Generic Routing Encapsulation Commands

This module describes the commands used to configure generic routing encapsulation (GRE).

For detailed information about GRE concepts, configuration tasks, and examples, refer to the .

interface tunnel-ip

To configure a tunnel interface, use the **interface tunnel-ip** command in the interface global configuration mode. To disable this feature, use the **no** form of this command.

interface tunnel-ip *number*
no interface tunnel-ip *number*

Syntax Description	*number* Specifies the instance number of the interface to be configured.

Command Default None

Command Modes interface configuration

Command History

Release	Modification
Release 3.9.0	This command was introduced.

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

Use the **interface tunnel-ip** command to enter the interface global configuration mode.

Task ID

Task ID	Operations
interface	read, write

Examples This example shows how to configure a tunnel interface:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# interface tunnel-ip 400
RP/0/RP0/CPU0:router(config-if)#
```

keepalive

To enable keepalive for a tunnel interface, use the **keepalive** command. To remove keepalive, use the **no** form of this command.

keepalive [*time_in_seconds* [*retry_num*]]
no keepalive

Syntax Description	

time_in_seconds	Specifies the frequency (in seconds) at which keepalive check is performed. The default is 10 seconds. The minimum value is 1 second.
retry_num	Specifies the number of keepalive retries before declaring that a tunnel destination is unreachable. The default is 3 retries. The minimum value is 1 retry.

Command Default   None

Command Modes   interface configuration

Command History

Release	Modification
Release 3.9.0	This command was introduced.

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

Use the **keepalive** command to enable keepalive for a tunnel interface.

Task ID

Task ID	Operations
interface	read, write

Examples   The following example shows how to configure interface tunnel:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# interface tunnel-ip 400
RP/0/RP0/CPU0:router(config-if)# keepalive 30
```

tunnel destination

To specify a tunnel interface's destination address, use the **tunnel destination** command. To remove the destination address, use the **no** form of this command.

> **Note** The tunnel will not be operational until the tunnel destination is specified.

tunnel destination *ip-address*
no tunnel destination *ip-address*

Syntax Description

ip-address	Specifies the IPv4 address of the host destination.

Command Default None

Command Modes interface configuration

Command History

Release	Modification
Release 3.9.0	This command was introduced.

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

Task ID

Task ID	Operations
interface	read, write

Examples The following example shows how to configure interface tunnel:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# interface tunnel-ip 400
RP/0/RP0/CPU0:router(config-if)# tunnel destination 10.10.10.1
```

Related Commands

Command	Description
tunnel mode, on page 6	Configures the encapsulation mode of the tunnel interface.
tunnel source, on page 7	Sets a tunnel interface's source address.
tunnel tos, on page 9	Specifies the value of the TOS field in the tunnel encapsulating packets.
tunnel ttl, on page 10	Configures the Time-To-Live (TTL) for packets entering the tunnel.

tunnel dfbit

To configure the DF bit setting in the tunnel transport header, use the **tunnel dfbit** command. To revert to the default DF bit setting value, use the **no** form of this command.

tunnel dfbit disable
no tunnel dfbit

Syntax Description

Syntax Description

disable	Disables the DF bit in the outer packet. This allows the outer packet to be fragmented, if required.

Command Default

The DF bit value in the outer packet is disabled. This allows outer packet fragmentation, if required.

Command Modes

interface configuration

Command History

Release	Modification
Release 3.9.0	This command was introduced.

Usage Guidelines

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

Task ID

Task ID	Operations
interface	read, write

Examples

The following example shows how to enable fragmentation over an interface tunnel.

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# interface tunnel-ip 400
RP/0/RP0/CPU0:router(config-if)# tunnel dfbit disable
```

Related Commands

Command	Description
tunnel destination, on page 4	Specifies a tunnel interface's destination address.
tunnel mode, on page 6	Configures the encapsulation mode of the tunnel interface.
tunnel source, on page 7	Sets a tunnel interface's source address.
tunnel tos, on page 9	Specifies the value of the TOS field in the tunnel encapsulating packets.
tunnel ttl, on page 10	Configures the Time-To-Live (TTL) for packets entering the tunnel.

tunnel mode

To configure the encapsulation mode of the tunnel interface, use the **tunnel mode** command. To revert the encapsulation to the default IPv4 GRE tunnel mode, use the **no** form of this command.

tunnel mode gre ipv4}
no tunnel mode

Syntax Description

Syntax Description

gre	ipv4	Specifies the tunnel as a GRE tunnel over an IPv4 transport network.

Command Default   The default tunnel mode is set as a GRE tunnel over an IPv4 transport network.

Command Modes   interface configuration

Command History

Release	Modification
Release 3.9.0	This command was introduced.

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

Task ID

Task ID	Operations
interface	read, write

Examples   The following example shows how to configure interface tunnel:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# interface tunnel-ip 400
RP/0/RP0/CPU0:router(config-if)#tunnel mode gre ipv4
```

Related Commands

Command	Description
tunnel destination, on page 4	Specifies a tunnel interface's destination address.
tunnel source, on page 7	Sets a tunnel interface's source address.
tunnel tos, on page 9	Specifies the value of the TOS field in the tunnel encapsulating packets.
tunnel ttl, on page 10	Configures the Time-To-Live (TTL) for packets entering the tunnel.

tunnel source

To set a tunnel interface's source address, use the **tunnel source** command. To remove the source address, use the **no** form of this command.

Note   The tunnel will not be operational until the tunnel source is specified.

tunnel source {interface_name | *ip-address*}
no tunnel source {interface_name | *ip-address*}

Syntax Description	*interface_name*	Specifies the name of the interface whose IP address will be used as the source address of the tunnel. The interface name can be of a loopback interface or a physical interface.
	ip-address	Specifies the IPv4 address to use as the source address for packets in the tunnel.

Command Default   None

Command Modes   interface configuration

Command History

Release	**Modification**
Release 3.9.0	This command was introduced.

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

It is recommended that the tunnel source is identified using the interface ID and not the IP address. Using the interface ID enables the router to mark the tunnel as down when the interface is down and the routing protocol tries to find and use an alternate route to the tunnel route.

Task ID

Task ID	**Operations**
interface	read, write

Examples   The following example shows how to configure interface tunnel:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# interface tunnel-ip 400
RP/0/RP0/CPU0:router(config-if)# tunnel source 10.10.10.1
```

Related Commands

Command	Description
tunnel destination, on page 4	Specifies a tunnel interface's destination address.
tunnel mode, on page 6	Configures the encapsulation mode of the tunnel interface.
tunnel tos, on page 9	Specifies the value of the TOS field in the tunnel encapsulating packets.
tunnel ttl, on page 10	Configures the Time-To-Live (TTL) for packets entering the tunnel.

tunnel tos

To specify the value of the TOS field in the tunnel encapsulating packets, use the **tunnel tos** command. To return to the default TOS value, use the **no** form of this command.

tunnel tos *tos_value*
no tunnel tos *tos_value*

Syntax Description	*tos_value* Specifies the value of the TOS field in the tunnel encapsulating packets. The TOS value ranges between 0 to 255.

Command Default
Copies the TOS/COS bits of the internal IP header to the GRE IP header. In case of labeled payload, EXP bits are copied to TOS bits of the GRE IP header.

Command Modes
interface configuration

Command History

Release	Modification
Release 3.9.0	This command was introduced.

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

Task ID

Task ID	Operations
interface	read, write

Examples
The following example shows how to configure interface tunnel:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# interface tunnel-ip 400
RP/0/RP0/CPU0:router(config-if)# tunnel tos 100
```

Related Commands

Command	Description
tunnel destination, on page 4	Specifies a tunnel interface's destination address.
tunnel mode, on page 6	Configures the encapsulation mode of the tunnel interface.
tunnel source, on page 7	Sets a tunnel interface's source address.
tunnel ttl, on page 10	Configures the Time-To-Live (TTL) for packets entering the tunnel.

tunnel ttl

To configure the Time-To-Live (TTL) for packets entering the tunnel, use the **tunnel ttl** command. To undo the configuration, use the **no** form of this command.

tunnel ttl *ttl_value*
no tunnel ttl *ttl_value*

Syntax Description

ttl_value	Specifies the value of TTL for packets entering the tunnel. The TTL value ranges between 1 to 255.

Command Default
The default TTL value is set to 255.

Command Modes
interface configuration

Command History

Release	Modification
Release 3.9.0	This command was introduced.

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

This command specifies the Time-To-Live for packets entering the tunnel so that the packets are not dropped inside the carrier network before reaching the tunnel destination.

Task ID

Task ID	Operations
interface	read, write

Examples
The following example shows how to configure interface tunnel:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# interface tunnel-ip 400
RP/0/RP0/CPU0:router(config-if)#tunnel source 10.10.10.1
```

Related Commands

Command	Description
tunnel destination, on page 4	Specifies a tunnel interface's destination address.
tunnel mode, on page 6	Configures the encapsulation mode of the tunnel interface.
tunnel tos, on page 9	Specifies the value of the TOS field in the tunnel encapsulating packets.

Command	Description
tunnel source, on page 7	Sets a tunnel interface's source address.