

term ip netmask-format

To specify the format in which netmasks are displayed in **show** command output, use the **term ip netmask-format** command in EXEC configuration mode. To restore the default display format, use the **no** form of this command.

```
term ip netmask-format { bitcount | decimal | hexadecimal }
```

```
no term ip netmask-format [ bitcount | decimal | hexadecimal ]
```

Syntax Description	bitcount	Number of bits in the netmask.
	decimal	Netmask dotted decimal notation.
	hexadecimal	Netmask hexadecimal format.

Defaults Netmasks are displayed in dotted decimal format.

Command Modes EXEC

Command History	Release	Modification
	10.3	This command was introduced.

Usage Guidelines IP uses a 32-bit mask that indicates which address bits belong to the network and subnetwork fields, and which bits belong to the host field. This range of IP addresses is called a *netmask*. By default, **show** commands display an IP address and then its netmask in dotted decimal notation. For example, a subnet would be displayed as 131.108.11.55 255.255.255.0.

However, you can specify that the display of the network mask appear in hexadecimal format or bit count format instead. The hexadecimal format is commonly used on UNIX systems. The previous example would be displayed as 131.108.11.55 0xFFFFFFFF00.

The bitcount format for displaying network masks is to append a slash (/) and the total number of bits in the netmask to the address itself. The previous example would be displayed as 131.108.11.55/24.

Examples The following example specifies that network masks for the session be displayed in bitcount notation in the output of **show** commands:

```
term ip netmask-format bitcount
```

threshold metric

To set a metric threshold other than the default value, use the **threshold metric** command in tracking configuration mode. To disable the metric threshold, use the **no** form of this command.

threshold metric up *number* **down** *number*

no threshold metric up *number* **down** *number*

Syntax Description	up	Specifies the up threshold. The state is up if the scaled metric for that route is less than or equal to the up threshold. The default up threshold is 254.
	<i>number</i>	Threshold value from 0 to 255.
	down	Specifies the down threshold. The state is down if the scaled metric for that route is greater than or equal to the down threshold. The default down threshold is 255.

Defaults	Up threshold: 254 Down threshold: 255
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Command Modes	Tracking configuration
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Command History	Release	Modification
	12.2(15)T	This command was introduced.

Usage Guidelines This command is available only to IP route metric threshold objects tracked by the **track ip route metric threshold** global configuration command.

The default up and down threshold values are 254 and 255, respectively. With these values, IP route threshold tracking gives the same result as IP route reachability tracking.

Examples In the following example, the tracking process is tracking the IP route metric threshold. The metric default value is changed to 16 for the up threshold and to 20 for the down threshold.

```
track 1 ip route 10.22.0.0/16 metric threshold
  threshold metric up 16 down 20
  delay down 20
```

Related Commands	Command	Description
	track ip route	Tracks the state of IP routing and enters tracking configuration mode.

track interface

To configure an interface to be tracked and to enter tracking configuration mode, use the **track interface** command in global configuration mode. To remove the tracking, use the **no** form of this command.

track *object-number* **interface** *type number* {**line-protocol** | **ip routing**}

no track *object-number* **interface** *type number* {**line-protocol** | **ip routing**}

Syntax Description		
	<i>object-number</i>	Object number in the range from 1 to 500 representing the interface to be tracked.
	<i>type number</i>	Interface type and number to be tracked. No space is required between the values.
	line-protocol	Tracks the state of the interface line protocol.
	ip routing	Tracks whether IP routing is enabled, an IP address is configured on the interface, and the interface state is up, before reporting to the tracking client that the interface is up.

Defaults No default behavior or values

Command Modes Global configuration

Command History	Release	Modification
	12.2(14)S	This command was introduced.
12.2(15)T	This command was introduced.	

Usage Guidelines This command reports a state value to clients. A tracked IP routing object is considered up when the platform is routing IP, the interface line protocol is up, and IP routing is enabled and active on the interface.

Tracking the IP routing state of an interface (using the **track interface ip routing** command) can be more useful in some situations than just tracking the line-protocol state (using the **track interface line-protocol** command).

For GLBP, use the **track interface** command in conjunction with the **glbp weighting** and **glbp weighting track** commands to configure parameters for an interface to be tracked. If a tracked interface on a GLBP router goes down, the weighting for that router is reduced. If the weighting falls below a specified minimum, the router will lose its ability to act as an active GLBP virtual forwarder.

Examples In the following example, the tracking process is configured to track the IP routing capability of serial interface 1/0:

```
track 1 interface serial1/0 ip routing
```

In the following example, Fast Ethernet interface 0/0 tracks whether serial interfaces 2/0 and 3/0 are up. If either serial interface goes down, the GLBP weighting is reduced by the default value of 10. If both serial interfaces go down, the GLBP weighting will fall below the lower threshold and the router will no longer be an active forwarder. To resume its role as an active forwarder, the router must have both tracked interfaces back up, and the weighting must rise above the upper threshold.

```
track 1 interface serial 2/0 line-protocol
track 2 interface serial 3/0 line-protocol
interface fastethernet 0/0
 ip address 10.21.8.32 255.255.255.0
 glbp 10 weighting 110 lower 95 upper 105
 glbp 10 weighting track 1
 glbp 10 weighting track 2
```

In the following example, Fast Ethernet interface 0/0 tracks whether serial interface 2/0 is enabled for IP routing, whether it is configured with an IP address, and whether the state of the interface is up. If serial interface 2/0 goes down, the GLBP weighting is reduced by a value of 20.

```
track 2 interface serial 2/0 ip routing
interface fastethernet 0/0
 ip address 10.21.8.32 255.255.255.0
 glbp 10 weighting 110 lower 95 upper 105
 glbp 10 weighting track 2 decrement 20
```

Related Commands

Command	Description
glbp weighting	Specifies the initial weighting value of a GLBP gateway.
glbp weighting track	Specifies an object to be tracked that affects the weighting of a GLBP gateway.
show track	Displays HSRP tracking information.

track ip route

To track the state of an IP route and to enter tracking configuration mode, use the **track ip route** command in global configuration mode. To remove the tracking, use the **no** form of this command.

```
track object-number ip route ip-address/prefix-length { reachability | metric threshold }
```

```
no track object-number ip route ip-address/prefix-length { reachability | metric threshold }
```

Syntax Description		
<i>object-number</i>		Object number in the range from 1 to 500 representing the object to be tracked.
<i>ip-address</i>		IP address.
<i>/prefix-length</i>		The number of bits that comprise the address prefix. A slash must precede the value.
reachability		Tracks whether the route is reachable.
metric threshold		Tracks the metric threshold. The default up threshold is 254 and the default down threshold is 255.

Defaults

Up threshold: 254
Down threshold: 255

Command Modes

Global configuration

Command History

Release	Modification
12.2(15)T	This command was introduced.

Usage Guidelines

A tracked IP route object is considered up and reachable when a routing table entry exists for the route and the route is not inaccessible.

To provide a common interface to tracking clients, route metric values have been normalized to the range of 0 to 255, where 0 is connected and 255 is inaccessible. The resulting value is compared against threshold values to determine the tracking state as follows:

- State is up if the scaled metric for that route is less than or equal to the up threshold.
- State is down if the scaled metric for that route is greater than or equal to the down threshold.

The tracking process uses a per-protocol configurable resolution value to convert the real metric to the scaled metric. The metric value communicated to clients is always such that a lower metric value is better than a higher value.

Use the **threshold metric** tracking configuration command to specify a metric threshold other than the default metric threshold.

Examples

In the following example, the tracking process is configured to track the reachability of 10.22.0.0/16:

■ track ip route

```
track 1 ip route 10.22.0.0/16 reachability
```

In the following example, the tracking process is configured to track the metric threshold using the default metric threshold values:

```
track 1 ip route 10.22.0.0/16 metric threshold
```

Related Commands

Command	Description
show track	Displays HSRP tracking information.
threshold metric	Sets a metric threshold other than the default value.

track timer

To specify the interval in which the tracking process polls the tracked object, use the **track timer** command in tracking configuration mode. To disable this functionality, use the **no** form of this command.

track timer {**interface** | **ip route**} *seconds*

no track timer {**interface** | **ip route**} *seconds*

Syntax Description		
	interface	Tracks the specified interface.
	ip route	Tracks the specified IP route.
	<i>seconds</i>	Interval (in seconds) that the tracking process polls the object. The range is from 1 to 3000.

Defaults
 Interface object polling interval: 1 second
 IP route object polling interval: 15 seconds

Command Modes
 Tracking configuration

Command History	Release	Modification
	12.2(15)T	This command was introduced.

Usage Guidelines
 If you do not use the **track timer** command to specify a polling interval, a tracked object will be tracked at the default polling interval.

Examples
 In the following example, the tracking process is configured to poll the tracked interface every 3 seconds:

```
track timer interface 3
```

transmit-interface

To assign a transmit interface to a receive-only interface, use the **transmit-interface** command in interface configuration mode. To return to normal duplex Ethernet interfaces, use the **no** form of this command.

transmit-interface *type number*

no transmit-interface

Syntax Description

<i>type</i>	Transmit interface type to be linked with the (current) receive-only interface.
<i>number</i>	Transmit interface number to be linked with the (current) receive-only interface.

Defaults

Disabled

Command Modes

Interface configuration

Command History

Release	Modification
10.0	This command was introduced.

Usage Guidelines

Receive-only interfaces are used commonly with microwave Ethernet links.

Examples

The following example specifies Ethernet interface 0 as a simplex Ethernet interface:

```
interface ethernet 1
 ip address 128.9.1.2
 transmit-interface ethernet 0
```

update arp

To secure dynamic Address Resolution Protocol (ARP) entries in the ARP table to their corresponding DHCP bindings, use the **update arp** command in DHCP pool configuration mode. To disable this command and change secure ARP entries to dynamic ARP entries, use the **no** form of this command.

update arp

no update arp

Syntax Description

This command has no keywords or arguments.

Defaults

No default behavior or values.

Command Modes

DHCP pool configuration

Command History

Release	Modification
12.2(15)T	This command was introduced.

Usage Guidelines

The **update arp** DHCP pool configuration command is used to secure ARP table entries and their corresponding DHCP leases. However, existing active leases are not secured. These leases will remain insecure until they are renewed. When the lease is renewed, it is treated as a new lease and will be secured automatically. If this feature is disabled on the DHCP server, all existing secured ARP table entries will automatically change to dynamic ARP entries.

This command can be configured only under the following conditions:

- DHCP network pools in which bindings are created automatically and destroyed upon lease termination or when the client sends a DHCPRELEASE message.
- Directly connected clients on LAN interfaces and wireless LAN interfaces.

The configuration of this command is not visible to the client. When this command is configured, secured ARP table entries that are created by a DHCP server cannot be removed from the ARP table by the **clear arp-cache** command. This is designed behavior. If a secure ARP entry created by the DHCP server must be removed, the **clear ip dhcp binding** command can be used. This command will clear the DHCP binding and secured ARP table entry.



Note

This command does not secure ARP table entries for BOOTP clients.

Examples

The following example configures the Cisco IOS DHCP server to secure ARP table entries to their corresponding DHCP leases within the DHCP pool named WIRELESS-POOL:

```
Router(config)# ip dhcp pool WIRELESS-POOL
Router(dhcp-config)# update arp
```

```
Router (dhcp-config) # exit
```

Related Commands

Command	Description
accounting (DHCP)	Enables DHCP accounting for the specified server group.
aaa accounting	Enables AAA accounting of requested services for billing or security purposes when you use RADIUS or TACACS+.
aaa group server	Groups different server hosts into distinct lists and distinct methods.
aaa new-model	Enables the AAA access control model.
aaa session-id	Specifies whether the same session ID will be used for each AAA accounting service type within a call or whether a different session ID will be assigned to each accounting service type.
clear arp-cache	Deletes all dynamic entries from the ARP cache.
clear ip dhcp binding	Deletes an automatic address binding from the Cisco IOS DHCP Server database.
ip dhcp database	Configures a Cisco IOS DHCP Server to save automatic bindings on a remote host called a database agent.
ip dhcp pool	Configures a DHCP address pool on a Cisco IOS DHCP Server and enters DHCP pool configuration mode.
ip radius source-interface	Forces RADIUS to use the IP address of a specified interface for all outgoing RADIUS packets.
radius-server host	Specifies a RADIUS server host.
radius-server retransmit	Specifies the number of times that Cisco IOS will look for RADIUS server hosts.
show ip dhcp binding	Displays address bindings on the Cisco IOS DHCP server.
show ip dhcp server statistics	Displays Cisco IOS DHCP server statistics.

utilization mark high

To configure the high utilization mark of the current address pool size, use the **utilization mark high** command in DHCP pool configuration mode. To remove the high utilization mark, use the **no** form of this command.

utilization mark high *percentage-number*

no utilization mark high *percentage-number*

Syntax Description

<i>percentage-number</i>	Percentage of the current pool size.
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Defaults

The default high utilization mark is 100 percent of the current pool size.

Command Modes

DHCP pool configuration

Command History

Release	Modification
12.2(8)T	This command was introduced.

Usage Guidelines

The current pool size is the sum of all addresses in all the subnets in the pool. If the utilization level exceeds the configured high utilization mark, the pool will schedule a subnet request.

This command cannot be used unless the **autogrow size** option of the **origin** command is configured.

Examples

The following example sets the high utilization mark to 80 percent of the current pool size:

```
utilization mark high 80
```

Related Commands

Command	Description
origin	Configures an address pool as an on-demand address pool.
utilization mark low	Configures the low utilization mark of the current address pool size.

utilization mark low

To configure the low utilization mark of the current address pool size, use the **utilization mark low** command in DHCP pool configuration mode. To remove the low utilization mark, use the **no** form of this command.

utilization mark low *percentage-number*

no utilization mark low *percentage-number*

Syntax Description	<i>percentage-number</i>	Percentage of the current pool size.

Defaults	The default low utilization mark is 0 percent of the current pool size.

Command Modes	DHCP pool configuration

Command History	Release	Modification
	12.2(8)T	This command was introduced.

Usage Guidelines	<p>The current pool size is the sum of all addresses in all the subnets in the pool. If the utilization level drops below the configured low utilization mark, a subnet release is scheduled from the address pool.</p> <p>This command cannot be used unless the autogrow <i>size</i> option of the origin command is configured.</p>

Examples	<p>The following example sets the low utilization mark to 20 percent of the current pool size:</p> <pre>utilization mark low 20</pre>

Related Commands	Command	Description
	origin	Configures an address pool as an on-demand address pool.
	utilization mark high	Configures the high utilization mark of the current address pool size.

virtual

To configure virtual server attributes, use the **virtual** virtual server configuration command. To remove the attributes, use the **no** form of this command.

```
virtual ip-address { tcp | udp } port-number [service service-name]
```

```
no virtual
```

Syntax Description	
<i>ip-address</i>	IP address for this virtual server instance, used by clients to connect to the server farm.
tcp	Performs load balancing for only TCP connections.
udp	Performs load balancing for only UDP connections.
<i>port-number</i>	<p>(Optional) IOS SLB virtual port (the TCP or UDP port number or port name). If specified, only the connections for the specified port on the server are load balanced. The ports and the valid name or number for the <i>port-number</i> argument are as follows:</p> <ul style="list-style-type: none"> • Domain Name System: dns 53 • File Transfer Protocol: ftp 21 • HTTP over Secure Socket Layer: https 443 • Mapping of Airline Traffic over IP, Type A: matip-a 350 • Network News Transport Protocol: nntp 119 • Post Office Protocol v2: pop2 109 • Post Office Protocol v3: pop3 110 • Simple Mail Transport Protocol: smtp 25 • Telnet: telnet 23 • World Wide Web (HTTP): www 80 <p>Specify a port number of 0 to configure an all-port virtual server (that is, a virtual server that accepts flows destined for all ports).</p>
service	(Optional) Couple connections associated with a given service, such as HTTP or Telnet, so all related connections from the same client use the same real server.
<i>service-name</i>	(Optional) Type of connection coupling. Currently, the only choice is ftp . Couple FTP data connections with the control session that created them.

Defaults No default behavior or values.

Command Modes SLB virtual server configuration

Command History

Release	Modification
12.0(7)XE	This command was introduced.
12.1(5)T	This command was integrated into Cisco IOS Release 12.1(5)T.

Usage Guidelines

The **no virtual** command is allowed only if the virtual server was removed from service by the **no inservice** command.

For some applications, it is not feasible to configure all the virtual server TCP or UDP port numbers for the IOS SLB feature. To support such applications, you can configure IOS SLB virtual servers to accept flows destined for all ports. To configure an all-port virtual server, specify a port number of **0**.

**Note**

In general, you should use port-bound virtual servers instead of all-port virtual servers. When you use all-port virtual servers, flows can be passed to servers for which no application port exists. When servers reject these flows, IOS SLB might fail the server and remove it from load balancing.

Examples

The following example specifies that the virtual server with the IP address 10.0.0.1 performs load balancing for TCP connections for the port named www. The virtual server processes HTTP requests.

```
ip slb vserver PUBLIC_HTTP
virtual 10.0.0.1 tcp www
```

Related Commands

Command	Description
ip slb vserver	Identifies a virtual server.
show ip slb vservers	Displays information about the virtual servers.

vrf

To associate the on-demand address pool with a VPN routing and forwarding instance (VRF) name, use the **vrf** command in DHCP pool configuration mode. To remove the VRF name, use the **no** form of this command.

vrf *name*

no vrf *name*

Syntax Description	<i>name</i>	Name of the VRF to which the address pool is associated.
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Defaults	No default behavior or values
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Command Modes	DHCP pool configuration
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Command History	Release	Modification
	12.2(8)T	This command was introduced.

Usage Guidelines	Associating a pool with a VRF allows overlapping addresses with other pools that are not on the same VRF. Only one pool can be associated with each VRF. If the pool is configured with the origin dhcp command or origin aaa command, the VRF information is sent in the subnet request. If the VRF is configured with an RFC 2685 VPN ID, the VPN ID will be sent instead of the VRF name.
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Examples	The following example associates the on-demand address pool with a VRF named red:
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```
ip dhcp pool red_pool
  origin dhcp subnet size initial 24 autogrow 24
  utilization mark high 85
  utilization mark low 15
  vrf red
```

Related Commands	Command	Description
	origin	Configures an address pool as an on-demand address pool.

vrrp authentication

To authenticate Virtual Router Redundancy Protocol (VRRP) packets received from other routers in the group, use the **vrrp authentication text** command in interface configuration mode. To disable VRRP authentication, use the **no** form of this command.

vrrp group authentication text *text-string*

no vrrp group authentication text *text-string*

Syntax Description

<i>group</i>	Virtual router group number for which authentication is being configured. The group number is configured with the vrrp ip command. The group number range is from 1 to 255.
text <i>text-string</i>	Authentication string (up to eight alphanumeric characters) used to validate incoming VRRP packets.

Defaults

No authentication of VRRP messages occurs.

Command Modes

Interface configuration

Command History

Release	Modification
12.0(18)ST	This command was introduced.
12.0(22)S	This command was integrated into Cisco IOS Release 12.0(22)S.
12.2(13)T	This command was integrated into Cisco IOS Release 12.2(13)T.

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 that 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.

Examples

The following example configures an authentication string of x30dn78k:

```
vrrp 1 authentication x30dn78k
```

Related Commands

Command	Description
vrrp ip	Enables VRRP and identifies the IP address of the virtual router.

vrrp description

To assign a description to the Virtual Router Redundancy Protocol (VRRP) group, use the **vrrp description** command in interface configuration mode. To remove the description, use the **no** form of this command.

```
vrrp group description text
```

```
no vrrp group description
```

Syntax Description	group	Virtual router group number. The group number range is from 1 to 255.
	text	Text (up to 80 characters) that describes the purpose or use of the group.

Defaults There is no description of the VRRP group.

Command Modes Interface configuration

Command History	Release	Modification
	12.0(18)ST	This command was introduced.
	12.0(22)S	This command was integrated into Cisco IOS Release 12.0(22)S.
	12.2(13)T	This command was integrated into Cisco IOS Release 12.2(13)T.

Examples The following example enables VRRP on Ethernet interface 0. VRRP group 1 is described as Building A — Marketing and Administration.

```
interface ethernet 0
 ip address 10.0.1.1 255.255.255.0
!
 vrrp 1 ip 10.0.1.20
 vrrp 1 description Building A - Marketing and Administration
```

Related Commands	Command	Description
	vrrp ip	Enables VRRP and identifies the IP address of the virtual router.

vrrp ip

To enable the Virtual Router Redundancy Protocol (VRRP) on an interface and identify the IP address of the virtual router, use the **vrrp ip** command in 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 group ip ip-address [secondary]
```

```
no vrrp group ip ip-address [secondary]
```

Syntax Description

<i>group</i>	Virtual router group number. The group number range is from 1 to 255.
<i>ip-address</i>	IP address of the virtual router.
secondary	(Optional) Indicates additional IP addresses supported by this group.

Defaults

VRRP is not configured on the interface.

Command Modes

Interface configuration

Command History

Release	Modification
12.0(18)ST	This command was introduced.
12.0(22)S	This command was integrated into Cisco IOS Release 12.0(22)S.
12.2(13)T	This command was integrated into Cisco IOS Release 12.2(13)T.

Usage Guidelines

Configure this command once without the **secondary** keyword to indicate the virtual router IP address. If you want to indicate additional IP addresses supported by this group, then do so and include the **secondary** keyword.

Note that removing the VRRP configuration from the IP address owner and leaving the IP address of the interface active is considered a misconfiguration because duplicate IP addresses on the LAN will result.

Examples

The following example enables VRRP on Ethernet interface 0. The VRRP group is 1. IP address 10.0.1.20 is the address of the virtual router.

```
interface ethernet 0
 ip address 10.0.1.1 255.255.255.0
 ip address 10.0.2.1 255.255.255.0 secondary
!
 vrrp 1 ip 10.0.1.20
 vrrp 1 ip 10.0.2.20 secondary
```

Related Commands

Command	Description
show vrrp	Displays a summary or detailed status of one or all configured VRRP groups.

vrrp preempt

To configure the router to take over as master virtual router for a Virtual Router Redundancy Protocol (VRRP) group if it has higher priority than the current master virtual router, use the **vrrp preempt** command in interface configuration mode. To disable this function, use the **no** form of this command.

```
vrrp group preempt [delay minimum seconds]
```

```
no vrrp group preempt
```

Syntax Description

<i>group</i>	Virtual router group number of the group for which preemption is being configured. The group number is configured with the vrrp ip command. The group number range is from 1 to 255.
delay minimum <i>seconds</i>	(Optional) Number of seconds that the router will delay before issuing an advertisement claiming master ownership. The default delay is 0 seconds.

Defaults

Enabled

Command Modes

Interface configuration

Command History

Release	Modification
12.0(18)ST	This command was introduced.
12.0(22)S	This command was integrated into Cisco IOS Release 12.0(22)S.
12.2(13)T	This command was integrated into Cisco IOS Release 12.2(13)T.
12.2(14)S	This command was integrated into Cisco IOS Release 12.2(14)S.

Usage Guidelines

By default, the router being configured with this command will take over as master virtual router for the group if it has a higher priority than the current master virtual router. You can configure a delay, which will cause the VRRP router to wait the specified number of seconds before issuing an advertisement claiming master ownership.



Note

The router that is the IP address owner will preempt, regardless of the setting of this command.

Examples

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

```
vrrp 1 preempt delay minimum 15
vrrp 1 priority 200
```

Related Commands	Command	Description
	vrrp ip	Enables VRRP and identifies the IP address of the virtual router.
	vrrp priority	Sets the priority level of the router within a VRRP group.

vrrp priority

To set the priority level of the router within a Virtual Router Redundancy Protocol (VRRP) group, use the **vrrp priority** command in interface configuration mode. To remove the priority level of the router, use the **no** form of this command.

vrrp *group* **priority** *level*

no vrrp *group* **priority** *level*

Syntax Description

<i>group</i>	Virtual router group number. The group number range is from 1 to 255.
<i>level</i>	Priority of the router within the VRRP group. The range is from 1 to 254. The default is 100.

Defaults

level: 100

Command Modes

Interface configuration

Command History

Release	Modification
12.0(18)ST	This command was introduced.
12.0(22)S	This command was integrated into Cisco IOS Release 12.0(22)S.
12.2(13)T	This command was integrated into Cisco IOS Release 12.2(13)T.

Usage Guidelines

Use this command to control which router becomes the master virtual router.

Examples

The following example configures the router with a priority of 254:

```
vrrp 1 priority 254
```

Related Commands

Command	Description
vrrp ip	Enables VRRP and identifies the IP address of the virtual router.
vrrp preempt	Configures the router to take over as master virtual router for a VRRP group if it has higher priority than the current master virtual router.

vrrp timers advertise

To configure the interval between successive advertisements by the master virtual router in a Virtual Router Redundancy Protocol (VRRP) group, use the **vrrp timers advertise** command in interface configuration mode. To restore the default value, use the **no** form of this command.

```
vrrp group timers advertise [msec] interval
```

```
no vrrp group timers advertise [msec] interval
```

Syntax Description		
<i>group</i>	Virtual router group number. The group number range is from 1 to 255.	
msec	(Optional) Changes the unit of the advertisement time from seconds to milliseconds. Without this keyword, the advertisement interval is in seconds.	
<i>interval</i>	Time interval between successive advertisements by the master virtual router. The unit of the interval is in seconds, unless the msec keyword is specified. The default is 1 second.	

Defaults *interval*: 1 second

Command Modes Interface configuration

Command History	Release	Modification
	12.0(18)ST	This command was introduced.
	12.0(22)S	This command was integrated into Cisco IOS Release 12.0(22)S.
	12.2(13)T	This command was integrated into Cisco IOS Release 12.2(13)T.

Usage Guidelines The advertisements being sent by the master virtual router communicate the state and priority of the current master virtual router.

Examples The following example configures the master virtual router to send advertisements every 4 seconds:

```
vrrp 1 timers advertise 4
```

Related Commands	Command	Description
	vrrp ip	Enables VRRP and identifies the IP address of the virtual router.
	vrrp timers learn	Configures the router, when it is acting as backup virtual router for a VRRP group, to learn the advertisement interval used by the master virtual router.

vrrp timers learn

To configure the router, when it is acting as backup virtual router for a Virtual Router Redundancy Protocol (VRRP) group, to learn the advertisement interval used by the master virtual router, use the **vrrp timers learn** command in interface configuration mode. To prevent the local router from learning the advertisement interval of the master virtual router, use the **no** form of this command.

vrrp group timers learn

no vrrp group timers learn

Syntax Description	<i>group</i>	Virtual router group number to which the command applies. The group number range is from 1 to 255.
Defaults	Disabled; the local router calculates the downtime of the master virtual router based on the advertisement interval of the local router as configured by the vrrp timers advertise command.	
Command Modes	Interface configuration	
Command History	Release	Modification
	12.0(18)ST	This command was introduced.
	12.0(22)S	This command was integrated into Cisco IOS Release 12.0(22)S.
	12.2(13)T	This command was integrated into Cisco IOS Release 12.2(13)T.
Usage Guidelines	If this command is configured, when the local router is acting as a backup virtual router for the group, it will learn the advertisement interval of the current master virtual router from its master advertisements. The local router will use that value to calculate how long it should wait before deciding that the master virtual router has gone down. This command synchronizes timers with the current master virtual router.	
Examples	The following example configures the router, when it is acting as backup virtual router, to learn the advertisement interval from the advertisements of the current master virtual router: vrrp 1 timers learn	
Related Commands	Command	Description
	vrrp ip	Enables VRRP and identifies the IP address of the virtual router.
	vrrp timers advertise	Configures the interval between successive advertisements by the master virtual router in a VRRP group.

weight

To specify the capacity of a real server relative to other real servers in the server farm, use the **weight** real server configuration command. To restore the default weight value, use the **no** form of this command.

weight *weighting-value*

no weight

Syntax Description	<i>weighting-value</i>	Weighting value to use for real server predictor algorithm. Valid values range from 1 to 155. The default weighting value is 8.
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Defaults The default weighting value is 8.

Command Modes SLB real server configuration

Command History	Release	Modification
	12.0(7)XE	This command was introduced.
12.1(5)T	This command was integrated into Cisco IOS Release 12.1(5)T.	

Examples The following example specifies the relative weighting values of three real servers as 16, 8 (by default), and 24, respectively:

```
ip slb serverfarm PUBLIC
real 10.10.1.1First real server
weight 16Assigned weight of 16
inserviceEnabled
exit
real 10.10.1.2Second real server
inserviceEnabled; default weight
exit
real 10.10.1.3Third real server
weight 24Assigned weight of 24;
```

Related Commands	Command	Description
		real
	show ip slb reals	Displays information about the real servers.
	show ip slb serverfarms	Displays information about the server farm configuration.