VRRP Commands

This document describes the Cisco IOS XR software commands used to configure and monitor the Virtual Router Redundancy Protocol (VRRP).

For detailed information about VRRP concepts, configuration tasks, and examples, refer to the *Cisco IOS XR IP Addresses and Services Configuration Guide for the Cisco XR 12000 Series Router*.

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accept-mode

To disable the installation of routes for the Virtual Router Redundancy Protocol (VRRP) virtual addresses, use the **accept-mode** command in the VRRP virtual router submode. To enable the installation of routes for the VRRP virtual addresses, use the **no** form of this command.

accept-mode disable

no accept-mode disable

Syntax Description

disable	Disables the accept mode.

Command Default

By default, the accept mode is enabled.

Command Modes

VRRP virtual router configuration

Command History

Release	Modification
Release 4.1.0	This command was introduced. This command replaced the **vrrp assume-ownership disable** command.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
vrrp	read, write

Examples

This example shows how to disable the installation of routes for the VRRP virtual addresses:

```
RP/0/0/CPU0:router# configure
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface TenGigE 0/4/0/4
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv4
RP/0/0/CPU0:router(config-vrrp-address-family)# vrrp 3 version 2
RP/0/0/CPU0:router(config-vrrp-virtual-router)# accept-mode disable
RP/0/0/CPU0:router(config-vrrp-virtual-router)#
```

Related Commands

Command	Description
address (VRRP), on page 9	Sets the primary virtual IPv4 address for a virtual router.
address global, on page 11	Configures the global virtual IPv6 address for a virtual router.
address linklocal, on page 13	Sets the virtual link-local IPv6 address for a virtual router.
address secondary, on page 15	Sets the secondary virtual IPv4 address for a virtual router.
message state disable, on page 26	Disables the task of logging the VRRP state change events.

accept-mode(slave)

To disable the installation of routes for the Virtual Router Redundancy Protocol (VRRP) virtual addresses, use the **accept-mode** command in the VRRP slave submode. To enable the installation of routes for the VRRP virtual addresses, use the **no** form of this command.

accept-mode disable

no accept-mode disable

Syntax Description

disable	Disables the accept mode.

Command Default

By default, the accept mode is enabled.

Command Modes

VRRP slave submode configuration

Command History

Release	Modification
Release 4.3	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
vrrp	read, write

Examples

This example shows how to disable the installation of routes for the VRRP virtual addresses:

```
RP/0/0/CPU0:router# configure
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface tenGigE 0/4/0/4
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv4
RP/0/0/CPU0:router(config-vrrp-address-family)# vrrp 3 slave
RP/0/0/CPU0:router(config-vrrp-virtual-router)# accept-mode disable
RP/0/0/CPU0:router(config-vrrp-virtual-router)#
```

Related Commands

Command	Description
accept-mode, on page 3	Disable the installation of routes for the Virtual Router Redundancy Protocol (VRRP) virtual addresses.

address-family

To enable address-family mode, use the **address-family** command in interface configuration mode. To terminate address-family mode, use the **no** form of this command.

address-family {**ipv4** | **ipv6**}

no address-family {**ipv4** | **ipv6**}

Syntax Description

ipv4	IPv4 address-family.
ipv6	IPv6 address-family.

Command Default

None.

Command Modes

Interface configuration

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
vrrp	read, write

Examples

The following example shows how to enable address-family mode:

```
RP/0/0/CPU0:router # config
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface tenGigE 0/4/0/4
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv4
```

Related Commands

Command	Description
interface (VRRP), on page 24	Enables VRRP interface configuration mode.

address (VRRP)

To configure the primary virtual IPv4 address for a virtual router, use the **address** command in the Virtual Router Redundancy Protocol (VRRP) virtual router submode. To deconfigure the primary virtual IPv4 address for the virtual router, use the **no** form of this command.

address *address*

no address *address*

Syntax Description

address	VRRP IPv4 address.

Command Default

None

Command Modes

VRRP virtual router

Command History

Release	Modification
Release 4.1.0	This command was introduced. This command replaced the **vrrp ipv4** command.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
vrrp	read, write

Examples

This example shows how to set the primary virtual IPv4 address for the virtual router:

```
RP/0/0/CPU0:router# configure
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface TenGigE 0/4/0/4
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv4
RP/0/0/CPU0:router(config-vrrp-address-family)# vrrp 3 version 3
RP/0/0/CPU0:router(config-vrrp-virtual-router)# address 192.168.18.1
RP/0/0/CPU0:router(config-vrrp-virtual-router)#
```

Related Commands

Command	Description
accept-mode, on page 3	Disables the installation of routes for the VRRP virtual addresses.
address global, on page 11	Configures the global virtual IPv6 address for a virtual router.
address linklocal, on page 13	Sets the virtual link-local IPv6 address for a virtual router.
address secondary, on page 15	Sets the secondary virtual IPv4 address for a virtual router.
message state disable, on page 26	Disables the task of logging the VRRP state change events.

address global

To configure the global virtual IPv6 address for a virtual router, use the **address global** command in the Virtual Router Redundancy Protocol (VRRP) virtual router submode. To deconfigure the global virtual IPv6 address for a virtual router, use the **no** form of this command.

address global *ipv6-address*

no address global *ipv6-address*

Syntax Description

ipv6-address	Global VRRP IPv6 address.

Command Default

None

Command Modes

VRRP virtual router

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
vrrp	read, write

Examples

This example shows how to add a global virtual IPv6 address for the virtual router:

```
RP/0/0/CPU0:router# configure
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface TenGigE 0/4/0/4
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv6
RP/0/0/CPU0:router(config-vrrp-address-family)# vrrp 3 version 3
RP/0/0/CPU0:router(config-vrrp-virtual-router)# address global 4000::1000
RP/0/0/CPU0:router(config-vrrp-virtual-router)#
```

Related Commands

Command	Description
address (VRRP), on page 9	Sets the primary virtual IPv4 address for a virtual router.
accept-mode, on page 3	Disables the installation of routes for the VRRP virtual addresses.
address linklocal, on page 13	Sets the virtual link-local IPv6 address for a virtual router.
address secondary, on page 15	Sets the secondary virtual IPv4 address for a virtual router.
message state disable, on page 26	Disables the task of logging the VRRP state change events.

address linklocal

To either configure the virtual link-local IPv6 address for a virtual router or to specify that the virtual link-local IPv6 address should be enabled and calculated automatically from the virtual router virtual Media Access Control (MAC) address, use the **address linklocal** command in the Virtual Router Redundancy Protocol (VRRP) virtual router submode. To deconfigure the virtual link-local IPv6 address for a virtual router, use the **no** form of this command.

address linklocal [*ipv6-address*| **autoconfig**]

no address linklocal [*ipv6-address*| **autoconfig**]

Syntax Description

ipv6-address	VRRP IPv6 link-local address.
autoconfig	Autoconfigures the VRRP IPv6 link-local address.

Command Default

None

Command Modes

VRRP virtual router

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
vrrp	read, write

Examples

This example shows how to autoconfigure the VRRP IPv6 link-local address:

```
RP/0/0/CPU0:router#configure
RP/0/0/CPU0:router(config)#router vrrp
RP/0/0/CPU0:router(config-vrrp)#interface TenGigE 0/4/0/4
RP/0/0/CPU0:router(config-vrrp-if)#address-family ipv6
RP/0/0/CPU0:router(config-vrrp-address-family)#vrrp 3
RP/0/0/CPU0:router(config-vrrp-virtual-router)#address linklocal autoconfig
RP/0/0/CPU0:router(config-vrrp-virtual-router)#
```

This example shows how to configure the virtual link-local IPv6 address for the virtual router:

```
RP/0/0/CPU0:router#configure
RP/0/0/CPU0:router(config)#router vrrp
RP/0/0/CPU0:router(config-vrrp)#interface TenGigE 0/4/0/4
RP/0/0/CPU0:router(config-vrrp-if)#address-family ipv6
RP/0/0/CPU0:router(config-vrrp-address-family)#vrrp 3
RP/0/0/CPU0:router(config-vrrp-virtual-router)#address linklocal FE80::260:3EFF:FE11:6770
RP/0/0/CPU0:router(config-vrrp-virtual-router)#
```

Note The **version** keyword is available only if IPv4 address-family is selected. By default, version is set to 3 for IPv6 address families.

Related Commands

Command	Description
address (VRRP), on page 9	Sets the primary virtual IPv4 address for a virtual router.
address global, on page 11	Configures the global virtual IPv6 address for a virtual router.
accept-mode, on page 3	Disables the installation of routes for the VRRP virtual addresses.
address secondary, on page 15	Sets the secondary virtual IPv4 address for a virtual router.
message state disable, on page 26	Disables the task of logging the VRRP state change events.

address secondary

To configure the secondary virtual IPv4 address for a virtual router, use the **address secondary** command in the Virtual Router Redundancy Protocol (VRRP) virtual router submode. To deconfigure the secondary virtual IPv4 address for a virtual router, use the **no** form of this command.

address *address* **secondary**

no address *address* **secondary**

Syntax Description

secondary	Sets the secondary VRRP IP address.
address	VRRP IPv4 address.

Command Default

None

Command Modes

VRRP virtual router

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
vrrp	read, write

Examples

This example shows how to set the secondary virtual IPv4 address for the virtual router:

```
RP/0/0/CPU0:router# configure
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface TenGigE 0/4/0/4
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv4
RP/0/0/CPU0:router(config-vrrp-address-family)# vrrp 3 version 2
RP/0/0/CPU0:router(config-vrrp-virtual-router)# address 192.168.18.1 secondary
RP/0/0/CPU0:router(config-vrrp-virtual-router)#
```

Related Commands

Command	Description
address (VRRP), on page 9	Sets the primary virtual IPv4 address for a virtual router.
address global, on page 11	Configures the global virtual IPv6 address for a virtual router.
address linklocal, on page 13	Sets the virtual link-local IPv6 address for a virtual router.
accept-mode, on page 3	Disables the installation of routes for the VRRP virtual addresses.
message state disable, on page 26	Disables the task of logging the VRRP state change events.

bfd minimum-interval (VRRP)

To configure the BFD minimum interval to be used for all VRRP BFD sessions on a given interface, use the **bfd minimum-interval** command in the interface configuration mode. To remove the configured minimum-interval period and set the minimum-interval period to the default period, use the **no** form of this command.

bfd minimum-interval *interval*

no bfd minimum-interval *interval*

Syntax Description

interval	Specify the minimum-interval in milliseconds. Range is 15 to 30000.

Command Default

Default minimum interval is 15 ms.

Command Modes

VRRP interface configuration

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

Minimum interval determines the frequency of sending BFD packets to BFD peers. It is the time between successive BFD packets sent for the session. Minimum interval is defined in milliseconds. The configured minimum interval applies to all BFD sessions on the interface.

Task ID

Task ID	Operations
vrrp	read, write

Examples

The following example shows how to configure a minimum interval of 100 milliseconds:

```
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface gig 0/1/1/0
RP/0/0/CPU0:router(config-vrrp-if)# bfd minimum-interval 100
```

Related Commands

Command	Description
vrrp bfd fast-detect, on page 50	Enables BFD on a VRRP interface.

bfd multiplier (VRRP)

To set the BFD multiplier value, use the **bfd multiplier** command in the interface configuration mode. To remove the configured multiplier value and set the multiplier to the default value, use the **no** form of this command.

bfd multiplier *multiplier*

no bfd multiplier *multiplier*

Syntax Description

multiplier	Specifies the BFD multiplier value. Range is 2 to 50.

Command Default

Default value is 3.

Command Modes

VRRP interface configuration

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

The multiplier value specifies the number of consecutive BFD packets that, if not received as expected, cause a BFD session to go down. The BFD multiplier applies to all configured BFD sessions on the interface.

Task ID

Task ID	Operations
vrrp	read, write

Examples

The following example shows how to configure a BFD multiplier with multiplier value of 10:

```
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface gig 0/1/1/0
RP/0/0/CPU0:router(config-vrrp-if)# bfd multiplier 10
```

Related Commands

Command	Description
vrrp bfd fast-detect, on page 50	Enables BFD on a VRRP interface.

clear vrrp statistics

To reset the Virtual Router Redundancy Protocol (VRRP) statistics (to zero or default value), use the **clear vrrp statistics** command in EXEC mode.

clear vrrp statistics {**ipv4 | ipv6**}[**interface** *type interface-path-id* [*vrid*]]

Syntax Description

ipv4	(Optional) Resets the IPv4 information.
ipv6	(Optional) Resets the IPv6 information.
interface *type*	(Optional) Interface type. For more information, use the question mark (?) online help function.
interface-path-id	(Optional) Either a physical interface instance or a virtual interface instance as follows: • Physical interface instance. Naming notation is *rack/slot/module/port* and a slash between values is required as part of the notation. ◦ *rack*: Chassis number of the rack. ◦ *slot*: Physical slot number of the modular services card or line card. ◦ *module*: Module number. A physical layer interface module (PLIM) is always 0. ◦ *port*: Physical port number of the interface. **Note** In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RP0 or RP1) and the module is CPU0. Example: interface mgmtEth 0/ RP1/CPU0/0. • Virtual interface instance. Number range varies depending on interface type. For more information about the syntax for the router, use the question mark (?) online help function.
vrid	(Optional) Virtual router identifier, which is the number identifying the virtual router for which status is displayed.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.7.0	This command was introduced.

Usage Guidelines

If no **interface** is specified, the statistics for all virtual routers on all interfaces are cleared.

If no value for *vrid* is specified, the statistics for all virtual routers on the specified interface are cleared.

Task ID

Task ID	Operations
vrrp	read, write

Examples

The following example shows how to clear vrrp statistics:

```
RP/0/0/CPU0:router# clear vrrp statistics
```

Related Commands

Command	Description
show vrrp	Displays a brief or detailed status of one or all Virtual Router Redundancy Protocol (VRRP) virtual routers.

delay (VRRP)

To configure the activation delay for a VRRP router, use the **delay** command in HSRP interface configuration mode. To delete the activation delay, use the **no** form of this command.

delay minimum *value* **reload** *value*

no delay

Syntax Description

minimum *value*	Sets the minimum delay in seconds for every interface up event. Range is 0 to 10000.
reload *value*	Sets the reload delay in seconds for first interface up event. Range is 0 to 10000.

Command Default

minimum *value:* 1

reload *value:* 5

Command Modes

VRRP interface configuration

Command History

Release	Modification
Release 4.1.0	This command was introduced. This command replaced the **vrrp delay** command.

Usage Guidelines

The **vrrp delay** command delays the start of the VRRP finite state machine (FSM) on an interface up event to ensure that the interface is ready to pass traffic. This ensures that there are no mistaken state changes due to loss of hello packets. The minimum delay is applied on all interface up events and the reload delay is applied on the first interface up event.

The values of zero must be explicitly configured to turn this feature off.

Task ID

Task ID	Operations
vrrp	read, write

Examples

The following example shows how to configure a minimum delay of 10 seconds with a reload delay of 100 seconds:

```
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface mgmtEth 0/RP0/CPU0/0
RP/0/0/CPU0:router(config-vrrp-if)# delay minimum 10 reload 100
```

Related Commands

Command	Description
show vrrp	Displays a brief or detailed status of one or all Virtual Router Redundancy Protocol (VRRP) virtual routers.

interface (VRRP)

To enable VRRP interface configuration mode, use the **interface (VRRP)** command in VRRP configuration mode. To terminate VRRP interface configuration mode, use the **no** form of this command.

interface *type interface-path-id*

no interface *type interface-path-id*

Syntax Description

type	Interface type. For more information, use the question mark (?) online help function.
interface-path-id	Physical interface or virtual interface. **Note** Use the **show interfaces** command to see a list of all interfaces currently configured on the router. For more information about the syntax for the router, use the question mark (?) online help function.

Command Default

VRRP is disabled.

Command Modes

VRRP configuration

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.6.0	The **interface (VRRP)** command is used in VRRP configuration mode.

Usage Guidelines

Use the **interface (VRRP)** command to enter VRRP interface configuration mode.

You must configure all VRRP configuration commands in VRRP interface configuration mode.

Task ID

Task ID	Operations
vrrp	read, write

Examples

The following example shows how to configure VRRP and a virtual router 1 on 10-Gigabit Ethernet interface 0/3/0/0:

```
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface TenGigE 0/3/0/0
RP/0/0/CPU0:router(config-vrrp-if)# vrrp 1 ipv4 192.168.18.1
```

```
RP/0/0/CPU0:router# config
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface tenGigE 0/4/0/4
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv4
RP/0/0/CPU0:router(config-vrrp-address-family)# vrrp 3 version 2
RP/0/0/CPU0:router(config-vrrp-virtual-router)#
```

Related Commands

Command	Description
router vrrp, on page 28	Configures a VRRP redundancy process.

message state disable

To disable the task of logging the Virtual Router Redundancy Protocol (VRRP) state change events via syslog, use the **message state disable** command in the VRRP virtual router submode. To re-enable the task of logging the VRRP state change events , use the **no** form of this command.

message state disable

no message state disable

Syntax Description

This command has no keywords or arguments.

Command Default

By default, the task of logging the VRRP state change events is enabled.

Command Modes

VRRP global

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
vrrp	read, write

Examples

This example shows how to disable the logging of VRRP state change events:

```
RP/0/0/CPU0:router#configure
RP/0/0/CPU0:router(config)#router vrrp
RP/0/0/CPU0:router(config-vrrp)#message state disable
RP/0/0/CPU0:router(config-vrrp)#
```

Related Commands

Command	Description
address (VRRP), on page 9	Sets the primary virtual IPv4 address for a virtual router.

Command	Description
address global, on page 11	Configures the global virtual IPv6 address for a virtual router.
accept-mode, on page 3	Disables the installation of routes for the VRRP virtual addresses.
address secondary, on page 15	Sets the secondary virtual IPv4 address for a virtual router.
address linklocal, on page 13	Sets the virtual link-local IPv6 address for a virtual router.

router vrrp

To configure Virtual Router Redundancy Protocol (VRRP), use the **router vrrp** command in Global Configuration mode. To remove the VRRP configuration, use the **no** form of this command.

router vrrp

no router vrrp

Command Default

This command has no keywords or arguments.

VRRP is disabled.

Command Modes

Global Configuration mode

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.6.0	The **router vrrp** command is used in global configuration mode.

Usage Guidelines

Use the **router vrrp** command to enter VRRP configuration mode.

You must configure all VRRP configuration commands in VRRP interface configuration mode.

Task ID

Task ID	Operations
vrrp	read, write

Examples

The following example shows how to configure a VRRP with virtual router 1 on an interface:

```
RP/0/0/CPU0:router# config
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface tenGigE 0/4/0/4
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv4
RP/0/0/CPU0:router(config-vrrp-address-family)# vrrp 3 version 2
RP/0/0/CPU0:router(config-vrrp-virtual-router)#
```

Related Commands

Command	Description
interface (VRRP), on page 24	Enables VRRP interface configuration mode.

session name(vrrp)

To configure a VRRP session name, use the **session name** command in the VRRP virtual router submode. To deconfigure a VRRP session name, use the **no** form of this command.

name *name*

no name *name*

Syntax Description

name	MGO session name

Command Default

None

Command Modes

VRRP virtual router configuration

Command History

Release	Modification
Release 4.3	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
vrrp	read

Examples

This example shows how to configure a VRRP session name.

```
RP/0/0/CPU0:router# configure
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface tenGigE 0/4/0/4
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv4
RP/0/0/CPU0:router(config-vrrp-ipv4)# vrrp 1
RP/0/0/CPU0:router(config-vrrp-virtual-router)# name s1
RP/0/0/CPU0:router(config-vrrp-virtual-router)#
```

Related Commands

Command	Description
accept-mode, on page 3	Disable the installation of routes for the Virtual Router Redundancy Protocol (VRRP) virtual addresses.

show vrrp

To display a brief or detailed status of one or all Virtual Router Redundancy Protocol (VRRP) virtual routers, use the **show vrrp** command in EXEC mode.

show vrrp [**ipv4**| **ipv6**] [**interface** *type interface-path-id* [*vrid*]] [**brief**| **detail**| **statistics [all]**]

Syntax Description

ipv4	(Optional) Displays the IPv4 information.
ipv6	(Optional) Displays the IPv6 information.
interface	(Optional) Displays the status of the virtual router interface.
type	Interface type. For more information, use the question mark (?) online help function.
interface-path-id	Physical interface or virtual interface. **Note** Use the show interfaces command to see a list of all interfaces currently configured on the router. For more information about the syntax for the router, use the question mark (?) online help function.
vrid	(Optional) Virtual router identifier, which is the number identifying the virtual router for which status is displayed. The virtual router identifier is configured with the **vrrp ipv4** command. Range is 1 to 255.
brief	(Optional) Provides a summary view of the virtual router information.
detail	(Optional) Displays detailed running state information.
statistics	(Optional) Displays total statistics.

all	(Optional) Displays statistics for each virtual router.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

If no interface is specified, all virtual routers on all interfaces are displayed. If no vrid is specified, all vrids on the given interface are displayed.

Task ID

Task ID	Operations
vrrp	read

Examples

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

```
RP/0/0/CPU0:router# show vrrp

                     A indicates IP address owner
                     | P indicates configured to preempt
                     | |
Interface   vrID Prio A P State    Master addr     VRouter addr
Te0/3/0/0      1  100   P Init     unknown         192.168.18.10
Te0/3/0/2      7  100   P Init     unknown         192.168.19.1
```

This table describes the significant fields shown in the display.

Table 1: show vrrp Command Field Descriptions

Field	Description
Interface	Interface of the virtual router.
vrID	ID of the virtual router.
Prio	Priority of the virtual router.
A	Indicates whether the VRRP router is the IP address owner.

Field	Description
P	Indicates whether the VRRP router is configured to preempt (default).
State	State of the virtual router.
Master addr	IP address of the master router.
VRouter addr	Virtual router IP address of the virtual router.

The following sample output is from the **show vrrp** command with the **detail** keyword:

```
RP/0/0/CPU0:router# show vrrp detail
GigabitEthernet0/4/0/0 - IPv4 vrID 1
  State is Master, IP address owner
    2 state changes, last state change 00:00:59
  Virtual IP address is 192.168.10.1
    Secondary Virtual IP address is 192.168.10.2
    Secondary Virtual IP address is 192.168.11.1
  Virtual MAC address is 0000.5E00.0101
  Master router is local
  Advertise time 1 secs
    Master Down Timer 3.609 (3 x 1 + 156/256)
  Minimum delay 1 sec, reload delay 5 sec
  Current priority 100
    Configured priority 110, may preempt
      Minimum delay 0 secs
  Authentication enabled, string "myauth"
  BFD enabled: state Up, interval 15ms multiplier 3 remote IP 192.168.10.3
    Tracked items:
                                      Priority
    Interface               State     Decrement
    POS0/5/0/1               Down            10

GigabitEthernet0/4/0/0 - IPv4 vrID 2
  State is Backup
    3 state changes, last state change 00:01:58
  Virtual IP address is 192.168.10.2
  Virtual MAC address is 0000.5E00.0102
  Master router is IP address owner (192.168.11.1), priority 200
  Advertise time 1.500 secs (forced)
    Master Down Timer 5.109 (3 x 1 + 156/256)
  Minimum delay 1 sec, reload delay 5 sec
  Current priority 100
    Configured priority 100, may preempt
      Minimum delay 20 secs


Bundle-Ether1 - IPv4 vrID 5
  State is Init
    0 state changes, last state change never
  Virtual IP address is unknown
  Virtual MAC address is 0000.5E00.0100
  Master router is unknown
  Advertise time 1 secs
    Master Down Timer 3.500 (3 x 1 + 128/256)
  Minimum delay 1 sec, reload delay 5 sec
  Current priority 128
    Configured priority 128

GigabitEthernet0/4/0/0 - IPv6 vrID 1
  State is Master
```

```
  2 state changes, last state change 00:10:01
Virtual Linklocal address is FE80::100
  Global Virtual IPv6 address is 4000::100
  Global Virtual IPv6 address is 5000::100
Virtual MAC address is 0000.5E00.0201
Master router is local
Advertise time 1 secs
  Master Down Timer 3.609 (3 x 1 + 156/256)
Minimum delay 1 sec, reload delay 5 sec
Current priority 100
  Configured priority 100, may preempt
    Minimum delay 0 secs
```

This table describes the significant fields shown in the displays.

Table 2: show vrrp detail Command Field Descriptions

Field	Description
TenGigE 0/3/0/0 - vrID 1	Interface type and number, and VRRP group number.
State is	Role this interface plays within VRRP (master or backup).
Virtual IP address is	Virtual IP address for this virtual router.
Virtual MAC address is	Virtual MAC address for this virtual router.
Master router is	Location of the master router.
Advertise time	Interval (in seconds) at which the router sends VRRP advertisements when it is the master virtual router. This value is configured with the **vrrp timer** command.
Master Down Timer	Time the backup router waits for the master router advertisements before assuming the role of master router.
Minimum delay	Time that the state machine start-up is delayed when an interface comes up, giving the network time to settle. The minimum delay is the delay that is applied after any subsequent interface up event (if the interface flaps) and the reload delay is the delay applied after the first interface up event.
Current priority	Priority of the virtual router.
Configured priority	Priority configured on the virtual router.
may preempt	Indication of whether preemption is enabled or disabled.
minimum delay	Delay time before preemption (default) occurs.

Field	Description
Tracked items	Section indicating the items being tracked by the VRRP router.
Interface	Interface being tracked.
State	State of the tracked interface.
Priority Decrement	Priority to decrement from the VRRP priority when the interface is down.

The following sample output is from the **show vrrp** command with the **interface** and **detail** keywords for 10-Gigabit Ethernet interface 0/3/0/0:

```
RP/0/0/CPU0:router# show vrrp interface gigabitEthernet 0/3/0/0

                     A indicates IP address owner
                     | P indicates configured to preempt
                     | |
Interface   vrID Prio A P State    Master addr     VRouter addr
Te0/3/0/0      1  100   P Init     unknown         192.168.10.20
Te0/3/0/2      7  100   P Init     unknown         192.168.20.0
```

This table describes the significant fields shown in the displays.

Table 3: show vrrp interface Command Field Descriptions

Field	Description
Interface	Interface of the virtual router.
vrID	ID of the virtual router.
Prio	Priority of the virtual router.
A	Indicates whether the VRRP router is the IP address owner.
P	Indicates whether the VRRP router is configured to preempt (default).
State	State of the virtual router.
Master addr	IP address of the master router.
VRouter addr	Virtual router IP address of the virtual router.

slave follow(vrrp)

To instruct the slave group to inherit its state from a specified group, use the **slave follow** command in VRRP slave submode.

follow *mgo-session-name*

Syntax Description

mgo-session-name	Name of the MGO session from which the slave group will inherit the state.

Command Default

None

Command Modes

VRRP slave submode configuration

Command History

Release	Modification
Release 4.3	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
vrrp	read, write

Examples

This example shows how to instruct the slave group to inherit its state from a specified group.

```
RP/0/0/CPU0:router# configure
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface tenGigE 0/4/0/4
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv4
RP/0/0/CPU0:router(config-vrrp-address-family)# vrrp 2 slave
RP/0/0/CPU0:router(config-vrrp-slave)# follow m1
```

Note Before configuring a slave group to inherit its state from a specified group, the group must be configured with the **session name** command on another vrrp group.

Related Commands

Command	Description
accept-mode, on page 3	Disable the installation of routes for the Virtual Router Redundancy Protocol (VRRP) virtual addresses.

slave primary virtual IPv4 address(vrrp)

To configure the primary virtual IPv4 address for the slave group, use the **slave primary virtual IPv4 address** command in the VRRP slave submode.

address *ip-address*

Syntax Description

ip-address	IP address of the Hot Standby router interface.

Command Default

None

Command Modes

VRRP slave submode configuration

Command History

Release	Modification
Release 4.3	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
vrrp	read, write

Examples

This example shows how to configure the primary virtual IPv4 address for the slave group.

```
RP/0/0/CPU0:router# configure
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface tenGigE 0/4/0/4
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv4
RP/0/0/CPU0:router(config-vrrp-address-family)# vrrp 2 slave
RP/0/0/CPU0:router(config-vrrp-slave)# address 192.168.10.4
```

Related Commands

Command	Description
accept-mode, on page 3	Disable the installation of routes for the Virtual Router Redundancy Protocol (VRRP) virtual addresses.

slave secondary virtual IPv4 address(vrrp)

To configure the secondary virtual IPv4 address for the slave group, use the **slave secondary virtual IPv4 address** command in the VRRP slave submode.

address *ip-address* **secondary**

Syntax Description

ip-address	IP address of the Hot Standby router interface.
secondary	Sets the secondary hot standby IP address.

Command Default

None

Command Modes

VRRP slave submode configuration

Command History

Release	Modification
Release 4.3	This command was introduced.

Usage Guidelines

Before configuring secondary virtual IPv4 address, the primary virtual IPv4 address for the slave group must be configured.

Task ID

Task ID	Operation
vrrp	read, write

Examples

This example shows how to configure the secondary virtual IPv4 address for the slave group.

```
RP/0/0/CPU0:router# configure
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface tenGigE 0/4/0/4
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv4
RP/0/0/CPU0:router(config-vrrp-address-family)# vrrp 2 slave
RP/0/0/CPU0:router(config-vrrp-slave)# address 192.168.10.4 secondary
```

Related Commands

Command	Description
accept-mode, on page 3	Disable the installation of routes for the Virtual Router Redundancy Protocol (VRRP) virtual addresses.

snmp-server traps vrrp events

To enable the Simple Network Management Protocol (SNMP) server notifications (traps) available for VRRP, use the **snmp-server traps vrrp events command** in Global Configuration mode. To disable all available VRRP SNMP notifications, use the **no** form of this command.

snmp-server traps vrrp events

no snmp-server traps vrrp events

Syntax Description

events	Specifies all VRRP SNMP server traps.

Command Default

None

Command Modes

Global Configuration mode

Command History

Release	Modification
Release 3.9.0	This command was introduced.

Command History

Release	Modification
Release 3.9.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
snmp	read, write

Examples

The following example shows how to enable snmpserver notifications for VRRP:

```
RP/0/0/CPU0:routerrouter(config)# snmp-server traps vrrp events
```

track object(vrrp)

To enable tracking of a named object with the specified decrement, use the **track object** command in VRRP virtual router submode. To remove the tracking, use the **no** form of this command.

track object *name*[*priority-decrement*]

no track object *name*[*priority-decrement*]

Syntax Description

object *name*	Object tracking. Name of the object to be tracked.
priority-decrement	(Optional) Amount by which the VRRP priority for the router is decremented when the interface goes down (or comes back up). Range is 1 to 255.

Command Default

The default priority-decrement is 10.

Command Modes

VRRP virtual router configuration

Command History

Release	Modification
Release 4.3	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
vrrp	read, write

Examples

This example shows how to configure object tracking under the VRRP virtual router submode.

```
RP/0/0/CPU0:router# configure
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface tenGigE 0/4/0/4
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv4
RP/0/0/CPU0:router(config-vrrp-ipv4)# vrrp 1
RP/0/0/CPU0:router(config-vrrp-virtual-router)# track object t1 2
RP/0/0/CPU0:router(config-vrrp-virtual-router)#
```

Related Commands

Command	Description
accept-mode, on page 3	Disable the installation of routes for the Virtual Router Redundancy Protocol (VRRP) virtual addresses.

vrrp

To enable Virtual Router Redundancy Protocol (VRRP) virtual router mode, use the **vrrp** command in address-family mode. To terminate VRRP virtual router mode, use the **no** form of this command.

vrrp *vrid* **version** *version-no*

novrrp *vrid* **version** *version-no*

Syntax Description

vrid	(Optional) Virtual router identifier, which is the number identifying the virtual router for which status is displayed. The virtual router identifier is configured with the vrrp ipv4 command. Range is 1 to 255.
version *version-no*	The VRRP version number. Range is 2-3. **Note** The **version** keyword is available only for the ipv4 address family. By default, version is set to 3 for IPv6 address families.

Command Default

None.

Command Modes

address-family

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
vrrp	read, write

Examples

The following example shows how to enable VRRP virtual router mode:

```
RP/0/0/CPU0:router# config
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface tenGigE 0/4/0/4
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv4
RP/0/0/CPU0:router(config-vrrp-address-family)# vrrp 3 version 2
RP/0/0/CPU0:router(config-vrrp-virtual-router)#
```

Related Commands

Command	Description
interface (VRRP), on page 24	Enables VRRP interface configuration mode.

vrrp assume-ownership disable

The VRRP router assumes ownership of the virtual IP Address in the master state by default. To disable this feature, use the **vrrp assume- assume ownership disable**command in VRRP interface configuration mode. To restore the default setting (assumed ownership), use the **no** form of this command.

vrrp *vrid* **assume-ownership disable**

no vrrp *vrid* **assume- ownership disable**

Syntax Description

vrid	Virtual router identifier, which is the number identifying the virtual router for which virtual IP address ownership is being configured. The virtual router identifier is configured with the **vrrp ipv4** command. Range is 1 to 255.
disable	(Optional) Does not accept IP packets sent to the Virtual IP address.

Command Default

The master router assumes ownership by default and accepts IP packets sent to the Virtual IP address.

Command Modes

VRRP interface configuration

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 4.1.0	This command has been deprecated. This command was replaced with the accept-mode, on page 3 command.

Usage Guidelines

By default, a router that is not the IP address owner, but is the master router for another IP address, accepts and responds to pings and accepts a Telnet to that router. Accepting packets sent to the other IP address is a useful tool during verification of network configuration. The **vrrp assume-ownership disable** command specifies that the router should not assume ownership of the virtual IP address if it is the master router regardless of whether it is the IP address owner, which means that it will not accept packets sent to that IP address during verification of network configuration.This command is ignored (irrelevant) when the router is the IP address owner (section 6.4.3 of RFC 2338, Virtual Router Redundancy Protocol).

Task ID

Task ID	Operations
vrrp	read, write

Examples

The following example shows how the configuration disables the **vrrp assume-ownership** command on 10-Gigabit Ethernet interface 0/3/0/0:

```
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface TenGigE 0/3/0/0
RP/0/0/CPU0:router(config-vrrp-if)# vrrp 1 ipv4 10.0.0.101 secondary
RP/0/0/CPU0:router(config-vrrp-if)# vrrp 1 assume-ownership disable
```

Related Commands

Command	Description
vrrp ipv4, on page 58	Enables VRRP on an interface and specifies the IP address of the virtual router.

vrrp bfd fast-detect

To enable bidirectional forwarding detection (BFD) fast detection on a VRRP interface, use the **vrrp bfd fast-detect** command in the interface configuration mode. This creates a BFD session between the Virtual Router Redundancy Protocol (VRRP) router and its peer, and if the session goes down while the VRRP is in the backup state, a VRRP failover is initiated. To disable BFD fast-detection, use the **no** form of this command.

vrrp *vrid* **bfd fast-detect peer** {**ipv4 | ipv6**} *address*

no vrrp *vrid* **bfd fast-detect peer** {**ipv4 | ipv6**} *address*

Syntax Description

vrid	Virtual Router Identifier.
peer	VRRP peer for BFD monitoring.
ipv4 *address*	IPv4 address of the BFD peer interface.
ipv6 *address*	IPv6 address of the BFD peer interface.

Command Default

BFD is disabled.

Command Modes

VRRP interface configuration

VRRP virtual router

Command History

Release	Modification
Release 3.9.0	This command was introduced.
Release 4.1.0	The IPv6 keyword was introduced.

Usage Guidelines

BFD is supported only on systems with exactly two redundant VRRP routers.

Task ID

Task ID	Operations
vrrp	read, write

Examples

The following example shows how to enable **bfd fast-detect** for an IPv4 address:

```
RP/0/0/CPU0:router# config
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface gig 0/1/1/0
RP/0/0/CPU0:router(config-vrrp-if)# vrrp 1 bfd fast-detect peer ipv4 10.1.1.1
```

Examples

The following example shows how to enable **bfd fast-detect** for an IPv6 address:

```
RP/0/0/CPU0:router# configure
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface tenGigE 0/4/0/4
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv6
RP/0/0/CPU0:router(config-vrrp-address-family)#vrrp 3 version 3
RP/0/0/CPU0:router(config-vrrp-virtual-router)#bfd fast-detect peer ipv6
fe80::211:bcff:fea5:28bb
```

Related Commands

Command	Description
vrrp bfd minimum-interval, on page 52	Configures the BFD minimum interval value for a given interface.
vrrp bfd multiplier, on page 54	Configures the BFD multiplier value for a given interface.

vrrp bfd minimum-interval

To configure the BFD minimum interval to be used for all VRRP BFD sessions on a given interface, use the **vrrp bfd minimum-interval** command in the interface configuration mode. To remove the configured minimum-interval period and set the minimum-interval period to the default period, use the **no** form of this command.

vrrp bfd minimum-interval *interval*

no vrrp bfd minimum-interval *interval*

Syntax Description

interval	Specify the minimum-interval in milliseconds. Range is 15 to 30000.

Command Default

Default minimum interval is 15 ms.

Command Modes

VRRP interface configuration

Command History

Release	Modification
Release 3.9.0	This command was introduced.
Release 4.1.0	This command has been deprecated. This command was replaced with the bfd minimum-interval (VRRP), on page 17 command.

Usage Guidelines

Minimum interval determines the frequency of sending BFD packets to BFD peers. It is the time between successive BFD packets sent for the session. Minimum interval is defined in milliseconds. The configured minimum interval applies to all BFD sessions on the interface.

Task ID

Task ID	Operations
vrrp	read, write

Examples

The following example shows how to configure a minimum interval of 100 milliseconds:

```
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface gig 0/1/1/0
RP/0/0/CPU0:router(config-vrrp-if)# vrrp bfd minimum-interval 100
```

Related Commands

Command	Description
vrrp bfd fast-detect, on page 50	Enables BFD on a VRRP interface.

vrrp bfd multiplier

To set the BFD multiplier value, use the **vrrp bfd multiplier** command in the interface configuration mode. To remove the configured multiplier value and set the multiplier to the default value, use the **no** form of this command.

vrrp bfd multiplier *multiplier*

no vrrp bfd multiplier *multiplier*

Syntax Description

multiplier	Specifies the BFD multiplier value. Range is 2 to 50.

Command Default

Default value is 3.

Command Modes

VRRP interface configuration

Command History

Release	Modification
Release 3.9.0	This command was introduced.
Release 4.1.0	This command has been deprecated. This command was replaced with the bfd multiplier (VRRP), on page 19 command.

Usage Guidelines

The multiplier value specifies the number of consecutive BFD packets that, if not received as expected, cause a BFD session to go down. The BFD multiplier applies to all configured BFD sessions on the interface.

Task ID

Task ID	Operations
vrrp	read, write

Examples

The following example shows how to configure a BFD multiplier with multiplier value of 10:

```
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface gig 0/1/1/0
RP/0/0/CPU0:router(config-vrrp-if)# vrrp bfd multiplier 10
```

Related Commands

Command	Description
vrrp bfd fast-detect, on page 50	Enables BFD on a VRRP interface.

vrrp delay

To configure the activation delay for a VRRP router, use the **vrrp delay** command in HSRP interface configuration mode. To delete the activation delay, use the **no** form of this command.

vrrp delay minimum *value* **reload** *value*

no vrrp delay

Syntax Description

minimum *value*	Sets the minimum delay in seconds for every interface up event. Range is 0 to 10000.
reload *value*	Sets the reload delay in seconds for first interface up event. Range is 0 to 10000.

Command Default

minimum *value:* 1

reload *value:* 5

Command Modes

VRRP interface configuration

Command History

Release	Modification
Release 3.4.0	This command was introduced.
Release 4.1.0	This command has been deprecated. This command was replaced with the delay (VRRP), on page 22 command.

Usage Guidelines

The **vrrp delay** command delays the start of the VRRP finite state machine (FSM) on an interface up event to ensure that the interface is ready to pass traffic. This ensures that there are no mistaken state changes due to loss of hello packets. The minimum delay is applied on all interface up events and the reload delay is applied on the first interface up event.

The values of zero must be explicitly configured to turn this feature off.

Task ID

Task ID	Operations
vrrp	read, write

Examples

The following example shows how to configure a minimum delay of 10 seconds with a reload delay of 100 seconds:

```
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface mgmtEth 0/RP0/CPU0/0
RP/0/0/CPU0:router(config-vrrp-if)# vrrp delay minimum 10 reload 100
```

Related Commands

Command	Description
show vrrp, on page 32	Displays a brief or detailed status of one or all Virtual Router Redundancy Protocol (VRRP) virtual routers.

vrrp ipv4

To enable the Virtual Router Redundancy Protocol (VRRP) on an interface and specify the IP address of the virtual router, use the **vrrp ipv4** command in VRRP interface configuration mode. To disable VRRP on the interface and remove the IP address of the virtual router, use the **no** form of this command.

vrrp *vrid* **ipv4** *ip-address* **[secondary]**

no vrrp *vrid* **ipv4** *ip-address* **[secondary]**

Syntax Description

vrid	Virtual router identifier, which is the number identifying the virtual router. Range is 1 to 255.
ip-address	IP address of the virtual router.
secondary	(Optional) Indicates additional IP addresses supported by this group.

Command Default

VRRP is not configured on the interface.

Command Modes

VRRP interface configuration

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 4.1.0	This command has been deprecated. This command was replaced with the address (VRRP), on page 9 command.

Usage Guidelines

Configure the **vrrp ipv4** command once without the **secondary** keyword to indicate the virtual router IP address. If you want to indicate additional IP addresses supported by the virtual router, include the **secondary** keyword.

Removing the VRRP configuration from the IP address owner and leaving the IP address of the interface active is considered a misconfiguration because this results in duplicate IP addresses on the LAN.

Task ID

Task ID	Operations
vrrp	read, write

Examples

The following example shows how to enable VRRP on 10-Gigabit Ethernet interface 0/3/0/0. The VRRP virtual router identifier is 1, and 10.0.1. 20 is the IP address of the virtual router.

Related Commands

Command	Description
show vrrp, on page 32	Displays a brief or detailed status of one or all Virtual Router Redundancy Protocol (VRRP) virtual routers.

vrrp preempt

VRRP preempt is enabled by default. This means, a VRRP router with higher priority than the master VRRP router will take over as master router. To disable this feature, use the **preempt disable** command. To delay preemption, so that the higher priority router waits for a period of time before taking over, use the **preempt delay** command. To restore the default behavior (preempt enabled with no delay), use the **no** form of the command.

preempt {**delay** *seconds*| **disable**}

no preempt {**delay** *seconds*| **disable**}

Syntax Description

delay *seconds*	(Optional) Specifies the number of seconds the router delays before issuing an advertisement claiming virtual IP address ownership to be the master router. Range is 1 to 3600 seconds (1 hour).
disable	(Optional) Disables preemption .

Command Default

VRRP preempt is enabled.

seconds : 0 (no delay)

Command Modes

VRRP virtual router

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

Using the **delay** keyword, you can configure a delay, which causes the VRRP router to wait the specified number of seconds before issuing an advertisement claiming virtual IP address ownership to be the master router.

Note The router that is the virtual IP address owner preempts, regardless of the setting of this command.

Task ID

Task ID	Operations
vrrp	read, write

Examples

The following example shows how to configure the router to preempt the current master router when its priority of 200 is higher than that of the current master router. If the router preempts the current master router, it waits 15 seconds before issuing an advertisement claiming that it is the master router.

```
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface TenGigE 0/3/0/0
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv4
RP/0/0/CPU0:router(config-vrrp-address-family)# vrrp 1 version 3
RP/0/0/CPU0:router(config-vrrp-virtual-router)# preempt delay 15
RP/0/0/CPU0:router(config-vrrp-virtual-router)# priority 200
```

Related Commands

Command	Description
vrrp priority, on page 62	Sets the priority of the virtual router.

vrrp priority

To set the priority of the virtual router, use the **priority** command in VRRP virtual router submode. To remove the priority of the virtual router, use the **no** form of this command.

priority *priority*

nopriority *priority*

Syntax Description

priority	Priority of the virtual router. Range is 1 to 254.

Command Default

priority : 100

Command Modes

VRRP virtual router

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

Use this command to control which router becomes the master router. This command is ignored while the router is the virtual IP address owner.

Task ID

Task ID	Operations
vrrp	read, write

Examples

The following example shows how to configure the router with a priority of 254:

```
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface TenGigE 0/3/0/0
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv4
RP/0/0/CPU0:router(config-vrrp-address-family)# vrrp 1 version 3
RP/0/0/CPU0:router(config-vrrp-virtual router)# priority 254
```

Related Commands

Command	Description
vrrp preempt, on page 60	Configures the router to take over as master router for a VRRP virtual router if it has a higher priority than the current master router.

vrrp text-authentication

To configure the simple text authentication used for Virtual Router Redundancy Protocol (VRRP) packets received from other routers running VRRP, use the **text-authentication** command in VRRP virtual router submode. To disable VRRP authentication, use the **no** form of this command.

text-authentication *string*

no text-authentication [*string*]

Syntax Description

string	Authentication string (up to eight alphanumeric characters) used to validate incoming VRRP packets.

Command Default

No authentication of VRRP messages occurs.

Command Modes

VRRP virtual router

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

When a VRRP packet arrives from another router in the VRRP group, its authentication string is compared to the string configured on the local system. If the strings match, the message is accepted. If they do not match, the packet is discarded.

All routers within the group must be configured with the same authentication string.

Note Plain text authentication is not meant to be used for security. It simply provides a way to prevent a misconfigured router from participating in VRRP.

Task ID

Task ID	Operations
vrrp	read, write

Examples

The following example shows how to configure an authentication string of x30dn78k:

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

```
RP/0/0/CPU0:router(config-vrrp)# interface TenGigE 0/3/0/0
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv4
RP/0/0/CPU0:router(config-vrrp-address-family)# vrrp 1 version 2
RP/0/0/CPU0:router(config-vrrp-virtual-router)# text-authentication x30dn78k
```

Note Text authentication is only valid for VRRP version 2 routers.

vrrp timer

To configure the interval between successive advertisements by the master router in a Virtual Router Redundancy Protocol (VRRP) virtual router, use the **timer** command in VRRP virtual router submode. To restore the default value, use the **no** form of this command.

timer [msec] *interval* **[force]**

no timer [msec] *interval* **[force]**

Syntax Description

msec	(Optional) Changes the unit of the advertisement time from seconds to milliseconds. Without this keyword, the advertisement interval is in seconds. Range is 20 to 3000 milliseconds.
interval	Time interval between successive advertisements by the master router. The unit of the interval is in seconds, unless the **msec** keyword is specified. Range is 1 to 255 seconds.
force	(Optional) Forces the configured value to be used. This keyword is required if milliseconds is specified.

Command Default

interval:1 second

Command Modes

VRRP virtual router

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
vrrp	read, write

Examples

The following example shows how to configure the master router to send advertisements every 4 seconds:

```
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface TenGigE 0/3/0/0
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv4
```

```
RP/0/0/CPU0:router(config-vrrp-address-family)# vrrp 1 version 3
RP/0/0/CPU0:router(config-vrrp-virtual-router)# timer 4
```

vrrp track interface

To configure the Virtual Router Redundancy Protocol (VRRP) to track an interface, use the **track interface** command in VRRP virtual router submode. To disable the tracking, use the **no** form of this command.

track interface *type interface-path-id* [*priority-decrement*]

no track interface *type interface-path-id* [*priority-decrement*]

Syntax Description

vrid	Virtual router identifier, which is the number identifying the virtual router to which tracking applies.
type	Interface type. For more information, use the question mark (?) online help function.
interface-path-id	Physical interface or virtual interface. **Note** Use the **show interfaces** command to see a list of all interfaces currently configured on the router. For more information about the syntax for the router, use the question mark (?) online help function.
priority-decrement	(Optional) Amount by which the priority for the router is decremented (or incremented) when the tracked interface goes down (or comes back up). Decrements can be set to any value between 1 and 254. Default value is 10.

Command Default

The default decrement value is 10. Range is 1 to 254.

Command Modes

VRRP virtual router

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

The **vrrp track interface** command ties the priority of the router to the availability of its interfaces. It is useful for tracking interfaces that are not configured for VRRP. Only IP interfaces are tracked. A tracked interface is up if IP on that interface is up. Otherwise, the tracked interface is down.

You can configure VRRP to track an interface that can alter the priority level of a virtual router for a VRRP virtual router. When the IP protocol state of an interface goes down or the interface has been removed from the router, the priority of the backup virtual router is decremented by the value specified in the *priority-decrement* argument. When the IP protocol state on the interface returns to the up state, the priority is restored.

Task ID

Task ID	Operations
vrrp	read, write

Examples

In the following example, 10-Gigabit Ethernet interface 0/3/0/0 tracks interface 0/3/0/3 and 0/3/0/2. If one or both of these two interfaces go down, the priority of the router decreases by 10 (default priority decrement) for each interface. The default priority decrement is changed using the *priority-decrement* argument. In this example, because the default priority of the virtual router is 100, the priority becomes 90 when one of the tracked interfaces goes down and the priority becomes 80 when both go down. See the **priority** command for details on setting the priority of the virtual router.

```
RP/0/0/CPU0:router(config)# router vrrp
RP/0/0/CPU0:router(config-vrrp)# interface TenGigE 0/3/0/0
RP/0/0/CPU0:router(config-vrrp-if)# address-family ipv4
RP/0/0/CPU0:router(config-vrrp-address-family)# vrrp 1 version 3
RP/0/0/CPU0:router(config-vrrp-virtual-router)# track interface TenGigE 0/3/0/3
RP/0/0/CPU0:router(config-vrrp-virtual-router)# track interface TenGigE 0/3/0/2
```

Related Commands

Command	Description
vrrp priority, on page 62	Sets the priority of the virtual router.