



Static Routing Commands

This module describes the commands used to establish static routes.

For detailed information about static routing concepts, configuration tasks, and examples, see the *Implementing Static Routes on Software* module in the *Routing Configuration Guide for Cisco NCS 6000 Series Routers*.

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address-family (static)

To enter various address family configuration modes while configuring static routes, use the **address-family** command in the appropriate configuration mode. To disable support for an address family, use the **no** form of this command.

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

Syntax Description	ipv4	Specifies IP Version 4 address prefixes.
	ipv6	Specifies IP Version 6 address prefixes. This option is available only in static router configuration mode.
	unicast	Specifies unicast address prefixes.
Command Modes	Router static configuration	
Command History	Release	Modification
	Release 5.0.0	This command was introduced.
Usage Guidelines	To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.	
	Use the address-family command to enter various address family configuration modes while configuring static routing sessions. From address family configuration mode, you can configure static routes using the route command.	
Task ID	Task ID	Operations
	static	read, write
Examples	The following example shows how to enter IPv6 unicast address family mode:	
	<pre>RP/0/RP0/CPU0:router(config)# router static RP/0/RP0/CPU0:router(config-static)# address-family ipv6 unicast RP/0/RP0/CPU0:router(config-static-afi)#</pre>	
Related Commands	Command	Description
	route (static) , on page 5	Establishes a static route.

maximum path (static)

To change the maximum number of allowable static routes, use the **maximum path** command in static router configuration mode. To remove the **maximum path** command from the configuration file and restore the system to its default condition, use the **no** form of this command.

maximum path {ipv4 | ipv6} *value*
no maximum path {ipv4 | ipv6} *value*

Syntax Description	ipv4 / ipv6	Specifies IP Version 4 (IPv4) or IP Version 6 (IPv6) address prefixes.
	<i>value</i>	Maximum number of static routes for the given AFI. The range is 1 to 140000.
Command Default	<i>value</i> : 4000	
Command Modes	Static router configuration	
Command History	Release	Modification
	Release 5.0.0	This command was introduced.
Usage Guidelines	<p>To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.</p> <p>If you use the maximum path command to reduce the configured maximum allowed number of static routes for a given table below the number of static routes currently configured, the change is rejected. In addition, if you commit a batch of routes that would, when grouped, push the number of static routes configured above the maximum allowed, the first <i>n</i> routes in the batch and the number previously configured are accepted, and the remainder rejected. The <i>n</i> argument is the difference between the maximum number allowed and the number previously configured.</p>	
Task ID	Task ID	Operations
	static	read, write

Examples

The following example shows how to set the maximum number of static IPv4 routes to 100000:

```
RP/0/RP0/CPU0:router(config-static)# maximum path ipv4 100000
```

The following example shows how to remove the preceding configuration and set the maximum number of static IPv4 routes back to the default:

```
RP/0/RP0/CPU0:router(config-static)# no maximum path ipv4 100000
```

Related Commands

Command	Description
route (static), on page 5	Enters static router configuration mode.
show route static	Displays the static routes in a routing table.

route (static)

To establish static routes, use the **route** command in address family configuration mode. To remove the **route** command from the configuration, use the **no** form of this command.

```
prefix/mask {ip-address | type interface-path-id [{ip-address | type interface-path-id}] [track
track-object-name] [ ] [distance] [description text] [tag tag] [permanent]}
no prefix/mask {ip-address | type interface-path-id [{ip-address | type interface-path-id}] [track
track-object-name] [ ] [distance] [description text] [tag tag] [permanent]}
```

Syntax Description

<i>prefix / mask</i>	<p>IP route prefix and prefix mask for the destination.</p> <p>The network mask can be specified in either of two ways:</p> <ul style="list-style-type: none"> • The network mask can be a four-part, dotted-decimal address. For example, 255.0.0.0 indicates that each bit equal to 1 means the corresponding address bit is a network address. • The network mask can be indicated as a slash (/) and number. For example, /8 indicates that the first 8 bits of the mask are 1s, and the corresponding bits of the address are the network address.
<i>ip-address</i>	<p>IP address of the next hop that can be used to reach that network.</p> <ul style="list-style-type: none"> • For IPv4 address—the IP address is required, not optional, if the interface type and interface-path-id arguments are not specified. You can specify an IP address and an interface type and interface path. • For IPv6 link-local address—the interface type and interface-path-id arguments are required. The route is not valid, if the interface type and interface-path-id arguments are not specified. <p>Note A forwarding router's IP address or an interface or virtual interface path ID can be configured, in any order.</p>
<i>type</i>	Interface type. For more information, use the question mark (?) online help function.
<i>interface-path-id</i>	<p>Physical interface or virtual interface.</p> <p>Note Use the show interfaces command to see a list of all interfaces currently configured on the router.</p> <p>For more information about the syntax for the router, use the question mark (?) online help function.</p> <p>Note A forwarding router's IP address or an interface or virtual interface path ID can be configured, in any order.</p>
<i>distance</i>	(Optional) Administrative distance. Range is 1 to 254.
description text	(Optional) Specifies a description of the static route.

tag <i>tag</i>	(Optional) Specifies a tag value that can be used as a match for controlling redistribution using route policies. Range is 1 to 4294967295.
permanent	(Optional) Specifies that the route is not removed from the routing table, even if the next-hop interface shuts down or next-hop IP address is not reachable.
track <i>track-object-name</i>	Enables object tracking for static route.

Command Default

No static route is established.

Command Modes

Address family configuration

Command History

Release	Modification
Release 5.0.0	This command was introduced.

Usage Guidelines

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

A static route is appropriate when the software cannot dynamically build a route to the destination.

Static routes have a default administrative distance of 1, in which a low number indicates a preferred route. By default, static routes are preferred to routes learned by routing protocols. You can configure an administrative distance with a static route if you want the static route to be overridden by dynamic routes. For example, you could have routes installed by the Open Shortest Path First (OSPF) protocol with an administrative distance of 120. To have a static route that would be overridden by an OSPF dynamic route, specify an administrative distance greater than 120.

The routing table considers the static routes that point to an interface as “directly connected.” Directly connected networks are advertised by IGP routing protocols if a corresponding **interface** command is contained under the router configuration stanza of that protocol.

Task ID

Task ID	Operations
static	read, write

Examples

The following example shows how to configure IPv6 unicast address family static routes:

```
RP/0/RP0/CPU0:router(config)# router static
RP/0/RP0/CPU0:router(config-static)# address-family ipv6 unicast
RP/0/RP0/CPU0:router(config-static-afi)# 2b11::327a:7b00/120 GigabitEthernet0/2/0/7
RP/0/RP0/CPU0:router(config-static-afi)# 2b11::327a:7b00/120 GigabitEthernet0/6/0/0
RP/0/RP0/CPU0:router(config-static-afi)# 2b11::327a:7b00/120 2b11::2f01:4c
RP/0/RP0/CPU0:router(config-static-afi)# 2b11::327a:7b00/120 2b11::2f01:4d
RP/0/RP0/CPU0:router(config-static-afi)# 2b11::327a:7b00/120 2b11::2f01:4e
RP/0/RP0/CPU0:router(config-static-afi)# 2b11::327a:7b00/120 2b11::2f01:4f
RP/0/RP0/CPU0:router(config-static-afi)# 2b11::327a:7b00/120 2b11::2f01:50
```

Related Commands

Command	Description
address-family (static), on page 2	Enters address family configuration mode.
network (BGP)	Specifies a list of networks for the BGP routing process.
show route	Displays the current contents of the routing table.
show route static	Displays the static routes in a routing table.
show route summary	Displays the current contents of the routing table in summary format.
router static, on page 8	Enters router static configuration mode.

router static

To enter static router configuration mode, use the **router static** command in XR Configmode. To remove all static route configurations and terminate the static routing process, use the **no** form of this command.

router static
no router static

Syntax Description This command has no arguments or keywords.

Command Default No static routing process is enabled.

Command Modes XR Config

Command History	Release	Modification
	Release 5.0.0	This command was introduced.

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

Task ID	Task ID	Operations
	static	read, write
	bgp, ospf, hsrp, isis, vrrp, or network	read, write

Examples The following example shows how to enter static router configuration mode:

```
RP/0/RP0/CPU0:router(config)# router static
RP/0/RP0/CPU0:router(config-static)#
```

Related Commands	Command	Description
	address-family (static), on page 2	Enters address family configuration mode.
	show route	Displays the current contents of the routing table.
	show route static	Displays the static routes in a routing table.
	show route summary	Displays the current contents of the routing table in summary format.
	route (static), on page 5	Establishes a static route.