

IP VRF Context Configuration Mode Commands

The IP VRF Context Configuration Mode is used to create and manage the Virtual Routing and Forwarding (VRF) context instance for BGP/MPLS VPN, GRE, IPSec tunneling or service interfaces for virtual routing, addresses, address resolution options, etc.

Command Modes

Exec > Global Configuration > Context Configuration > IP VRF Context Configuration

configure > context *context_name* **> ip vrf** *vrf_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-context-vrf)#
```

Important The commands or keywords/variables that are available are dependent on platform type, product version, and installed license(s).

Important For information on common commands available in this configuration mode, refer to the Common Commands chapter.

- associate l2-mapping-table, on page 1
- description, on page 2
- ip aggregate-address, on page 3
- ip guarantee, on page 4
- ip maximum-routes, on page 5
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associate l2-mapping-table

Associates a global QoS-to-Level 2 mapping table with this VRF.

Product

ePDG

HSGW

P-GW

SAEGW

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > IP VRF Context Configuration

configure > context *context_name* **> ip vrf** *vrf_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-context-vrf)#
```

Syntax Description

```
associate l2-mapping-table { name table_name | system-default }
no associate l2-mapping-table
```

no

Disassociates an existing L2 mapping table from this VRF.

name *table_name*

Specifies the name of an existing internal table from which to map QoS to L2 values.

table_name is an alphanumeric string of 0 through 80 characters.

system-default

Associates the system-default table with this VRF. This is useful if the base-context has a different explicit mapping.

Usage Guidelines

Use this command to associates a global QoS-to-Level 2 mapping table with this VRF.

Internal-QoS will be mapped to an actual L2 value (either or both of 802.1p/MPLS) using a per-VRF based table.



Important If an l2-mapping-table association is made at both the VRF and VPN level, the VRF level takes precedence.

The mapping table is configured via the Global Configuration mode **qos l2-mapping-table** command.

Example

The following command associates this VRF with Qos-to-L2 mapping table *vrf10*.

```
associate l2-mapping-table name vrf10
```

description

Allows you to enter descriptive text for this configuration.

Product All

Privilege Security Administrator, Administrator

Syntax Description

```
description text
no description
```

no

Clears the description for this configuration.

text

Enter descriptive text as an alphanumeric string of 1 to 100 characters.

If you include spaces between words in the description, you must enclose the text within double quotation marks (" "), for example, "AAA BBBB".

Usage Guidelines The description should provide useful information about this configuration.

ip aggregate-address

Specifies an IPv4 address/mask for aggregating frame routes in the VRF.

Product All

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Command Modes Exec > Global Configuration > Context Configuration > IP VRF Context Configuration

configure > context *context_name* **> ip vrf** *vrf_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-context-vrf)#
```

Syntax Description

```
ip aggregate-address ipv4_address/mask [summary-only]
no ip aggregate-address ipv4_address/mask
```

no

Deletes the specified IPv4 aggregate address.

ipv4_address/mask

Specifies the IP address and mask in IPv4 CIDR dotted-decimal notation.

[summary-only]

When this option is configured, the constituent routes are removed from the VRF.

Usage Guidelines Use this command to configure aggregate framed-routes in a VRF. It enables inserting an aggregate-address in a VRF and its advertisement in the routing domain if at least one constituent framed-route exists in that

VRF. By default, the constituent routes will also be present along with the aggregate address. However, if the summary-only option is configured, the constituent routes will be removed from the VRF. Up to 32 aggregate addresses can be configured in a VRF.

Example

The following example sets an IPv4 aggregate address for the VFR:**ip aggregate-address 209.165.201.0/27**

ip guarantee

Enables and disables local switching of framed route packets.

Product

GGSN

P-GW

SAEGW

Privilege

Administrator

Command Modes

Exec > Global Configuration > Context Configuration

configure > context *context_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx)#
```

Syntax Description

`[no] ip guarantee framed-route local-switching`

no

Disables local switching of framed route packets.

framed-route local-switching

Enables local switching of framed route packets. By default, this functionality is disabled.

Usage Guidelines

Use this command to enable and disable local switching of framed route packets. This functionality will be applicable only when there are some NEMO/framed route sessions in a context.

Example

The following command enables local switching of framed route packets:

`ip guarantee framed-route local-switching`

ip maximum-routes

This command configures the maximum number of routes in an IP VRF routing table configured in this context.



Important This command should only be used for framed or NEMO (Network Mobility) routes of the VRF.

Product

All

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > IP VRF Context Configuration

configure > context *context_name* **> ip vrf** *vrf_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-context-vrf)#`

Syntax Description

`ip maximum-routes` *`max_routes`*
`no ip maximum-routes`

no

Disables the configured maximum routes in specific IP VRF context.

max_routes

Sets the maximum number of routes in a specific IP VRF context.

max_routes must be an integer from 1 through 32768 or 65536 (release 17.0+).

Usage Guidelines

Use this command to configure the maximum number of routes in a particular VRF routing table. When the number of routes in the VRF is more than the maximum limit configured, a critical log is generated indicating that the number of routes is over the limit. Once the number of routes in the VRF goes under the limit, a **clear log** is generated.

The maximum routes configured using this command will be sent to the threshold configuration logic for appropriate action. For more information on threshold configuration, refer to descriptions of the **threshold route-service** and **threshold poll route-service interval** commands in the *Global Configuration Mode Commands* chapter.

Example

The following command sets *1000* routes as a maximum limit for specific VRF context:

`ip maximum-routes 1000`

mpls map-dscp-to-exp

This command maps the final differentiated services code point (DSCP) bit value in the IP packet header to the final Experimental (EXP) bit value in the MPLS header for incoming traffic.

Important This command has been deprecated beginning with Release 15.0.

Product

GGSN

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Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > IP VRF Context Configuration

configure > context *context_name* **> ip vrf** *vrf_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-context-vrf)#
```

Syntax Description

[no] mpls map-dscp-to-exp dscp *dscp_bit_value* **exp** *exp_bit_value*

no

Disables the configured DSCP bit value mapping to the EXP bit value from a specific IP VRF context.

dscp *dscp_bit_value*

Specifies the final DSCP bit value which is to map with the final EXP bit value in MPLS header for incoming traffic.

dscp_bit_value specifies the value of DSCP bit values separated in eight groups and represented with integers from 0 through 7.

The default representation of DSCP value in eight groups is given in the following table:

DSCP Marking Value	DSCP Map Group
0-7	0
8-15	1
16-23	2
24-31	3
32-39	4
40-47	5
48-55	6
56-63	7

exp *exp_bit_value*

Specifies the final EXP bit value in MPLS header to which the final DSCP bit value 0 to 7 (represented in eight values) coming from incoming traffic will be mapped.

exp_bit_value is the value of EXP bit in MPLS header and must be an integer between 0 through 7.

Usage Guidelines

Use this command to map the final DSCP value coming from incoming IP traffic to a final EXP value in MPLS header. This mapping determines the QoS and service parameters to which the packet is assigned.

Example

The following command maps the DSCP value *3* (24 to 31) to EXP bit *3* in MPLS header:

```
mpls map-dscp-to-exp dscp 3 exp 3
```

mpls map-exp-to-dscp

Maps incoming the Experimental (EXP) bit value in MPLS header to the internal differentiated services code point (DSCP) bit value in IP packet headers for outgoing traffic.



Important This command has been deprecated beginning with Release 15.0.

Product

GGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > IP VRF Context Configuration

configure > context *context_name* **> ip vrf** *vrf_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-context-vrf)#
```

Syntax Description

[no] mpls map-exp-to-dscp exp *exp_bit_value* **dscp** *dscp_bit_value*

no

Disables the configured EXP bit value mapping to DSCP bit value from specific IP VRF context.

exp *exp_bit_value*

Specifies the incoming EXP bit value in MPLS header to which the internal DSCP bit value 0 to 7 (represented in 8 values) in IP traffic will be mapped.

exp_bit_value is the value of the EXP bit in an MPLS header and must be an integer from 0 through 7.

dscp *dscp_bit_value*

Maps the DSCP bit value with the incoming EXP bit value in an MPLS header.

dscp_bit_value specifies the value of the DSCP bit values separated in eight groups and represented with integers between 0 through 7.

The default representation of DSCP value in eight groups is given in the following table:

DSCP Marking Value	DSCP Map Group
0-7	0
8-15	1
16-23	2
24-31	3
32-39	4
40-47	5
48-55	6
56-63	7

Usage Guidelines

Use this command to map the incoming EXP bit value in MPLS headers to the DSCP bit value in IP traffic. This mapping determines the QoS and service parameters to which the packet is assigned.

Example

The following command maps the EXP bit value *4* to DSCP value *6* (48 to 55) in IP header:

```
mpls map-exp-to-dscp exp 4 dscp 6
```