



HSRP Commands on Cisco IOS-XR Software

This chapter describes the commands used to configure and monitor the Hot Standby Router Protocol (HSRP) on Cisco IOS-XR software.

hsrp authentication

To configure an authentication string for the Hot Standby Router Protocol (HSRP), use the **hsrp authentication** command in HSRP interface configuration mode. To delete an authentication string, use the **no** form of this command.

hsrp [*group-number*] **authentication** *string*

no hsrp [*group-number*] **authentication** [*string*]

Syntax Description

<i>group-number</i>	(Optional) Group number on the interface to which this authentication string applies. The default is 0.
<i>string</i>	Authentication string. It can be up to eight characters long. The default string is cisco .

Defaults

group-number: 0
string: **cisco**

Command Modes

HSRP interface configuration

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. 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*.

The authentication string is sent unencrypted in all HSRP messages. The same authentication string must be configured on all routers and access servers on a LAN to ensure interoperability. Authentication mismatch prevents a device from learning the designated Hot Standby IP address and the Hot Standby timer values from other routers configured with HSRP. Authentication mismatch does not prevent protocol events such as one router taking over as the designated router.

This command is currently supported only on Management Ethernet interfaces.

Examples

The following example configures “company1” as the authentication string required to allow Hot Standby routers in group 1 on Management Ethernet interface 0/RP1/CPU0/0 to interoperate:

```
RP/0/RP0/CPU0:router(config)# router hsrp
RP/0/RP0/CPU0:router(config-hsrp)# interface MgmtEth 0/RP1/CPU0/0
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp 1 authentication company1
```

Related Commands

Command	Description
show hsrp	Displays HSRP information.

hsrp ipv4

To activate the Hot Standby Router Protocol (HSRP), use the **hsrp ipv4** command in HSRP interface configuration mode. To disable HSRP, use the **no** form of this command.

```
hsrp [group-number] ipv4 [ip-address [secondary]]
```

```
no hsrp [group-number] ipv4 [ip-address [secondary]]
```

Syntax Description

<i>group-number</i>	(Optional) Group number on the interface for which HSRP is being activated. The range is from 0 to 255; the default is 0.
<i>ip-address</i>	(Optional) IP address of the Hot Standby router interface.
secondary	(Optional) Indicates that the IP address is a secondary Hot Standby router interface. Useful on interfaces with primary and secondary addresses; you can configure primary and secondary HSRP addresses.

Defaults

group-number: 0
HSRP is disabled by default.

Command Modes

HSRP interface configuration

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. 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*.

The **hsrp ipv4** command activates HSRP on the configured interface. If an IP address is specified, that address is used as the designated address for the Hot Standby group. If no IP address is specified, the virtual address is learned from the active router. For HSRP to elect a designated router, at least one router in the Hot Standby group must have been configured with, or learned, the designated address.

Configuring the designated address on the active router always overrides a designated address that is currently in use.

When the **hsrp ipv4** command is enabled on an interface, the handling of proxy Address Resolution Protocol (ARP) requests is changed (unless proxy ARP was disabled). If the Hot Standby state group has been configured with or has learned the designated address, the proxy ARP requests are answered using the MAC address of the Hot Standby group. Otherwise, proxy ARP responses are suppressed.

Configuring secondary Hot Standby router IP addresses is necessary when the interface has secondary IP addresses configured and redundancy must be provided for the networks of these addresses also.

A primary address must be configured before a secondary address. Likewise, a secondary address must be deconfigured before deconfiguring a primary address. All IP addresses can be deconfigured using the **no hsrp ipv4** command.

Examples

The following example activates HSRP for group 1 on Management Ethernet interface 0/RP1/CPU0/0. The IP address used by the Hot Standby group will be learned using HSRP.

```
RP/0/RP0/CPU0:router(config)# router hsrp  
RP/0/RP0/CPU0:router(config-hsrp)# interface MgmtEth 0/RP1/CPU0/0  
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp 1 ipv4
```

Related Commands

Command	Description
hsrp redirects	Configures ICMP redirect messages to be sent when the HSRP is configured on an interface.
show hsrp	Displays HSRP information.

hsrp mac-address

To specify a virtual MAC address for the Hot Standby Router Protocol (HSRP), use the **hsrp mac-address** command in HSRP interface configuration mode. To revert to the standard virtual MAC address (0000.0C07.AC*n*), use the **no** form of this command.

hsrp [*group-number*] **mac-address** *address*

no hsrp [*group-number*] **mac-address**

Syntax Description

<i>group-number</i>	(Optional) Group number on the interface for which HSRP is being activated. The default is 0.
<i>address</i>	MAC address.

Defaults

group-number: 0

If this command is not configured, and the **hsrp use-bia** command is not configured, the standard virtual MAC address is used: 0000.0C07.AC*n*, where *n* is the group number in hexadecimal. This address is specified in RFC 2281, *Cisco Hot Standby Router Protocol (HSRP)*.

Command Modes

HSRP interface configuration

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. 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 supported only on Management Ethernet interfaces.

This command is not recommended except for IBM networking environments where first hop redundancy is based on being able to use a virtual MAC address, and where you cannot change the first hop addresses in the PCs that are connected to an Ethernet switch.

HSRP is used to help end stations locate the first hop gateway for IP routing. The end stations are configured with a default gateway. However, HSRP can provide first hop redundancy for other protocols. Some protocols, such as Advanced Peer-to-Peer Networking (APPN), use the MAC address to identify the first hop for routing purposes. In this case, it is often necessary to be able to specify the virtual MAC address; the virtual IP address is unimportant for these protocols. Use the **hsrp mac-address** command to specify the virtual MAC address.

The MAC address specified is used as the virtual MAC address when the router is active.

This command is intended for certain APPN configurations. [Table 6](#) shows the parallel terms between APPN and IP.

Table 6 APPN and IP Parallel Terms

APPN	IP
end node	host
network node	router or gateway

In an APPN network, an end node is typically configured with the MAC address of the adjacent network node. Use the **hsrp mac-address** command in the routers to set the virtual MAC address to the value used in the end nodes.

Examples

If the end nodes are configured to use 4000.1000.1060 as the MAC address of the network node, the command to configure the virtual MAC address is as follows:

```
RP/0/RP0/CPU0:router(config)# router hsrp
RP/0/RP0/CPU0:router(config-hsrp)# interface MgmtEth 0/RP1/CPU0/0
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp 5 mac-address 4000.1000.1060
```

Related Commands

Command	Description
hsrp use-bia	Configures HSRP to use the burned-in address of the interface as its virtual MAC address.
show hsrp	Displays HSRP information.

hsrp preempt

To configure Hot Standby Router Protocol (HSRP) preemption and preemption delay, use the **hsrp preempt** command in HSRP interface configuration mode. To restore the default values, use the **no** form of this command.

```
hsrp [group-number] preempt [delay seconds]
```

```
no hsrp [group-number] preempt [delay seconds]
```

Syntax Description

<i>group-number</i>	(Optional) Group number on the interface to which the other arguments in this command apply. The default is 0.
delay <i>seconds</i>	(Optional) Time in seconds. The <i>seconds</i> argument causes the local router to postpone taking over the active role for the specified preempt delay <i>seconds</i> value. The range is from 0 to 3600 seconds (1 hour). The default is 0 seconds (no delay).

Defaults

group-number: 0
seconds: 0 seconds (if the router wants to preempt, it will do so immediately)

Command Modes

HSRP interface configuration

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. 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*.

When this command is configured, the router is configured to preempt, which means that when the local router has a Hot Standby priority higher than the current active router, the local router should attempt to assume control as the active router. If the **hsrp preempt** command is not configured, the local router assumes control as the active router only if it receives information indicating that no router currently is in the active state (acting as the designated router).

When a router first comes up, it does not have a complete routing table. If it is configured to preempt, it will become the active router, yet it is unable to provide adequate routing services. Solve this problem by configuring a delay before the preempting router actually preempts the currently active router.

The preempt delay *seconds* value does not apply if there is no router currently in the active state. In this case, the local router will become active after the appropriate timeouts (see the **hsrp timers** command), regardless of the preempt delay *seconds* value.

Examples

In the following example, the router waits for 300 seconds (5 minutes) after having determined that it should preempt before attempting to preempt the active router. The router might become the active router despite the delay if no active router is present. Only preempting the active router is delayed.

```
RP/0/RP0/CPU0:router(config)# router hsrp
RP/0/RP0/CPU0:router(config-hsrp)# interface MgmtEth 0/RP1/CPU0/0
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp ipv4 172.19.108.254
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp preempt delay 300
```

Related Commands

Command	Description
hsrp priority	Configures HSRP priority.
hsrp track	Configures an interface so that the Hot Standby priority changes based on the availability of other interfaces.
show hsrp	Displays HSRP information.

hsrp priority

To configure Hot Standby Router Protocol (HSRP) priority, use the **hsrp priority** command in HSRP interface configuration mode. To restore the default values, use the **no** form of this command.

hsrp [*group-number*] **priority** *priority*

no hsrp [*group-number*] **priority** *priority*

Syntax Description

<i>group-number</i>	(Optional) Group number on the interface to which the priority applies. The default is 0.
<i>priority</i>	Priority value that prioritizes a potential Hot Standby router. The range is from 1 to 255; the default is 100.

Defaults

group-number: 0
priority: 100

Command Modes

HSRP interface configuration

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. 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*.

The assigned priority is used to help select the active and standby routers. Assuming that preemption is enabled, the router with the highest priority becomes the designated active router. In case of ties, the primary IP addresses are compared, and the higher IP address has priority.

The priority of the device can change dynamically if an interface is configured with the **hsrp track** command and another interface on the device goes down.

If preemption is not enabled, the router may not become active even though it might have a higher priority than other HSRP routers.

Examples

In the following example, the router has a priority of 120 (higher than the default value):

```
RP/0/RP0/CPU0:router(config)# router hsrp
RP/0/RP0/CPU0:router(config-hsrp)# interface MgmtEth 0/RP1/CPU0/0
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp ipv4 172.19.108.254
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp priority 120
```

Related Commands	Command	Description
	hsrp preempt	Configures HSRP preemption and preemption delay.
	hsrp track	Configures an interface so that the Hot Standby priority changes based on the availability of other interfaces.
	show hsrp	Displays HSRP information.

hsrp redirects

To configure Internet Control Message Protocol (ICMP) redirect messages to be sent when the Hot Standby Router Protocol (HSRP) is configured on an interface, use the **hsrp redirects** command in HSRP interface configuration mode. To revert to the default, which is that ICMP messages are enabled, use the **no** form of this command.

hsrp redirects [disable]

no hsrp redirects [disable]

Syntax Description	disable	(Optional) Disables the filtering of ICMP redirect messages on interfaces configured with HSRP.
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Defaults	HSRP ICMP redirects are enabled by default.
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Command Modes	HSRP interface configuration
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Command History	Release	Modification
	Release 2.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. 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*.

The **hsrp redirects** command can be configured on a per-interface basis. When HSRP is first configured on an interface, the setting for that interface will inherit the global value. If ICMP redirects have been explicitly disabled on an interface, then the global command cannot reenables the functionality.

Examples

The following example allows HSRP to filter redirect messages on Management Ethernet interface 0/RP1/CPU0/0:

```
RP/0/RP0/CPU0:router(config)# router hsrp
RP/0/RP0/CPU0:router(config-hsrp)# interface MgmtEth 0/RP1/CPU0/0
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp 1 ipv4 172.16.0.1
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp redirects
```

Related Commands

Command	Description
show hsrp	Displays the HSRP information.

hsrp timers

To configure the time between hello packets and the time before other routers declare the active Hot Standby or standby router to be down, use the **hsrp timers** command in HSRP interface configuration mode. To restore the timers to their default values, use the **no** form of this command.

```
hsrp [group-number] timers {hello-seconds | msec hello-milliseconds} {hold-seconds | msec hold-milliseconds}
```

```
no hsrp [group-number] timers
```

Syntax Description

<i>group-number</i>	(Optional) Group number on the interface to which the timers apply. The default is 0.
<i>hello-seconds</i>	Hello interval in seconds. The range is from 1 to 255; the default is 3 seconds.
msec <i>hello-milliseconds</i>	Hello interval in milliseconds. The range is from 20 to 3000 milliseconds.
<i>hold-seconds</i>	Time in seconds before the active or standby router is declared to be down. The range is from 1 to 255; the default is 10 seconds.
msec <i>hold-milliseconds</i>	Time in milliseconds before the active or standby router is declared to be down. The range is from 20 to 3000 milliseconds.

Defaults

group-number: 0
hello-seconds: 3 seconds (If the **msec** keyword is specified, there is no default value.)
hold-seconds: 10 seconds (If the **msec** keyword is specified, there is no default value.)

Command Modes

HSRP interface configuration

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs.

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*.

Nonactive routers learn timer values from the active router, unless millisecond timer values are being used. If millisecond timer values are being used, all routers must be configured with the millisecond timer values. This rule applies if either the hello time or hold time is specified in milliseconds.

The timers configured on the active router always override any other timer settings. All routers in a Hot Standby group should use the same timer values. Normally, the hold time is greater than or equal to three times the hello time ($\text{holdtime} > 3 * \text{hellotime}$).

You must specify either the *hello-seconds* argument or the **msec** keyword and *hello-milliseconds* argument, depending on whether you want the hello time in seconds or milliseconds. You must also specify either the *hold-seconds* argument or **msec** keyword and *hold-milliseconds* argument, depending on whether you want the hold time in seconds or milliseconds.

Examples

The following example sets, for group number 1 on Management Ethernet interface 0/RP1/CPU0/0, the time between hello packets to 5 seconds, and the time after which a router is considered to be down to 15 seconds. The configured timer values will be used only if the router is active (or before they have been learned).

```
RP/0/RP0/CPU0:router(config)# router hsrp
RP/0/RP0/CPU0:router(config-hsrp)# interface MgmtEth 0/RP1/CPU0/0
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp 1 ipv4
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp 1 timers 5 15
```

The following example sets, for group number 1 on Management Ethernet interface 0/RP1/CPU0/0, the time between hello packets to 200 milliseconds, and the time after which a router is considered to be down to 1000 milliseconds. The configured timer values will always be used because milliseconds have been specified.

```
RP/0/RP0/CPU0:router(config)# router hsrp
RP/0/RP0/CPU0:router(config-hsrp)# interface MgmtEth 0/RP1/CPU0/0
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp 1 ipv4
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp 1 timers msec 200 msec 1000
```

Related Commands

Command	Description
show hsrp	Displays HSRP information.

hsrp track

To configure an interface so that the Hot Standby priority changes based on the availability of other interfaces, use the **hsrp track** command in HSRP interface configuration mode. To remove the tracking, use the **no** form of this command.

```
hsrp [group-number] track type instance [priority-decrement]
```

```
no hsrp [group-number] track type instance [priority-decrement]
```

Syntax Description

<i>group-number</i>	(Optional) Group number on the interface to which the tracking applies. The default is 0.
<i>type</i>	Interface type. For more information, use the question mark (?) online help function.
<i>instance</i>	<p>Either a physical interface instance or a virtual interface instance:</p> <ul style="list-style-type: none"> Physical interface instance. Naming notation is rack/slot/module/port and a slash mark between values is required as part of the notation. <ul style="list-style-type: none"> rack: Chassis number of the rack. slot: Physical slot number of the line card. module: Module number. A Physical Layer Interface Module (PLIM) is always 0. port: Physical port number of the interface. <p>Note In references to a Management Ethernet interface located on a Route Processor card, the physical slot number is alphanumeric (RP0 or RP1) and the module is CPU0. Example: interface MgmtEth0/RP1/CPU0/0.</p> <ul style="list-style-type: none"> Virtual interface instance. Number range will vary depending on interface type. <p>For more information about the syntax for the router, use the question mark (?) online help function.</p>
<i>priority-decrement</i>	(Optional) Amount by which the Hot Standby priority for the router is decremented (or incremented) when the interface goes down (or comes back up). The range is from 1 to 255; the default value is 10.

Defaults

group-number: 0
priority-decrement: 10

Command Modes

HSRP interface configuration

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs.

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*.

The **hsrp track** command ties the Hot Standby priority of the router to the availability of its interfaces. It is useful for tracking interfaces that are not configured for the Hot Standby Router Protocol (HSRP). Only IP interfaces are tracked. A tracked interface is up if IP on that interface is up. Otherwise, the tracked interface is down.

When a tracked interface goes down, the Hot Standby priority decreases by 10. If an interface is not tracked, its state changes do not affect the Hot Standby priority. For each interface configured for Hot Standby, you can configure a separate list of interfaces to be tracked.

The optional *priority-decrement* argument specifies by how much to decrement the Hot Standby priority when a tracked interface goes down. When the tracked interface comes back up, the priority is incremented by the same amount.

When multiple tracked interfaces are down and *priority-decrement* values have been configured, these configured priority decrements are cumulative. If tracked interfaces are down, but none of them were configured with priority decrements, the default decrement is 10 and it is cumulative.

The **hsrp preempt** command must be used in conjunction with this command on all routers in the group whenever the best available router should be used to forward packets. If the **hsrp preempt** command is not used, then the active router will stay active, regardless of the current priorities of the other HSRP routers.

Examples

In the following example, Management Ethernet interface 1/RP1/CPU0/0 tracks interface 0/RP1/CPU0/0 and 1/RP0/CPU0/0. If one or both of these two interfaces go down, the Hot Standby priority of the router decreases by 10. Because the default Hot Standby priority is 100, the priority becomes 90 when one of the tracked interfaces goes down and the priority becomes 80 when both go down.

```
RP/0/RP0/CPU0:router(config)# router hsrp
RP/0/RP0/CPU0:router(config-hsrp)# interface MgmtEth 1/RP1/CPU0/0
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp track MgmtEth 0/RP1/CPU0/0
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp track MgmtEth 1/RP0/CPU0/0
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp preempt
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp ipv4 192.92.72.46
```

Related Commands

Command	Description
hsrp preempt	Configures HSRP preemption and preemption delay.
hsrp priority	Configures HSRP priority.
show hsrp	Displays HSRP information.

hsrp use-bia

To configure the Hot Standby Router Protocol (HSRP) to use the burned-in address of the interface as its virtual MAC address, instead of the preassigned MAC address or the functional address, use the **hsrp use-bia** command in HSRP interface configuration mode. To restore the default virtual MAC address, use the **no** form of this command.

hsrp use-bia

no hsrp use-bia

Syntax Description This command has no arguments or keywords.

Defaults HSRP uses the preassigned MAC address on Ethernet.

Command Modes HSRP interface configuration

Command History	Release	Modification
	Release 2.0	This command was introduced.

Usage Guidelines To use this command, you must be in a user group associated with a task group that includes the proper task IDs. 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*.

It is desirable to configure the **hsrp use-bia** command on an interface if there are devices that reject Address Resolution Protocol (ARP) replies with source hardware addresses set to a functional address.

Examples In the following example, the burned-in address of Management Ethernet interface 0/RP1/CPU0/0 will be the virtual MAC address mapped to the virtual IP address for all Hot Standby groups configured on Ten Gigabit Ethernet interface 0/1/0/1:

```
RP/0/RP0/CPU0:router(config)# router hsrp
RP/0/RP0/CPU0:router(config-hsrp)# interface MgmtEth 0/RP1/CPU0/0
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp use-bia
```

Related Commands	Command	Description
	hsrp mac-address	Specifies a virtual MAC address for HSRP.
	show hsrp	Displays HSRP information.

interface (HSRP)

To enable Hot Standby Router Protocol (HSRP) interface configuration command mode, use the **interface** command in router configuration mode. To terminate interface mode, use the **no** form of this command.

interface *type instance*

no interface *type instance*

Syntax Description

<i>type</i>	Interface type. For more information, use the question mark (?) online help function.
<i>instance</i>	<p>Either a physical interface instance or a virtual interface instance:</p> <ul style="list-style-type: none"> Physical interface instance. Naming notation is rack/slot/module/port and a slash mark between values is required as part of the notation. <ul style="list-style-type: none"> rack: Chassis number of the rack. slot: Physical slot number of the line card. module: Module number. A Physical Layer Interface Module (PLIM) is always 0. port: Physical port number of the interface. <p>Note In references to a Management Ethernet interface located on a Route Processor card, the physical slot number is alphanumeric (RP0 or RP1) and the module is CPU0. Example: interface MgmtEth0/RP1/CPU0/0.</p> <ul style="list-style-type: none"> Virtual interface instance. Number range will vary depending on interface type. <p>For more information about the syntax for the router, use the question mark (?) online help function.</p>

Defaults

HSRP is disabled.

Command Modes

Router configuration

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. 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*.

All the commands used to configure HSRP fall under HSRP interface configuration mode.

Examples

The follow example enables HSRP interface configuration mode on Management Ethernet interface 0/RP1/CPU0/0:

```
RP/0/RP0/CPU0:router(config)# router hsrp  
RP/0/RP0/CPU0:router(config-hsrp)# interface MgmtEth 0/RP1/CPU0/0
```

Related Commands

Command	Description
router hsrp	Enables HSRP.

router hsrp

To enable the Hot Standby Router Protocol (HSRP), use the **router hsrp** command in global configuration mode. To disable HSRP, use the **no** form of this command.

router hsrp

no router hsrp

Syntax Description This command has no arguments or keywords.

Defaults HSRP is disabled.

Command Modes Global configuration

Command History	Release	Modification
	Release 2.0	This command was introduced.

Usage Guidelines To use this command, you must be in a user group associated with a task group that includes the proper task IDs. 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*.

HSRP configuration commands must be configured in HSRP global configuration mode followed by the interface configuration mode.

Examples The following example configures an HSRP redundancy process that contains a virtual router group 1 on Management Ethernet interface 0/RP1/CPU0/0:

```
RP/0/RP0/CPU0:router(config)# router hsrp  
RP/0/RP0/CPU0:router(config-hsrp)# interface MgmtEth 0/RP1/CPU0/0  
RP/0/RP0/CPU0:router(config-hsrp-if)# hsrp 1 priority 254
```

show hsrp

To display Hot Standby Router Protocol (HSRP) information, use the **show hsrp** command in EXEC mode.

```
show hsrp [type instance [group-number]] [brief | detail | | ]
```

Syntax	Description
<i>type</i>	Interface type. For more information, use the question mark (?) online help function.
<i>instance</i>	<p>Either a physical interface instance or a virtual interface instance:</p> <ul style="list-style-type: none"> Physical interface instance. Naming notation is rack/slot/module/port and a slash mark between values is required as part of the notation. <ul style="list-style-type: none"> rack: Chassis number of the rack. slot: Physical slot number of the line card. module: Module number. A Physical Layer Interface Module (PLIM) is always 0. port: Physical port number of the interface. <p>Note In references to a Management Ethernet interface located on a Route Processor card, the physical slot number is alphanumeric (RP0 or RP1) and the module is CPU0. Example: interface MgmtEth0/RP1/CPU0/0.</p> <ul style="list-style-type: none"> Virtual interface instance. Number range will vary depending on interface type. <p>For more information about the syntax for the router, use the question mark (?) online help function.</p>
<i>group-number</i>	(Optional) Group number on the interface for which output is displayed.
brief	(Optional) A single line of output summarizes each standby group. The brief keyword is the default if detail is not specified.
detail	(Optional) This keyword has the same effect as not specifying brief ; more output is provided.
	<p>(Optional) After this vertical bar (), specify one of the following output modifiers and a keyword from the output:</p> <ul style="list-style-type: none"> begin—Begins the output from the word that you specify. exclude—Excludes lines that match the word that you specify. include—Includes lines that match the word that you specify.

Defaults

The **brief** keyword is the default.

Command Modes

EXEC

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs.

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*.

Use the **show hsrp** command to display HSRP information.

If you want to specify a *group-number*, you must also specify an interface type and number.

Examples

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

```
RP/0/RP0/CPU0:router# show hsrp detail

MgmtEthernet0/RP1/CPU0/0 - Group 1
  Local state is Standby, priority 96, may preempt
  Preemption delay for at least 30 secs
  Hellosent 4 holdtime 16 configured hellosent 3 sec holdtime 10 sec
  Next hello sent in 2.143
  Hot standby IP address is 192.241.2.7 configured
  Active router is 192.241.2.2 expires in 00:00:10
  Standby router is local
  Standby virtual mac address is 0000.0c07.ac01
  36 state changes, last state change 00:00:17
  Tracking interface states for 1 interface, 1 up:
    Up 0/RP0/CPU0/0 Priority decrement:10
```

The following is sample output from the **show hsrp** command with a specific interface:

```
RP/0/RP0/CPU0:router# show hsrp MgmtEth 0/RP0/CPU0/0
P indicates configured to preempt
|
Interface  Grp Prio P State Active addr      Standby addr      Group addr
Mgmt0     0 100 Standby 172.69.232.33    local              172.19.48.254
```

Related Commands

Command	Description
hsrp authentication	Configures an authentication string for HSRP.
hsrp ipv4	Activates the HSRP.
hsrp mac-address	Configures a virtual MAC address for HSRP.
hsrp preempt	Configures HSRP preemption and preemption delay.
hsrp priority	Configures HSRP priority.
hsrp timers	Configures the time between hello packets and the time before other routers declare the active Hot Standby or standby router to be down.
hsrp track	Configures an interface so that the Hot Standby priority changes based on the availability of other interfaces.
hsrp use-bia	Configures HSRP to use the burned-in address of the interface as its virtual MAC address, instead of the preassigned MAC address.

■ show hsrp