 is now available

Press RETURN to get started.
```

Related Topics

[abort](#), on page 79

[end](#), on page 109

[commit](#), on page 99

group (configuration)

To define a configuration group containing configuration statements that can be applied in the router configuration, use the **group** command in global configuration mode. To remove a configuration group from the running configuration, use the **no** form of this command.

```
group group-name config-statements
no group group-name
```

Syntax Description	<i>group-name</i>	Name of the configuration group.
	<i>config-statements</i>	Series of configuration statements, starting in global configuration mode, that comprise this configuration group.
Command Default	None	
Command Modes	Global configuration	
Command History	Release	Modification
	Release 4.3.1	This command was introduced.

Usage Guidelines

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

The **group** command enters group configuration mode where you can list a series of configuration statements that can then be used elsewhere in the router configuration. Most configuration commands can be used in group configuration mode. You must be in a user group associated with a task group that includes the appropriate task IDs for each of the command statements that you list within a configuration group.

The *group-name* argument is limited to 32 characters and is case-sensitive. It must not contain any of these special characters:

- ` - grave
- ' - single quote
- " - double quote
- < - less than
- > - greater than
- (- open parenthesis
-) - close parenthesis
- [- open bracket
-] - close bracket
- { - open brace

- } - close brace
- / - slash
- \ - backslash
- & - ampersand
- ^ - caret
- ! - exclamation point
- ? - question mark
- ~ - tilde
- * - asterisk
- % - percent sign
- = - equal sign
- , - comma
- + - plus sign
- | - vertical bar
- - space

A configuration group can be removed from the running configuration, only if it is not used by a configured **apply-group** command.

To exit from configuration group submode and return to global configuration mode, use the **end-group** command.

Regular expressions are used within the configuration statements to make them widely applicable. POSIX 1003.2 regular expressions are supported in the names of configuration statements. Single quotes are used to delimit a regular expression. For example, to specify the regular expression `GigabitEthernet.*` that matches all GigabitEthernet interfaces, enter the regular expression within single quotes as `'GigabitEthernet.*'`.

To display a list of available interface types for your router configuration, enter **interface ?** at the configuration group prompt:

```
RP/0/RSP0/CPU0:router(config-GRP) # interface ?

ATM                'RegExp': ATM Network Interface(s)
BVI                 'RegExp': Bridge-Group Virtual Interface
Bundle-Ether       'RegExp': Aggregated Ethernet interface(s)
Bundle-POS         'RegExp': Aggregated POS interface(s)
GigabitEthernet    'RegExp': GigabitEthernet/IEEE 802.3 interface(s)
IMA                'RegExp': ATM Network Interface(s)
Loopback           'RegExp': Loopback interface(s)
MgmtEth            'RegExp': Ethernet/IEEE 802.3 interface(s)
Multilink          'RegExp': Multilink network interface(s)
Null               'RegExp': Null interface
POS                'RegExp': Packet over SONET/SDH network interface(s)
PW-Ether           'RegExp': PWHE Ethernet Interface
PW-IW              'RegExp': PWHE VC11 IP Interworking Interface
Serial             'RegExp': Serial network interface(s)
tunnel-ip          'RegExp': GRE/IPinIP Tunnel Interface(s)
```

```
tunnel-mte      'RegExp': MPLS Traffic Engineering P2MP Tunnel interface(s)
tunnel-te       'RegExp': MPLS Traffic Engineering Tunnel interface(s)
tunnel-tp       'RegExp': MPLS Transport Protocol Tunnel interface
```



Note Although you are required to enter only enough characters for the interface type to be unique, it is recommended that you enter the entire phrase. All interface types used in regular expressions are case-sensitive.

For example, you can use the command `interface 'GigabitEthernet.*'`, but not `interface 'gigabite.*'`. To specify a subinterface, prefix the expression with the characters `\.` (backslash period), for example: `interface 'GigabitEthernet.*\.*'`. Refer to the *Configuring Flexible Command Line Interface Configuration Groups* module in the *System Management Configuration Guide for Cisco ASR 9000 Series Routers* for more extensive examples.

Task ID

Task ID	Operation
config-services	read, write

This example shows the definition of a configuration group to configure Gigabit Ethernet interfaces with ISIS routing parameters:

```
RP/0/RSP0/CPU0:router(config)# group g-isis-gige
RP/0/RSP0/CPU0:router(config-GRP)# router isis '*'
RP/0/RSP0/CPU0:router(config-GRP-isis)# interface 'GigabitEthernet.*'
RP/0/RSP0/CPU0:router(config-GRP-isis-if)# lsp-interval 20
RP/0/RSP0/CPU0:router(config-GRP-isis-if)# hello-interval 40
RP/0/RSP0/CPU0:router(config-GRP-isis-if)# address-family ipv4 unicast
RP/0/RSP0/CPU0:router(config-GRP-isis-if-af)# metric 10
RP/0/RSP0/CPU0:router(config-GRP-isis-if-af)# end-group
RP/0/RSP0/CPU0:router(config)#
```

To illustrate the use of this configuration group, assume that you want to configure Gigabit Ethernet interfaces with ISIS routing parameters, as shown here:

```
router isis green
interface GigabitEthernet0/0/0/0
  lsp-interval 20
  hello-interval 40
  address-family ipv4 unicast
  metric 10
!
!
interface GigabitEthernet0/0/0/1
  lsp-interval 20
  hello-interval 40
  address-family ipv4 unicast
  metric 10
!
!
interface GigabitEthernet0/0/0/2
  lsp-interval 20
  hello-interval 40
  address-family ipv4 unicast
```



```

    metric 10
    !
    !
interface GigabitEthernet0/0/0/3
  lsp-interval 20
  hello-interval 40
  address-family ipv4 unicast
  metric 10
  !
!
!
```

There are three possible ways to use the configuration group to configure these interfaces. The first is by applying the group within the interface configuration, as shown here:

```

router isis green
interface GigabitEthernet0/0/0/0
  apply-group g-isis-gige
  !
!
interface GigabitEthernet0/0/0/1
  apply-group g-isis-gige
  !
!
interface GigabitEthernet0/0/0/2
  apply-group g-isis-gige
  !
!
interface GigabitEthernet0/0/0/3
  apply-group g-isis-gige
  !
!
```

The second way to configure these interfaces using the configuration group is to apply the configuration group within the **router isis** configuration, as shown here:

```

router isis green
  apply-group g-isis-gige
interface GigabitEthernet0/0/0/0
  !
interface GigabitEthernet0/0/0/1
  !
interface GigabitEthernet0/0/0/2
  !
interface GigabitEthernet0/0/0/3
  !
!
```

In this situation, any other Gigabit Ethernet interfaces that you configure in ISIS green configuration inherit the configuration group configurations.

The third way to configure these interfaces using the configuration group is to apply the group at the global level, as shown here:

```

apply-group g-isis-gige
router isis green
interface GigabitEthernet0/0/0/0
  !
interface GigabitEthernet0/0/0/1
```

```
!  
interface GigabitEthernet0/0/0/2  
!  
interface GigabitEthernet0/0/0/3  
!  
!
```

In this example, the configuration of the group is applied to all Gigabit Ethernet interfaces configured for ISIS.

Related Topics

[end-group](#), on page 111

[apply-group](#), on page 85

hostname

To specify or modify the hostname for the router, use the **hostname** command in Global Configuration mode.

hostname *name*

Syntax Description	<i>name</i> New hostname for the router.
---------------------------	--

Command Default	The factory-assigned default hostname is “ios.”
------------------------	---

Command Modes	Global Configuration mode
----------------------	---------------------------

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

Usage Guidelines	<p>The hostname is used in prompts and default configuration filenames.</p> <p>No blank or space characters are permitted as part of a name. Do not expect case to be preserved. Uppercase and lowercase characters look the same to many Internet software applications. It may seem appropriate to capitalize a name the same way you might do in English, but conventions dictate that computer names appear all lowercase. For more information, see RFC 1178, <i>Choosing a Name for Your Computer</i>.</p>
-------------------------	--

Task ID	Task ID	Operations
	root-lr	read, write

The following example shows how to change the router hostname:

```
RP/0/RSP0/CPU0:router(config)# hostname router1
```

ipv6-enable

To enable IPv6, use **ipv6-enable** command in the . To disable IPv6, use the **no** form of this command.

ipv6-enable

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes

Command History	Release	Modification
	Release 7.6.2	This command was introduced.

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

Task ID	Task ID	Operation
	config-services	read

Examples

This example shows how enable ipv6 using the **ipv6-enable** command:

```
Router#configure terminal
Router(config)#interface CSI-Ether
Router(config-if)#ipv6 enable
Router(config-if)#ipv6 address 2001:0DB8:0:1::/64
Router(config-if)#exit
```

load

To populate the target configuration with the contents of a previously saved configuration file, use the **load** command in global configuration or administration configuration mode.

load *device:directory-path*

Syntax Description	<i>device: directory-path</i> Storage device and directory path of the configuration file to be loaded into the target configuration.
---------------------------	---

Command Default	If the full path of the file is not specified, the present working directory is used.
------------------------	---

Command Modes	Global configuration Administration configuration
----------------------	--

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **load** command to populate the target configuration with the contents of a previously saved configuration. When loading a file, you must specify the device, directory path, and filename of the configuration file.

Use the **commit** command in conjunction with the **load** command. Load a new configuration with the **load** command, and use the **commit** command with the **replace** keyword to have the loaded configuration become the active (running) configuration.

Use the **show configuration failed** (config) command with the optional **load** keyword to display syntax errors that occurred during the last load operation.

Task ID	Task ID	Operations
	config-services	read, write

The following example shows how to load a target configuration file into the current configuration session. The current configuration session is then populated with the contents of the file.

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# load disk1:myconfig.cfg
RP/0/RSP0/CPU0:router(config)# show config
```

```
Building configuration...
interface TenGigE 0/3/0/0
description My 10 GE Interface
ipv4 address 10.10.11.20 255.0.0.0
```

```
!  
end
```

Related Topics

[show configuration failed \(config\)](#), on page 177

[commit](#), on page 99

load commit changes

To populate the target configuration with changes from previous configuration commits, use the **load commit changes** command in global configuration or administration configuration mode.

load commit changes {*commit-id* | **since** *commit-id* | **last** *number-of-commits*}

Syntax Description	<i>commit-id</i>	Specific configuration commit.
	since <i>commit-id</i>	Loads all configuration changes committed into the target buffer since (and including) a specific configuration commit, <i>commit-id</i> .
	last <i>number-of-commits</i>	Loads the configuration changes into the target buffer that have been made during the last number of configuration commits specified with the <i>number-of-commits</i> argument.
Command Default	None	
Command Modes	Global configuration	
	Administration configuration	
Command History	Release	Modification
	Release 3.7.2	This command was introduced.
Usage Guidelines	To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.	
	Use the load commit changes command to populate the target configuration with changes from previous configuration commits. The changes are not applied until you enter the commit command.	
	Use the show configuration (config) command to display the target configuration.	
Task ID	Task ID	Operations
	config-services	read, write

The following example shows how to populate the target configuration with changes from a previous configuration commit:

```
RP/0/RSP0/CPU0:router(config)# load commit changes since 1000000006
Building configuration...
Loading.
223 bytes parsed in 1 sec (222)bytes/sec
```

load configuration failed

To populate the target configuration with the contents of the previous failed configuration commit, use the **load configuration failed** command in global configuration or administration configuration mode.

```
load configuration failed {commit | startup [previous number-of-reloads] [noerror]}
```

Syntax Description	Parameter	Description
	commit	Loads the failed configuration from the last commit.
	startup	Loads the failed configuration from the startup configuration.
	previous number-of-reloads	(Optional) Loads the failed configurations from a previous router reload. Valid <i>number-of-reloads</i> values are 1 to 4.
	noerror	(Optional) Excludes the error reasons when the failed configurations are loaded.

Command Default None

Command Modes Global configuration
Administration configuration

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **load configuration failed** command to populate the target configuration with the contents of the previous failed configuration commit.

Task ID	Task ID	Operations
	config-services	read, write

The following example shows how to populate the target configuration with the contents of the previous failed configuration commit:

```
RP/0/RSP0/CPU0:router(config)# load configuration failed startup
Loading.
32 bytes parsed in 1 sec (31)bytes/sec
```

Related Topics

[show configuration \(config\)](#), on page 167

load configuration removed

To populate the target configuration with the contents of the previous removed configuration, use the **load configuration removed** command in global configuration or administration configuration mode.

load configuration removed *config-id*

Syntax Description	<i>config-id</i> Identifier of the removed configuration to load.
---------------------------	---

Command Default	None
------------------------	------

Command Modes	Global configuration Administration configuration
----------------------	--

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **load configuration removed** command to populate the target configuration with the contents of the removed configuration during installation operations.

Task ID	Task ID	Operations
	config-services	read, write

The following example shows how to populate the target configuration with the contents of the removed configuration during installation:

```
RP/0/RSP0/CPU0:router(config)# load configuration removed 20070316021626.cfg
```

Related Topics

[show configuration persistent](#), on page 190

load rollback changes

To populate the target configuration with the contents of a previous configuration, use the **load rollback changes** command in global configuration or administration configuration mode.

load rollback changes {*commit-id* | **last** *number-of-commits* | **to** *commit-id*}

Syntax Description	<i>commit-id</i>	Rolls back the configuration changes for a specific configuration commit.
	last <i>number-of-commits</i>	Rolls back to the configuration that existed before the last number of commits (specified with the <i>number-of-commits</i> argument) were made.
	to <i>commit-id</i>	Rolls back to the running configuration that existed before the configuration specified with the <i>commit-id</i> argument.
Command Default	None	
Command Modes	Global configuration Administration configuration	
Command History	Release	Modification
	Release 3.7.2	This command was introduced.
Usage Guidelines	<p>To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.</p> <p>Use the load rollback changes command to load rollback configuration changes to the target configuration. This command is similar to the rollback configuration command. The difference between the commands is that the load rollback changes command copies the rollback changes to the target configuration and does not commit the changes until the changes are explicitly committed with the commit command.</p> <p>Use the show configuration rollback changes command to display rollback changes.</p>	
Task ID	Task ID	Operations
	config-services	read, write

The following example shows how to populate the target configuration with the contents of a previous configuration:

```
RP/0/RSP0/CPU0:router(config)# load rollback changes 1000000004
Building configuration...
Loading.
302 bytes parsed in 1 sec (301)bytes/sec
```

man

Cisco IOS XR software provides online help for standard command-line interface (CLI) commands using manual (man) pages. To display manual pages, use the **man** command in EXEC mode.

man {**command** *command-name* | **feature** [*feature-name*] | **keyword** *keywords*}

Syntax Description		
command <i>command-name</i>		Displays the manual pages for a specific command. The <i>command-name</i> argument must include the complete command name.
feature [<i>feature-name</i>]		Displays all commands available in the feature. Use the man command with the feature keyword to list the available feature names.
keyword <i>keywords</i>		Displays a list of command names that match the keywords. Enter one or more keywords to match in a command. When entering multiple keywords, the keywords must be entered in the same sequential order as they are in the command.

Command Default None

Command Modes EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

You must have the documentation PIE installed before you can use the **man** command. If you attempt to run this command without the documentation PIE installed, an error is displayed as shown in the following example:

```
RP/0/RSP0/CPU0:router# man command show install

Building index table...
Warning. Unable to get directory info for '/pkg/man' :No such file or directory.
Discarding!
man [5521656]:Building index table failed. No entries found
```

For information about installing optional software PIEs, see the *Upgrading and Managing Cisco IOS XR Software* module in *System Management Configuration Guide for Cisco ASR 9000 Series Routers*.

Use the **man** command to display the manual pages for a specific command on the basis of the command name, a feature, or a keyword. Each man page contains the command name, syntax, command mode, usage, examples, and related commands.

The **man** command queries and displays command information about the router. A query can be based on keywords or a feature. The **feature** *feature-name* keyword and argument display all commands that match the feature. For example, entering **man feature asr9k-base-1** displays all commands that match the asr9k-base-1 feature. The **keyword** *keywords* keyword and argument display all commands that contain the specified keyword. For example, **man keyword ipv4** displays all commands that contain ipv4.

Task ID	Task ID	Operations
	basic-services	read

The following example shows how to display the manual page for the **arp timeout** command:

```
RP/0/RSP0/CPU0:router# man command arp timeout
```

COMMAND

arp timeout

DESCRIPTION

To specify how long dynamic entries learned on an interface remain in the Address Resolution Protocol (ARP) cache, use the **arp timeout** command in interface configuration mode. To remove the **arp timeout** command from the configuration file and restore the system to its default condition with respect to this command, use the **no** form of this command.

arp timeout seconds

no arp timeout<seconds>

SYNTAX DESCRIPTION

seconds

Time, in seconds, for which an entry remains in the ARP cache. The range is from 0 to 4294967. A value of 0 means that entries are never cleared from the cache. The default is 14400.

DEFAULTS

Entries remain in the ARP cache for 14400 seconds (4 hours).

COMMAND MODES

Interface configuration

COMMAND HISTORY

Release

Modification

Release 2.0

This command was introduced.

USAGE GUIDELINES

To use the arp timeout command, you must be a member of a user group associated with the cef task ID.

For detailed information about user groups and task IDs, refer to the Configuring AAA Services on Cisco IOS-XR Software module of the Cisco IOS-XR System Security Configuration Guide.

This command is ignored when issued on interfaces that do not use ARP. Also, ARP entries that correspond to the local interface or that are statically configured by the user never time out.

The show interfaces command displays the ARP timeout value in hours:minutes:seconds, as follows:

```

* * * * * START OF LISTING * * * * *
ARP type: ARPA, ARP Timeout 04:00:00
* * * * * END OF LISTING * * * * *
    
```

EXAMPLES

The following example shows how to set the ARP timeout to 3600 seconds to allow entries to time out more quickly than the default:

```

* * * * * START OF LISTING * * * * *
RP/0/RSP0/CPU0:router# configure

RP/0/RSP0/CPU0:router(config)# interface MgmtEth 0/RP1/CPU0/0

RP/0/RSP0/CPU0:router(config-if)# arp timeout 3600
* * * * * END OF LISTING * * * * *
    
```

RELATED COMMANDS

Command	Description
clear arp-cache	Deletes all dynamic entries from the ARP cache.
show arp (cache)	Displays the entries in the ARP table.
show interfaces	Displays statistics for all interfaces configured on the networking device.

more

To display the contents of a file, use the **more** command in EXEC or administration EXEC mode.

```
more [{/ascii | /binary | /ebcdic}] filesystem:directory-path location [{node-id | all}] { begin
regular-expression | | exclude regular-expression | | include regular-expression }
```

Syntax Description	
/ascii	(Optional) Displays a binary file in ASCII format.
/binary	(Optional) Displays a file in hexadecimal or text format.
/ebcdic	(Optional) Displays a binary file in ebcdic format.
<i>filesystem:directory-path</i>	File system location of the file to be displayed. Include the file system alias for the <i>filesystem</i> argument, followed by a colon, and the directory path of the file to be displayed.
location [<i>node-id</i> all]	(Optional) Displays the contents of a file on a designated node or all nodes.
<i>regular-expression</i>	(Optional) Regular expression found in the file.
	Vertical bar (the “pipe” symbol) indicates that an output processing specification follows.
begin	(Optional) Begins unfiltered output of the more command with the first line that contains the regular expression.
exclude	(Optional) Displays output lines that do not contain the regular expression.
include	(Optional) Displays output lines that contain the regular expression.

Command Default None

Command Modes EXEC
Administration EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **more** command to display any text file, especially an ASCII file stored on the router or accessible through the network. The file can be a configuration file or any other text file.

Filtering Output

This table shows filter options for the output displayed by the **more** command.

Table 8: Filtering Options

Command	Purpose
more <i>filesystem:</i> begin <i>regular-expression</i>	Begins unfiltered output of the more command with the first line that contains the regular expression.
more <i>filesystem:</i> exclude <i>regular-expression</i>	Displays output lines that do not contain the regular expression.
more <i>filesystem:</i> include <i>regular-expression</i>	Displays output lines that contain the regular expression.

Adding a Filter at the --More-- Prompt

You can also specify a filter at the --More-- prompt of a **more** command output. To filter output from the --More-- prompt, enter a forward slash (/) followed by a regular expression. The filter remains active until the command output finishes or is interrupted (using **Ctrl-Z** or **Ctrl-C**).

- A second filter cannot be specified at a --More-- prompt if a filter has already been specified at the original command or at a previous --More-- prompt.
- The minus sign (–) preceding a regular expression displays output lines that do not contain the regular expression.
- The plus sign (+) preceding a regular expression displays output lines that contain the regular expression.



Note After you specify a filter for a **more** command, you cannot specify another filter at the next --More-- prompt. The first specified filter remains until the **more begin** command output finishes or until you interrupt the output. The use of the keyword does not constitute a filter.

Task ID

Task ID Operations

filesystem execute

The following example shows partial sample output from the **more** command. The output displays a configuration file saved on the hard disk drive.

```
router# more harddisk:/user/alternate.cfg

!! Last configuration change at 15:52:55 UTC Fri Feb 13 2009 by UNKNOWN
!
line console
exec-timeout 0 0
!
interface MgmtEth0/RP1/CPU0/0
  ipv4 address 10.32.45.154 255.0.0.0
!
interface TenGigE0/1/0/0
  ipv4 address 10.32.45.155 255.0.0.0
  keepalive disable
```

more

```

!
interface TenGigE0/1/0/1
  ipv4 address 10.32.45.156 255.0.0.0
  keepalive disable
!
interface TenGigE0/1/0/2
  /ip
  ipv4 address 10.32.45.157 255.0.0.0
  keepalive disable
!
interface TenGigE0/1/0/3
  ipv4 address 10.32.45.158 255.0.0.0
  keepalive disable
!
interface TenGigE0/2/0/0
  ipv4 address 10.32.45.159 255.0.0.0
  keepalive disable
!
--More--

```

The following example shows partial sample output from the **more** command. The output begins with unfiltered output from the first line that contains the regular expression “ipv4.” In this example, a new search is specified that begins with output lines that contain the regular expression “ipv4.”

```
RP/0/RSP0/CPU0:router# more disk0:config.backup | begin ipv4
```

```

ipv4 address 2.2.2.2 255.255.255.255
!
interface TenGigE0/3/1/0
  shutdown
!
interface TenGigE0/3/1/2
  shutdown
!
interface TenGigE0/2/1/0
  ipv4 address 10.0.0.1 255.255.255.0
  keepalive disable
!
interface TenGigE0/2/1/1
  ipv4 address 10.0.0.1 255.255.255.0
  keepalive disable
!
interface TenGigE0/2/1/2
  ipv4 address 10.0.0.1 255.255.255.0
  keepalive disable
!
interface TenGigE0/2/1/3
  shutdown
!
  /ipv4

filtering...
  ipv4 address 10.0.0.1 255.255.255.0
  proxy-arp disable
  shutdown
!
interface TenGigE 0/1/0/0
  ipv4 address 10.0.0.1 255.255.255.0
  proxy-arp disable
!
route ipv4 0.0.0.0/0 12.25.26.5
route ipv4 223.255.254.254/32 12.25.0.1

```



```
end
```

The following example shows partial sample output of the **more** command on the sample file `config.backup` in `disk0:`. The command usage is `more disk0:config.backup | include log`. At the `--More--` prompt, a new search is specified that begins with output lines that contain the regular expression “aaa.”

```
RP/0/RSP0/CPU0:router# more disk0:config.backup | include log

logging trap
logging trap informational
logging console debugging
logging history size 1
.
.
.

/aaa

filtering...
aaa authentication login default none
```

The following example shows partial sample output from the **more** command. The output excludes lines that contain the regular expression “alias.” In this example, at the `--More--` prompt, a new search is specified, beginning with output lines that contain the regular expression “ipv4 address.”

```
RP/0/RSP0/CPU0:router# more disk0:myconfig/file | exclude alias

Building configuration...
!! Last configuration change at 18:17:00 UTC Thu May 16 2009 by lab
!
hostname router
line console
  exec-timeout 0 0
  width 132
  length 0
  session-timeout 0
/ipv4 address

filtering...
ipv4 address 10.10.1.1 255.255.255.255
!
interface Loopback200
  ipv4 address 10.20.1.1 255.255.255.255
!
interface TenGigE0/0/0/0
  ipv4 address 10.30.1.1 255.255.0.0
  keepalive 100
!
interface preconfigure TenGigE0/1/0/1
  shutdown
end
```

Related Topics

[show](#), on page 159

pwd (config)

To display the current configuration submode from a configuration submode, use the **pwd** command in any supported configuration submode.

pwd

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes Any subconfiguration mode

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

The following example shows how to use the **pwd** command from an interface configuration submode:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface tengige 0/6/4/5
RP/0/RSP0/CPU0:router(config-if)# pwd

interface TenGigE0/6/4/5
RP/0/RSP0/CPU0:router(config-if)#
```

rollback configuration

To roll back the running configuration to a previous configuration, use the **rollback configuration** command in EXEC or administration EXEC mode.

rollback configuration {**last** *number-of-commits* | **to** *commit-id*} [**force**] [**label** *label*] **comment** *comment*

Syntax Description		
last <i>number-of-commits</i>		Rolls back to the configuration that existed before the last number of commits (specified with the <i>number-of-commits</i> argument) were made.
to <i>commit-id</i>		Rolls back to the running configuration that existed before the configuration specified with the <i>commit-id</i> argument.
force		(Optional) Specifies to override any commit blocks.
label <i>label</i>		(Optional) Assigns a text label to this rollback. The <i>label</i> argument must begin with a letter.
comment <i>comment</i>		(Optional) Assigns a text comment to this rollback. The <i>comment</i> argument can be up to 60 characters long.
Command Default	None	
Command Modes	EXEC Administration EXEC	
Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Each time the **commit** command is entered, a commit ID is assigned to the new configuration. You can revert the system to the configuration of a previous commit ID with the **rollback configuration** command:

- Use the **to** keyword to revert to the configuration that existed *before* the configuration specified with the *commit-id* argument.

- Use the **last** keyword to revert to the configuration that existed *before* the last number of configuration commits (specified with the *number-of-commits* argument) were made.
- Use **show configuration commit list** to display a list of the commit IDs available for rollback operations.



Note The most recent 100 commits are retained by the system. As new commit IDs are added, the oldest commit IDs are discarded and are no longer available for rollback operations.

Use the **force** keyword to override commits that would fail otherwise. This is useful in the event of a low-memory condition on the router, to revert to a commit that would remove a configuration that caused the low-memory condition.



Note The rollback operation may fail if you try to rollback two (or more) commits where the individual commits involve the configuration and removing of the configuration of the same item, and there is a dependency of one item over another in any of the individual commit operations.

Task ID	Task ID	Operations
	root-lr (EXEC)	read, write
	root-system (administration EXEC)	read, write

Rolling Back to a Specific Commit ID

The following example shows how to roll back to a specific commit ID. In this example, the **show configuration commit list** command displays the available rollback points. The configuration is then rolled back to a prior commit with the **rollback configuration** command.

```
RP/0/RSP0/CPU0:router# show configuration commit list

SNo. Label/ID      User      Line      Client      Time Stamp
~~~~ ~~~~~~      ~~~~~      ~~~~~      ~~~~~      ~~~~~~
 1  1000000009 lab      con0_RSPs0_C  Rollback    02:41:08 UTC Sun Sep 26 2009
 2  1000000008 lab      con0_RSPs0_C  CLI         02:40:30 UTC Sun Sep 26 2009
 3  1000000007 lab      con0_RSPs0_C  CLI         02:39:54 UTC Sun Sep 26 2009
 4  1000000006 lab      con0_RSPs0_C  Rollback    02:38:40 UTC Sun Sep 26 2009
 5  1000000005 lab      con0_RSPs0_C  CLI         02:37:35 UTC Sun Sep 26 2009
 6  1000000004 lab      con0_RSPs0_C  CLI         02:37:04 UTC Sun Sep 26 2009

RP/0/RSP0/CPU0:router# rollback configuration to 1000000008

Loading Rollback Changes.
Loaded Rollback Changes in 1 sec
Committing.
1 items committed in 1 sec (0)items/sec
Updating.RP/0/RP0/CPU0:Sep 26 02:42:09.318 : config_rollback[65707]: %LIBTARCFG-
6-COMMIT : Configuration committed by user 'lab'. Use 'show commit changes 100
0000010' to view the changes.

Updated Commit database in 1 sec
```

Configuration successfully rolled back to '1000000008'.

Rolling Back to a Span of Configuration Commits

The following example shows how to roll back to the configuration that existed prior to the last two configuration commits:

```
RP/0/RSP0/CPU0:router# rollback configuration last 2
```

```
Loading Rollback Changes.  
Loaded Rollback Changes in 1 sec  
Committing.  
1 items committed in 1 sec (0)items/sec  
Updating.  
Updated Commit database in 1 sec  
Configuration successfully rolled back 2 commits.
```

Related Topics

[load rollback changes](#), on page 128

[show configuration rollback changes](#), on page 194

root

To return to configuration mode from a configuration submode, use the **root** command in any supported configuration submode.

root

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

Any subconfiguration mode except the following:

- The **root** command is not available under the route-policy submodes, because it requires the **end-policy** command to exit out of the configuration.
- The **root** command is not available in template submode, but is available in the submodes configurable under the template submode.

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

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

Task ID

Task ID	Operations
config-services	read

The following example shows how to use the **root** command to return to configuration mode from the interface configuration submode:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface tengige 0/1/0/0
RP/0/RSP0/CPU0:router(config-if)# root
RP/0/RSP0/CPU0:router(config)#
```

The following example shows how to use the **root** command from a submode configurable under the template submode. In this example, the **root** command is used to return to configuration mode from the username submode:



Note The recommended range for a user-defined username is 2-253 characters.

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# template test
RP/0/RSP0/CPU0:router(config-TPL)# username xyz
```

```
RP/0/RSP0/CPU0:router(config-un)# root  
RP/0/RSP0/CPU0:router(config)# show conf
```

```
Building configuration...  
template test  
  username xyz  
  !  
end-template  
end
```



Tip The **root** command is not available from the template submode, but is available in the submodes configurable under the template submode.

save configuration

To save the contents of a configuration to a file, use the **save configuration** command in global configuration or administration configuration mode.

save configuration [**running**] *device:directory-path*

Syntax Description	running (Optional) Saves the contents of the running configuration.				
	<i>device: directory-path</i> Storage device and directory path of the configuration file to be loaded into the target configuration.				
Command Default	None				
Command Modes	Global configuration Administration configuration				
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Release 3.7.2</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	Release 3.7.2	This command was introduced.
Release	Modification				
Release 3.7.2	This command was introduced.				
Usage Guidelines	<p>To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.</p> <p>To save a configuration to a file, use the save configuration command.</p> <p>To save a configuration that failed to a file, use the save configuration failed command.</p>				
Task ID	<table border="1"> <thead> <tr> <th>Task ID</th> <th>Operations</th> </tr> </thead> <tbody> <tr> <td>config-services</td> <td>read</td> </tr> </tbody> </table>	Task ID	Operations	config-services	read
Task ID	Operations				
config-services	read				

The following example shows the configuration saved to disk0: from global configuration mode:

```
RP/0/RSP0/CPU0:router(config)# save configuration disk0:sample3

Destination file name (control-c to abort): [/sample3]?
Building configuration.
1 lines built in 1 second
[OK]
```

The following example shows the configuration saved to disk1 from administration EXEC mode:

```
RP/0/RSP0/CPU0:router(admin-config)# save configuration disk1:sample4

Destination file name (control-c to abort): [/sample4]?
Building configuration.
1 lines built in 1 second
```


[OK]

Related Topics

[save configuration commit changes](#), on page 146

[save configuration failed](#), on page 148

[save configuration merge](#), on page 150

[save rollback changes](#), on page 153

[save configuration removed](#), on page 151

[Show configuration commit changes](#), on page 171

[show configuration commit list](#), on page 174

[show configuration rollback changes](#), on page 194

save configuration changes

To save the changes of a configuration to a file, use the **save configuration changes** command in global configuration or administration configuration mode.

save configuration changes *device:directory-path*

Syntax Description	<i>device: directory-path</i> Storage device and directory path of the configuration file to be loaded into the target configuration.	
Command Default	None	
Command Modes	Global configuration Administration configuration	
Command History	Release	Modification
	Release 3.7.2	This command was introduced.
Usage Guidelines	<p>To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.</p> <p>To save the configuration changes to be made during a replace operation to a file, use the save configuration changes command.</p>	
Task ID	Task ID	Operations
	config-services	read

The following example shows the configuration saved to disk0: from global configuration mode:

```
RP/0/RSP0/CPU0:router(config)# save configuration changes disk0:sample3
Destination file name (control-c to abort): [/sample3]?
Building configuration.
1 lines built in 1 second
[OK]
```

Related Topics

- [save configuration commit changes](#), on page 146
- [save configuration failed](#), on page 148
- [save configuration merge](#), on page 150
- [save rollback changes](#), on page 153
- [save configuration removed](#), on page 151
- [Show configuration commit changes](#), on page 171

[show configuration commit list](#), on page 174

[show configuration rollback changes](#), on page 194

save configuration commit changes

To save the changes for a commit, or a series of commits, to a file, use the **save configuration commit changes** command in global configuration or administration configuration mode.

save configuration commit changes {*commit-id* | **last** *number-of-commits* | **since** *commit-id*}
device:directory-path

Syntax Description		
	<i>commit-id</i>	Specific commit ID.
	last <i>number-of-commits</i>	Saves changes made in the most recent <i>number-of-commits</i> .
	since <i>commit-id</i>	Saves changes made since (and including) a specific <i>commit-id</i> .
	<i>device: directory-path</i>	Storage device and directory path of the configuration file to be loaded into the target configuration.

Command Default None

Command Modes Global configuration
Administration configuration

Command History	Release	Modification
	Release 3.7.2	This command was introduced.
	Release 3.9.0	No modification.

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

Use the **save configuration commit changes** command to save the changes made in a commit operation to a file. You can specify a specific commit ID, all the changes since a specified commit ID, or the changes that occurred during the last *n* commits.

Task ID	Task ID	Operations
	config-services	read

The following example saves the changes from the last two commit operations to disk0:

```
RP/0/RSP0/CPU0:router(admin-config)# save configuration commit changes last 2 disk0:sample1
```

```
Destination file name (control-c to abort): [/sample1]?
Building configuration.
5 lines built in 1 second
```

[OK]

Related Topics

[save configuration](#), on page 142

[save configuration changes](#), on page 144

[save configuration failed](#), on page 148

[save configuration merge](#), on page 150

[save rollback changes](#), on page 153

[show configuration history](#), on page 184

[save configuration removed](#), on page 151

[Show configuration commit changes](#), on page 171

[show configuration commit list](#), on page 174

[show configuration rollback changes](#), on page 194

save configuration failed

To save the contents of the failed configuration, use the **save configuration failed** command in global configuration or administration configuration mode.

```
save configuration failed [{load | noerrors | startup [previous number] [noerror]]
device:directory-path
```

Syntax Description	load	(Optional) Saves the failed configuration (syntax errors) in the last reload.
	noerrors	(Optional) Excludes the error reasons from the saved configuration.
	startup	(Optional) Saves the failed configuration during startup.
	previous number	(Optional) Saves a failed startup configuration from the specified previous sessions. The <i>number</i> argument is a value between 1 and 4 that indicates how many failed startup configurations to save.
	<i>device: directory-path</i> Storage device and directory path of the configuration file to be saved.	

Command Default None

Command Modes Global configuration
Administration configuration

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

To save a configuration to a file, use the **save configuration** command.

To save a configuration that failed to a file, use the **save configuration failed** command.

To save a configuration that failed during startup to a file, use the **save configuration failed** command with the **startup** keyword.

Task ID	Task ID	Operations
	config-services	read

The following example saves the failed configuration to disk0:

```
RP/0/RSP0/CPU0:router (admin-config) # save configuration failed disk1:/configs
```

Related Topics

[save rollback changes](#), on page 153

[show configuration history](#), on page 184

[save configuration removed](#), on page 151

[Show configuration commit changes](#), on page 171

[show configuration commit list](#), on page 174

[show configuration rollback changes](#), on page 194

save configuration merge

To save the contents of a merged configuration to a file, use the **save configuration merge** command in global configuration or administration configuration mode.

save configuration merge *device:directory-path*

Syntax Description	<i>device : directory-path</i> Storage device and directory path of the configuration file to be loaded into the target configuration.
---------------------------	--

Command Default	None
------------------------	------

Command Modes	Global configuration Administration configuration
----------------------	--

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Task ID	Task ID	Operations
	config-services	read

The following example shows the configuration saved to disk0:

```
RP/0/RSP0/CPU0:router(admin-config)# save configuration merge disk0:sample3

Destination file name (control-c to abort): [/sample3]?
Building configuration.
1 lines built in 1 second
[OK]
```

Related Topics

- [save rollback changes](#), on page 153
- [show configuration history](#), on page 184
- [save configuration removed](#), on page 151
- [Show configuration commit changes](#), on page 171
- [show configuration commit list](#), on page 174
- [show configuration rollback changes](#), on page 194

save configuration removed

To save the contents of a removed configuration to a file, use the **save configuration removed** command in global configuration or administration configuration mode.

save configuration removed *removed-configuration-file* *device:directory-path*

Syntax Description	
<i>removed-configuration-file</i>	Specifies the name of the removed configuration file.
<i>device:directory-path</i>	Storage device and directory path of the configuration file to be loaded into the target configuration.

Command Default None

Command Modes Global configuration
Administration configuration

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

When a package is deactivated, the configuration belonging to that package is removed from the running configuration and saved to a file. To save a copy of the removed configuration file, use the **save configuration removed** command.

Task ID	Task ID	Operations
	config-services	read

To view a list of the available removed configuration files, use the **save configuration removed** command followed by a question mark:

```
RP/0/RSP0/CPU0:router(config)# save configuration removed ?
      20051208042507.cfg  Removed configuration.
      20051208044553.cfg  Removed configuration.
      <cr>
```

In the following example, a removed configuration is saved to disk0: and assigned the filename "sample3:"

```
RP/0/RSP0/CPU0:router(config)# save configuration removed 20051208042507.cfg disk0:sample3
      Destination file name (control-c to abort): [/sample3]?
```

```
Building configuration.  
1 lines built in 1 second  
[OK]
```

Related Topics

- [save configuration](#), on page 142
- [save configuration commit changes](#), on page 146
- [save configuration failed](#), on page 148
- [save configuration merge](#), on page 150
- [save rollback changes](#), on page 153
- [show configuration history](#), on page 184
- [Show configuration commit changes](#), on page 171
- [show configuration commit list](#), on page 174
- [show configuration rollback changes](#), on page 194

save rollback changes

To save the rollback changes, use the **save rollback changes** command in global configuration or administration configuration mode.

save rollback changes {*commit-id* | **last** *number-of-commits* | **to** *commit-id*} *device:directory-path*

Syntax Description		
	<i>commit-id</i>	Specific commit ID.
	last <i>number-of-commits</i>	Saves the rollback changes for the last <i>n</i> commits
	to <i>commit-id</i>	Saves rollback changes up to a specific <i>commit-id</i> .
	<i>device: directory-path</i>	Storage device and directory path of the configuration file to be loaded into the target configuration.

Command Default None

Command Modes Global configuration
Administration configuration

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **save rollback changes** command to save the changes that would be made in a configuration rollback to a specific commit point or for a series of commits.

Task ID	Task ID	Operations
	config-services	read

The following example shows that the rollback changes for the commit point 5 are saved to the file sample4 on disk0:

```
RP/0/RSP0/CPU0:router(admin-config)# save rollback changes last 1 disk0:sample4
```

```
Destination file name (control-c to abort): [/sample4]?
Building configuration.
6 lines built in 1 second
[OK]
```

Related Topics

[save configuration](#), on page 142

[save configuration commit changes](#), on page 146
[show configuration history](#), on page 184
[show configuration commit list](#), on page 174
[show configuration rollback changes](#), on page 194

set default-afi

To set the default address family identifier (AFI) for the current session, use the **set default-afi** command in EXEC mode.

```
set default-afi {all | ipv4 | ipv6}
```

Syntax Description

all Sets the default AFI to IPv4 and IPv6 for the current session.

ipv4 Sets the default AFI to IPv4 for the current session. This is the default setting.

ipv6 Sets the default AFI to IPv6 for the current session.

Command Default

The default AFI setting is set to IPv4 for all sessions.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

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

Use the **set default-afi** command to set the default AFI for the current session. This command acts as a keystroke shortcut for **show** commands. If the default AFI setting is set to IPv4, then you would not have to specify the **ipv4** keyword for **show** commands that support the **ipv4** keyword. For example, if the AFI setting is set to IPv4, you could issue the **show route** command without specifying the **ipv4** keyword to display IPv4 routes in the Routing Information Base (RIB).

Use the **show default-afi-safi-vrf** command to display the default AFI setting.

Task ID

Task ID	Operations
basic-services	read, write

The following example shows how to set the default AFI to IPv6:

```
RP/0/RSP0/CPU0:router# set default-afi ipv6
%% Default Address Family Identifier is set to 'ipv6'
```

Related Topics

[set default-safi](#), on page 156

[set default-vrf](#), on page 157

[show default-afi-safi-vrf](#), on page 202

set default-safi

To set the default subaddress family identifier (SAFI) for the current session, use the **set default-safi** command in EXEC mode.

```
set default-safi {all | multicast | unicast}
```

Syntax Description	
all	Sets the default SAFI to multicast and unicast for the current session.
multicast	Sets the default SAFI to multicast for the current session.
unicast	Sets the default SAFI to unicast for the current session. This is the default setting.

Command Default The default SAFI setting is set to unicast for all sessions.

Command Modes EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **set default-safi** command to set the default SAFI setting for the current session. This command acts as a keystroke shortcut for **show** commands. If the default SAFI setting is set to unicast, you would not have to specify the **unicast** keyword for **show** commands that support that keyword. For example, if the default SAFI setting is set to unicast, you could issue the **show router** command without specifying the **unicast** keyword to display information about unicast address prefixes in the Routing Information Base (RIB).

Use the **show default-afi-safi-vrf** command to display the default SAFI setting.

Task ID	Task ID	Operations
	basic-services	read, write

The following example shows how to set the default SAFI to multicast:

```
RP/0/RSP0/CPU0:router# set default-safi multicast
%% Default Sub-Address Family Identifier is set to 'multicast'
```

Related Topics

[set default-afi](#), on page 155

[set default-vrf](#), on page 157

[show default-afi-safi-vrf](#), on page 202

set default-vrf

To set the default VPN routing and forwarding (VRF) instance for the current session, use the **set default-vrf** command in EXEC mode.

```
set default-vrf {name | none}
```

Syntax Description

name Default VPN routing and forwarding name.

none Sets the default VPN routing and forwarding name to empty.

Command Default

The default VRF setting is set to empty.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

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

Use the **set default-vrf** command to set the default VRF setting for the current session. This command acts as a keystroke shortcut for **show** commands. For example, if the default VRF is configured, you can issue the **show route** command without specifying the VRF name.

When the default VRF for the session is set to **none**, then IPv4 routes for the system default VRF are displayed.



Note To override the default VRF setting, specify the VRF name in the **show** command.

Use the **show default-afi-safi-vrf** command to display the default VRF setting.

Task ID

Task ID	Operations
basic-services	read, write

In the following example, the default VRF is set to “dft_vrf:”

```
RP/0/RSP0/CPU0:router# set default-vrf dft_vrf

%% Default Virtual Routing/Forwarding is set to 'dft_vrf'
```

In the following command, the **show route** command is entered without specifying a VRF name. The results for the "dft_vrf" VRF are displayed because the default VRF was set to “dft_vrf.”

```
RP/0/RSP0/CPU0:router# show route ipv4
```

```
% No matching vrf found
```

When the default VRF for the session is set to **none**, the system default VRF routes are displayed. In the following example, the default VRF is set to (empty) and the **show route** command displays the system default VRF information:

```
RP/0/RSP0/CPU0:router# set default-vrf none
```

```
%% Default Virtual Routing/Forwarding is set to ''
```

```
RP/0/RSP0/CPU0:router# show route ipv4
```

```
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
        D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
        N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
        E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
        i - ISIS, L1 - IS-IS level-1, L2 - IS-IS level-2
        ia - IS-IS inter area, su - IS-IS summary null, * - candidate default
        U - per-user static route, o - ODR, L - local
```

```
Gateway of last resort is 12.29.0.1 to network 0.0.0.0
```

```
S* 0.0.0.0/0 [1/0] via 12.29.0.1, 00:31:30
L 10.10.10.10/32 is directly connected, 3d02h, Loopback1
C 12.29.0.0/16 is directly connected, 00:31:30, MgmtEth0/0/CPU0/0
L 12.29.56.21/32 is directly connected, 00:31:30, MgmtEth0/0/CPU0/0
```

Related Topics

[set default-afi](#), on page 155

[set default-safi](#), on page 156

[show default-afi-safi-vrf](#), on page 202

show

To display information about the system configuration or operational state, use the **show** command in EXEC mode, administration EXEC mode, or any configuration mode.

```
show command [{ | begin regular-expression | | exclude regular-expression | | file filesystem: | | include regular-expression }
```

Syntax Description		
<i>command</i>		Supported show command.
		Vertical bar (the “pipe” symbol) indicates that an output processing specification follows.
<i>regular-expression</i>		(Optional) Regular expression found in show command output.
begin		(Optional) Begins unfiltered output of the show command with the first line that contains the regular expression.
exclude		(Optional) Displays output lines that do not contain the regular expression.
file <i>filesystem:</i>		(Optional) Writes the output lines that contain the regular expression to the specified file on the specified file system. Include the file system alias for the <i>filesystem</i> argument, followed by a colon, and the directory path and filename.
include		(Optional) Displays output lines that contain the regular expression.

Command Default None

Command Modes EXEC
Administration EXEC
Any configuration

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

The **show** commands display information about the system and its configuration. To display a list of the available **show** commands, use the question mark (?) online help function.

Filtering Output

Search options for the **show** command are shown in this table.

Table 9: Show Command Search Options

Command	Purpose
show command begin <i>regular-expression</i>	Begins unfiltered output of the show command command with the first line that contains the regular expression.
show command exclude <i>regular-expression</i>	Displays output lines that do not contain the regular expression.
show command include <i>regular-expression</i>	Displays output lines that contain the regular expression.
show command file <i>filesystem:</i>	Writes the output lines that contain the regular expression to the specified file on the specified file system.

Adding a Filter at the --More-- Prompt

You can also specify a filter at the --More-- prompt of a **show** command output. To filter output from the --More-- prompt, enter a forward slash (/) followed by a regular expression. The filter remains active until the command output finishes or is interrupted (using **Ctrl-Z** or **Ctrl-C**).

- If a filter is specified at the original command or a previous --More-- prompt, a second filter cannot be applied.
- The use of the **begin** keyword does not constitute a filter.
- The minus sign (-) preceding a regular expression displays output lines that do not contain the regular expression.
- The plus sign (+) preceding a regular expression displays output lines that contain the regular expression.

Task ID

Task ID	Operations
Task ID for the feature used with the show command	read

For example, the **show interfaces** command requires read privileges in the interface task ID.

The following example shows output from the **show interface | include protocol** command. In this example, the **show** command command includes only lines in which the regular expression “protocol” appears:

```
RP/0/RSP0/CPU0:router# show interface | include protocol

Null0 is up, line protocol is up
0 drops for unrecognized upper-level protocol
TenGigE0/2/0/0 is administratively down, line protocol is administratively down
0 drops for unrecognized upper-level protocol
TenGigE0/2/0/1 is administratively down, line protocol is administratively down
0 drops for unrecognized upper-level protocol
TenGigE0/2/0/2 is administratively down, line protocol is administratively down
0 drops for unrecognized upper-level protocol
TenGigE0/2/0/3 is administratively down, line protocol is administratively down
0 drops for unrecognized upper-level protocol
```

```
FastEthernet0/RP0/CPU0/0 is administratively down, line protocol is administratively
down
FastEthernet0/RP0/CPU0/0 is administratively down, line protocol is administratively
down
0 drops for unrecognized upper-level protocol
```

On most systems, the **Ctrl-Z** key combination can be entered at any time to interrupt the output and return to EXEC mode. For example, use the **show running-config | begin hostname** command to start the display of the running configuration file at the line containing the hostname setting, then use **Ctrl-Z** when you get to the end of the information you are interested in.

The following example shows sample output from the **show configuration running | begin line** command. The output begins with unfiltered output from the first line that contains the regular expression “line.” In this example, at the --More-- prompt, a new search is specified that begins with output lines that contain the regular expression “ipv4.”



Note The use of the **begin** keyword does not constitute a filter.

```
RP/0/RSP0/CPU0:router# show configuration running | begin line

Building configuration...
line console
  exec-timeout 120 120
!
logging trap
--More--
/ipv4

filtering...
route ipv4 0.0.0.0 255.255.0.0 pos0/2/0/0
interface TenGigE0/2/0/0
  ipv4 address 172.19.73.215 255.255.0.0
end
```

Related Topics

[more](#), on page 132

show aliases

To display all defined aliases or the aliases defined in a specified mode, use the **show aliases** command in EXEC mode.

show aliases

Syntax Description This command has no keywords or arguments.

Command Default Displays all aliases currently configured on the system.

Command Modes EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **show aliases** command to display all aliases currently configured on the system.

Task ID	Task ID	Operations
	basic-services	read

The following example illustrates sample output from the **show aliases** command. The output displays a summary of all the command aliases configured.

```
RP/0/RSP0/CPU0:router# show aliases

exec mode aliases:
ipv4_brief          show ipv4 interface brief

interface mode aliases:
sample_int          tengige 0/2/0/0
```

Related Topics

[alias](#), on page 82

show apply-group

To display the applied configuration groups, use the **show apply-group** command in EXEC mode.

show apply group

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes EXEC

Command History	Release	Modification
	Release 5.1.1	This command was introduced.

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

The output of this show command indicates if the group is a part of the global apply-group or is a part of the sub-mode level apply-group.

Task ID	Task ID	Operation
	config-services	read

Example

This example shows how to use the **show apply-group** command:

```
RP/0/RSP0/CPU0:router # show apply-group
                        Global      Non-Global
Groups Reference Count Reference Count
-----
B                      1          0
C                      1          0
```

Reference count can either be 0 or 1. 0 indicates that the group is not applied globally; 1 indicates that the group is globally applied.

show commit changes diff

To display the difference between the currently running configuration and the target configuration (the configuration before the commit command), use the **show commit changes diff** command in the appropriate mode.

show commit changes diff

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes Global Configuration

Command History	Release	Modification
	Release 5.2.0	This command was introduced.
	Release 5.2.1	Class-map was supported.
	Release 5.3.1	Policy-map was supported.

Usage Guidelines The **show commit changes diff** command displays the output by prepending symbols based on the configuration event:

Symbol	Event
+	Add
-	Delete
<-	Modify for old value
+>	Modify for new value

Task ID	Task ID	Operations
	config-services	read

This example shows the output of **show commit changes diff** command for adding a policy-map:

```
RP/0/RSP0/CPU0:router# show commit changes diff
+ policy-map pshow
+ class c1
+ set precedence 1
+ !
+ class c2
+ police rate 100 kbps
+ !
+ !
+ class class-default
+ !
```

```
+ end-policy-map
+ !
```

This example shows the output of **show commit changes diff** command for adding a class-map:

```
RP/0/RSP0/CPU0:router# show commit changes diff
!
+ class-map match-any c
+ match precedence 1 2 3
+ match qos-group 2
+ end-class-map
end
```

This example shows the output of **show commit changes diff** command for deleting a policy-map:

```
RP/0/RSP0/CPU0:router# show commit changes diff
- policy-map pshow
- class c1
- set precedence 1
- !
- class c2
- police rate 100 kbps
- !
- !
- class class-default
- !
- end-policy-map
- !
```

This example shows the output of **show commit changes diff** command for deleting a class-map:

```
RP/0/RSP0/CPU0:router# show commit changes diff
!
- class-map match-any c1
- match precedence 1
- end-class-map
end
```

This example shows the output of **show commit changes diff** command for modifying a policy-map:

```
RP/0/RSP0/CPU0:router# show commit changes diff
policy-map pshow
- class c1
- set precedence 1
!
class c2
<- police rate 100 kbps
+> police rate 200 kbps
!
+ set precedence 1
!
+ class c3
+ shape average 100 kbps
!
end-policy-map
!
end
```

This example shows the output of **show commit changes diff** command for modifying a class -map:

```
RP/0/RSP0/CPU0:router# show commit changes diff
policy-map pshow
class-map match-any c
- match precedence 1 2 3
<- match qos-group 2
+> match qos-group 2 4 5
+ match dscp 1 2 3
end-class-map
```


show configuration (config)

To display information about the current configuration session (target configuration), use the **show configuration** command in any configuration mode.

show configuration [**merge**] [**running**]

Syntax Description	<p>merge (Optional) Displays the configuration that occurs if the contents of the uncommitted changed (target configuration) are committed to the running configuration.</p> <p>running (Optional) Displays the running (committed) configuration.</p>				
Command Default	When the show configuration command is entered without an argument, the uncommitted changes to the target configuration are displayed.				
Command Modes	Any configuration				
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Release 3.7.2</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	Release 3.7.2	This command was introduced.
Release	Modification				
Release 3.7.2	This command was introduced.				
Usage Guidelines	<p>To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.</p> <p>Use the show configuration command to display details on uncommitted configuration changes.</p> <p>Use the show configuration command with the running keyword to display the running (active) configuration.</p> <p>Prior to committing the target configuration, use the show configuration command with the merge keyword from any configuration mode to display the result of merging the target configuration with the running configuration.</p>				
Task ID	<table border="1"> <thead> <tr> <th>Task ID</th> <th>Operations</th> </tr> </thead> <tbody> <tr> <td>basic-services</td> <td>read</td> </tr> </tbody> </table>	Task ID	Operations	basic-services	read
Task ID	Operations				
basic-services	read				

In this example, the **show configuration** command displays uncommitted changes made during a configuration session:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface tengige0/3/0/3
RP/0/RSP0/CPU0:router(config-if)# description faq
RP/0/RSP0/CPU0:router(config-if)# ipv4 address 10.10.11.20 255.0.0.0
RP/0/RSP0/CPU0:router(config-if)# show configuration
```

```
Building configuration...
interface TenGigE0/3/0/3
  description faq
  ipv4 address 10.10.11.20 255.0.0.0
```

```
end
```

The following example shows sample output from the **show configuration** command with the optional **merge** keyword. The command is entered during a configuration session. The output displays the result of merging the target and running configuration, without committing the changes.

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface tengige0/3/0/3
RP/0/RSP0/CPU0:router(config-if)# description faq
RP/0/RSP0/CPU0:router(config-if)# ipv4 address 10.10.11.20 255.0.0.0
RP/0/RSP0/CPU0:router(config-if)# show configuration merge
```

```
Building configuration...
hostname router
interface TenGigE0/0/0/0
  ipv4 address 1.2.3.4 255.0.0.0
  exit
interface TenGigE0/3/0/3
  description faq
  ipv4 address 1.1.1.1 255.0.0.0
  shutdown
end
```

Related Topics

- [show configuration failed \(config\)](#), on page 177
- [show configuration history](#), on page 184
- [show configuration sessions](#), on page 200
- [show running-config](#), on page 206
- [commit](#), on page 99
- [load](#), on page 123
- [Show configuration commit changes](#), on page 171
- [show configuration commit list](#), on page 174
- [show configuration failed startup](#), on page 183
- [show configuration rollback changes](#), on page 194
- [show configuration running-config](#), on page 198

show configuration changes

To display the configuration changes to be made during a replace operation, use the **show configuration changes** command in global configuration or administration configuration Admin Configuration mode .

show configuration changes [**diff**]

Syntax Description	diff (Optional) Displays the changes in UNIX-like format.						
Command Default	None						
Command Modes	Global Configuration mode Admin Configuration mode						
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Release 3.7.2</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	Release 3.7.2	This command was introduced.		
Release	Modification						
Release 3.7.2	This command was introduced.						
Usage Guidelines	To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.						
Task ID	<table border="1"> <thead> <tr> <th>Task ID</th> <th>Operations</th> </tr> </thead> <tbody> <tr> <td>config-services</td> <td>read</td> </tr> <tr> <td>basic-services</td> <td>read</td> </tr> </tbody> </table>	Task ID	Operations	config-services	read	basic-services	read
Task ID	Operations						
config-services	read						
basic-services	read						

The following example shows the changes to be made during a replace operation:

```
RP/0/RSP0/CPU0:router(config)# show configuration changes diff

Building configuration...
# hostname router
# hostname bla
- logging console
- telnet vrf default ipv4 server disable
- domain ipv4 host xhu-u5
- domain ipv4 host coax-u10
- domain ipv4 host coax-u10.cisco.com
- domain name
- interface Loopback1
- ipv4 address 10.0.0.2 255.255.255.224
- !
- interface Loopback2
- description
- !
- interface Loopback5
- description
- !
- interface Loopback6
```

show configuration changes

```
- description
- !
- interface MgmtEth0/0/CPU0/0
-   ipv4 address 10.0.0.1 255.255.255.224
- !
- interface GigabitEthernet0/2/0/0
-   shutdown
- !
- interface GigabitEthernet0/2/0/1
-   shutdown
- !
- interface GigabitEthernet0/2/0/2
-   shutdown
- !
- router static
-   address-family ipv4 unicast
-     0.0.0.0/0 255.255.255.224
- !
- !
end
```

Show configuration commit changes

To display the changes made to the running configuration by previous configuration commits, a configuration commit, or for a range of configuration commits, use the **show configuration commit changes** command in EXEC, administration EXEC, administration configuration, or global configuration mode.

show configuration commit changes {*commit-id* | **since** *commit-id* | **last** *number-of-commits* } [**diff**]

Syntax Description	since	Displays all changes committed to the running configuration since (and including) a specific configuration commit.
	<i>commit-id</i>	Displays configuration changes for a specific configuration commit.
	last <i>number-of-commits</i>	Displays the changes made to the running configuration during the last number of configuration commits specified for the <i>number-of-commits</i> argument.
	diff	(Optional) Displays added lines, changed lines, and deleted lines.
Command Default	None	
Command Modes	EXEC	
	Administration EXEC	
	Administration configuration	
	Global configuration	
Command History	Release	Modification
	Release 3.7.2	This command was introduced.
Usage Guidelines	Each time a configuration is committed with the commit command, the configuration commit operation is assigned a commit ID. The show configuration commit changes command displays the configuration changes made since the specified commit.	
	To display a list of the available commit IDs, enter the show configuration commit list command. You can also display the commit IDs by entering the show configuration commit changes command with the online help function (?).	
	You can't view commit IDs from a different release if the syntax or semantics of the configuration changed in the current release.	



Note Syntax of a configuration refers to its structure and format, while the semantics of a configuration refers to its backend interpretation.

Task ID	Task ID	Operations
	config-services	read

The following example shows sample output from the **show configuration commit changes** command. The output displays commit IDs.

```
RP/0/RSP0/CPU0:router# show configuration commit list
```

SNo.	Label/ID	User	Line	Client	Time Stamp
~~~~	~~~~~	~~~~	~~~~	~~~~~	~~~~~
1	1000000077	lab	con0_RSPs1_C	CLI	15:42:45 UTC Fri Jan 30 2009
2	1000000076	lab	con0_RSPs1_C	Rollback	15:30:39 UTC Fri Jan 30 2009
3	1000000075	lab	con0_RSPs1_C	Rollback	15:25:26 UTC Fri Jan 30 2009
4	1000000074	lab	con0_RSPs1_C	Rollback	15:04:29 UTC Fri Jan 30 2009
5	1000000073	lab	con0_RSPs1_C	CLI	14:49:07 UTC Fri Jan 30 2009
6	1000000072	lab	con0_RSPs1_C	CLI	14:48:35 UTC Fri Jan 30 2009

The following example shows sample output from the **show configuration commit changes** command with the *commit-id* argument. In this example, the output displays the changes made in the configuration commit assigned commit ID 1000000077.

```
RP/0/RSP0/CPU0:router# show configuration commit changes 1000000077
```

```
Building configuration...
alias exec shrun show configuration running
alias exec shver show version
end
```

The following example shows sample output from the **show configuration commit changes** command with the **since** *commit-id* keyword and argument. In this example, the output displays the configuration changes made since the configuration commit assigned commit ID 1000000077 was committed.

```
RP/0/RSP0/CPU0:router# show configuration commit changes since 1000000077
```

```
Building configuration...
no hw-module node 0/RP0/CPU0 shutdown
hostname router
logging trap
no logging console
logging history size 1
alias exec shrun show configuration running
alias exec shver show version
interface MgmtEth0/RP1/CPU0/0
  ipv4 address 12.25.34.10 255.255.0.0
  no shutdown
!
interface preconfigure MgmtEth0/RP0/CPU0/0
  no shutdown
```

```
!  
no route ipv4 0.0.0.0/0 12.7.0.1  
route ipv4 0.0.0.0/0 12.25.0.1  
route ipv4 223.255.254.254/32 12.25.0.1  
telnet ipv4 server enable  
end
```

The following example shows sample output from the **show configuration commit changes** command with the **diff** keyword. In the display, the following symbols signify changes:

+ indicates an added line.

– indicates a deleted line.

# indicates a modified line.

```
RP/0/RSP0/CPU0:router# show configuration commit changes last 1 diff
```

```
Building configuration...  
+ interface Loopback1000  
+ ipv4 address 190.190.180.1 255.255.255.255  
!  
end  
  
+ interface Loopback1000  
+ ipv4 address 190.190.180.1 255.255.255.255  
!  
end
```

### Related Topics

[rollback configuration](#), on page 137

[show configuration rollback changes](#), on page 194

# show configuration commit list

To display information about the configuration commits stored in the commit database, use the **show configuration commit list** command in EXEC, administration EXEC, administration configuration, or global configuration mode.

**show configuration commit list** [*number-of-commits*] [**detail**]

## Syntax Description

*number-of-commits* (Optional) Number of commits (beginning with the most recent commit) that are available for rollback.

**detail** (Optional) Displays detailed commit information, including comments.

## Command Default

If this command is entered without any optional arguments or keywords, the output displays information about all the configuration commits stored in the commit database.

## Command Modes

EXEC

Administration EXEC

Administration configuration

Global configuration

## Command History

### Release

### Modification

Release 3.7.2

This command was introduced.

## Usage Guidelines

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

Use the **show configuration commit list** command to list the commit IDs (up to 100) that are available for rollback.



**Note** The most recent 100 commits are retained by the system. As new commit IDs are added, the oldest commit IDs are discarded and are no longer available for rollback operations.

## Task ID

### Task ID

### Operations

config-services read

The following example shows sample output from the **show configuration commit list** command. The output displays the commit IDs that are available for rollback.

```
RP/0/RSP0/CPU0:router# show configuration commit list
```



```

SNo. Label/ID      User      Line      Client      Time Stamp
~~~~ ~~~~~~      ~~~~~      ~~~~~      ~~~~~      ~~~~~~
1 1000000010 UNKNOWN con0_RSP0_C Rollback 02:25:53 UTC Fri Feb 06 2009
2 1000000009 UNKNOWN con0_RSP0_C CLI 02:23:09 UTC Fri Feb 06 2009
3 1000000008 UNKNOWN con0_RSP0_C CLI 02:22:54 UTC Fri Feb 06 2009
4 1000000007 UNKNOWN con0_RSP0_C CLI 02:22:18 UTC Fri Feb 06 2009
5 1000000006 UNKNOWN con0_RSP0_C CLI 02:07:21 UTC Fri Feb 06 2009

```

Table 10: show configuration commit list Field Descriptions, on page 175 describes the significant fields shown in the display.

Table 10: show configuration commit list Field Descriptions

Field	Description
SNo.	Serial number of the commit entry.
Label/ID	If a label was assigned to a commit, the first 10 characters of the label display; otherwise, the autogenerated commit ID displays.
User	User who executed the commit.
Line	Line in which the user session was established. In some cases, this field may display "UNKNOWN" or "SYSTEM". These fields indicate that an internal commit was made by the system.
Client	The management interface used to make the commit.
Time Stamp	Time and date when the commit was executed.

**Related Topics**

- [show configuration \(config\)](#), on page 167
- [show configuration failed \(config\)](#), on page 177
- [show configuration history](#), on page 184
- [show configuration running](#), on page 196
- [show configuration sessions](#), on page 200
- [show running-config](#), on page 206
- [Show configuration commit changes](#), on page 171
- [show configuration failed startup](#), on page 183
- [show configuration rollback changes](#), on page 194
- [show configuration running-config](#), on page 198

# show configuration failed

To display information about a configuration that failed during the last commit, use the **show configuration failed** command in EXEC mode.

**show configuration failed** [**inheritance**]

<b>Syntax Description</b>	<b>inheritance</b> Displays the failed configuration details at the inheritance level.
---------------------------	----------------------------------------------------------------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	EXEC
----------------------	------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 5.1.1	This command was introduced.

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

Without the inheritance keyword, this command displays the failed configuration information in brief.

<b>Task ID</b>	<b>Task ID</b>	<b>Operation</b>
	config-services	read

## Example

This example shows how to run the **show configuration failed** command:



<b>Note</b>	When there are two (or more) groups that have failed, the ordering of the failed groups is displayed in the same order as the apply-group statement.
-------------	------------------------------------------------------------------------------------------------------------------------------------------------------

```
RP/0/RSP0/CPU0:router (config) # show config failed
!! SEMANTIC ERRORS: This configuration was rejected by
!! the system due to semantic errors. The individual
!! errors with each failed configuration command can be
!! found below.
apply-group GROUP-1 GROUP-2 GROUP-3 GROUP-4 GROUP-5
!% Please issue "show configuration failed inheritance" for details.
Applying following groups failed: GROUP-2 GROUP-4 GROUP-5
```

## show configuration failed (config)

To display information about a configuration that failed during the last commit, use the **show configuration failed** command in any configuration mode.

```
show configuration failed [{load | noerrors}]
```

<b>Syntax Description</b>	<b>load</b> (Optional) Displays any syntax errors found in a configuration loaded with the <b>load</b> command.				
	<b>noerrors</b> (Optional) Displays the configuration that failed in last commit without the error reasons.				
<b>Command Default</b>	Displays the details of the failed configuration including error reasons.				
<b>Command Modes</b>	Any configuration				
<b>Command History</b>	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Release 3.7.2</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	Release 3.7.2	This command was introduced.
Release	Modification				
Release 3.7.2	This command was introduced.				
<b>Usage Guidelines</b>	To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.				
<b>Task ID</b>	<table border="1"> <thead> <tr> <th>Task ID</th> <th>Operations</th> </tr> </thead> <tbody> <tr> <td>basic-services</td> <td>read</td> </tr> </tbody> </table>	Task ID	Operations	basic-services	read
Task ID	Operations				
basic-services	read				

The following example shows a failed commit operation:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# taskgroup bgp
RP/0/RSP0/CPU0:router(config-tg)# description this is an example of an invalid task group
RP/0/RSP0/CPU0:router(config-tg)# commit
% Failed to commit one or more configuration items.
Please use 'show configuration failed' to view the errors
```

The following example shows sample output from the **show configuration failed** command. The output displays the configuration items that failed during the last commit operation.

```
RP/0/RSP0/CPU0:router(config-tg)# show configuration failed

!! CONFIGURATION FAILED DUE TO SEMANTIC ERRORS
taskgroup bgp
!!% Usergroup/Taskgroup names cannot be taskid names
!
```

The following example shows sample output from the **show configuration failed** command with the optional **no errors** keyword. The output displays the configuration items that failed during the last commit operation without an error description.

```
RP/0/RSP0/CPU0:router(config-tg)# show configuration failed noerrors

!! CONFIGURATION FAILED DUE TO SEMANTIC ERRORS
taskgroup bgp
!
```

### Related Topics

- [show configuration \(config\)](#), on page 167
- [show configuration history](#), on page 184
- [show configuration running](#), on page 196
- [show configuration sessions](#), on page 200
- [show running-config](#), on page 206
- [Show configuration commit changes](#), on page 171
- [show configuration commit list](#), on page 174
- [show configuration failed startup](#), on page 183
- [show configuration rollback changes](#), on page 194
- [show configuration running-config](#), on page 198

# show configuration failed incompatible

To display any configurations that were removed from the running configuration because they were not understood by the software being activated, use the **show configuration failed incompatible** command in EXEC or administration EXEC mode.

**show configuration failed incompatible**

**Syntax Description** This command has no keywords or arguments.

**Command Default** None

**Command Modes** EXEC  
Administration EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Any configurations in the running configuration that are not understood by new software being installed are removed from the running configuration. To see which configurations were removed, use the **show configuration failed incompatible** command.

Task ID	Task ID	Operations
	config-services	read

## Related Topics

[show running-config](#), on page 206

## show configuration failed remove

To display information about a configuration that failed while being removed during installation operations, use the **show configuration failed remove** command in EXEC or administration EXEC mode.

**show configuration failed remove**

**Syntax Description** This command has no keywords or arguments.

**Command Default** None

**Command Modes** EXEC  
Administration EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Task ID	Task ID	Operations
	config-services	read

The following example shows a failed commit operation:

```
RP/0/RSP0/CPU0:router# show configuration failed remove

!! SEMANTIC ERRORS: This configuration was rejected by
!! the system due to semantic errors. The individual
!! errors with each failed configuration command can be
!! found below.

multicast-routing
 no address-family ipv4
 !!% Process did not respond to sysmgr
 address-family ipv4
 no interface all enable
 !!% Process did not respond to sysmgr
!
```

Because the configuration failed to be removed, it is still displayed in the output from the **show running-configuration** command as expected:

```
RP/0/RSP0/CPU0:router# show running-configuration
...
router pim vrf default address-family ipv4
 auto-rp candidate-rp GigabitEthernet0/2/0/3 scope 255 group-list 224/4 interval 10
```

```
!
multicast-routing
 address-family ipv4
 interface all enable
!
!
```

### Related Topics

- [show configuration \(config\)](#), on page 167
- [show configuration failed \(config\)](#), on page 177
- [show configuration history](#), on page 184
- [show configuration running](#), on page 196
- [show configuration sessions](#), on page 200
- [show running-config](#), on page 206
- [Show configuration commit changes](#), on page 171
- [show configuration commit list](#), on page 174
- [show configuration rollback changes](#), on page 194
- [show configuration running-config](#), on page 198

# show configuration failed rollback

To display information about a configuration that failed in the last rollback operation, use the **show configuration failed rollback** command in EXEC or administration EXEC mode.

**show configuration failed rollback**

**Syntax Description** This command has no keywords or arguments.

**Command Default** None

**Command Modes** EXEC  
Administration EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Task ID	Task ID	Operations
	config-services	read
	root-lr	read

## Related Topics

- [show configuration \(config\)](#), on page 167
- [show configuration failed \(config\)](#), on page 177
- [show configuration running](#), on page 196
- [show configuration sessions](#), on page 200
- [show running-config](#), on page 206
- [Show configuration commit changes](#), on page 171
- [show configuration commit list](#), on page 174
- [show configuration failed startup](#), on page 183
- [show configuration rollback changes](#), on page 194
- [show configuration running-config](#), on page 198



# show configuration failed startup

To display information about a configuration that failed at startup, use the **show configuration failed** command in EXEC or administration EXEC mode.

```
show configuration failed startup [{noerror | previous number}]
```

<b>Syntax Description</b>	<b>noerror</b>	(Optional) Displays the configuration that failed at startup without an error reason.
	<b>previous <i>number</i></b>	(Optional) Displays the previous failed startup configuration or configurations. The <i>number</i> argument is a value from 1 to 4, which displays the failed startup configurations in previous of sessions.
<b>Command Default</b>	If no keywords are specified, this command displays the details of the failed startup configuration including error reasons.	
<b>Command Modes</b>	EXEC Administration EXEC	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.
<b>Usage Guidelines</b>	To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.	
<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	config-services	read

## Related Topics

- [show configuration \(config\)](#), on page 167
- [show configuration failed \(config\)](#), on page 177
- [show configuration history](#), on page 184
- [show configuration running](#), on page 196
- [show configuration sessions](#), on page 200
- [show running-config](#), on page 206
- [Show configuration commit changes](#), on page 171
- [show configuration commit list](#), on page 174
- [show configuration rollback changes](#), on page 194
- [show configuration running-config](#), on page 198

## show configuration history

To display a history of configuration events, use the **show configuration history** command in EXEC, administration EXEC, administration configuration, or global configuration mode.

```
show configuration history [{alarm | backup | cfs-check | commit | rebase | shutdown | startup}]
[{first number | last number | reverse}] [detail]
```

Syntax Description	
<b>alarm</b>	(Optional) Displays alarm events.
<b>backup</b>	(Optional) Displays configuration backup events.
<b>cfs-check</b>	(Optional) Displays CFS check events.
<b>commit</b>	(Optional) Displays commit events.
<b>rebase</b>	(Optional) Displays commit database consolidation events.
<b>shutdown</b>	(Optional) Displays shutdown events.
<b>startup</b>	(Optional) Displays startup events, including alternate configurations, failed configurations, and other events.
<b>first number</b>	(Optional) Displays the first x number of events, where x is the <i>number</i> argument.
<b>last number</b>	(Optional) Displays the last x <i>number</i> events. Replace with the number of events to display.
<b>reverse</b>	(Optional) Displays the most recent events first.
<b>detail</b>	(Optional) Displays detailed information, including comments.

**Command Default** When entered without any optional arguments or keywords, this command displays all configuration events. The oldest events are displayed at the top of the list for each event type.

**Command Modes**

- EXEC
- Administration EXEC
- Administration configuration
- Global Configuration

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **show configuration history** command to display information about the last (up to) 1500 configuration events.

Use one of the available keywords to display the configuration event only for that event type. Use the **first number** and **last number** keywords and arguments to display a specified number of events. Use the **reverse** keyword to display the newest events at the top of the list.

Task ID	Task ID	Operations
	config-services	read

In the following example, the **show configuration history** command is used to display the history of all configuration events for an SDR:

```
RP/0/RSP0/CPU0:router# show configuration history

Sno. Event Info Time Stamp
~~~~  ~~~~~      ~~~~                               ~~~~~
 1     alarm     inconsistency alarm raised        Thu Jun 22 15:23:15 2009
 2     startup   configuration applied             Thu Jun 22 15:23:32 2009
 3     OIR config restore                Thu Jun 22 15:23:25 2009
 4     OIR config restore                Thu Jun 22 15:23:33 2009
 5     OIR config restore                Thu Jun 22 15:23:33 2009
 6     OIR config restore                Thu Jun 22 15:23:34 2009
 7     OIR config restore                Thu Jun 22 15:23:34 2009
 8     OIR config restore                Thu Jun 22 15:23:35 2009
 9     OIR config restore                Thu Jun 22 15:23:36 2009
10     OIR config restore                Thu Jun 22 15:23:37 2009
11     OIR config restore                Thu Jun 22 15:23:37 2009
12     OIR config restore                Thu Jun 22 15:23:38 2009
13     OIR config restore                Thu Jun 22 15:23:38 2009
14     OIR config restore                Thu Jun 22 15:23:39 2009
15     OIR config restore                Thu Jun 22 15:23:39 2009
16     OIR config restore                Thu Jun 22 15:23:40 2009
17     OIR config restore                Thu Jun 22 15:23:40 2009
18     OIR config restore                Thu Jun 22 15:23:42 2009
19     OIR config restore                Thu Jun 22 15:23:42 2009
20     OIR config restore                Thu Jun 22 15:23:42 2009
21     OIR config restore                Thu Jun 22 15:23:43 2009
--More--
```

In the following example, the **show configuration history** command is used to display only the startup configuration events:

```
RP/0/RSP0/CPU0:router# show configuration history startup

Sno.  Event      Info                               Time Stamp
~~~~  ~~~~~      ~~~~                               ~~~~~
 1 startup configuration applied Thu Jun 22 15:23:32 2009
 2 startup configuration applied Sat Jul 1 15:02:24 2009
 3 startup configuration applied Sat Jul 8 17:36:52 2009
 4 startup configuration applied Sun Jul 9 13:40:27 2009
 5 startup configuration applied Sat Jul 15 18:18:54 2009
```

In the following example, the **show configuration history** command with the **commit detail** keywords is used to display additional details regarding the commit events:

```
RP/0/RSP0/CPU0:router# show configuration history commit detail

1) Event: commit Time: Thu Jun 22 15:44:33 2009
```

## show configuration history

```

Commit ID: 1000000001 Label:
User: lab Line: vty0
Client: CLI Comment:

2) Event: commit Time: Thu Jun 22 16:58:18 2009
 Commit ID: 1000000002 Label:
 User: lab Line: vty2
 Client: CLI Comment:

3) Event: commit Time: Thu Jun 22 16:58:39 2009
 Commit ID: 1000000003 Label:
 User: lab Line: vty2
 Client: CLI Comment:

4) Event: commit Time: Sat Jul 1 15:29:31 2009
 Commit ID: 1000000001 Label:
 User: lab Line: vty0
 Client: CLI Comment:

5) Event: commit Time: Sat Jul 1 15:32:25 2009
 Commit ID: 1000000002 Label:
 User: lab Line: vty0
--More--

```

Table 11: show configuration history Field Descriptions

Field	Description
SNo.	Serial number of the entry.
Event	Type of configuration event.
Info	Summary of the configuration action.
Time Stamp	Time and date when the event was run.
Label/ID	If a label was assigned to a commit, the first 10 characters display; otherwise, the autogenerated commit ID displays.
User	User who issued the command.
Line	Line in which the user session was established. In some cases, this field may display “UNKNOWN” or “SYSTEM”. These fields indicate that an internal action was made by the system.
Client	The management interface used to make the event.

**Related Topics**

- [show configuration \(config\)](#), on page 167
- [show configuration failed \(config\)](#), on page 177
- [show configuration history](#), on page 184
- [show configuration running](#), on page 196
- [show configuration sessions](#), on page 200
- [show running-config](#), on page 206

[Show configuration commit changes](#), on page 171  
[show configuration commit list](#), on page 174  
[show configuration rollback changes](#), on page 194  
[show configuration running-config](#), on page 198

# show configuration inconsistency replica

To display any configuration inconsistencies on a replica node, use the **show configuration inconsistency replica** command in EXEC or administration EXEC mode.

**show configuration inconsistency replica location *node-id* [detail]**

<b>Syntax Description</b>	<b>location <i>node-id</i></b> Displays any configuration inconsistencies on the designated node. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> notation.
	<b>detail</b> Displays a detailed list of inconsistencies.

**Command Default** Administration EXEC mode: Displays configuration inconsistencies for the admin plane configuration.  
EXEC mode: Displays configuration inconsistencies for an SDR configuration.

**Command Modes** EXEC  
Administration EXEC

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.

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

In administration EXEC or EXEC mode, the replica node for the **show configuration inconsistency replica** command is the standby designated system controller (DSC).

Use the **show configuration inconsistency replica** command, before performing a manual switchover or DSC migration, to verify that the node in line to take over for the DSC is in good shape. If any problems are reported, use the **clear configuration inconsistency replica** command to correct them.

<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	config-services	read

The following example shows a configuration with inconsistencies:

```
RP/0/RSP0/CPU0:router# show configuration inconsistency replica location 0/rsp1/cpu0
```

```
The replica at location 0/RSP1/CPU0 is inconsistent.
Please run 'clear configuration inconsistency replica location 0/RP1/CPU0'.
```

The following example shows sample output after the inconsistencies have been resolved:

```
RP/0/RSP0/CPU0:Router# show configuration inconsistency replica location 0/rsp1/cpu0
Replica is consistent
```

**Related Topics**

[clear configuration inconsistency replica](#), on page 95

# show configuration persistent

To display the persistent configuration, use the **show configuration persistent** command in EXEC mode.

**show configuration persistent [diff]**

## Syntax Description

**diff** (Optional) Displays the difference between the running configuration and persistent configuration. This option is available only on the DSC.

## Command Default

If no argument is specified, the **show configuration persistent** command displays the entire contents of the persistent configuration file.

## Command Modes

EXEC

## Command History

Release	Modification
Release 3.7.2	This command was introduced.

## Usage Guidelines

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

The persistent configuration is the configuration stored in nonvolatile memory, from which the running configuration is restored after the router is reloaded. The running configuration should be the same as the persistent configuration. Use the **show configuration persistent** command with the **diff** keyword to check if there is a difference between the running configuration and the persistent configuration.

## Task ID

Task ID	Operations
config-services	read

The following example shows that there is no difference between the running configuration and the persistent configuration:

```
RP/0/RSP0/CPU0:router# show configuration persistent diff
Building configuration...
end
```

The following example shows a difference between the running configuration and the persistent configuration:

```
RP/0/RSP0/CPU0:router# show configuration persistent diff
Building configuration...
router vrrp
interface tengige0/1/0/1.1
vrrp 1 preempt delay 300
```



```
!
interface tengiget0/1/0/1.2
vrrp 1 preempt delay 300
!
interface tengige0/1/0/1.3
vrrp 1 preempt delay 300
```

**Related Topics**

[show running-config](#), on page 206

# show configuration removed

To display a configuration removed during installation operations, use the **show configuration removed** command in EXEC or administration EXEC mode.

**show configuration removed** *config-id*

<b>Syntax Description</b>	<i>config-id</i> Name of removed configuration. Type (?) to see a list of the names of all removed configurations.	
<b>Command Default</b>	None	
<b>Command Modes</b>	EXEC Administration EXEC	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.
<b>Usage Guidelines</b>	To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.	
<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	config-services	read

The following example shows a removed configuration:

```
RP/0/RSP0/CPU0:router# show configuration removed 20060301112919.cfg

xml agent corba
http server
end
```

## Related Topics

- [show configuration \(config\)](#), on page 167
- [show configuration failed \(config\)](#), on page 177
- [show configuration history](#), on page 184
- [show configuration running](#), on page 196
- [show configuration sessions](#), on page 200
- [show running-config](#), on page 206
- [commit](#), on page 99
- [load](#), on page 123
- [Show configuration commit changes](#), on page 171

[show configuration commit list](#), on page 174

[show configuration failed startup](#), on page 183

[show configuration rollback changes](#), on page 194

## show configuration rollback changes

To display changes that would be made by the **rollback configuration** command or to display the list of commit IDs, use the **show configuration rollback changes** command in EXEC, administration EXEC, administration configuration, or global configuration mode.

**show configuration rollback changes** {*commit-id* | **to** *commit-id* | **last** *number-of-commits*} [**diff**]

Syntax Description		
	<i>commit-id</i>	Name of configuration. When a specific <i>commit-id</i> is specified, only the changes that would occur if only the specified commit is rolled back are displayed.
	<b>to</b> <i>commit-id</i>	Displays the changes that will occur to the running configuration if the system is rolled back to the configuration specified with the <i>commit-id</i> argument.
	<b>last</b> <i>number-of-commits</i>	Displays the changes that will occur to the running configuration if the system is rolled back to the last number of commits specified with the <i>number-of-commits</i> argument.
	<b>diff</b>	(Optional) Displays added lines, changed lines, and deleted lines.

**Command Default** None

**Command Modes** EXEC  
Administration EXEC  
Administration configuration  
Global configuration

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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



**Note** The most recent 100 commits are retained by the system. As new commit IDs are added, the oldest commit IDs are discarded and are no longer available for rollback operations.

Use the *commit-id* argument without the **to** keyword to display the changes for a particular commit. This can be useful for troubleshooting actions of the **rollback configuration** command.

Task ID	Task ID	Operations
	config-services	read

The following example shows sample output from the **show configuration rollback changes** command with the **to *commit-id*** keyword and argument. The output displays the configuration changes that would occur if the configuration were to be rolled back to the configuration commit specified for the argument.

```
RP/0/RSP0/CPU0:router# show configuration rollback changes to 1000000007

Building configuration...
hostname old-name
end
```

The following example shows sample output from the **show configuration rollback changes** command **last *number-of-commits*** keyword and argument. The output displays the configuration changes that would occur if the configuration were to be rolled back to the number of configuration commits specified for the argument.

```
RP/0/RSP0/CPU0:router# show configuration rollback changes last 2

Building configuration...
hostname orig_name
interface POS0/1/0/1
 shutdown
!
end
```

The following example shows sample output from the **show configuration rollback changes** command with the **diff** keyword.

In the display, the following symbols signify changes:

- + indicates an added line.
- – indicates a deleted line.
- # indicates a modified line.

```
RP/0/RSP0/CPU0:router
show configuration rollback changes last 1 diff

Building configuration...
interface Loopback1000
ipv4 address 1.1.1.1 255.255.255.255
!
end
```

### Related Topics

[load rollback changes](#), on page 128

[rollback configuration](#), on page 137

# show configuration running

To display the running configuration, use the **show configuration running** command in the appropriate mode.

**show configuration running** [*config-keyword*]

<b>Syntax Description</b>	<i>config-keyword</i> (Optional) Specific configuration to display.
---------------------------	---------------------------------------------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	Administration EXEC Administration configuration Global configuration
----------------------	-----------------------------------------------------------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.

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

Use the **show configuration running** command to display the currently active configuration.

<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	basic-services	read

This example shows the currently running (committed) configuration from administration mode.

```
RP/0/RSP0/CPU0:router (admin) # show configuration running

Building configuration...
username lab
 secret 5 1XNWt$j8RscNdncKSRoMSnqSpbj/
 group root-system
!
end
```

## Related Topics

- [show configuration \(config\)](#), on page 167
- [show configuration failed \(config\)](#), on page 177
- [show configuration history](#), on page 184
- [show configuration sessions](#), on page 200
- [show running-config](#), on page 206
- [commit](#), on page 99

[load](#), on page 123

[Show configuration commit changes](#), on page 171

[show configuration commit list](#), on page 174

[show configuration failed startup](#), on page 183

[show configuration rollback changes](#), on page 194

[show configuration running-config](#), on page 198

# show configuration running-config

To display the running configuration, use the **show configuration running-config** command in EXEC mode.

**show configuration running-config** [*config-keyword*]

<b>Syntax Description</b>	<i>config-keyword</i>	(Optional) Specific configuration to display.
<b>Command Default</b>	None	
<b>Command Modes</b>	EXEC	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.

**Usage Guidelines**

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

Use the *config-keyword* argument to display the running configuration for a specific keyword only.

Task ID	Task ID	Operations
	basic-services	read

This example shows the currently running (committed) configuration:

```
RP/0/RSP0/CPU0:router# show configuration running-config
Building configuration...

!! Last configuration change at 15:36:31 UTC Thu Nov 17 2009 by lab
sessions Users with active configuration sess
!n
hostname router
line consolestartup Sh
 exec-timeout 0 0configuration
!
logging console debugging
 | Ou
snmp-server community public RW
<cr>
RP/0/0/
ipv4 source-routeadmin)#show confi
key chain IPSLA ?
key 10
 key-string password 1
 ipv4 address 10.0.0.0 255.255.255.0
 encapsulation ppp
 keepalive disable
!
interface POS0/7/0/0
```



```
shutdown
!
interface POS0/7/0/1
 shutdown
!
interface POS0/7/0/2
 shutdown
!
interface POS0/7/0/3
 shutdown
!
route ipv4 0.0.0.0/0 12.7.0.1
ipsla
 responder
!
!
end
```

### Related Topics

- [show configuration \(config\)](#), on page 167
- [show configuration failed \(config\)](#), on page 177
- [show configuration history](#), on page 184
- [show configuration running](#), on page 196
- [show configuration sessions](#), on page 200
- [show running-config](#), on page 206
- [commit](#), on page 99
- [load](#), on page 123
- [Show configuration commit changes](#), on page 171
- [show configuration commit list](#), on page 174
- [show configuration failed startup](#), on page 183
- [show configuration rollback changes](#), on page 194

# show configuration sessions

To display the active configuration sessions, use the **show configuration sessions** command in EXEC or administration EXEC mode.

**show configuration sessions [detail]**

<b>Syntax Description</b>	<b>detail</b> (Optional) Displays detailed information.
---------------------------	---------------------------------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	EXEC Administration EXEC
----------------------	-----------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.

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

Use the **show configuration sessions** command to display the active configuration sessions. Use the **clear configuration sessions** command to clear a configuration session. The **show configuration sessions** command can be used with the **clear configuration sessions** command to verify that an active configuration session was cleared.

<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	config-services	read

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

```
RP/0/RSP0/CPU0:router# show configuration sessions

Current Configuration Session Line User Date Lock
00000050-001200bb-00000000 con0_5_CPU cisco Fri Feb 16 17:23:47 2007
```

**Table 12: show configuration sessions Field Descriptions**

Field	Description
Session	System-generated configuration session ID number.
Line	Line in which the user session was established. In some cases, this field may display “UNKNOWN” or “SYSTEM.” These fields indicate that an internal commit was made by the system.
User	User who initiated the configuration session.

Field	Description
Date	Time and date the configuration session was started.
Lock	Locked running-configuration. An asterisk (*) displayed in this field means the session has been locked. Only one session can lock the running configuration at a time.

**Related Topics**

[clear configuration sessions](#), on page 97

# show default-afi-safi-vrf

To display the default address family identifier (AFI), subaddress family identifier (SAFI), and VPN routing and forwarding (VRF) instance for the current session, use the **show default-afi-safi-vrf** command in EXEC mode.

**show default-afi-safi-vrf**

**Syntax Description** This command has no keywords or arguments.

**Command Default** None

**Command Modes** EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **show default-afi-safi-vrf** command to display the default AFI and SAFI settings for the current session. The AFI and SAFI settings are controlled by the following commands:

- [set default-afi, on page 155](#)
- [set default-safi, on page 156](#)
- [set default-vrf, on page 157](#)

Task ID	Task ID	Operations
	basic-services	read

The following example shows sample output from the **show default-afi-safi-vrf** command:

```
RP/0/RSP0/CPU0:router# show default-afi-safi-vrf

%% Default AFI/SAFI/VRF for this session is:
 Address Family Identifier: 'ipv4'
 Sub-Address Family Identifier: 'unicast'
 Virtual Routing/Forwarding: ''
```

## Related Topics

- [set default-afi, on page 155](#)
- [set default-safi, on page 156](#)
- [set default-vrf, on page 157](#)

# show history

To display a history of commands executed in EXEC, administration EXEC, administration configuration, or global configuration mode use the **show history** command in one of the supported modes.

**show history** [**detail**]

<b>Syntax Description</b>	<b>detail</b> (Optional) Displays detailed history information.	
<b>Command Default</b>	None	
<b>Command Modes</b>	EXEC Administration EXEC Administration configuration Global configuration	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.
<b>Usage Guidelines</b>	<p>To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.</p> <p>The <b>show history</b> command displays a history of the command entered for the current command mode. For example, enter the <b>show history</b> command to display a history of commands entered in EXEC mode. Enter the <b>show history</b> command in global configuration mode to display a history of the commands entered in global configuration mode.</p>	
<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	config-services	read
	basic-services	read

In the following example, the **show history** command is run in EXEC mode to display a history of the command entered in EXEC mode:

```
RP/0/RSP0/CPU0:router# show history
configure
admin
show history
```

In the following example, the **show history** command is run in global configuration mode to display a history of the command entered in global configuration mode:

```
RP/0/RSP0/CPU0:router(config)# show history
interface pos 0/1/0/0
ipv4 address 10.0.0.0
root
end
describe line default autocommand config
line default autocommand configure
end
show history
```

# snmp-server script

To map the script file with custom OID, use the **snmp-server script** command in mode.

**snmp-server script script-oid** *oid-number* **script-filename** *file-name*

Syntax Description	script-oid	<i>oid-number</i>	The OID number to be added as custom OID. The custom OID number has to be followed by root OID 1.3.6.1.4.1.9.9.999998.
	script-filename	<i>file-name</i>	The name of the script file to be mapped.

**Command Default** None

## Command Modes

Command History	Release	Modification
	Release 7.5.3	This command was introduced.

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

Task ID	Task ID	Operation
	snmp	read,write

## Examples

This example shows how to map the script file with custom OID.

```
Router(config)#snmp-server script script-oid 1.3.6.1.4.1.9.9.999998.10 script-filename showlldp_string.py
```

# show running-config

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

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

Syntax Description		
<b>exclude</b>	(Optional)	Excludes a specific configuration from the display.
<i>command</i>	(Optional)	Command for which to display the configuration.
<b>sanitized</b>	(Optional)	Displays a sanitized configuration for safe distribution and analysis.

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

**Command Modes** EXEC  
Administration EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

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



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

## Sanitized Output

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

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



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

### Excluding Parts of the Display

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

Task ID	Task ID	Operations
	config-services	read

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

```
RP/0/RSP0/CPU0:router# show running-config ?

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

In this example, the **show running-config** command is used to display the running configuration for Packet-over-SONET/SDH (POS) interface 0/2/0/1:

```
RP/0/RSP0/CPU0:router# show running-config interface pos 0/2/0/1

interface POS0/2/0/1
ipv4 address 10.0.0.0 255.0.0.0
```

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

```
RP/0/RSP0/CPU0:router# show running-config sanitized

Building configuration...

!! Last configuration change at 05:26:50 UTC Thu Jan 19 2009 by <removed>
!
snmp-server traps fabric plane
snmp-server traps fabric bundle state
hostname <removed>
line console
exec-timeout 0 0
!
exception choice 1 compress off filepath <removed>
logging console debugging
telnet vrf <removed> ipv4 server max-servers no-limit
snmp-server ifindex persist
snmp-server host 10.0.0.1 traps version <removed> priv <removed> udp-port 2555
snmp-server view <removed> <removed> included
snmp-server community <removed> RO LROwner
snmp-server community <removed> RO LROwner
snmp-server group <removed> v3 priv read <removed> write <removed>
snmp-server traps snmp
snmp-server traps syslog
interface Loopback10
!
interface Loopback1000
!
--More--
```

### Related Topics

[show configuration \(config\)](#), on page 167

[show configuration running-config](#), on page 198

# service cli commit-optimized enable

To prevent the re-application of the commands which are already present in the running configuration of the router, use the **service cli commit-optimized enable** command in XR Config mode.

**service cli commit-optimized enable**

---

**Syntax Description** This command has no keywords or arguments.

---

**Command Default** None

---

**Command Modes** XR Config mode

---

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 6.4.1	This command was introduced.

---

---

**Usage Guidelines** None

## Example

```
Router# configure
Router(config)# service cli commit-optimized enable
Router(config)# commit
```

# template

To create a template name and enter template configuration mode, use the **template** command in global configuration mode. To remove a template definition, use the **no** form of this command.

**template** *name*  
**no template** *name*

<b>Syntax Description</b>	<i>name</i> Unique name for the template to be created.
---------------------------	---------------------------------------------------------

<b>Command Default</b>	No templates are defined.
------------------------	---------------------------

<b>Command Modes</b>	Global configuration
----------------------	----------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.

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

Use the **template** command to enter template configuration mode. From template configuration mode, you can group a subset of configuration commands in a named template. Commonly used sets of configuration commands can be grouped into a named template. Defining a template is similar to creating a C macro function. A template provides modularity and ease of use during user configuration.

Use the **end-template** command to exit template configuration mode. After defining a template, use the **apply-template** command to apply the template. Use the **show running-config** command with the optional **template** keyword and *template-name* argument to display the contents of a template.

<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	config-services	read, write

The following example shows how to enter template configuration mode to create a template. In this example, a template named “pre-pos” is defined for the preconfigured Packet-over-SONET/SDH (POS) interface 0/1/0/1. The **end-template** command is used to exit from template configuration mode.

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# template pre-pos
RP/0/RSP0/CPU0:router(config-TPL)# interface preconfigure pos0/1/0/0
RP/0/RSP0/CPU0:router(config-if-pre)# ipv4 address 10.3.32.154 255.0.0.0
RP/0/RSP0/CPU0:router(config-if-pre)# end-template
RP/0/RSP0/CPU0:router(config)#
```



---

**Note** After configuring a template, you may want to display the contents of the configured template. To display a template configuration, use the **show running-config** command with the **template name** keyword and argument.

---

The following example shows sample output from the **show running-config** command with the **template name** keyword and argument. In this example, the output displays the contents of a template named “pre-pos.”

```
RP/0/RSP0/CPU0:router# show running-config template pre-pos

template pre-pos
 interface preconfigure POS0/1/0/0
 ipv4 address 10.3.32.154 255.0.0.0
 !
end-template
```

### Related Topics

- [apply-template](#), on page 88
- [end-template](#), on page 112
- [show running-config](#), on page 206

template



## File System Commands

---

- [cd](#), on page 214
- [cfs check](#), on page 215
- [copy](#), on page 216
- [delete](#), on page 222
- [dir](#), on page 223
- [mkdir](#), on page 225
- [pwd](#), on page 226
- [rmdir](#), on page 227
- [show filesystem](#), on page 228
- [show media](#), on page 230

# cd

To change the current working directory, use **cd** command in EXEC mode or XR EXEC mode.

**cd** *filesystem* :

<b>Syntax Description</b>	<i>filesystem</i> : (Optional) Location of the new working directory. Include the file system alias for the <i>filesystem</i> argument, followed by a colon and optionally, the name of a directory.
---------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<b>Command Default</b>	The default file directory is <b>disk0:/usr</b> .
------------------------	---------------------------------------------------

<b>Command Modes</b>	EXEC XR EXEC
----------------------	-----------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 7.0.1	This command was introduced.

<b>Usage Guidelines</b>	<p>The current working directory is the directory used when EXEC commands that have an optional argument are entered without that argument. Use <b>cd</b> command to define the working directory. For example, when the <b>dir</b> command is entered without specifying the <i>filesystem</i> argument, the files in the current working directory are displayed.</p>
-------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Use **cd** command without an argument to set the working directory back to the default directory, **disk0:/usr**.

The following example shows how to change the current working directory to the root directory on the hard disk. In this example, the **pwd** command confirms that the working directory has changed to the root directory on the hard disk.

```
RP/0/RSP0/CPU0:router# cd harddisk:
RP/0/RSP0/CPU0:router# pwd

harddisk:
```

The following example shows how to change the current working directory to the default file directory by specifying the **cd** command without a location. In this example, the **pwd** command confirms that the working directory has changed to the default file directory.

```
RP/0/RSP0/CPU0:router# cd
RP/0/RSP0/CPU0:router# pwd

disk0:/usr
```



# cfs check

To perform a check on the Configuration File System (CFS), use **cfs check** command in EXEC or administration EXEC mode.

## cfs check

**Syntax Description** This command has no keywords or arguments.

**Command Default** No default behavior or values.

**Command Modes** EXEC mode  
Admin EXEC mode

Command History	Release	Modification
	Release 7.0.1	This command was introduced.

**Usage Guidelines** Use this command to check the sanity of the configuration file system and attempt to recover from internal inconsistencies; one or more rollback points may be lost depending on the severity of the state of the file system.



**Note** While this command runs, redundancy of the designated shelf controller (DSC) is disabled.

The following example shows how to perform a CFS check:

```
RP/0/RSP0/CPU0:router# cfs check

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

# copy

To copy a file from a source (such as a network server) to a destination (such as a flash disk), use **copy** command in EXEC or Admin EXEC mode.

**copy** *source* {**location** *node-id* *destination* **location** {*node-id* | **all**} | **running-config**[**atomic**]}

## Syntax Description

<i>source</i>	<p>Filename including the directory path or network location of the file. The possible sources are:</p> <p><i>directory-path</i> —Directory path of the file from which the file is copied.</p> <p><b>access-list</b> { <b>ipv4</b>   <b>ipv6</b> }—Copies an access list (EXEC mode only).</p> <p><b>bootflash:</b> —Copies from the bootflash: file system.</p> <p><b>compactflash:</b> —Copies from the compactflash: file system.</p> <p><b>compactflasha:</b> —Copies from the compactflasha: file system partition.</p> <p><b>disk0:</b> —Copies from disk0: file system.</p> <p><b>disk0a:</b> —Copies from disk0a: file system partition.</p> <p><b>disk1:</b> —Copies from disk1: file system.</p> <p><b>disk1a:</b> —Copies from disk1a: file system partition.</p> <p><b>flash:</b> —Copies from the flash: file system. The <b>flash:</b> keyword is an alias for bootflash:.</p> <p><b>ftp:</b> —Copies from an FTP network server. The syntax is <b>ftp:</b>[[<i>//username</i> [<i>:password</i>]@]<i>location</i>]/<i>directory</i>]/<i>filename</i>.</p> <p><b>harddisk:</b> —Copies from the hard disk drive file system (if present).</p> <p><b>harddiska:</b> —Copies from the hard disk partition a.</p> <p><b>harddiskb:</b> —Copies from the hard disk partition b.</p> <p><b>nvr:</b> —Copies from the NVRAM file system.</p> <p><b>prefix-list</b> {<b>ipv4</b>   <b>ipv6</b>}—Copies from a prefix list (EXEC mode only).</p> <p><b>rcp:</b> —Copies from a remote copy protocol (rcp) network server. The syntax is <b>rcp:</b>[[<i>//username</i>@]<i>location</i>]/<i>directory</i>]/<i>filename</i>.</p> <p><b>running-config</b> —Copies from the current system configuration.</p> <p><b>tftp:</b> —Copies from a TFTP network server. The syntax is <b>tftp:</b>[[<i>//location</i>]/<i>directory</i>]/<i>filename</i></p> <p><b>xml-schema</b> —Copies the XML schema files as a tar ball file (.tar.gz) [EXEC mode only].</p> <p><b>sftp:</b> —Copies from an SFTP network server. The syntax is <b>sftp:</b>[[<i>//username</i> [<i>:password</i>]@]<i>location</i>]/<i>directory</i>]/<i>filename</i>.</p> <p><b>scp:</b> —Copies from an SCP network server. The syntax is <b>scp:</b>[[<i>//username</i> [<i>:password</i>]@]<i>location</i>]/<i>directory</i>]/<i>filename</i>.</p>
<i>destination</i>	<p>Filename including the directory path or network location of the file.</p>

---

**location** *node-id* Specifies a node. The *node-id* argument is expressed in the *rack/slot/module* notation.

---

**location all** Copies to all nodes.

---

**running-config** Applies the source configuration file to the running configuration of the system.

---

**atomic** (Optional) Applies the changes to the running configuration only if there are no errors

---



---

**Command Default** No default behavior or values

---

**Command Modes** EXEC mode.  
Admin EXEC mode.

---

Command History	Release	Modification
	Release 7.10.1	This command was modified to support public key authentication.
	Release 7.9.1	This command was modified to support SFTP and SCP options.
	Release 7.0.12	This command was introduced.

---

**Usage Guidelines** Source and destination can each be a configuration file, a text file, or a file system. Enter source and destination URL information, usernames, and passwords and issue the **copy** command. The networking device prompts for any missing information.

The exact format of the *source* and *destination* arguments vary according to the file or directory location. Enter the device or network location for the file system type.

Filenames can include the following characters:

```
!#$%&' + 0 1 2 3 4 5 6 7 8 9 ; @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [] ^ _ a b c
d e f g h i j k l m n o p q r s t u v w x y z { } ~
```

The following characters can be used with the stated limitations:

- ` needs backslash before this character
- – cannot be the first character
- . cannot be the last character
- = cannot be the filename without other characters

The following characters cannot be used in filenames:

```
" () * , / : < > ? \ |
```

The maximum length allowed for a filename is 254 characters including the path. If a filename longer than 254 characters is specified, the filename is truncated to 254 characters.

To copy a file from a source on the router to a destination on the router, specify a source **location** *node-id* and a destination **location** *node-id*. To copy the file to all nodes, use the **location all** keywords.

In the alias syntax for the **ftp:**, **rcp:**, **tftp:**, **sftp:**, and **scp:** keywords, the location is either an IP address or a hostname. The filename is specified relative to the directory used for file transfers.

When no alias is specified, the networking device looks for a file in the current directory. To view the current directory, enter the **pwd** command.



**Note** During processing of the **copy** command, you might see the “C” character. For all files being copied, “C” indicates that the copy process is taking place. The entire copying process might take several minutes and differs from protocol to protocol and from network to network.

**Table 13: Network Protocols Supported by Cisco IOS XR Software**

Prefix	Name	Description
<b>tftp:</b>	Trivial File Transfer Protocol	<i>TFTP</i> is a simplified version of FTP that allows files to be transferred from one computer to another over a network, usually without the use of client authentication (for example, username and password).
<b>ftp:</b>	File Transfer Protocol	<i>FTP</i> is an application protocol, part of the TCP/IP protocol stack, and is used for transferring files between network nodes. FTP requires a username and password.
<b>rep:</b>	Remote Copy Protocol	The <i>rep</i> protocol allows users to copy files to and from a file system residing on a remote host or server on the network. The <i>rep</i> protocol uses TCP to ensure the reliable delivery of data. The <i>rep</i> protocol downloads require a username.
<b>sftp:</b>	Secure File Transfer Protocol	<i>SFTP</i> is an application protocol is used for secure transferring files between the router and and an archive server. SFTP requires a username and password.
<b>scp:</b>	Secure Copy Protocol	<i>SCP</i> is an application protocol is used for secure transferring files between the router and and an archive server. SFTP requires a username and password.

Additional usage guidelines are in the following sections.

#### Invalid Combinations of Source and Destination

Some combinations of source and destination are invalid. Specifically, you cannot copy the following:

- From a running configuration to a running configuration
- From a network device to a network device (for example, **copy ftp: rep:** )

#### Using TFTP

*TFTP* is a simplified version of FTP that allows files to be transferred from one computer to another over a network, usually without the use of client authentication (for example, username and password).

The syntax is as follows:

```
copy tftp://hostname /ipaddress/directory-path file name target-device [location {node-id | all}]
```

Example:

```
RP/0/RSP0/CPU0:router# copy tftp://1.1.1.1/images/software.pie disk1:
```



**Note** Some Cisco IOS XR images may be larger than 32 MB, and the TFTP services provided by some vendors may not support a file this large. If you do not have access to a TFTP server that supports files larger than 32 MB, download the software image using FTP or rcp as described in the following sections.

### Using FTP

FTP servers require a username and password for each client request. Cisco IOS XR software sends the first valid username in the following list:

1. The username and password specified in the **copy** command, if a username is specified.

The syntax is as follows:

```
copy ftp:// username : password @ hostname or ipaddress/directory-path/pie-name target-device [location {node-id | all}]
```

Example:

```
RP/0/RSP0/CPU0:router# copy ftp://john:secret@10.1.1.1/images/software.pie disk1:
```

2. An “anonymous” username and password. The anonymous password is “root@ip address,” where “ip address” is the IP address of the local networking device.
3. A password “username@iosname.domain” formed by the networking device. The variable “username” is the username associated with the current session, “iosname” is the configured hostname, and “domain” is the domain of the networking device.

The username and password must be associated with an account on the FTP server. If you are writing to the network server, the FTP server must be properly configured to accept the FTP write request from the user on the networking device.

If the network server has a directory structure, the configuration file or image is written to or copied from the directory associated with the username on the network server. For example, if the system image resides in the home directory of a user on the network server, specify the name of that user as the remote username.

Refer to the documentation for your FTP server for more details.

### Using rcp

The rcp protocol requires a username upon each request. When you copy a configuration file or image between the networking device and an rcp server, the Cisco IOS XR software sends the first valid username in the following list:

1. The remote username specified in the **copy** command, if one is specified.
2. The username set by the **rcp client username** command, if the command is configured.
3. The networking device hostname.

For the rcp copy request to process successfully, an account must be defined on the network server for the remote username. If the network administrator of the destination server did not establish an account for the remote username, this command does not run successfully. If the network server has a directory structure, the

configuration file or image is written to or copied from the directory associated with the remote username on the network server. For example, if the system image resides in the home directory of a user on the network server, specify the name of that user as the remote username.

If you are writing to the network server, the rcp server must be properly configured to accept the rcp write request from the user on the networking device. For UNIX systems, add an entry to the `.rhosts` file for the remote user on the rcp server. Suppose the networking device contains the following configuration lines:

```
hostname Rtrl
ip rcp remote-username User0
```

If the IP address of the networking device translates to `company.com`, then the `.rhosts` file for `User0` on the rcp server should contain the following line:

```
company.com Rtrl
```

See the documentation for your rcp server for more details.

If you are using a personal computer as a file server, the computer must support remote shell (rsh) protocol.

### Using xml-schema

Use the **xml-schema** keyword to obtain the most up-to-date XML schemas (.xsd files) from the router. Using this keyword is useful to prevent the use of outdated schemas in the event that router software updates include schema updates. The tar ball file includes all active schema files. It does not include schemas that are activated by specific package installation envelopes (PIEs) if those PIEs are not installed and activated on the router.

### Copying to the Running Configuration

When you use the **copy** command to copy a configuration file to the **running-config** destination, the configuration in the file is applied to the running configuration of the system. This is a configuration operation. By default, the copy is carried out in a best-effort manner. This means that if some configuration lines from the file cannot be applied, the remaining configuration is still integrated into the system. In this case, a partial configuration is committed. When the **atomic** keyword is used, partial configurations are not committed. This means that even if one error occurs in the parsing or committing phase, no changes are made to the system. To view any errors when applying the configuration, use the **show configuration failed** command.

---

#### Task ID

---

#### Task ID    Operations

---

```
filesystem execute
```

---

The following example shows how to copy a file from a FTP server to disk1:

```
RP/0/RSP0/CPU0:router#
copy ftp://john:secret@10.1.1.1/images/comp-asr9k-full.pie disk1:
```

The following example shows how to copy a file from an rcp server to disk1:

```
RP/0/RSP0/CPU0:router#
```

```
copy rcp://john@10.1.1.1/images/comp-asr9k-full.pie disk1:
```

The following example shows how to copy a file from a TFTP server to disk1:

```
RP/0/RSP0/CPU0:router#
copy tftp://10.1.1.1/images/comp-asr9k-full.pie disk1:
```

The following example shows how to copy a file from a SCP and SFTP server using public key authentication:

```
Router#copy running-config scp://root@192.0.4.2//var/opt/run_conf_scp.txt
Router#copy running-config sftp://root@192.0.4.2//var/opt/run_conf_sftp.txt
```

# delete

To delete files, use **delete** command in the appropriate mode.

**delete** [/noprompt] [/ena] *filesystem*: *filename* **location** {*node-id* | **all**}

Syntax Description		
<b>/noprompt</b>	(Optional)	Causes no prompt for confirmation before deleting the specified files.
<b>/ena</b>	(Optional)	Deletes all files from and below the current working directory.
<i>filesystem</i> :	(Optional)	Location of the file to be deleted. Include the file system alias for the <i>filesystem</i> argument, followed by a colon, and, optionally, the name of a directory.
<i>filename</i>		Filename of the file to be deleted.
<b>hddisk</b>		Deletes the hddisk
<b>location</b> { <i>node-id</i>   <b>all</b> }		Deletes a file from a designated node. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation. The <b>all</b> keyword specifies to delete the file from all nodes.

**Command Default** A filename must be specified. If a filename is entered without a file system or directory path, the present working directory is used.

**Command Modes** EXEC mode.  
Admin EXEC mode.

Command History	Release	Modification
	Release 7.0.1	This command was introduced.

**Usage Guidelines** When a file is deleted, it is removed from the system and cannot be restored (undeleted).  
Use the **dir** command to display the list of files on a storage device.

The following example shows how to delete a file:

```
RP/0/RSP0/CPU0:router# delete rbtest
```

```
Delete disk1:/rbtest[confirm]y
```



# dir

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

**dir** [{/all | /ena | /recurse}] [*filesystem*:] [*filename*] **location** {*node-id* | **all**}

Syntax Description	
<b>/all</b>	(Optional) Lists deleted files, undeleted files, and files with errors.
<b>/ena</b>	(Optional) Recognizes subdirectories.
<b>/recurse</b>	(Optional) Recursively lists subdirectories.
<i>filesystem</i> :	(Optional) Name of the directory containing the files to be displayed. Include the file system alias for the <i>filesystem</i> argument, followed by a colon, and, optionally, the name of a directory.
<i>filename</i>	(Optional) Name of the files to display. The files can be of any type. You can use wildcards in the filename. A wildcard character (*) matches all patterns. Strings following a wildcard are ignored.
<b>location</b> { <i>node-id</i>   <b>all</b> }	(Optional) Specifies the node from which to display a list of files. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation. The <b>all</b> keyword specifies to display files on all nodes.

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

**Command Modes** EXEC mode.  
Admin EXEC mode.

Command History	Release	Modification
	Release 7.0.1	This command was introduced.

**Usage Guidelines** If you enter the **dir** command without specifying a directory, the contents of the present working directory are displayed. The **all** keyword displays all files, including deleted files. The size associated with the directory name is the total size for all files in that directory.

The following example shows how to display the contents of a directory:

```
RP/0/RSP0/CPU0:router# dir harddisk:/log

Directory of harddisk:/log

5527 drwx 4096 Thu Aug 28 11:21:48 2008 boot_28_Aug_2008_11_21_49
5533 drwx 4096 Thu Aug 28 11:38:54 2008 boot_28_Aug_2008_11_38_54
5538 drwx 4096 Fri Sep 5 13:28:54 2008 boot_05_Sep_2008_13_28_54
5543 drwx 4096 Mon Sep 8 08:55:52 2008 boot_08_Sep_2008_06_59_08
```

--More--

# mkdir

To create a new directory on a file system, use the **mkdir** command in the appropriate mode.

**mkdir** *filesystem*:**[location** {*node-id* | **all**}]

<b>Syntax Description</b>	<i>filesystem</i> :	File system on which to create a new directory.
	<b>location</b> { <i>node-id</i>   <b>all</b> }	(Optional) Specifies the node where the file system is located. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> notation. Use the <b>all</b> keyword to indicate all nodes.
<b>Command Default</b>	No default behavior or values	
<b>Command Modes</b>	EXEC Admin EXEC.	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 7.0.1	This command was introduced.

## Usage Guidelines

After you issue the **mkdir** command, Cisco IOS XR software prompts you to specify the name of the directory to be created. When specifying the name of the new directory, include the directory path where you want the new directory to reside. If you do not specify a directory path, the new directory is created in the /usr directory of the file system specified for the *filesystem*: argument.

The following example shows how to create a directory named newdir. The **dir** command is used to verify that the directory has been added.

```
RP/0/RSP0/CPU0:router# mkdir harddisk:

Create directory filename []?newdir
Created dir harddisk:/newdir
RP/0/RP0/CPU0:router# dir harddisk:

Directory of harddisk:

11193 drwx 4096 Fri Feb 13 06:45:05 2009 newdir
37146 drwx 4096 Sun Dec 14 15:30:48 2008 malloc_dump
43030 drwx 4096 Wed Dec 24 11:20:52 2008 tracebacks
43035 drwx 4096 Thu Jan 8 18:59:18 2009 sau
51026 drwx 4096 Sat Dec 27 02:52:46 2008 tempA
51027 drwx 4096 Sat Dec 27 02:04:10 2008 dir.not.del
-430307552 -rwx 342 Fri Jan 16 10:47:38 2009 running-config
-430305504 -rwx 39790 Mon Jan 26 23:45:56 2009 cf.dat

39929724928 bytes total (39883231232 bytes free)
```

# pwd

To display the present working directory, use the **pwd** command in EXEC mode

## pwd

**Syntax Description** This command has no keywords or arguments.

**Command Default** No default behavior or values.

**Command Modes** EXEC

Command History	Release	Modification
	Release 7.0.1	This command was introduced.

**Usage Guidelines** Use the **pwd** command to show what directory or file system is specified as the default by the **cd** command.

The following example shows how to display the present working directory:

```
RP/0/RSP0/CPU0:router# pwd
disk0:/usr
```

# rmdir

To remove an existing directory, use the **rmdir** command in the appropriate mode.

**rmdir** *filesystem:* **location** {*node-id* | **all**}

<b>Syntax Description</b>	<i>filesystem</i>	Name of the file system from which to delete a directory, followed by a colon.
	<b>location</b> { <i>node-id</i>   <b>all</b> }	Specifies the node where the file system is located. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> notation. Use the <b>all</b> keyword to indicate all nodes.
<b>Command Default</b>	No default behavior or values	
<b>Command Modes</b>	EXEC Administration EXEC	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 7.0.1	This command was introduced.

**Usage Guidelines** Use the **rmdir** command to remove directories (for example, to free up disk space) from a file system. After you issue the **rmdir** command, the Cisco IOS XR software prompts you to specify the name of the directory to be deleted.

When a directory contains files, you must remove the files before deleting the directory. Use the **delete** command to remove files.

The following example shows how to delete a subdirectory from the hard disk. The **dir** command is used to verify that the directory has been deleted.

```
RP/0/RSP0/CPU0:router# rmdir harddisk:

Remove directory filename []?newdir
Delete harddisk:/newdir[confirm]y
RP/0/RSP0/CPU0:router# dir harddisk:

Directory of harddisk:

 37146 drwx 4096 Sun Dec 14 15:30:48 2008 malloc_dump
 43030 drwx 4096 Wed Dec 24 11:20:52 2008 tracebacks
 43035 drwx 4096 Thu Jan 8 18:59:18 2009 sau
 51026 drwx 4096 Sat Dec 27 02:52:46 2008 tempA
 51027 drwx 4096 Sat Dec 27 02:04:10 2008 dir.not.del
-430307552 -rwx 342 Fri Jan 16 10:47:38 2009 running-config
-430305504 -rwx 39790 Mon Jan 26 23:45:56 2009 cf.dat

39929724928 bytes total (39883235328 bytes free)
```

# show filesystem

To display the layout and contents of file systems, use the **show filesystem** command in EXEC mode.

**show filesystem** *filesystem*:[{**firmware** | **stats** | **verbose level**}] [**location** {*node-id* | **all**}]

## Syntax Description

<i>filesystem</i> :	Name of the file system for which to display information, followed by a colon. Possible values are: <b>disk0:</b> , <b>disk1:</b> , <b>harddisk:</b> .
<b>firmware</b>	(Optional) Displays the firmware level.
<b>stats</b>	(Optional) Displays device statistics.
<b>verbose level</b>	(Optional) Changes the device driver verbose level.
<b>location</b> { <i>node-id</i>   <b>all</b> }	(Optional) Specifies the node where the file system is located. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> notation. Use the <b>all</b> keyword to indicate all nodes.

## Command Default

The file system for the active RP is displayed.

## Command Modes

EXEC mode

## Command History

Release	Modification
Release 7.0.1	This command was introduced.

## Usage Guidelines

Use the **show filesystem** command to learn the alias names (prefixes) of the file systems supported by your networking device.

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

```
RP/0/RSP0/CPU0:router# show filesystem

File Systems:

 Size (b) Free (b) Type Flags Prefixes
 - - - - -
 - - network rw qsm/dev/fs/tftp: tftp:
 - - network rw qsm/dev/fs/rcp: rcp:
 - - network rw qsm/dev/fs/ftp: ftp:
39929724928 39852978176 harddisk rw harddisk:
 1024606208 863584256 flash-disk rw disk0:
 2092032 2059264 nvram rw nvram:
 62390272 62381260 flash rw bootflash:
```

The following example shows sample output from the **show filesystem** command using the optional **location** *node-id* keyword and argument:

```
RP/0/RSP0/CPU0:router# show filesystem location 0/rp0/cpu0

File Systems:
```

```

 Size(b) Free(b) Type Flags Prefixes
 - - network rw qsm/dev/fs/tftp: tftp:
 - - network rw qsm/dev/fs/rcp: rcp:
 - - network rw qsm/dev/fs/ftp: ftp:
39929724928 39883235328 harddisk rw harddisk:
 2092032 2019328 nvram rw nvram:
1024606208 847888384 flash-disk rw disk0:
 62390272 62153616 flash rw bootflash:

```

**Table 14: show filesystem Field Descriptions**

Field	Description
Size(b)	Amount of memory in the file system, in bytes.
Free(b)	Amount of free memory in the file system, in bytes.
Type	Type of file system.
Flags	Permissions for file system.
Prefixes	Alias for the file system.

# show media

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

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

## Syntax Description

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

## Command Default

The disk storage media for the active RP is displayed.

## Command Modes

Administration EXEC

EXEC

## Command History

Release	Modification
Release 7.0.1	This command was introduced.

## Usage Guidelines

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

The following example displays the output of the **show media** command:

```

sysadmin-vm:0_RP0 #show media
Thu Nov 30 14:57:14.002 WET
Media Information for local node.

Partition Size Used Percent Avail
rootfs: 2.7G 1.5G 59% 1.1G
apphost: 1.9G 61M 4% 1.7G
/dev/sde 870M 401M 50% 409M
harddisk: 2.4G 966M 43% 1.3G
log: 459M 67M 16% 359M
config: 159M 2.5M 2% 144M
disk0: 1.3G 108M 9% 1.1G

rootfs: = root file system (read-only)
log: = system log files (read-only)
config: = configuration storage (read-only)

```

**Table 15: show media Field Descriptions**

Field	Description
Partition	Partition on the disk.
Size	Size of the partition.
Used	Partition size used.
Percent	Percentage used.



Field	Description
Avail	Available free partition space.





## Manageability Commands

---

- [ipv4 disable](#), on page 234
- [ipv6 enable \(XML\)](#), on page 235
- [iteration](#), on page 236
- [nvgen default-sanitize](#), on page 238
- [session timeout](#), on page 239
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- [shutdown \(VRF\)](#), on page 244
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- [vrf \(XML\)](#), on page 248
- [xml agent](#), on page 249
- [xml agent ssl](#), on page 250
- [xml agent tty](#), on page 251

# ipv4 disable

To disable IPv4 XML transport, use the **ipv4 disable** command in XML agent configuration mode. To enable IPv4 XML transport, use the **no** form of this command.

**ipv4 disable**  
**no ipv4 disable**

**Syntax Description** This command has no keywords or arguments.

**Command Default** IPv4 XML transport is enabled by default.

**Command Modes** XML agent configuration

Command History	Release	Modification
	Release 4.1.0	This command was introduced.

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

Task ID	Task ID	Operation
	config-services	read, write

This example illustrates how to disable IPv4 XML transport:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml-agent) ipv4 disable
```

## ipv6 enable (XML)

To enable IPv6 XML transport, use the **ipv6 enable** command in XML agent configuration mode. To disable IPv6 XML transport, use the **no ipv6 enable** form of this command.

**ipv6 enable**  
**no ipv6 enable**

**Syntax Description** This command has no keywords or arguments.

**Command Default** IPv6 XML transport is disabled by default.

**Command Modes** XML agent configuration

Command History	Release	Modification
	Release 4.1.0	This command was introduced.
	Release 5.0.0	This command was introduced.

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

Task ID	Task ID	Operation
	config-services	read, write

This example illustrates how to enable IPv6 XML transport:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml-agent) ipv6 enable
```

# iteration

To configure the iteration size for large XML agent responses, use the `iteration` command in xml agent configuration mode. To revert to the default iteration settings, use the `no` form of this command.

**iteration** {**off** | **on** **size** *iteration-size*}  
**no iteration**

Syntax Description	off	on	size <i>iteration-size</i>
	Disables iteration, meaning that the entire XML response is returned, regardless of its size. Use of this option is not recommended.	Enables iteration, meaning that large XML responses are broken into chunks according to the iteration chunk size.	Specifies the size of the iteration chunk, in Kbytes. Values can range from 1 to 100,000.

**Command Default** Iteration is enabled; the *iteration-size* is 48.

**Command Modes** XML agent  
 TTY XML agent  
 SSL XML agent

Command History	Release	Modification
	Release 3.9.0	This command was introduced.

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

When the XML agent returns a large response, it splits the response into chunks and returns one chunk at a time. External clients then need to send a GetNext request to obtain the next chunk. Use the **iteration** command to control the size of iteration chunks. A larger chunk value allows larger chunks to be received in a shorter period of time, possibly making the router system busier. A smaller chunk value allows smaller chunks to be received over a longer period of time, but does not make the router busy. You can also specify to disable iteration completely using the **iteration off** command.



**Note** It is not recommended to disable iteration, since this could result in large transient memory usage.

To specify the TTY or SSL iteration size specifically, use the **iteration** command from the appropriate command mode.

Task ID	Task ID	Operations
	config-services	read, write

### Example

The following example shows how to configure the iteration chunk size to 100 Kbytes.

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml)# iteration on size 100
```

The following example shows how to disable iteration:

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml)# iteration off
```

The following example shows how to turn on iteration with the default iteration size:

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml)# no iteration off
```

The following example shows how to change the iteration size to the default iteration size.

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml)# no iteration on size 100
```

The following example shows how to change the iteration size of the TTY agent to 3 Kbytes:

```
RP/0/RSP0/CPU0:router(config)# xml agent tty
RP/0/RSP0/CPU0:router(config-xml-tty)# iteration on size 3
```

The following example shows how to turn off the iteration of the SSL agent:

```
RP/0/RSP0/CPU0:router(config)# xml agent ssl
RP/0/RSP0/CPU0:router(config-xml-ssl)# iteration off
```

## nvgen default-sanitize

To enable sanitizing Strings, Usernames, Passwords, Comments, or IP Addresses in the output for **show running configurations** command, use the **nvgen default-sanitize** command.

```
nvgen default-sanitize { strings | usernames | passwords | comments | ipaddrs }
```

Syntax Description	
<b>strings</b>	Removes the description strings in the running configuration and replaces it with <b>&lt;removed&gt;</b> phrase.
<b>usernames</b>	Removes the usernames in the running configuration and replaces it with <b>&lt;removed&gt;</b> phrase.
<b>password</b>	Removes the passwords in the running configuration and replaces it with <b>&lt;removed&gt;</b> phrase.
<b>comments</b>	Removes the comments in the running configuration and replaces it with <b>&lt;comments removed&gt;</b> phrase.
<b>ipaddrs</b>	Removes the IP addresses in the running configuration and replaces it with <b>&lt;removed&gt;</b> phrase.

Command Default	
	The output for <b>show running configurations</b> command includes sensitive information such as Strings, Usernames, Passwords, Comments, or IP Addresses.

Command Modes	
	Configuration mode

Command History	Release	Modification
	Release 7.5.4	This command was introduced.

Usage Guidelines	
	None

**Examples**

The following example shows how to sanitize show running configurations:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# nvgen default-sanitize strings
RP/0/RSP0/CPU0:router(config)# nvgen default-sanitize usernames
RP/0/RSP0/CPU0:router(config)# nvgen default-sanitize passwords
RP/0/RSP0/CPU0:router(config)# nvgen default-sanitize comments
RP/0/RSP0/CPU0:router(config)# nvgen default-sanitize ipaddrs
RP/0/RSP0/CPU0:router(config)# commit
```



# session timeout

To configure an idle timeout for the XML agent, use the **session timeout** command in xml agent configuration mode. To remove the session timeout, use the **no** form of this command.

**session timeout** *timeout*

<b>Syntax Description</b>	<i>timeout</i> Amount of idle time in minutes that must pass before the XML agent closes the session. Values can range from 1 to 1440.				
<b>Command Default</b>	There is no session timeout.				
<b>Command Modes</b>	xml agent xml agent ssl xml agent tty				
<b>Command History</b>	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Release 4.0.0</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	Release 4.0.0	This command was introduced.
Release	Modification				
Release 4.0.0	This command was introduced.				
<b>Usage Guidelines</b>	To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.				
<b>Task ID</b>	<table border="1"> <thead> <tr> <th>Task ID</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>config-services</td> <td>read, write</td> </tr> </tbody> </table>	Task ID	Operation	config-services	read, write
Task ID	Operation				
config-services	read, write				

The following example illustrates how to configure the dedicated agent to close the session after 5 minutes of idle time:

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml-agent)# session timeout 5
```

The following example illustrates how to configure the XML TTY agent to close the session after 60 minutes of idle time:

```
RP/0/RSP0/CPU0:router(config)# xml agent tty
RP/0/RSP0/CPU0:router(config-xml-agent-tty)# session timeout 60
```

The following example illustrates how to configure the XML TTY agent to have no timeout (the default):

```
RP/0/RSP0/CPU0:router(config)# xml agent tty
```

```
RP/0/RSP0/CPU0:router(config-xml-agent)# no session timeout
```

# show xml schema

To browse the XML schema and data, use the **show xml schema** command in

EXEC

mode.

**show xml schema**

**Syntax Description** This command has no keywords or arguments.

**Command Default** None

**Command Modes** EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

The **show xml schema** command runs the XML schema browser so that you can browse the XML schema and data.

Task ID	Task ID	Operations
	config-services	read

This example shows how to enter the XML schema browser and the available commands:

```
RP/0/RSP0/CPU0:router# show xml schema

Username: xxxx
Password:
Enter 'help' or '?' for help
xml-schema[config]:> ?

config oper action
adminoper adminaction cd
pwd classinfo list
ls datalist walk
walkdata get hierarchy
quit exit help
xml-schema[config]:>
```

# show xml sessions

To display the status of an Extensible Markup Language (XML) session, use the **show xml sessions** command in

EXEC

mode.

**show xml sessions** [{**default** | **ssl** | **tty**}] [**detail**]

Syntax Description	default
	Displays the status of the default XML agent.
ssl	Displays the status of the XML agents over secure socket layer (SSL).
tty	Displays the status of XML agents over telnet.
detail	Displays details regarding the XML sessions.

**Command Default** None

**Command Modes** EXEC

Command History	Release	Modification
	Release 4.0.0	This command was introduced.

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

Task ID	Task ID	Operation
	config-services	read

## Example

This example illustrates sample output of the **show xml sessions** command with no optional keywords specified:

```
RP/0/RSP0/CPU0:router# show xml sessions

Session Client Agent User Date State
00000001 192.168.10.85 (default) tty cisco Fri Jun 19 22:42:29 2009 idle
10000001 10.12.24.15 (VRF1) default lab Fri Jun 19 22:32:12 2009 busy
```

This example illustrates sample output of the **show xml sessions** command with the **tty** keyword:

```
RP/0/RSP0/CPU0:router# show xml sessions tty
```

```
Session Client Agent User Date State
00000001 192.168.10.85 (default) tty cisco Fri Jun 19 22:42:29 2009 idle
00000002 10.12.24.15 (VRF1) tty lab Fri Jun 19 22:32:12 2009 busy
```

This example illustrates sample output of the **show xml sessions** command with the **detail** keyword:

```
RP/0/RSP0/CPU0:router#
```

```
show xml sessions detail
```

```
Session: 00000001
 Client: 192.168.10.85 (default)
 Agent type: tty
 User: cisco
 State: idle
 Config session: -
 Alarm notification: Registered
 Start Date: Tue Aug 24 18:21:29 2010
 Elapsed Time: 00:00:27
 Last State Changed: 00:00:27
Session: 10000001
 Client: 10.12.24.15 (VRF1)
 Agent type: default
 User: lab
 State: busy
 Config session: 00000010-0005b105-00000000
 Alarm notification: Not registered
 Start date: Tue Aug 24 18:21:29 2010
 Elapsed Time: 00:01:10
 Last State Changed: 00:01:10
```

## shutdown (VRF)

To configure the dedicated XML agent to not receive or send messages via the default VRF, use the **shutdown** command in xml agent vrf configuration mode. To enable the dedicated XML agent to receive or send messages via the default VRF, use the **no** form of this command.

**shutdown**  
**no shutdown**

This command has no keywords or arguments.

**Command Default** The default VRF instance is enabled by default.

**Command Modes** xml agent vrf configuration  
xml agent ssl vrf configuration

Command History	Release	Modification
	Release 4.0.0	This command was introduced.

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

Task ID	Task ID	Operation
	config-services	read, write

### Example

The following example illustrates how to configure the XML dedicated agent to send and receive messages via VRF1 only:

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml-agent)# vrf VRF1
RP/0/RSP0/CPU0:router(config-xml-agent)# vrf default
RP/0/RSP0/CPU0:router(config-xml-agent-vrf)# shutdown
```

The following example illustrates how to configure the XML SSL agent to send and receive messages via VRF1 only:

```
RP/0/RSP0/CPU0:router(config)# xml agent ssl
RP/0/RSP0/CPU0:router(config-xml-agent-ssl)# vrf VRF1
RP/0/RSP0/CPU0:router(config-xml-agent-ssl)# vrf default
RP/0/RSP0/CPU0:router(config-xml-agent-ssl-vrf)# shutdown
```

The following example illustrates how to enable the default VRF after it has been disabled:

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml-agent)# vrf default
RP/0/RSP0/CPU0:router(config-xml-agent-vrf)# no shutdown
```

# streaming

To configure XML response streaming, use the **streaming** command in one of the XML agent configuration modes. To disable XML response streaming, use the **no** form of this command.

**streaming on size** *size*

<b>Syntax Description</b>	<b>on</b> Turns on XML streaming.
	<b>size</b> <i>size</i> Specifies the size of the stream in Kbytes.

**Command Default** XML streaming is disabled.

**Command Modes** XML agent  
XML agent ssl  
XML agent tty

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 4.1.0	This command was introduced.

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

<b>Task ID</b>	<b>Task ID</b>	<b>Operation</b>
	config-services	read, write

This example illustrates how to set the XML response streaming size to 5000 Kbytes.

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml-agent)# streaming on size 5000
```



# throttle

To configure the XML agent processing capabilities, use the **throttle** command in XML agent configuration mode.

```
throttle {memory size | process-rate tags}
```

Syntax Description	memory	process-rate
	<i>size</i>	<i>tags</i>
	Specifies the XML agent memory size.	Specifies the XML agent processing rate.
	Maximum memory usage of XML agent per session in MB. Values can range from 100 to 600. The default is 300.	Number of tags that the XML agent can process per second. Values can range from 1000 to 30000.

**Command Default** The process rate is not throttled; memory size is 300 MB.

**Command Modes** XML agent configuration

Command History	Release	Modification
	Release 3.8.2	This command was introduced.

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

Use the **throttle** command to control CPU time used by the XML agent when it handles large data.

Task ID	Task ID	Operation
	config-services	read, write

## Example

This example illustrates how to configure the number of tags that the XML agent can process to 1000:

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml-agent)# throttle process-rate 1000
```

## vrf (XML)

To configure a dedicated agent to receive and send messages via the specified VPN routing and forwarding (VRF) instance, use the `vrf` command in one of the xml agent configuration mode. To disable the receiving and sending of messages via a specific VRF instance, use the `no` form of this command.

**vrf** {**default***vrf-name*}

Syntax Description	default	Configures the default VRF instance.
	<i>vrf-name</i>	Configures the specified VRF instance.

**Command Default** The default VRF is enabled by default.

**Command Modes** XML agent configuration  
XML agent SSL configuration

Command History	Release	Modification
	Release 4.0.0	This command was introduced.

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

The default VRF is enabled by default. To disable the default VRF, use the **shutdown** command.

Task ID	Task ID	Operation
	config-services	read, write

### Example

This example shows how to configure the dedicated XML agent to receive and send messages via VRF1, VRF2 and the default VRF:

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml-agent)# vrf VRF1
RP/0/RSP0/CPU0:router(config-xml-agent)# vrf VRF2
```

This example shows how to remove access to VRF2 from the dedicated agent:

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml-agent)# no vrf VRF2
```

# xml agent

To enable Extensible Markup Language (XML) requests over a dedicated TCP connection and enter XML agent configuration mode, use the **xml agent** command in

global configuration

mode. To disable XML requests over the dedicated TCP connection, use the **no** form of this command.



**Note** This command enables a new, enhanced-performance XML agent. The **xml agent tty** command enables the legacy XML agent and is supported for backward compatibility.

**xml agent**  
**no xml agent**

**Command Default** XML requests are disabled.

**Command Modes** Global configuration

Command History	Release	Modification
	Release 3.8.0	This command was introduced.

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

There are two XML agents: a legacy XML agent and an enhanced-performance XML agent. We recommend that you use the enhanced-performance agent. The legacy agent is supported for backward compatibility. Use the **xml agent** command to enable the enhanced-performance XML agent. Use the **xml agent tty** command to enable the legacy XML agent.

Use the **no** form of the **xml agent** command to disable the enhanced-performance XML agent.

Task ID	Task ID	Operations
	config-services	read, write

This example shows how to enable XML requests over a dedicated TCP connection:

```
RP/0/RSP0/CPU0:router(config)# xml agent
```

# xml agent ssl

To enable Extensible Markup Language (XML) requests over Secure Socket Layer (SSL) and enter SSL XML agent configuration mode, use the **xml agent ssl** command in

global configuration

mode. To disable XML requests over SSL, use the **no** form of this command.

**xml agent ssl**  
**no xml agent ssl**

---

**Command Default**      SSL agent is disabled by default.

---

**Command Modes**        Global configuration

---

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.9.0	This command was introduced.

---



---

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

The k9sec package is required to use the SSL agent. The configuration is rejected during commit when the security software package is not active on the system. When the security software package is deactivated after configuring SSL agent, the following syslog message is displayed to report that the SSL agent is no longer available.

```
xml_dedicated_ssl_agent[420]:
%MGBL-XML_TTY-7-SSLINIT : K9sec pie is not active, XML service over
SSL is not available.
```

---

<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	config-services	read, write

---

This example shows how to enable XML requests over SSL:

```
RP/0/RSP0/CPU0:router(config)# xml agent ssl
```

# xml agent tty

To enable Extensible Markup Language (XML) requests over Secure Shell (SSH) and Telnet and enter TTY XML agent configuration mode, use the **xml agent tty** command in

global configuration

mode. To disable XML requests over SSH and Telnet, use the **no** form of this command.



**Note** This command enables a legacy XML agent that has been superceded by an enhanced performance XML agent and is supported only for backward compatibility. To enable the enhanced-performance XML agent, use the **xml agent** command.

**xml agent tty**  
**no xml agent tty**

**Command Default** XML requests over SSH and Telnet are disabled.

**Command Modes** Global configuration

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

There are two XML agents: a legacy XML agent and an enhanced-performance XML agent. We recommend that you use the enhanced-performance agent. The legacy agent is supported for backward compatibility. The **xml agent tty** command enables the legacy XML agent. Use the **xml agent** command to enable the enhanced-performance XML agent.

Use the **no** form of the **xml agent tty** command to disable the legacy XML agent.

Task ID	Task ID	Operations
	config-services	read, write

This example shows how to enable XML requests over Secure Shell (SSH) and Telnet:

```
RP/0/RSP0/CPU0:router(config)# xml agent tty
```





## Terminal Services Commands

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# absolute-timeout

To set the absolute timeout for line disconnection, use the **absolute-timeout** command in line template configuration mode. To remove the **absolute-timeout** command from the configuration file and restore the system to its default condition, use the **no** form of this command.

**absolute-timeout** *minutes*  
**no absolute-timeout** *minutes*

<b>Syntax Description</b>	<i>minutes</i> Absolute timeout interval, in minutes. Range is from 10 to 10000.
---------------------------	----------------------------------------------------------------------------------

<b>Command Default</b>	<i>minutes</i> : 1440
------------------------	-----------------------

<b>Command Modes</b>	Line template configuration
----------------------	-----------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.
	Release 5.0.0	This command was introduced.

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

Use the **absolute-timeout** command to terminate the connection after the specified time has elapsed, regardless of whether the connection is being used at the time of termination. You can specify an absolute-timeout value for each port. The user is notified 20 seconds before the session is terminated.

<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	tty-access	read, write

The following example shows how to set the session timeout value to 2880 minutes (2 days) for the default line template:

```
RP/0/RSP0/CPU0:router(config)# line default
RP/0/RSP0/CPU0:router(config-line)# absolute-timeout 2880
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	banner incoming	Sets the idle wait timeout interval for user input over a physical terminal connection.
	session timeout	Sets the idle wait timeout interval for user input over a virtual terminal connection.

# access-class

To restrict incoming and outgoing connections using an IPv4 or IPv6 access list, use the **access-class** command in line template configuration mode. To remove the restriction, use the **no** form of this command.

```
access-class list-name {in | out}
no accessclass list-name {in | out}
```

Syntax Description	
	<i>list-name</i> IPv4 or IPv6 access list name.
	<b>in</b> Filters incoming connections.
	<b>out</b> Filters outgoing connections.

**Command Default** No access class is set.

**Command Modes** Line template configuration

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **access-class** command to restrict incoming or outgoing connections to addresses defined in an access list. Use the **ipv4 access-list** or **ipv6 access-list** command to define an access list by name.



**Note** To restrict access of incoming or outgoing connections over IPv4 and IPv6, the IPv4 access list and IPv6 access list must share the same name.

Task ID	Task ID	Operations
	tty-access	read, write

The following example shows how to specify an access class assigned to outgoing connections for the default line template:

```
RP/0/RSP0/CPU0:router(config)# line default
RP/0/RSP0/CPU0:router(config-line)# access-class vtyacl out
```

The following sample output from the **show ipv4 access-lists** command displays the IPv4 access list named vtyacl:

```
RP/0/RSP0/CPU0:router# show ipv4 access-lists vtyacl

ipv4 access-list vtyacl
 10 permit ip host 10.32.162.48 any
 20 permit ip host 10.20.49.170 any
 30 permit ip host 10.60.3.5 any
```

The following sample output from the **show ipv6 access-lists** command displays the IPv6 access list name vtyacl:

```
RP/0/RSP0/CPU0:router# show ipv6 access-lists vtyacl

ipv6 access-list vtyacl
 10 permit ipv6 host 2001:db8:2222:: any
 20 permit ipv6 host 2001:db8:0:4::2 any
```

**Related Commands**

Command	Description
<b>ipv4 access-list</b>	Defines an IPv4 access list by name.
<b>ipv6 access-list</b>	Defines an IPv6 access list by name.

# autocommand

To automatically run one or more commands after a user logs in to a vty terminal session, use the **autocommand** command in line default or line template configuration mode. To remove the **autocommand** command from the configuration file and restore the system to its default condition, use the **no** form of this command.

**autocommand** *command*  
**no autocommand** *command*

<b>Syntax Description</b>	<i>command</i> Command or command alias to be executed on user login to a vty session.
---------------------------	----------------------------------------------------------------------------------------

<b>Command Default</b>	No default behavior or values
------------------------	-------------------------------

<b>Command Modes</b>	Line template configuration Line default configuration
----------------------	-----------------------------------------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.

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

Use the **autocommand** command to automatically run a command or command alias when a user logs in to a vty session. To run multiple commands, use a command alias for the *command* argument. When the user logs in, the commands included in the alias are run sequentially.



<b>Note</b>	The <b>autocommand</b> command is supported on vty connections only; it is not supported on console or aux line connections. Use this command to automatically run a command after user login.
-------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	tty-access	read, write

The following example shows how to use the **autocommand** command to automatically run the **show ip interface brief** command when a user logs in to a default vty session:

```
RP/0/RSP0/CPU0:router# configure terminal
RP/0/RSP0/CPU0:router(config)# line default
RP/0/RSP0/CPU0:router(config-line)# autocommand show ip interface brief
RP/0/RSP0/CPU0:router(config-line)# end
```

```
Uncommitted changes found, commit them before exiting(yes/no/cancel)? [cancel]:yes
```

```
RP/0/RSP0/CPU0:router# exit

<Your 'TELNET' connection has terminated>
```

The following example shows how the **show ip interface brief** command is automatically run when the user logs on to a vty session:

```
User Access Verification

Username: lab
Password:

Executing Autocommand 'show ip interface brief'
RP/0/RSP0/CPU0:router# show ip interface brief

Interface IP-Address Status Protocol
MgmtEth0/RP0/CPU0/0 172.16.0.0 Up Up
POS0/0/0/0 unassigned Up Up
POS0/0/0/1 unassigned Up Up
POS0/0/0/2 unassigned Up Up
POS0/0/0/3 unassigned Up Up
POS0/3/0/0 unassigned Up Up
POS0/3/0/1 unassigned Up Up
POS0/3/0/2 unassigned Up Up
POS0/3/0/3 unassigned Up Up
```

The following example shows how to disable the feature using the **no** form of the **autocommand** command. In this example, the autocommand for the **show ip interface brief** command is disabled. When the user logs out, and logs back in, the **autocommand** command does not run.

```
RP/0/RSP0/CPU0:router# configure terminal
RP/0/RSP0/CPU0:router(config)# line default
RP/0/RSP0/CPU0:router(config-line)# no autocommand ?

LINE Appropriate EXEC command

RP/0/RSP0/CPU0:router(config-line)# no autocommand show ip interface brief
RP/0/RSP0/CPU0:router(config-line)# end

Uncommitted changes found, commit them before exiting(yes/no/cancel)? [cancel]:yes

RP/0/RSP0/CPU0:router# exit

<Your 'TELNET' connection has terminated>

User Access Verification

Username: lab
Password:
RP/0/RSP0/CPU0:router#
```

The following example shows how to use a command alias with the **autocommand** command to run more than one command when a user logs in to a default vty session. In this example, the alias “test” is created to include the **show ip interface brief** command and the **show users** command. The autocommand feature is then used to run the “test” alias when a user logs in to the vty terminal:

```
RP/0/RSP0/CPU0:router# configure terminal
RP/0/RSP0/CPU0:router(config)# alias test show ip interface brief; show users
```

```

RP/0/RSP0/CPU0:router(config)# line default
RP/0/RSP0/CPU0:router(config-line)# autocommand test
RP/0/RSP0/CPU0:router(config-line)# end

Uncommitted changes found, commit them before exiting(yes/no/cancel)? [cancel]:yes

RP/0/RSP0/CPU0:router# exit

<Your 'TELNET' connection has terminated>

User Access Verification

Username: lab
Password:

Executing Autocommand 'test'
RP/0/RSP0/CPU0:router# test

RP/0/RSP0/CPU0:router# show ip interface brief

Interface IP-Address Status Protocol
MgmtEth0/RP0/CPU0/0 172.16.0.0 Up Up
POS0/0/0/0 unassigned Up Up
POS0/0/0/1 unassigned Up Up
POS0/0/0/2 unassigned Up Up
POS0/0/0/3 unassigned Up Up
POS0/3/0/0 unassigned Up Up
POS0/3/0/1 unassigned Up Up
POS0/3/0/2 unassigned Up Up
POS0/3/0/3 unassigned Up Up

RP/0/RSP0/CPU0:router# show users

 Line User Service Conns Idle Location
* vty0 lab telnet 0 00:00:00 172.16.0.0

```

# banner exec

To create a message that is displayed when an EXEC process is created (an EXEC banner), use the **banner exec** command in Global Configuration mode. To delete the EXEC banner, use the **no** form of this command.

```
banner exec delimiter message delimiter
no banner exec
```

## Syntax Description

*delimiter* Delimiting character is (c).

*message* Message text. Text may include tokens in the form \$( *token* ) in the message text. Tokens are replaced with the corresponding configuration variable. Tokens are described in [Table 1](#).

## Command Default

No EXEC banner is displayed.

## Command Modes

Global Configuration mode

## Command History

Release	Modification
Release 3.7.2	This command was introduced.

## Usage Guidelines

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

Use the **banner exec** command to specify a message that is displayed when an EXEC process is created (a line is activated or an incoming connection is made to a vty). Follow this command with one or more blank spaces and the delimiting character (c). After entering one or more lines of text, terminate the message with the delimiting character (c).

When a user connects to a router, the message-of-the-day (MOTD) banner appears first, followed by the login banner and prompts. After the user logs in to the router, the EXEC banner or incoming banner is displayed, depending on the type of connection. For a reverse Telnet login, the incoming banner is displayed. For all other connections, the router displays the EXEC banner.

Use tokens in the form \$( *token* ) in the message text to customize the banner. Tokens display current configuration variables, such as the router hostname and IP address.

The tokens are described in this table.

**Table 16: banner exec Tokens**

Token	Information Displayed in the Banner
\$(hostname)	Displays the hostname for the router.
\$(domain)	Displays the domain name for the router.
\$(line)	Displays the vty or tty (asynchronous) line number.

Task ID	Task ID	Operations
	tty-access	read, write

The following example shows how to set an EXEC banner that uses tokens:

```
RP/0/RSP0/CPU0:router(config)# banner exec c
Enter TEXT message. End with the character 'c'.
THIS IS AN EXEC BANNER
c
```

#### Related Commands

Command	Description
<b>banner incoming</b>	Defines and enables a customized message that is displayed when there is an incoming connection to a terminal line from a host on the network.
<b>banner login</b>	Defines and enables a customized banner that is displayed before the username and password login prompts.
<b>banner motd</b>	Defines a customized MOTD banner.
<b>banner prompt timeout</b>	Defines a customized banner that is displayed when there is a login timeout.



# banner incoming

To create a banner that is displayed when there is an incoming connection to a terminal line from a host on the network, use the **banner incoming** command in Global Configuration mode. To delete the incoming connection banner, use the **no** form of this command.

**banner incoming** *delimiter message delimiter*  
**no banner incoming**

## Syntax Description

*delimiter* Delimiting character is (c).

*message* Message text. You can include tokens in the form \$( *token* ) in the message text. Tokens are replaced with the corresponding configuration variable. Tokens are described in [Table 1](#).

## Command Default

No incoming banner is displayed.

## Command Modes

Global Configuration mode

## Command History

Release	Modification
Release 3.7.2	This command was introduced.

## Usage Guidelines

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

Follow the **banner incoming** command with one or more blank spaces and the delimiting character (c). After entering one or more lines of text, terminate the message with the second occurrence of the delimiting character (c).

An *incoming connection* is one initiated from the network side of the router. Incoming connections are also called reverse Telnet sessions. These sessions can display message-of-the-day (MOTD) banners and incoming banners, but they do not display EXEC banners.

When a user connects to a router, the MOTD banner (if configured) appears first, followed by the login banner and prompts. After the user logs in to the router, the EXEC banner or incoming banner is displayed, depending on the type of connection. For a reverse Telnet login, the incoming banner is displayed. For all other connections, the router displays the EXEC banner.

Incoming banners cannot be suppressed. If you do not want the incoming banner to appear, you must delete it with the **no banner incoming** command.

To customize the banner, use tokens in the form \$(*token*) in the message text. Tokens display current variables, such as the router hostname and IP address.

This table describes the tokens.

**Table 17: banner incoming Tokens**

Token	Information Displayed in the Banner
\$(hostname)	Displays the hostname for the router.

Token	Information Displayed in the Banner
<b>\$(domain)</b>	Displays the domain name for the router.
<b>\$(line)</b>	Displays the vty or tty (asynchronous) line number.

**Task ID****Task ID Operations**

```

tty-access read,
 write

```

The following example shows how to create an incoming connection banner:

```

RP/0/RSP0/CPU0:router(config)# banner incoming c

 Enter TEXT message. End with the character `c`
THIS IS AN INCOMING BANNER.
c

```

**Related Commands**

Command	Description
<b>banner exec</b>	Defines a customized banner that is displayed whenever the EXEC process is initiated.
<b>banner login</b>	Defines and enables a customized banner that is displayed before the username and password login prompts.
<b>banner motd</b>	Defines a customized MOTD banner.
<b>banner prompt timeout</b>	Defines a customized banner that is displayed when there is a login timeout.

# banner login

To create a customized banner that is displayed before the username and password login prompts, use the **banner login** command in Global Configuration mode. To disable the login banner, use **no** form of this command.

```
banner login delimiter message delimiter
no banner login
```

## Syntax Description

*delimiter* Delimiting character is (c).

*message* Message text. You can include tokens in the form \$( *token* ) in the message text. Tokens are replaced with the corresponding configuration variable. Tokens are described in [Table 1](#).

## Command Default

No login banner is displayed.

## Command Modes

Global Configuration mode

## Command History

Release	Modification
Release 3.7.2	This command was introduced.

## Usage Guidelines

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

Follow the **banner login** command with one or more blank spaces and the delimiting character (c). Then enter one or more lines of text, terminating the message with the second occurrence of the delimiting character (c).

When a user connects to the router, the message-of-the-day (MOTD) banner (if configured) appears first, followed by the login banner and prompts. After the user successfully logs in to the router, the EXEC banner or incoming banner is displayed, depending on the type of connection. For a reverse Telnet login, the incoming banner is displayed. For all other connections, the router displays the EXEC banner.

To customize the banner, use tokens in the form \$( *token* ) in the message text. Tokens display current configuration variables, such as the router hostname and IP address.

Tokens are described in the this table.

**Table 18: banner login Tokens**

Token	Information Displayed in the Banner
\$(hostname)	Displays the hostname for the router.
\$(domain)	Displays the domain name for the router.
\$(line)	Displays the vty or tty (asynchronous) line number.

Task ID	Task ID	Operations
	tty-access	read, write

The following example shows how to set a login banner:

```
RP/0/RSP0/CPU0:router(config)# banner login c
Enter TEXT message. End with the character 'c'.
THIS IS A LOGIN BANNER
c
```

#### Related Commands

Command	Description
<b>banner exec</b>	Defines a customized banner that is displayed whenever the EXEC process is initiated.
<b>banner incoming</b>	Defines and enables a customized message that is displayed when there is an incoming connection to a terminal line from a host on the network.
<b>bannet motd</b>	Defines a customized MOTD banner.
<b>banner prompt timeout</b>	Defines a customized banner that is displayed when there is a login timeout.

# banner motd

To create a message-of-the-day (MOTD) banner, use the **banner motd** command in Global Configuration mode. To delete the MOTD banner, use the **no** form of this command.

**banner motd** *delimiter message delimiter*  
**no banner motd**

## Syntax Description

*delimiter* Delimiting character is (c).

*message* Message text. You can include tokens in the form  $\$(token)$  in the message text. Tokens are replaced with the corresponding configuration variable.

## Command Default

No MOTD banner is displayed.

## Command Modes

Global Configuration mode

## Command History

Release	Modification
Release 3.7.2	This command was introduced.

## Usage Guidelines

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

Follow this command with one or more blank spaces and the delimiting character (c). Then enter one or more lines of text, terminating the message with the second occurrence of the delimiting character (c).

This MOTD banner is displayed to all terminals connected and is useful for sending messages that affect all users (such as impending system shutdowns). Use the **no banner motd** command to disable the MOTD banner on a line.

When a user connects to the router, the MOTD banner (if configured) appears first, followed by the login banner and prompts. After the user successfully logs in to the router, the EXEC banner or incoming banner is displayed, depending on the type of connection. For a reverse Telnet login, the incoming banner is displayed. For all other connections, the router displays the EXEC banner.

To customize the banner, use tokens in the form  $\$(token)$  in the message text. Tokens display current configuration variables, such as the router hostname and IP address.

Tokens are described in this table.

**Table 19: banner motd Tokens**

Token	Information Displayed in the Banner
$\$(hostname)$	Displays the hostname for the router.
$\$(domain)$	Displays the domain name for the router.
$\$(line)$	Displays the vty or tty (asynchronous) line number.

Task ID	Task ID	Operations
---------	---------	------------

	tty-access	read, write
--	------------	----------------

The following example shows how to configure an MOTD banner with a token:

```
RP/0/RSP0/CPU0:router(config)# banner motd c
```

```
Enter TEXT message. End with the character 'c'.
```

```
Notice: all routers in $(domain) will be upgraded beginning April 20
c
```

Related Commands	Command	Description
	<b>banner exec</b>	Defines and enables a customized banner that is displayed whenever the EXEC process is initiated.
	<b>banner incoming</b>	Defines and enables a customized message that is displayed when there is an incoming connection to a terminal line from a host on the network.
	<b>banner login</b>	Defines and enables a customized banner that is displayed before the username and password login prompts.
	<b>banner prompt timeout</b>	Defines a customized banner that is displayed when there is a login timeout.

# banner prompt-timeout

To create a banner that is displayed when there is a login authentication timeout, use the **banner prompt-timeout** command in Global Configuration mode. To delete the prompt timeout banner, use the **no banner prompt-timeout** form of this command.

**banner prompt-timeout** *delimiter message delimiter*  
**no banner prompt-timeout**

<b>Syntax Description</b>	<i>delimiter</i> Delimiting character is (c).				
	<i>message</i> Message text. You can include tokens in the form $\$(token)$ in the message text. Tokens are replaced with the corresponding configuration variable.				
<b>Command Default</b>	No banner is displayed when there is a login authentication timeout.				
<b>Command Modes</b>	Global Configuration mode				
<b>Command History</b>	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Release 3.7.2</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	Release 3.7.2	This command was introduced.
Release	Modification				
Release 3.7.2	This command was introduced.				

**Usage Guidelines**

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

Follow this command with one or more blank spaces and the delimiting character (c). Then enter one or more lines of text, terminating the message with the second occurrence of the delimiting character (c).

This prompt-timeout banner is displayed when there is a login authentication timeout at the username and password prompt.

Task ID	Task ID	Operations
	tty-access	read, write

The following example shows how to configure a prompt-timeout banner:

```
RP/0/RSP0/CPU0:router(config)# banner prompt-timeout c
```

```
Enter TEXT message. End with the character 'c'.
```

```
THIS IS A PROMPT TIMEOUT BANNER
```

```
c
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>banner exec</b>	Defines and enables a customized banner that is displayed whenever the EXEC process is initiated.
<b>banner incoming</b>	Defines and enables a customized message that is displayed when there is an incoming connection to a terminal line from a host on the network.
<b>banner login</b>	Defines and enables a customized banner that is displayed before the username and password login prompts.
<b>banner motd</b>	Defines a customized MOTD banner.



# clear line

To clear an auxiliary or console line to an idle state, use the **clear line** command in EXEC mode.

```
clear line {aux | console} location node-id
```

Syntax Description	Parameter	Description
	<b>aux</b>	Clears the auxiliary line.
	<b>console</b>	Clears the console line.
	<b>location</b> <i>node-id</i>	Specifies the location of a route processor (RP) where the auxiliary or console line to be cleared resides. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Task ID	Task ID	Operations
	tty-access	execute

The following example shows how to clear the console line, putting it in an idle state:

```
RP/0/RSP0/CPU0:router# clear line console location 0/RP1/CPU0
```

Related Commands	Command	Description
	<b>show users</b>	Displays information about the active lines on the networking device.

# clear line vty

To clear a virtual terminal line (vty) to an idle state, use the **clear line vty** command in EXEC mode.

**clear line vty** *line-number*

<b>Syntax Description</b>	<i>line-number</i> Line number in the range from 0 to 99.
---------------------------	-----------------------------------------------------------

<b>Command Default</b>	No default behavior or values
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<b>Command Modes</b>	EXEC mode
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.

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

Use the **show users** command to determine the origin of the connection and which lines to clear. When a line is cleared to an idle state, the user on the other end of the connection receives notice that the connection was closed by a foreign host.

<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	tty-access	execute

The following example shows how to reset vty 3 to the idle state:

```
RP/0/RSP0/CPU0:router# clear line vty 3
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<a href="#">show users, on page 305</a>	Displays information about the active lines on the networking device.

# cli interactive syntax check

To enable interactive syntax checking, use the **cli interactive syntax check** command in the appropriate line configuration mode. To disable interactive syntax checking, use the **no** form of this command.

**cli interactive syntax check**  
**no cli interactive syntax check**

**Syntax Description** This command has no keywords or arguments.

**Command Default** Interactive syntax checking is disabled.

**Command Modes** Line console configuration  
 Line default configuration  
 Line template configuration

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **cli interactive syntax check** command to check command syntax as you type. You are not allowed to enter incorrect syntax.

Task ID	Task ID	Operations
	tty-access	read, write

The following example shows how to enable interactive syntax checking:

```
RP/0/RSP0/CPU0:router(config)# line console
RP/0/RSP0/CPU0:router(config-line)# cli interactive syntax check
```

Related Commands	Command	Description
	<b>cli whitespace completion</b>	Enables completion of a command when you type the space key.

# cli whitespace completion

To enable completion of a command when you type the space key, use the **cli whitespace completion** command in the appropriate line configuration mode. To disable whitespace completion, use the **no** form of this command.

**cli whitespace completion**  
**no cli whitespace completion**

**Syntax Description** This command has no keywords or arguments.

**Command Default** Whitespace completion is disabled.

**Command Modes** Line console configuration  
 Line default configuration  
 Line template configuration

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **cli whitespace completion** command to complete the next word of the command syntax if you type the space key before completing the word. If more than one option is valid, all options are displayed for you to choose one.

Task ID	Task ID	Operations
	tty-access	read, write

The following example shows how to enable whitespace completion:

```
RP/0/RSP0/CPU0:router(config)# line console
RP/0/RSP0/CPU0:router(config-line)# cli whitespace completion
```

Related Commands	Command	Description
	<a href="#">cli interactive syntax check, on page 273</a>	Enables interactive syntax checking.

# databits

To set the data bits per character for physical terminal connections, use the **databits** command in line console configuration mode. To restore the default value, use the **no** form of this command.

**databits** {**5** | **6** | **7** | **8**}  
**no databits**

<b>Syntax Description</b>	<b>5</b> Sets the data bits per character to 5.				
	<b>6</b> Sets the data bits per character to 6.				
	<b>7</b> Sets the data bits per character to 7.				
	<b>8</b> Sets the data bits per character to 8.				
<b>Command Default</b>	Eight databits per character.				
<b>Command Modes</b>	Line console configuration				
<b>Command History</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Release</th> <th style="text-align: left;">Modification</th> </tr> </thead> <tbody> <tr> <td>Release 3.7.2</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	Release 3.7.2	This command was introduced.
Release	Modification				
Release 3.7.2	This command was introduced.				
<b>Usage Guidelines</b>	<p>To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.</p> <p>Use the <b>databits</b> command to set the data bits attributes for physical terminal connections. Physical terminal connections use either the console or auxiliary line template.</p> <p>The <b>databits</b> command masks the high bit on input from devices that generate 7 data bits with parity. If parity is being generated, specify 7 data bits per character. If no parity generation is in effect, specify 8 data bits per character. The keywords <b>5</b> and <b>6</b> are supplied for compatibility with older devices and generally are not used.</p>				
<b>Task ID</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Task ID</th> <th style="text-align: left;">Operations</th> </tr> </thead> <tbody> <tr> <td>tty-access</td> <td>read, write</td> </tr> </tbody> </table>	Task ID	Operations	tty-access	read, write
Task ID	Operations				
tty-access	read, write				

The following example shows how to set the data bits per character for the console terminal template to 7:

```
RP/0/RSP0/CPU0:router(config)# line console
RP/0/RSP0/CPU0:router(config-line)# databits 7
```

**Related Commands**

<b>Command</b>	<b>Description</b>
show users	Displays information about the active lines on the networking device.
stopbits	Sets the number of stop bits.

# disconnect

To disconnect a network connection, use the **disconnect** command in EXEC mode.

**disconnect** [{*connection-number*network-name}]

Syntax Description	
<i>connection-number</i>	(Optional) Number of the line of the active network connection to be disconnected. Range is from 1 to 20.
<i>network-name</i>	(Optional) Name of the active network connection to be disconnected.

**Command Modes** EXEC mode

**Command Default** Disconnects the existing network connection if no arguments are provided.

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

**Usage Guidelines** Do not disconnect a line to end a session. Instead, log off the host before ending the session to clear the connection. If you cannot log out of an active session, disconnect the line.

Task ID	Task ID	Operations
	tty-access	read, write

The following example shows how to disconnect from a device (in this example “User1”) to return to the router:

```
User1% disconnect
Connection closed by remote host

RP/0/RSP0/CPU0:router#
```

# disconnect-character

To define a character to disconnect a session, use the **disconnect-character** command in line template configuration mode. To remove the **disconnect-character** command from the configuration file and restore the system to its default condition, use the **no** form of this command.

**disconnect-character** [*{numbercharacter}*]  
**no disconnect-character**

<b>Syntax Description</b>	<i>number</i> (Optional) ASCII decimal equivalent of the disconnect character. Range is from 0 through 255.
	<i>character</i> (Optional) Disconnect character.

**Command Default** No disconnect character is defined.

**Command Modes** Line template configuration

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.

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

The break character is represented by 0; null cannot be represented.

<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	tty-access	read, write

The following example shows how to set the disconnect character for the default line template to the Esc character, which is the ASCII decimal equivalent 27:

```
RP/0/RSP0/CPU0:router(config)# line default
RP/0/RSP0/CPU0:router(config-line)# disconnect-character 27
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<a href="#">escape-character, on page 279</a>	Defines an escape character.



# escape-character

To define a character to escape a session, use the **escape-character** command in line template configuration mode. To remove the **escape-character** command from the configuration file and restore the system to its default condition, use the **no** form of this command.

```
escape-character {breaknumbercharacter | default | none}
no escape-character
```

Syntax Description	
<b>break</b>	Sets the escape character to the Break key.
<i>number</i>	ASCII decimal equivalent of the escape character. Range is from 0 through 255.
<i>character</i>	Escape character.
<b>default</b>	Specifies the default escape character (^X).
<b>none</b>	Disables the escape function.

**Command Default** The default escape character is ^X.

**Command Modes** Line template configuration

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **escape-character** command to define an escape character sequence that is different from the default. Use the escape character to exit from an existing connection and return to the EXEC prompt.

The default escape key sequence is Ctrl-Shift-6, X (^X). The **escape-character** command with the **default** keyword sets the escape character to the Break key (the default setting for the Break key is Ctrl-C).

Task ID	Task ID	Operations
	tty-access	read, write

The following example shows how to set the escape character for the default line template to Ctrl-P, which is the ASCII decimal character 16:

```
RP/0/RSP0/CPU0:router(config)# line default
RP/0/RSP0/CPU0:router(config-line)# escape-character 16
```

---

**Related Commands**

Command	Description
<a href="#">disconnect-character, on page 278</a>	Defines a disconnect character.

## exec-timeout

To set the interval that the EXEC command interpreter waits until user input is detected, use the **exec-timeout** command in the appropriate line configuration mode. To remove the **exec-timeout** command from the running configuration and restore the system to its default condition, use the **no** form of this command.

**exec-timeout** *minutes seconds*  
**no exec-timeout** *minutes seconds*

### Syntax Description

*minutes* Minutes for the wait interval. Range is from 0 to 35791.

*seconds* Seconds for the wait interval. Range is from 0 to 2147483.

### Command Default

*minutes*: 10  
*seconds*: 0

### Command Modes

Line console configuration  
 Line default configuration  
 Line template configuration

### Command History

Release	Modification
Release 3.7.2	This command was introduced.

### Usage Guidelines

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

If no input is detected during the interval, the EXEC facility resumes the current connection. If no connections exist, the EXEC facility returns the terminal to the idle state and disconnects the incoming session. To disable the EXEC timeout function so that the EXEC session never timeouts, enter the following command:

```
exec-timeout 00
```

### Task ID

Task ID	Operations
tty-access	read, write

The following example shows how to set the timeout interval for the console line template to 60 minutes, 0 seconds:

```
RP/0/RSP0/CPU0:router(config)# line console
RP/0/RSP0/CPU0:router(config-line)# exec-timeout 60 0
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<a href="#">absolute-timeout, on page 255</a>	Sets the absolute timeout for line disconnection.
<a href="#">session-timeout, on page 295</a>	Sets the idle wait timeout interval for user input over a virtual terminal connection.

# flowcontrol hardware

To configure the hardware flow control setting for physical terminal connections, use the **flowcontrol hardware** command in line console configuration mode. To remove the attribute from the configuration file and restore the system to its default condition, use the **no** form of this command.

```
flowcontrol hardware {in | out | none}
no flowcontrol hardware {in | out | none}
```

## Syntax Description

<b>in</b>	Specifies inbound flow control.
<b>out</b>	Specifies outbound flow control.
<b>none</b>	Specifies no flow control.

## Command Default

None

## Command Modes

Line console configuration

## Command History

Release	Modification
Release 3.7.2	This command was introduced.

## Usage Guidelines

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

Use the **flowcontrol hardware** command to set the flow control attribute for physical line connections. Physical line connections use either the console or auxiliary line template.

## Task ID

Task ID	Operations
tty-access	read, write

The following example shows how to restrict the hardware flow control to inbound for the console line template:

```
RP/0/RSP0/CPU0:router(config)# line console
RP/0/RSP0/CPU0:router(config-line)# flowcontrol hardware in
```

## Related Commands

Command	Description
<b>show users</b>	Displays information about the active lines on the networking device.

# lcd alarm-category

To set the alarm-category (will get displayed on the LCD panel), use the **lcd alarm-category** command in the appropriate mode. To delete the set category, use the **no** form of the command.

**lcd alarm-category** *number*

**no lcd alarm-category** *number*

<b>Syntax Description</b>	<p><i>number</i> Number to identify the alarm category. This lists indicates the numbers for classification:</p> <ul style="list-style-type: none"> <li>• 1 for critical</li> <li>• 2 for critical and major</li> <li>• 3 for critical, major and minor</li> <li>• 0 for other</li> </ul>
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<b>Command Default</b>	None
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<b>Command Modes</b>	Global configuration
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<b>Command History</b>	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Release 7.0.1</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	Release 7.0.1	This command was introduced.
Release	Modification				
Release 7.0.1	This command was introduced.				

<b>Usage Guidelines</b>	None
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## Example

This example show how to use the **lcd alarm-category** command:

```
RP/0/RSP0/CPU0:router (config) # lcd alarm-category 2
```

# lcd message

To set administrative messages (will get displayed on the LCD panel), use the **lcd message** command in the appropriate mode. To delete the set message, use the **no** form of the command.

**lcd message** *message*

---

<b>Syntax Description</b>	<i>message</i> Administrative message for the operator. Limit is 512 alphanumeric characters.
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<b>Command Default</b>	None
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<b>Command Modes</b>	Global configuration
----------------------	----------------------

---

---

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 7.0.1	This command was introduced.

---

---

<b>Usage Guidelines</b>	None
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---

## Example

This example show how to use the **lcd message** command:

```
RP/0/RSP0/CPU0:router (config) # lcd message abcd
```

# lcd name

To set the rack-name (will get displayed on the LCD panel), use the **lcd name** command in the appropriate mode. To delete the set name, use the **no** form of the command.

**lcd name** *rack-name location*

Syntax Description	
<i>rack-name</i>	The rack-name. Limit is 15 alphanumeric characters.
<i>location</i>	The location of the rack (rack-id).

**Command Default** None

**Command Modes** Global configuration

Command History	Release	Modification
	Release 7.0.1	This command was introduced.

**Usage Guidelines** None

## Example

This example show how to use the **lcd name** command:

```
RP/0/RSP0/CPU0:router (config) # lcd name lc1
```



# length

To set the number of lines that display at one time on the screen, use the **length** command in line template configuration mode. To remove the **length** command from the configuration file and restore the system to its default condition, use the **no** form of this command.

**length** *lines*  
**no length** *lines*

<b>Syntax Description</b>	<i>lines</i> Number of lines that displays on a screen. Range is from 0 through 512. 0 specifies no pausing. The default is 24.				
<b>Command Default</b>	<i>lines</i> : 24				
<b>Command Modes</b>	Line template configuration				
<b>Command History</b>	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Release 3.7.2</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	Release 3.7.2	This command was introduced.
Release	Modification				
Release 3.7.2	This command was introduced.				

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

Use the **length** command to modify the default length setting for the specified line template. The length setting determines when the screen pauses during the display of multiple-screen output. Specifying a value of 0 for the lines argument prevents the router from pausing between screens of output.

Task ID	Task ID	Operations
	tty-access	read, write

The following example shows how to set the length of the default line template to 33 lines:

```
RP/0/RSP0/CPU0:router(config)# line default
RP/0/RSP0/CPU0:router(config-line)# length 33
```

Related Commands	Command	Description
	<b>terminal length</b>	Sets the length of the display terminal for the current terminal session.

# line

To specify the console, the default, or a user-defined line template and enter line template configuration mode, use the **line** command in

global configuration

mode.

**line** {**console** | **default** | **template** *template-name*}

## Syntax Description

<b>console</b>	Specifies the line template for the console line.
<b>default</b>	Specifies the default line template.
<b>template</b> <i>template-name</i>	Specifies a user-defined line template to be applied to a vty pool.

## Command Default

None

## Command Modes

Global configuration

## Command History

Release	Modification
Release 3.7.2	This command was introduced.

## Usage Guidelines

Use the **line** command to specify a line template type and enter into line template configuration mode. Line templates are a collection of attributes used to configure and manage physical terminal line connections (the console and auxiliary ports) and vty connections. The following templates are available in Cisco IOS XR software:

- Default line template—The default line template that applies to a physical and virtual terminal lines.
- Console line template—The line template that applies to the console line.
- User-defined line templates—User-defined line templates that can be applied to a range of virtual terminal lines.

The following example shows how to enter line template configuration mode to allow configuration changes to be made to the default line template:

```
RP/0/RSP0/CPU0:router(config)# line default
RP/0/RSP0/CPU0:router(config-line)#
```

# parity

To set the parity bit for physical terminal connections, use the **parity** command in line console configuration mode. To specify no parity, use the **no** form of this command.

```
parity {even | none | odd}
no parity {even | none | odd}
```

## Syntax Description

<b>even</b>	Specifies even parity.
<b>none</b>	Specifies no parity.
<b>odd</b>	Specifies odd parity.

## Command Default

No parity is set.

## Command Modes

Line console configuration

## Command History

Release	Modification
Release 3.7.2	This command was introduced.

## Usage Guidelines

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

Communication protocols provided by devices such as terminals and modems often require a specific parity bit setting.

Use the **parity** command for setting the parity attribute for physical terminal connections. Physical terminal connections use either the console or auxiliary line template.

## Task ID

Task ID	Operations
tty-access	read, write

The following example shows how to set the line parity configuration to even for the console line template:

```
RP/0/RSP0/CPU0:router(config)# line console
RP/0/RSP0/CPU0:router(config-line)# parity even
```

## Related Commands

Command	Description
<b>show users</b>	Displays information about the active lines on the networking device.

# resume

To switch to another active Secure Shell (SSH) or Telnet session, use the **resume** command in

EXEC

mode.

**resume** [*connection*]

## Syntax Description

*connection* (Optional) Name or number of the active network connection; the default is the most recent connection. Number range is from 1 to 20.

## Command Default

The most recent connection.

## Command Modes

EXEC

## Command History

Release	Modification
Release 3.7.2	This command was introduced.

## Usage Guidelines

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

SSH and Telnet sessions can be established to another router or server.

When the network session is being established and without disconnecting the network session, you can resume the router console session by typing a special sequence of characters as shown. After switching back to the router console, the network connection can be resumed by specifying the number of the connection or the name of the connection.

You can have several concurrent sessions open and switch back and forth between them. The number of sessions that can be open is defined using the **session-limit** command.

You can switch between sessions by escaping one session and resuming a previously opened session, as follows:

1. Escape from the current session by pressing the escape sequence (Ctrl Shift-6, x [^^X]) to return to the EXEC prompt.
2. Enter the **show sessions** command to list the open sessions. All open sessions associated with the current terminal line are displayed.
3. Enter the **resume** command and the session number to make the connection.

You can also resume the previous session by pressing the **Return** key.

The ^^X and commands are available for all supported connection protocols.

Task ID	Task ID	Operations
	tty-access	read, write

The following example shows how to escape from one connection and resume another. You can omit the connection name and simply enter the connection number to resume that connection.

```
host1% ^^X
RP/0/RSP0/CPU0:router# resume 1

blg_router#
```

#### Related Commands

Command	Description
<a href="#">session-limit, on page 294</a>	Sets the maximum number of outgoing terminal sessions from the current terminal.
<a href="#">show sessions, on page 301</a>	Displays information about SSH and Telnet connections.
<b>telnet</b>	Logs in to a host that supports Telnet.

# send

To send messages to one or all terminal lines, use the **send** command in

EXEC

mode.

```
send {*line-number | aux 0 | console 0 | vty number}
```

## Syntax Description

<b>*</b>	Sends a message to all tty lines.
<i>line-number</i>	Line number to which the message is sent. A number from 0 to 101.
<b>aux 0</b>	Sends a message to the auxiliary line.
<b>console 0</b>	Sends a message to the console line.
<b>vty number</b>	Sends a message to a virtual terminal line (vty). Range is 0 to 99.

## Command Default

None

## Command Modes

EXEC

## Command History

Release	Modification
Release 3.7.2	This command was introduced.

## Usage Guidelines

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

The system prompts for the message, which can be up to 500 characters long. Enter **Ctrl-Z** to end the message. Enter **Ctrl-C** to abort this command.

## Task ID

Task ID	Operations
tty-access	read, write

The following example shows how to send a message to all lines:

```
RP/0/RSP0/CPU0:router# send *

Enter message, end with CTRL/Z; abort with CTRL/C:
The system will be shut down in 10 minutes for repairs.^Z
Send message? [confirm]
RP/0/RSP0/CPU0:router#


```

```
*** Message from tty to all terminals:

The system will be shut down in 10 minutes for repairs.
```

# session-limit

To set the maximum number of outgoing terminal sessions from the current terminal, use the **session-limit** command in the appropriate line configuration mode. To remove any specified session limit, use the **no** form of this command.

**session-limit** *connections*  
**no session-limit**

<b>Syntax Description</b>	<i>connections</i> Maximum number of outgoing connections. Range is from 0 through 20.	
<b>Command Default</b>	<i>connections</i> : 6	
<b>Command Modes</b>	Line console configuration Line default configuration Line template configuration	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.
<b>Usage Guidelines</b>	To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.	
<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	tty-access	read, write

The following example shows how to limit the number of active outgoing connections for the default line template to eight:

```
RP/0/RSP0/CPU0:router(config)# line default
RP/0/RSP0/CPU0:router(config-line)# session-limit 8
```



# session-timeout

To set the timeout interval for all outgoing connections from the current terminal, use the **session-timeout** command in the appropriate line configuration mode. To remove the **session-timeout** command from the configuration file and restore the system to its default condition, use the **no** form of this command.

**session-timeout** *minutes* [**output**]  
**no session-timeout** *minutes*

<b>Syntax Description</b>	<i>minutes</i> Timeout interval, in minutes. Range is 0 to 35791. The default is 10.				
	<b>output</b> (Optional) Specifies that when traffic is sent to an asynchronous line from the router (within the specified interval), the connection is retained.				
<b>Command Default</b>	<i>minutes</i> : 10				
<b>Command Modes</b>	Line console configuration Line default configuration Line template configuration				
<b>Command History</b>	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Release 3.7.2</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	Release 3.7.2	This command was introduced.
Release	Modification				
Release 3.7.2	This command was introduced.				
<b>Usage Guidelines</b>	<p>To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.</p> <p>Use the <b>session-timeout</b> command to set the interval that Cisco IOS XR software waits for traffic before closing the connection to a remote device and returning the terminal to an idle state. If the <b>output</b> keyword is not specified, the session timeout interval is based solely on detected input from the user. If the keyword is specified, the interval is based on input and output traffic.</p>				
<b>Task ID</b>	<table border="1"> <thead> <tr> <th>Task ID</th> <th>Operations</th> </tr> </thead> <tbody> <tr> <td>tty-access</td> <td>read, write</td> </tr> </tbody> </table>	Task ID	Operations	tty-access	read, write
Task ID	Operations				
tty-access	read, write				

The following example shows how to set the session timeout value for the default line template to 120 minutes (2 hours):

```
RP/0/RSP0/CPU0:router(config)# line default
RP/0/RSP0/CPU0:router(config-line)# session-timeout 120
```

# show cli submode-exit

To display the status of terminal submode-exit configuration, use **show cli submode-exit status** command in EXEC mode.

## show cli submode-exit status

**Syntax Description** This command has no keywords or arguments.

**Command Default** No default behavior or values.

**Command Modes** EXEC mode.

Command History	Release	Modification
	Release 6.5.1	This command was introduced.

**Usage Guidelines** You cannot enable or disable service cli submode-exit on a different users's VTY session..

```
RP/0/RSP0/CPU0:router #show cli submode-exit status
Global submode exit feature is enabled.
Session submode exit feature is enabled
```

# show diag lcd-interface

To display details about the LCD interface (of the craft panel) , use the **show diag lcd-interface** command in the appropriate mode.

## show diag lcd-interface

<b>Syntax Description</b>	This command has no keywords or arguments.
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<b>Command Default</b>	None
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<b>Command Modes</b>	EXEC
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 5.2.1	This command was introduced.

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

<b>Task ID</b>	<b>Task ID</b>	<b>Operation</b>
	lcd	read

## Example

This example shows how to use the **show diag lcd-interface**

```
RP/0/RSP0/CPU0:router # show diag location 0/CI0
```

```
Diag Information For : 0/CI0
```

```
0/CI0-IDPROM Info
 Controller Family : 0084
 Controller Type : 0932
 PID : NCS4K-CRAFT
 Version Identifier : V00
 UDI Description : NCS 4000 Craft Panel
 CLEI Code : NOCLEICODE
 ECI Number : 11223344
 Top Assy. Part Number : 800-41609-01
 Top Assy. Revision : 12
 PCB Serial Number : SAL1818RL2G
 PCA Number : 73-14799-03
```

# show line

To display the parameters of terminal lines, use the **show line** command in

EXEC

mode.

**show line** [{aux location *node-id* | console location *node-id* | vty *number*}]

Syntax Description		
<b>aux</b>	(Optional) Displays the terminal line parameters for the auxiliary line.	
<b>location</b> <i>node-id</i>	(Optional) Specifies the location for the route processor (RP) on which the auxiliary or console port resides. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation.	
<b>console</b>	(Optional) Displays the terminal line parameters for the console line.	
<b>vty</b> <i>number</i>	(Optional) Specifies a virtual terminal line (vty) number. Range is from 0 through 99.	

**Command Default** None

**Command Modes** EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Task ID	Task ID	Operations
	tty-access	read

The following example shows sample output from the **show line** command. The asterisk (*) indicates the current terminal session.

```
RP/0/RSP0/CPU0:router# show line

 Tty Speed Modem Uses Noise Overruns Acc I/O
 aux0_0_0 9600 - - - 0/0 -/-
* con0_0_0 9600 - - - 0/0 -/-
 vty0 0/0 - - - 0/0 -/-
 vty1 0/0 - - - 0/0 -/-
 vty2 0/0 - - - 0/0 -/-
```

```

vty3 0/0 - - - 0/0 -/-
vty4 0/0 - - - 0/0 -/-
vty100 0/0 - - - 0/0 -/-
vty101 0/0 - - - 0/0 -/-
vty102 0/0 - - - 0/0 -/-
vty103 0/0 - - - 0/0 -/-
vty104 0/0 - - - 0/0 -/-
vty105 0/0 - - - 0/0 -/-

```

Table 20: show line Field Descriptions

Field	Description
Tty	Available ttys and vtys.
Speed	Baud rate that the inbound serial connection is using, in bps.
Modem	Not implemented.
Uses	Not implemented.
Noise	Not implemented.
Overruns	Hardware Universal Asynchronous Receiver/Transmitter (UART) overruns or software buffer overflows, both defined as the number of overruns or overflows that have occurred on the specified line since the system was restarted. Hardware overruns are buffer overruns; the UART chip has received bits from the software faster than it can process them. A software overflow occurs when the software has received bits from the hardware faster than it can process them.
Acc I/O	Not implemented.

The following example shows sample output from the **show line** command with the console line specified:

```

RP/0/RSP0/CPU0:router# show line console location 0/rp0/cpu0

 Tty Speed Overruns Acc I/O
con0/RP0/CPU0 9600 0/0 -/-

Line con0_RP0_CPU0, Location "0/RP0/CPU0", Type "Console"
Length: 24 lines, Width: 80 columns
Baud rate (TX/RX) is 9600, 1 parity, 2 stopbits, 8 databits
Template: console
Capabilities: Timestamp Disabled
Allowed transports are none.

```

Table 21: show line location Field Descriptions

Field	Description
Tty	Unique identifier of the tty; it contains the type of tty and, for physical ttys, it indicates the physical location of the tty.
Speed	Baud rate that the inbound serial connection is using in bps.

Field	Description
Overruns	Hardware UART overruns or software buffer overflows, both defined as the number of overruns or overflows that have occurred on the specified line since the system was restarted. Hardware overruns are buffer overruns; the UART chip has received bits from the software faster than it can process them. A software overflow occurs when the software has received bits from the hardware faster than it can process them.
Acc I/O	Not implemented.
Line	Unique identifier of the TTY. This field displays the type of TTY and the physical location of physical TTYs.
Location	Location of the line.
Type	Line type.
Length	Length of the terminal or screen display, in rows.
Width	Width of the terminal or screen display, in columns.
Baud rate (TX/RX)	Transmit rate/receive rate of the line, in bps.
parity	Parity bits value used for physical terminal connections.
stopbits	Stop bits value used for physical terminal connections.
databits	Data bits value used for physical terminal connections.
Template	Line template being sourced by the particular connection.
Config	Configuration applied to the tty. This field indicates the allowed incoming transports that can be used to access the router from this tty.
Allowed transports are	Incoming transport protocols that can be used by this tty to access the router.

# show sessions

To display information about suspended Secure Shell (SSH) and Telnet connections launched from the terminal session, use the **show sessions** command in

EXEC

mode.

## show sessions

**Syntax Description** This command has no keywords or arguments.

**Command Default** None

**Command Modes** EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **show sessions** command to display the hostname, remote connection service used by the router to access the host, idle time, and connection name.

Task ID	Task ID	Operations
	tty-access	read

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

```
RP/0/RSP0/CPU0:router# show sessions

Conn Host Address Service Idle Conn Name
* 1 10.26.25.40 10.26.25.40 telnet 15 10.26.25.40
```

The asterisk (*) indicates the current terminal session.

**Table 22: show sessions Field Descriptions**

Field	Description
Conn	Identifier for the connection used for resuming and disconnecting suspended sessions. An asterisk (*) indicates the current terminal session.

Field	Description
Host	Remote host to which the router is connected. This field displays either the IP address or hostname of the remote host. If the IP address of the remote host is mapped to the hostname (that is, if Domain Name System [DNS] services are enabled) and the session is initiated with the hostname, the output for this field displays the hostname of the host rather than the IP address of the host.
Address	IP address of the remote host.
Service	Remote connection service used.
Idle	Interval (in seconds) since data was last sent on the line.
Conn Name	Equivalent to the “Host” field in Cisco IOS XR software.

**Related Commands**

Command	Description
<a href="#">disconnect, on page 277</a>	Disconnects a network connection.
<a href="#">resume, on page 290</a>	Switches to another active Telnet session.



# show terminal

To obtain information about the terminal configuration attribute settings for the current terminal line, use the **show terminal** command in

EXEC

mode.

**show terminal**

## Syntax Description

This command has no keywords or arguments.

## Command Default

None

## Command Modes

EXEC

## Command History

Release	Modification
Release 3.7.2	This command was introduced.

## Usage Guidelines

None.

This example shows sample output from the **show terminal** command:

```
RP/0/RSP0/CPU0:router# show terminal

Line vty0, Location "10.56.249.67", Type "VTY"
Length: 24 lines, Width: 80 columns
Baud rate (TX/RX) is 0, 0 parity, 0 stopbits, 0 databits
Template: default
Capabilities: Timestamp Disabled
Allowed transports are telnet ssh.
```

**Table 23: show terminal Field Descriptions**

Field	Description
Line	Line that is currently being used.
Location	Location of the terminal accessing the router.
Type	Type of line.
Length	Length of the terminal or screen display, in rows.
Width	Width of the terminal or screen display, in columns.
Baud rate (TX/RX)	Transmit or receive rate of the line, in bps.
parity	Parity bits value used for physical terminal connections.

Field	Description
stopbits	Stop bits value used for physical terminal connections.
databits	Data bits value used for physical terminal connections.
Template	Line template being sourced by the particular connection.
Config	Configuration applied to the tty. This field indicates the allowed incoming transports that can be used to access the router from this tty.
Allowed transports are	Incoming transport protocols that can be used by this tty to access the router.

# show users

To display information about the active lines on the router, use the **show users** command in EXEC mode.

**show users**

**Syntax Description** This command has no keywords or arguments.

**Command Default** None

**Command Modes** EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

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

Use the **show users** command to display the line number, connection name, idle time, hosts, and terminal location. An asterisk (*) indicates the current terminal session.



**Note** To display all user groups and task IDs associated with the currently logged-in user, use the **show user** command in EXEC mode. See the *Authentication, Authorization, and Accounting Commands on Cisco IOS XR Software* module in *System Security Command Reference for Cisco ASR 9000 Series Routers*.

Task ID	Task ID	Operations
	tty-access	read

The following example shows sample output identifying an active vty terminal session:

```
RP/0/RSP0/CPU0:router# show users

 Line User Service Conns Idle Location
 con0_RP0_CPU0 cisco hardware 0 18:33:48
 vty0 cisco telnet 0 00:30:36 10.33.54.132
 * vty1 cisco telnet 0 00:00:00 10.33.54.132
```

**Table 24: show users Command Output Field Descriptions**

Field	Description
Line	All current connections. An asterisk (*) indicates the active connection.
User	Username of the user logged into the line.

Field	Description
Service	Physical or remote login service used.
Conns	Number of outgoing connections.
Idle	Interval (in hours:minutes:seconds) since last keystroke.
Location	IP address of remote login host. For local (physical) terminal connections, this field is blank.

---

**Related Commands**

Command	Description
<b>show line</b>	Displays the parameters of a terminal line.
<b>show user</b>	Displays all user groups and task IDs associated with the currently logged-in user.

# stopbits

To set the stop bits used for physical terminal connections, use the **stopbits** command in line console configuration mode. To restore the default, use the **no** form of this command.

**stopbits** {1 | 2}  
**no stopbits**

## Syntax Description

- |          |                                               |
|----------|-----------------------------------------------|
| <b>1</b> | Specifies one stop bit.                       |
| <b>2</b> | Specifies two stop bits. This is the default. |

## Command Default

Two stop bits.

## Command Modes

Line console configuration

## Command History

Release	Modification
Release 3.7.2	This command was introduced.

## Usage Guidelines

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

Use the **stopbits** command to set the data bits attributes for physical terminal connections. Physical terminal connections use either the console or auxiliary terminal templates.

Communication protocols provided by devices such as terminals and modems often require a specific stop-bit setting.



**Note** The number of stop bits configured on the router and a terminal server should be same. The default number of stop bits on the router is two stop-bits.

## Task ID

### Task ID Operations

tty-access	read, write
------------	----------------

This example shows how to change the default from two stop bits to one for the console line template:

```
RP/0/RSP0/CPU0:router(config)# line console
RP/0/RSP0/CPU0:router(config-line)# stopbits 1
```

---

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>databits</b>	Sets the number of data bits.

## terminal cli submode-exit

To enable or disable submode-exit on all interactive configuration sessions per VTY, use **terminal cli submode-exit** command in EXEC mode.

**terminal cli submode-exit**

### Syntax Description

**enable** Enables submode-exit on all interactive configuration sessions per VTY.

**disable** Disables submode-exit on all interactive configuration sessions per VTY.

### Command Default

No default behavior or values.

### Command Modes

EXEC mode.

### Command History

Release	Modification
Release 6.5.1	This command was introduced.

### Usage Guidelines

You cannot enable or disable service cli submode-exit on a different users's VTY session..

```
RP/0/RSP0/CPU0:router #terminal cli submode-exit ?
 disable Disable submode-exit behavior for this config session
 enable Enable submode-exit behavior for this config session

RP/0/RSP0/CPU0:router #terminal cli submode-exit enable
WARNING: submode-exit enable is already configured at GLOBAL level.This takes precedence
over per-session settings.

RP/0/RSP0/CPU0:router #terminal cli submode-exit disable
```

# terminal exec prompt

To specify prompt attributes for the current terminal session, use the **terminal exec prompt** command in the appropriate mode.

```
terminal exec prompt {no-timestamp | timestamp}
```

Syntax Description	
<b>no-timestamp</b>	Disables the time-stamp printing before each command.
<b>timestamp</b>	Enables the time-stamp printing before each command.

**Command Default** None

**Command Modes** EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

**Usage Guidelines** Use the **terminal exec prompt** command with the **timestamp** keyword to show the time-stamp display after each command is entered. Use the **terminal exec** command with the **no-timestamp** keyword to disable the time-stamp display.



**Note** The **terminal** commands are active for the current terminal session only. To apply a setting to all sessions, use the **line** commands.

This example shows how to enable the time-stamp prompt. When enabled, the date and time are displayed after each command. In this example, the **show version** command is entered, and the date and time is displayed.

```
RP/0/RSP0/CPU0:router# terminal exec prompt timestamp
RP/0/RSP0/CPU0:router# show version

Thu Jan 14 06:39:50.926 PST

Cisco IOS XR Software, Version 3.9.1.15I[DT_IMAGE]
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ROM: System Bootstrap, Version 1.2(20090903:202931) [ASR9K ROMMON],

router uptime is 6 days, 14 hours, 47 minutes
System image file is "bootflash:disk0/asr9k-os-mbi-3.9.1.15I/mbiasr9k-rp.vm"

cisco ASR9K Series (MPC8641D) processor with 4194304K bytes of memory.
MPC8641D processor at 1333MHz, Revision 2.2

2 Management Ethernet
40 GigabitEthernet
12 TenGigE
219k bytes of non-volatile configuration memory.
```



```
975M bytes of compact flash card.
33994M bytes of hard disk.
1605616k bytes of disk0: (Sector size 512 bytes).
1605616k bytes of disk1: (Sector size 512 bytes).

Configuration register on node 0/RSP0/CPU0 is 0x102
Boot device on node 0/RSP0/CPU0 is disk0:
--More--
```

The following example shows how to disable the time-stamp prompt:

```
RP/0/RSP0/CPU0:router# terminal exec prompt no-timestamp
```

# terminal exec utility pager

To configure the terminal page display options, use the **terminal exec utility pager** command in the appropriate mode.

**terminal exec utility pager** {less | more | none}

## Syntax Description

<b>less</b>	Specifies to use unix-like "less" bidirectional paging for the terminal display.
<b>more</b>	Specifies to use unix-like "more" unidirectional paging for the terminal display.
<b>none</b>	Specifies that the display is not paginated.

## Command Default

No pagination is configured by default.

## Command Modes

EXEC

## Command History

Release	Modification
Release 3.7.2	This command was introduced.

## Usage Guidelines

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

Use the **terminal exec utility pager** command with the **more** keyword to scroll forward through command display one screen at a time. "--More--" is displayed at the end of each screen. Press the Space key to advance one screen. Press the Enter key to advance one line. Press the Esc key to exit the command display.

## Task ID

Task ID	Operation
tty-access	Read

This example shows how to limit command display to one screen at a time such that you can move forward through the display:

```
RP/0/RSP0/CPU0:router#terminal exec utility pager more
```

# terminal length

To set the number of lines that display at one time on the screen for the current terminal session, use the **terminal length** command in

EXEC

mode.

**terminal length** *lines*

<b>Syntax Description</b>	<i>lines</i> Number of lines that display on a screen. Range is from 0 through 512.
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<b>Command Default</b>	None
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<b>Command Modes</b>	EXEC
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.

<b>Usage Guidelines</b>	To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.
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Use the **terminal length** command to set the terminal length value for only the current terminal session and not save it to the running configuration. Exiting from the terminal session returns the terminal length value to the value configured with the **length** command.

Specifying a value of 0 for the *lines* argument prevents the router from pausing between screens of output.



<b>Note</b>	The <b>terminal</b> commands are active for the current terminal session only. To apply a setting to all sessions, use the <b>line</b> commands.
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<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	tty-access	read, write

This example shows how to set the length for the current terminal session to 120 lines:

```
RP/0/RSP0/CPU0:router# terminal length 120
```

---

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>length</b>	Sets the length of the display terminal.

# terminal width

To set the width of the display terminal for the current terminal session, use the **terminal width** command in

EXEC

mode.

**terminal width** *characters*

## Syntax Description

*characters* Number of characters to display on a screen. Range is from 0 to 512.

## Command Default

None

## Command Modes

EXEC

## Command History

Release	Modification
Release 3.7.2	This command was introduced.

## Usage Guidelines

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

Use the **terminal width** command to set the terminal width value for only the current terminal session and not save it to the running configuration. Exiting from the terminal session returns the terminal width value to the value configured with the **width** (display) command.

## Task ID

Task ID	Operations
tty-access	read, write

The following example shows how to set the terminal width for the current terminal session to 120 characters:

```
RP/0/RSP0/CPU0:router# terminal width 120
```

## Related Commands

Command	Description
<b>width display</b>	Sets the width of the display terminal.

# timestamp disable

To disable time-stamp recording at the top of each command output, use the **timestamp disable** command in the appropriate line configuration mode. To reenale time-stamp recording if disabled, use the **no** form of this command.

**timestamp disable**  
**no timestamp disable**

<b>Syntax Description</b>	This command has no keywords or arguments.
<b>Command Default</b>	Time-stamp recording at the top of each command output is enabled.
<b>Command Modes</b>	Line console configuration Line default configuration Line template configuration

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.

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

By default, the time stamp is displayed at the top of any command output. The time stamp records the time at which the command was issued. You can use the **snmp-server view** command to disable this setting so that the time stamp does not appear at the top of the command output. This setting applies to all command outputs on any terminal line to which the current line template applies.

<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	tty-access	read, write

This example shows how to disable time-stamp recording for the console line template:

```
RP/0/RSP0/CPU0:router(config)# line console
RP/0/RSP0/CPU0:router(config-line)# timestamp disable
```

# transport input

To define the transport protocols that can be used to access the router, use the **transport input** command in the appropriate line configuration mode. To change or remove the protocol, use the **no** form of this command.

```
transport input {all | none | ssh | telnet}
no transport input {all | none | ssh | telnet}
```

## Syntax Description

<b>all</b>	Specifies the Secure Shell (SSH) and Telnet protocols.
<b>none</b>	Specifies that the router rejects incoming SSH and Telnet transport protocol connections.
<b>ssh</b>	Specifies the SSH transport protocol.
<b>telnet</b>	Specifies the Telnet transport protocol.

## Command Default

All protocols are allowed on the line.

## Command Modes

Line console configuration  
Line default configuration  
Line template configuration

## Command History

Release	Modification
Release 3.7.2	This command was introduced.

## Usage Guidelines

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

To be accepted, incoming network connections to an asynchronous port (terminal line) must use a transport protocol specified with the **transport input** command. This command can be useful in limiting the acceptable transport protocols to include or exclude those used by different types of users, or to restrict a line to secure connections (SSH connections).

## Task ID

Task ID	Operations
tty-access	read, write

This example shows how to set the transport input setting for the default line template to SSH connections:

```
RP/0/RSP0/CPU0:router(config)# line default
RP/0/RSP0/CPU0:router(config-line)# transport input ssh
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>transport output</b>	Determines the protocols that can be used for outgoing connections from a line.
<b>transport preferred</b>	Specifies the transport protocol that Cisco IOS XR software uses if the user does not specify one when initiating a connection.



## transport output

To specify the transport protocols that can be used for outgoing connections from a line, use the **transport output** command in the appropriate line configuration mode. To change or remove the protocol, use the **no** form of this command.

```
transport output {all | none | ssh | telnet}
no transport output {all | none | ssh | telnet}
```

Syntax Description	
<b>all</b>	Specifies the Secure Shell (SSH) and Telnet transport protocols.
<b>none</b>	Specifies that the router rejects outgoing SSH and Telnet transport protocol connections.
<b>ssh</b>	Specifies the SSH transport protocol.
<b>telnet</b>	Specifies the Telnet transport protocol.

**Command Default** All protocols are allowed on the line.

**Command Modes** Line console configuration  
Line default configuration  
Line template configuration

Command History	Release	Modification
	Release 3.7.2	This command was introduced.
	Release 3.8.0	No modification.
	Release 3.9.0	No modification.

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

Any settings made with the **transport output** command override settings made with the **transport preferred** command.

Task ID	Task ID	Operations
	tty-access	read, write

This example shows how to set the default line template to prevent any outgoing transport protocol connections:

```
RP/0/RSP0/CPU0:router(config)# line default
```

```
RP/0/RSP0/CPU0:router(config-line)# transport output none
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>transport input</b>	Defines which protocols to use to connect to a specific line of the router.
<b>transport preferred</b>	Specifies the transport protocol that Cisco IOS XR software uses if the user does not specify one when initiating a connection.

# transport preferred

To specify the default outgoing transport protocol to be used for initiating network connections, use the **transport preferred** command in the appropriate line configuration mode. To change or remove the protocol, use the **no** form of this command.

```
transport preferred {none | ssh | telnet}
no transport preferred {none | ssh | telnet}
```

## Syntax Description

<b>none</b>	Disables the feature.
<b>ssh</b>	Specifies the Secure Shell (SSH) transport protocol.
<b>telnet</b>	Specifies the Telnet transport protocol.

## Command Default

No transport protocol is set as the default outgoing protocol.

## Command Modes

Line console configuration  
Line default configuration  
Line template configuration

## Command History

Release	Modification
Release 3.7.2	This command was introduced.

## Usage Guidelines

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

Use the **transport preferred** command to provide a default transport protocol to use when initiating outgoing connections. The preferred outgoing transport protocol specified with the **transport preferred** command enables you to initiate an outgoing connection without explicitly specifying the transport protocol.

Cisco IOS XR software assumes that any unrecognized command is a hostname and the software attempts a connection. When the protocol is set to **none**, the system ignores unrecognized commands entered at the EXEC prompt, and does not attempt a connection.

The default setting, the same as using the **transport preferred** command with the **none** keyword, prevents errant connection attempts.

## Task ID

Task ID	Operations
tty-access	read, write

The following example shows how to set the preferred transport setting for the default line template to SSH:

**transport preferred**

```
RP/0/RSP0/CPU0:router(config)# line default
RP/0/RSP0/CPU0:router(config-line)# transport preferred ssh
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>transport input</b>	Defines which protocols to use to connect to a specific line of the router.
<b>transport output</b>	Determines the protocols that can be used for outgoing connections from a line.

# vty-pool

To create or modify a virtual terminal line (vty) pool, use the **vty-pool** command in global configuration mode. To delete a vty pool, use the **no** form of this command.

```
vty-pool {default | eempool-name} first-vty last-vty [line-template {defaulttemplate-name}]
no vty-pool {default | eempool-name} first-vty last-vty [line-template {defaulttemplate-name}]
```

Syntax Description	
<b>default</b>	Specifies the default vty pool.
<b>eem</b>	Specifies the embedded event manager vty pool.
<i>pool-name</i>	User-defined vty pool.
<i>first-vty</i>	First vty line in the pool. <ul style="list-style-type: none"> <li>For the default vty pool, you must specify 0 for the first vty line.</li> <li>For a user-defined vty pool, the range is 5 to 99.</li> <li>For the embedded event manager vty pool, you must specify 100 for the first vty line.</li> </ul>
<i>last-vty</i>	Last vty line in the pool. <ul style="list-style-type: none"> <li>The default vty pool must contain at least five vtys. Range is 4 to 99.</li> <li>For a user-defined vty pool, the range is 5 to 99.</li> <li>The embedded event manager vty pool must contain at least six vtys. Range is 105 to 199.</li> </ul>
<b>line-template</b>	(Optional) Specifies the terminal template to be used in the configuration of virtual terminals in the vty pool.
<b>default</b>	Specifies that the vty pool should reference the default template.
<i>template-name</i>	User-defined template to be applied to the vtys in the vty pool.

Command Default	
<b>default</b>	<i>vty-pool</i> : 5 vtys (vty 0 through 4) referencing the default line template.
<b>eem</b>	<i>vty pool</i> : 6 vtys (vty 100 through 105) referencing the default line template.

Command Modes	
	Global configuration

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

Usage Guidelines	
	When creating or modifying vty pools, follow these usage guidelines:

- Before creating or modifying the vty pools, enable the Telnet server using the **telnet server** command in global configuration mode. See *IP Addresses and Services Configuration Guide for Cisco ASR 9000 Series Routers* and *IP Addresses and Services Command Reference for Cisco ASR 9000 Series Routers* for more information.
- The vty range for the default vty pool must start at vty 0 and must contain a minimum of five vtys.
- The vty range from 0 through 99 can reference the default vty pool.
- The vty range from 5 through 99 can reference a user-defined vty pool.
- The vty range from 100 is reserved for the embedded event manager vty pool.
- The vty range for embedded event manager vty pools must start at vty 100 and must contain a minimum of six vtys.
- A vty can be a member of only one vty pool. A vty pool configuration fails if the vty pool includes a vty that is already in another pool.

If you attempt to remove an active vty from the active vty pool when configuring a vty pool, the configuration for that vty pool fails.

This example shows how to configure a user-defined vty pool (test1) that contains vtys 10 through 14 and references the user-defined line template test2:

```
RP/0/RSP0/CPU0:router(config)# vty-pool test1 10 14 line-template test2
```

# width (display)

To set the width of the display terminal, use the **width** command in the appropriate line configuration mode. To remove the **width** command from the configuration file and restore the system to its default condition, use the **no** form of this command.

**width** *characters*  
**no width** *characters*

<b>Syntax Description</b>	<i>characters</i> Number of characters to display on a screen. Range is from 0 to 512.
---------------------------	----------------------------------------------------------------------------------------

<b>Command Default</b>	<i>characters</i> : 80
------------------------	------------------------

<b>Command Modes</b>	Line console configuration Line default configuration Line template configuration
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.

<b>Usage Guidelines</b>	To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.
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Use the **width** command to modify the default width setting for the specified line template.

<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	tty-access	read, write

This example shows how to set the terminal width for the default line template to 99 characters:

```
RP/0/RSP0/CPU0:router(config)# line default
RP/0/RSP0/CPU0:router(config-line)# width 99
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>terminal width</b>	Sets the width of the display terminal for the current terminal session.

width (display)