Configuration Commands

Generic Commands

description

Syntax **description** *description-string*
no description

Context config>qos>network *policy-id*

Description This command creates a text description stored in the configuration file for a configuration context.

The **description** command associates a text string with a configuration context to help identify the context in the configuration file.

The **no** form of this command removes any description string from the context.

Default No description is associated with the configuration context.

Parameters *description-string* — A text string describing the entity. Allowed values are any string up to 80 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, $, spaces, etc.), the entire string must be enclosed within double quotes.

Operational Commands

copy

Syntax **copy network** *src-pol dst-pol* [**overwrite**]

Context config>qos

Description This command copies existing QoS policy entries for a QoS policy-id to another QoS policy-id.

The **copy** command is used to create new policies using existing policies and also allows bulk modifications to an existing policy with the use of the **overwrite** keyword.

Parameters **network** *src-pol dst-pol* — Indicates that the source and destination policies are network policy IDs. Specify the source policy that the copy command will copy and specify the destination policy to which the command will duplicate the policy to a new or different policy ID.

Values 1 — 65535

overwrite — Specifies to replace the existing destination policy. Everything in the existing destination policy will be overwritten with the contents of the source policy. If **overwrite** is not specified, an error will occur if the destination policy ID exists.

```
SR>config>qos# copy network 1 427
MINOR: CLI Destination "427" exists use {overwrite}.
SR>config>qos# copy network 1 427 overwrite
```

scope

Syntax **scope** {**exclusive** | **template**}
no scope

Context config>qos>network *policy-id*

Description This command configures the network policy scope as exclusive or template. The policy's scope cannot be changed if the policy is applied to an interface.

The **no** form of this command sets the scope of the policy to the default of **template**.

Default template

Parameters **exclusive** — When the scope of a policy is defined as exclusive, the policy can only be applied to one interface. If a policy with an exclusive scope is assigned to a second interface an error message is generated. If the policy is removed from the exclusive interface, it will become available for assignment to another exclusive interface.
The system default policies cannot be put into the exclusive scope. An error will be generated if scope exclusive is executed in any policies with a policy-id equal to 1.

template — When the scope of a policy is defined as template, the policy can be applied to multiple interfaces on the router.

Default QoS policies are configured with template scopes. An error is generated if you try to modify the template scope parameter to exclusive scope on default policies.

Multi-Link Frame Relay Commands

mc-fr-profile-ingress

Syntax [**no**] **mc-fr-profile-ingress** *profile-id*

Context config>qos

Description This command creates a profile for the user to configure the ingress QoS parameters of a Multi-Link Frame Relay (MLFR) bundle. A maximum of 128 ingress QoS profiles may be created on the system.

The **no** form of this command deletes the profile.

Default none

Parameters *profile-id* — Specifies the profile number.

Values 1 — 65535

class

Syntax **class** *class-id*

Context config>qos>mc-fr-profile-ingress
config>qos>mc-fr-profile-egress

Description This command provides the Frame Relay scheduling class context for the user to configure the ingress or egress QoS parameters of an MLFR bundle or an FRF.12 UNI/NNI link for this profile.

Default none

Parameters *class-id* — Specifies the Frame Relay scheduling class number.

Values 0 — 3

reassembly-timeout

Syntax **reassembly-timeout** *timeout-value*
no reassembly-timeout

Context config>qos>mc-fr-profile-ingress>class

Description This command configures the value of the MLFR bundle ingress per-class reassembly timer for the profile.

Default Class 0=10 msec
Class 1=10 msec
Class 2=100 msec
Class 3=1000 msec

Parameters *timeout-value* — Specifies the timeout value, in milliseconds.

Values 1 — 1000

mc-fr-profile-egress

Syntax [**no**] **mc-fr-profile-egress** *profile-id*

Context config>qos

Description This command creates a profile for the user to configure the egress QoS parameters of an MLFR bundle or an FRF.12 UNI/NNI link. A maximum of 128 egress QoS egress profile may be created on the system.

The no form of this command deletes the profile.

Default none

Parameters *profile-id* — Specifies the profile number.

Values 1 — 65535

max-queue-size

Syntax **max-queue-size** *queue-size*
no max-queue-size

Context config>qos>mc-fr-profile-egress>class

Description This command configures the maximum size for each Frame Relay scheduling class queue for this profile.

Default Class 0=10
Class 1=50
Class 2=150
Class 3=750

Parameters *queue-size* — Specifies the number, in milliseconds, of the available link or bundle rate.

Values 1 — 1000

mir

Syntax **mir** *mir*
no mir

Context config>qos>mc-fr-profile-egress>class

Description This command configures the minimum information rate scheduling parameter for each Frame Relay scheduling class queues for this profile.

Default 90% for all classes

Parameters *mir* — Specifies the percentage of the available link or bundle rate.

Values 1 — 100

weight

Syntax **weight** *weight*
no weight

Context config>qos>mc-fr-profile-egress>class

Description This command configures the WRR weight scheduling parameter for each Frame Relay scheduling class queue for this profile.

Default Class 0=N/A

Class 1=1 (not configurable)

Class 2=89

Class 3=10

Parameters *weight* — Specifies the weight schedule.

Values 1 — 100

Network QoS Policy Commands

network

Syntax **network** *network-policy-id* [**create**]
no network *network-policy-id*

Context config>qos

Description This command creates or edits a QoS network policy. The network policy defines the treatment IP or MPLS packets receive as they ingress and egress the network port.

The QoS network policy consists of an ingress and egress component. The ingress component of the policy defines how DiffServ code points and MPLS EXP bits are mapped to internal forwarding class and profile state. The forwarding class and profile state define the Per Hop Behavior (PHB) or the QoS treatment through the router. The mapping on each network interface defaults to the mappings defined in the default network QoS policy until an explicit policy is defined for the network interface.

The egress component of the network QoS policy defines the queuing parameters associated with each forwarding class. Each of the forwarding classes defined within the system automatically creates a queue on each network interface. This queue gets all the parameters defined within the default network QoS policy 1 until an explicit policy is defined for the network interfaceaccess uplink port. If the egressing packet originated on an ingress SAP, or the remarking parameter is defined for the egress interface, the egress QoS policy also defines the IP DSCP or MPLS EXP bit marking based on the forwarding class and the profile state.

Network **policy-id 1** exists as the default policy that is applied to all network interfaces by default. The network **policy-id 1** cannot be modified or deleted. It defines the default DSCP-to-FC mapping and MPLS EXP-to-FC mapping and for the ingress. For the egress, it defines six forwarding classes which represent individual queues and the packet marking criteria.

Network policy-id 1 exists as the default policy that is applied to all network ports by default. This default policy cannot be modified or deleted. It defined the default DSCP-to-FC mapping and default unicast meters for ingress IP traffic. For the egress, if defines the forwarding class to Dot1p and DSCP values and the packet marking criteria.

If a new network policy is created (for instance, policy-id 3), only the default action and egress forwarding class parameters are identical to the default policy. A new network policy does not contain the default DSCP-to-FC and MPLS-EXP-to-FC mapping for network QoS policy of type **ip-interface** or the DSCP-to-FC mapping (for network QoSpolicy of type **port**). The default network policy can be copied (use the copy command) to create a new network policy that includes the default ingress DSCP-to-FC and MPLS EXP-to-FC mapping (as appropriate). You can modify parameters or use the **no** modifier to remove an object from the configuration.

Any changes made to an existing policy, using any of the sub-commands, will be applied immediately to all network interfaces where this policy is applied. For this reason, when many changes are required on a policy, it is highly recommended that the policy be copied to a work area policy-id. That work-in-progress policy can be modified until complete and then written over the original policy-id. Use the config qos copy command to maintain policies in this manner.

The **no** form of this command deletes the network policy. A policy cannot be deleted until it is removed from all entities where it is applied. The default network **policy** *policy-id* 1 cannot be deleted.

Default System Default Network Policy 1

Parameters *network-policy-id* — The policy-id uniquely identifies the policy on the router.

Default none

Values 1— 65535

Network Ingress QoS Policy Commands

ingress

Syntax **ingress**

Context config>qos>network *policy-id*

Description This command is used to enter the CLI node that creates or edits policy entries that specify the DiffServ code points to forwarding class mapping for all IP packets and define the MPLS EXP bits to forwarding class mapping for all labeled packets.

When pre-marked IP or MPLS packets ingress on a network port, they get a Per Hop Behavior (that is, the QoS treatment through the router-based on the mapping defined under the current node.

default-action

Syntax **default-action fc** *fc-name* **profile** {**in** | **out**}

Context config>qos>network>ingress

Description This command defines or edits the default action to be taken for packets that have an undefined DSCP or MPLS EXP bits set. The **default-action** command specifies the forwarding class to which such packets are assigned.

Multiple default-action commands will overwrite each previous default-action command.

Default default-action fc be profile out

Parameters **fc** *fc-name* — Specify the forwarding class name. All packets with DSCP value or MPLS EXPor dot1p bits bits that is not defined will be placed in this forwarding class.

Default None, the fc name must be specified

Values be, l2, af, l1, h2, ef, h1, nc

profile {**in** | **out**} — All packets that are assigned to this forwarding class will be considered in or out of profile based on this command. In case of congestion, the in-profile packets are preferentially queued over the out-of-profile packets.

Default None

Values in, out

ip-criteria

Syntax **[no] ip-criteria**

Context config>qos>network>ingress

Description IP criteria-based network ingress policies are used to select the appropriate ingress queue and corresponding forwarding class for matched traffic. This command is used to enter the context to create or edit policy entries that specify IP criteria such as IP quintuple lookup or DiffServ code point.

7750 SR OS implementation will exit on the first match found and execute the actions in accordance with the accompanying action command. For this reason, entries must be sequenced correctly from most to least explicit.

The classification only applies to the outer IP header of non-tunneled traffic. The only exception is for traffic received on a Draft Rosen tunnel for which classification on the outer IP header only is supported.

Attempting to apply a network QoS policy containing an **ip-criteria** statement to any object except a network IP interface will result in an error.

The **no** form of this command deletes all the entries specified under this node. Once IP criteria entries are removed from a network ingress policy, the IP criteria is removed from all network interfaces where that policy is applied. This command is supported on FP2 and higher based hardware and is otherwise ignored.

ipv6-criteria

Syntax **[no] ip-criteria**

Context config>qos>network>ingress

Description IP criteria-based network ingress policies are used to select the appropriate ingress queue and corresponding forwarding class for matched traffic. This command is used to enter the context to create or edit policy entries that specify IPv6 criteria such as IP quintuple lookup or DiffServ code point.

7750 SR OS implementation will exit on the first match found and execute the actions in accordance with the accompanying action command. For this reason, entries must be sequenced correctly from most to least explicit.

The classification only applies to the outer IPv6 header of non-tunneled traffic.

Attempting to apply a network QoS policy containing an **ipv6-criteria** statement to any object except a network IP interface will result in an error.

The **no** form of this command deletes all the entries specified under this node. Once IP criteria entries are removed from a network ingress policy, the IP criteria is removed from all network interfaces where that policy is applied.

This command is supported on FP2 and higher based hardware and is otherwise ignored.

action

Syntax **action** [**fc** *fc-name*] [**profile** {**in | out**}]
no action

Context config>qos>network>ingress>ip-criteria>entry
config>qos>network>ingress>ipv6-criteria>entry

Description This mandatory command associates the forwarding class and packet profile with specific IP or IPv6 criteria entry ID.

Packets that meet all match criteria within the entry have their forwarding class and packet profile set based on the parameters included in the action parameters.

The action command must be executed for the match criteria to be added to the active list of entries.

Each time action is executed on a specific entry ID, the previous entered values for fc fc-name and profile are overridden with the newly defined parameters.

The **no** form of the command removes the entry from the active entry list. Removing an entry on a policy immediately removes the entry from all network interfaces using the policy. All previous parameters for the action are lost.

Default Action specified by the default-action.

fc *fc-name* — The value given for fc fc-name must be one of the predefined forwarding classes in the system. Specifying the fc fc-name is required. When a packet matches the rule, the forwarding class is assigned to the specified forwarding class.

Values fc: class
class: be, l2, af, l1, h2, ef, h1, nc

Default Inherit (When fc fc-name is not defined, the rule preserves the previous forwarding class of the packet.)

profile {in | out} — The profile reclassification action is mandatory. Packets matching the IP flow reclassification entry will be explicitly reclassified to either in-profile or out-of-profile.

entry

Syntax **entry** *entry-id* [**create**]
no entry *entry-id*

Context config>qos>network>ingress>ip-criteria
config>qos>network>ingress>ipv6-criteria

Description This command is used to create or edit an IP or IPv6 criteria entry for the policy. Multiple entries can be created using unique entry-id numbers.

The list of flow criteria is evaluated in a top down fashion with the lowest entry ID at the top and the highest entry ID at the bottom. If the defined match criteria for an entry within the list matches the information in the ingress packet, the system stops matching the packet against the list and performs the matching entries reclassification actions. If none of the entries match the packet, the IP flow reclassification list has no effect on the packet.

An entry is not populated in the list unless the action command is executed for the entry. An entry that is not populated in the list has no effect on ingress packets. If the action command is executed without any explicit reclassification actions specified, the entry is populated in the list allowing packets matching the entry to exit the list, preventing them from matching entries lower in the list. Since this is the only flow reclassification entry that the packet matched and this entry explicitly states that no reclassification action is to be performed, the matching packet will not be reclassified.

The **no** form of this command removes the specified entry from the policy. Entries removed from the policy are immediately removed from all services where that policy is applied.

Default none

Parameters *entry-id* — The entry-id, expressed as an integer, uniquely identifies a match criterion and the corresponding action. It is recommended that multiple entries be given entry-ids in staggered increments. This allows users to insert a new entry in an existing policy without requiring renumbering of all the existing entries.

An entry cannot have any match criteria defined (in which case, everything matches) but must have at least the keyword action fc fc-name profile {in | out}] for it to be considered complete. Entries without the action keyword will be considered incomplete and hence will be rendered inactive.

Values 1— 65535

Default none

create — Required parameter when creating a flow entry when the system is configured to require the explicit use of the keyword to prevent accidental object creation. Objects may be accidentally created when this protection is disabled and an object name is mistyped when attempting to edit the object. This keyword is not required when the protection is disabled. The keyword is ignored when the flow entry already exists.

match

Syntax **match** [**protocol** *protocol-id*]
[**no**] **match**

Context config>qos>network>ingress>ip-criteria>entry

Description This command creates a context to configure match criteria for an ingress network QoS policy match criteria. When the match criteria have been satisfied the action associated with the match criteria is executed.

If more than one match criteria (within one match statement) are configured then all criteria must be satisfied (AND function) before the action associated with the match is executed.

A match context can consist of multiple match criteria, but multiple match statements cannot be entered per entry.

It is possible that a network QoS policy includes the dscp map command, the dot1p map command, and an IP match criteria. When multiple matches occur for the traffic, the order of precedence is used to arrive at the final action. The order of precedence is as follows:

1. 802.1p bits
2. DSCP
3. IP Quintuple

The **no** form of this command removes the match criteria for the entry-id.

Parameters **protocol** *protocol-id* — Specifies an IP protocol to be used as an ingress network QoS policy match criterion.

The protocol type such as TCP / UDP / OSPF is identified by its respective protocol number. Well-known protocol numbers include ICMP(1), TCP(6), UDP(17).

Values protocol-id: 0 — 255 protocol numbers accepted in DHB
keywords: none, crtp, crudp, egp, eigrp, encap, ether-ip, gre, icmp, idrp,igmp, igp, ip, ipv6, ipv6-frag, ipv6-icmp, ipv6-no-nxt, ipv6-opts, ipv6-route, isis, iso-ip, l2tp, ospf-igp, pim, pnni, ptp, rdp, rsvp, stp, tcp, udp, vrrp
* — udp/tcp wildcard

Table 27:

Protocol	Protocol ID	Description
icmp	1	Internet Control Message
igmp	2	Internet Group Management
ip	4	IP in IP (encapsulation)

Table 27:

Protocol	Protocol ID	Description
tcp	6	Transmission Control
egp	8	Exterior Gateway Protocol
igp	9	any private interior gateway (used by Cisco for their IGRP)
udp	17	User Datagram
rdp	27	Reliable Data Protocol
ipv6	41	IPv6
ipv6-route	43	Routing Header for IPv6
ipv6-frag	44	Fragment Header for IPv6
idrp	45	Inter-Domain Routing Protocol
rsvp	46	Reservation Protocol
gre	47	General Routing Encapsulation
ipv6-icmp	58	ICMP for IPv6
ipv6-no-nxt	59	No Next Header for IPv6
ipv6-opts	60	Destination Options for IPv6
iso-ip	80	ISO Internet Protocol
eigrp	88	EIGRP
ospf-igp	89	OSPFIGP
ether-ip	97	Ethernet-within-IP Encapsulation
encap	98	Encapsulation Header
pnni	102	PNNI over IP
pim	103	Protocol Independent Multicast
vrrp	112	Virtual Router Redundancy Protocol
l2tp	115	Layer Two Tunneling Protocol
stp	118	Schedule Transfer Protocol
ptp	123	Performance Transparency Protocol
isis	124	ISIS over IPv4

Table 27:

Protocol	Protocol ID	Description
crtp	126	Combat Radio Transport Protocol
crudp	127	Combat Radio User Datagram

match

Syntax **match** [**next-header** *next-header]*
no match

Context config>qos>network>ingress>ipv6-criteria>entry

Description This command creates a context to configure match criteria for a network QoS policy match IPv6 criteria. When the match criteria have been satisfied the action associated with the match criteria is executed.

If more than one match criteria (within one match statement) are configured, then all criteria must be satisfied (AND function) before the action associated with the match is executed.

A match context can consist of multiple match criteria, but multiple match statements cannot be entered per entry.

It is possible that a network ingress policy includes the dscp map command, the dot1p map command, and an IPv6 match criteria. When multiple matches occur for the traffic, the order of precedence is used to arrive at the final action. The order of precedence is as follows:

1. 802.1p bits
2. DSCP
3. IP Quintuple

The **no** form of this command removes the match criteria for the entry-id.

Parameters **next-header** *next-header* — Specifies the next meader to match.

The protocol type such as TCP / UDP / OSPF is identified by its respective protocol number. Well-known protocol numbers include ICMP(1), TCP(6), UDP(17).

Values protocol numbers accepted in DHB: 0 — 42, 45 — 49, 52 — 59, 61 — 255
keywords: none, crtp, crudp, egp, eigrp, encap, ether-ip, gre, icmp, idrp, igmp, igp, ip, ipv6, ipv6-icmp, ipv6-no-nxt, isis, iso-ip, l2tp, ospf-igp, pim, pnni, ptp, rdp, rsvp, stp, tcp, udp, vrrp
* — udp/tcp wildcard

dscp

Syntax **dscp** *dscp-name*
no dscp

Context config>qos>network>ingress>ip-criteria>entry>match
config>qos>network>ingress>ipv6-criteria>entry>match

Description This command configures a DiffServ Code Point (DSCP) code point to be used as a network ingress QOS policy match criterion.

The **no** form of this command removes the DSCP match criterion.

Parameters *dscp-name* — Specifies a dscp name that has been previously mapped to a value using the dscp-name command. The DiffServ code point can only be specified by its name.

Values be, cp1, cp2, cp3, cp4, cp5, cp6, cp7, cs1, cp9, af11, cp11, af12, cp13, af13, cp15, cs2, cp17, af21, cp19, af22, cp21, af23, cp23, cs3, cp25, af31, cp27, af32, cp29, af33, cp31, cs4, cp33, af41, c p35, af42, cp37, af43, cp39, cs5, cp41, cp42, cp43, cp44, cp45, ef, cp47, nc1, cp49, cp50, cp51, cp52, cp53, cp54, cp55, nc2, cp57, cp58, cp59, cp60, cp61, cp62, cp63

dst-ip

Syntax **dst-ip** {*ip-address/mask* | *ip-address netmask*}
dst-ip {*ipv6-address/prefix-length* **| ipv6-address** *ipv6-address-mask***}**
no dst-ip

Context config>qos>network>ingress>ip-criteria>entry>match
config>qos>network>ingress>ipv6-criteria>entry>match

Description This command configures a destination address range to be used as a network ingress QoS policy match criterion.

To match on the destination address, specify the address and its associated mask, e.g., 10.1.0.0/16. The conventional notation of 10.1.0.0 255.255.0.0 can also be used.

The **no** form of this command removes the destination IP address match criterion.

Parameters *ip-address* — The IP address of the destination IP or IPv6 interface. This address must be unique within the subnet and specified in dotted decimal notation.

Values ip-address: a.b.c.d
ipv6-address: x:x:x:x:x:x:x:x (eight 16-bit pieces)
x:x:x:x:x:x:d.d.d.d
x: [0 — FFFF]H
d: [0 — 255]D
prefix-length: 1 — 128

dst-port

Syntax **dst-port** {**lt | gt | eq**} *dst-port-number*
dst-port range *start end*
no dst-port

Context config>qos>network>ingress>ip-criteria>entry>match
config>qos>network>ingress>ipv6-criteria>entry>match

Description This command configures a destination TCP or UDP port number or port range for a network ingress QoS policy match criterion.

The **no** form of this command removes the destination port match criterion.

Default none

Parameters **lt | gt | eq** *dst-port-number* **—** The TCP or UDP port numbers to match specified as less than (lt), greater than (gt) or equal to (eq) to the destination port value specified as a decimal integer.

Values 1 — 65535 (decimal)

range *start end* **—** The range of TCP or UDP port values to match specified as between the start and end destination port values inclusive.

Values 1 — 65535 (decimal)

fragment

Syntax **fragment {true | false}**
no fragment

Context config>qos>ingress>ip-criteria>entry>match

Description This command configures fragmented or non-fragmented IP packets as a network ingress QoS policy match criterion.

The **no** form of this command removes the match criterion and matches all packets regardless of whether they are fragmented or not.

Parameters **true** **—** Configures a match on all fragmented IP packets. A match will occur for all packets that have either the MF (more fragment) bit set OR have the Fragment Offset field of the IP header set to a non-zero value.

false **—** Configures a match on all non-fragmented IP packets. Non-fragmented IP packets are packets that have the MF bit set to zero and have the Fragment Offset field also set to zero.

fragment

Syntax **fragment** {**true|false|first-only|non-first-only**}
no fragment

Context config>qos>network>ingress>ipv6-criteria>entry>match

Description This command configures fragmented or non-fragmented IPv6 packets as a network ingress QoS policy match criterion.

The **no** form of this command removes the match criterion and matches all packets regardless of whether they are fragmented or not.

Parameters **true** — Specifies to match on all fragmented IPv6 packets. A match will occur for all packets that contain an IPv6 Fragmentation Extension Header.

false — Specifies to match on all non-fragmented IP packets. Non-fragmented IPv6 packets are packets that do not contain an IPv6 Fragmentation Extension Header.

first-only — Matches if a packet is an initial fragment of the fragmented IPv6 packet.

non-first-only — Matches if a packet is a non-initial fragment of the fragmented IPv6 packet.

src-ip

Syntax **src-ip** {*ip-address/mask* **| ip-address** *ipv4-address-mask*|**ip-prefix-list** *prefix-list-name*]}
src-ip {*ipv6-address/prefix-length* **| ipv6-address** *ipv6-address-mask*}
no src-ip

Context config>qos>network>ingress>ip-criteria>entry>match
config>qos>network>ingress>ipv6-criteria>entry>match

Description This command configures a source IPv4 or IPv6 address range to be used as a network ingress QoS policy match criterion.

To match on the source IPv4 or IPv6 address, specify the address and its associated mask, for example, 10.1.0.0/16. The conventional notation of 10.1.0.0 255.255.0.0 can also be used for IPv4.

The **no** form of the command removes the source IPv4 or IPv6 address match criterion.

Default No source IP match criterion.

Parameters **ip-address** — Specifies the source IPv4 address specified in dotted decimal notation.

Values ip-address: a.b.c.d

mask — Specifies the length in bits of the subnet mask.

Values 1 — 32

ipv4-address-mask — Specifies the subnet mask in dotted decimal notation.

Values a.b.c.d (dotted quad equivalent of mask length)

ipv6-address — Specifies the IPv6 prefix for the IP match criterion in hex digits.

Values ipv6-address: x:x:x:x:x:x:x:x (eight 16-bit pieces)
x:x:x:x:x:x:d.d.d.d
x: [0 — FFFF]H
d: [0 — 255]D

prefix — Specifies the IPv6 prefix length for the ipv6-address expressed as a decimal integer.

Values 1 — 128

mask — Specifies the eight 16-bit hexadecimal pieces representing bit match criteria.

Values x:x:x:x:x:x:x:x (eight 16-bit pieces)

src-port

Syntax **src-port {lt | gt | eq}** *src-port-number*
src-port range *start end*

Context config>qos>network>ingress>ip-criteria>entry>match
config>qos>network>ingress>ipv6-criteria>entry>match

Description This command configures a source TCP or UDP port number or port range for a network ingress QoS policy match criterion.

The **no** form of this command removes the source port match criterion.

Default No src-port match criterion.

Parameters **lt | gt | eq** *src-port-number* — The TCP or UDP port numbers to match specified as less than (lt), greater than (gt) or equal to (eq) to the source port value specified as a decimal integer.

Values 1 — 65535 (decimal)

range *start end* — The range of TCP or UDP port values to match specified as between the start and end source port values inclusive.

Values 1 — 65535 (decimal)

dot1p

Syntax **dot1p** *dot1p-priority* **fc** *fc-name* **profile** {**in** | **out** | **use-de**}
no dot1p *dot1p-priority*

Context config>qos>network>ingress

Description This command explicitly sets the forwarding class or enqueuing priorityand profile of the packet when a packet is marked with a *dot1p-priority* specified. Adding a dot1p rule on the policy forces packets that match the *dot1p-priority* specified to override be assigned to the forwarding class and enqueuing priority and profile of the packet based on the parameters included in the Dot1p rule. When the forwarding class is not specified in the rule, a matching packet preserves (or inherits) the existing forwarding class derived from earlier matches in the classification hierarchy. When the enqueuing priority is not specified in the rule, a matching packet preserves (or inherits) the existing enqueuing priority derived from earlier matches in the classification hierarchy.

The *dot1p-priority* is derived from the most significant three bits in the IEEE 802.1Q or IEEE 802.1P header. The three dot1p bits define 8 Class-of-Service (CoS) values commonly used to map packets to per-hop Quality-of-Service (QoS) behavior.

The **no** form of this command removes the explicit dot1p classification rule from the policy. Removing the rule on the policy immediately removes the rule on all ingress SAPs using the policy.

Parameters *dot1p-priority* — This value is a required parameter that specifies the unique IEEE 802.1P value that will match the dot1p rule. If the command is executed multiple times with the same *dot1p-value*, the previous forwarding class and enqueuing priority is completely overridden by the new parameters or defined to be inherited when a forwarding class or enqueuing priority parameter is missing.

A maximum of eight dot1p rules are allowed on a single policy.

Values 0 — 7

fc *fc-name* — The value given for the *fc-name* parameter must be one of the predefined forwarding classes in the system. Specifying the *fc-name* is optional. When a packet matches the rule, the forwarding class is only overridden when the **fc** *fc-name* parameter is defined on the rule. If the packet matches and the forwarding class is not explicitly defined in the rule, the forwarding class is inherited based on previous rule matches.

Values `be`, `l2`, `af`, `l1`, `h2`, `ef`, `h1`, `nc`

profile {**in** | **out** | **use-de**} — All packets that are assigned to this forwarding class will be considered in or out of profile based on this command or to use the DE1 bit to determine the profile of the packets. In case of congestion, the in-profile packets are preferentially queued over the out-of-profile packets.

Default none, the profile name must be specified.

dscp

Syntax **dscp** *dscp-name* **fc** *fc-name* **profile** {**in** | **out**}
no dscp *dscp-name*

Context config>qos>network>ingress

Description This command creates a mapping between the DiffServ Code Point (DSCP) of the network ingress traffic and the forwarding class.

Ingress traffic that matches the specified DSCP will be assigned to the corresponding forwarding class. Multiple commands can be entered to define the association of some or all sixty-four DiffServ code points to the forwarding class. For undefined code points, packets are assigned to the forwarding class specified under the **default-action** command.

The **no** form of this command removes the DiffServ code point to forwarding class association. The **default-action** then applies to that code point value.

Default none

Parameters *dscp-name* — The name of the DiffServ code point to be associated with the forwarding class. DiffServ code point can only be specified by its name and only an existing DiffServ code point can be specified. The software provides names for the well known code points.

The system-defined names available are as follows. The system-defined names must be referenced as all lower case exactly as shown in the first column in Table 28 and Table 29 below.

Additional names to code point value associations can be added using the '**dscp-name** *dscp-name dscp-value*' command.

The actual mapping is being done on the *dscp-value*, not the *dscp-name* that references the *dscp-value*. If a second *dscp-name* that references the same *dscp-value* is mapped within the policy, an error will occur. The second name will not be accepted until the first name is removed.

Table 28: Default DSCP Names to DSCP Value Mapping Table

DSCP Name	DSCP Value Decimal	DSCP Value Hexadecimal	DSCP Value Binary
nc1	48	0x30	0b110000
nc2	56	0x38	0b111000
ef	46	0x2e	0b101110
af41	34	0x22	0b100010
af42	36	0x24	0b100100
af43	38	0x26	0b100110
af31	26	0x1a	0b011010
af32	28	0x1c	0b011100
af33	30	0x1d	0b011110
af21	18	0x12	0b010010
af22	20	0x14	0b010100
af23	22	0x16	0b010110
af11	10	0x0a	0b001010
af12	12	0x0c	0b001100
af13	14	0x0e	0b001110
default	0	0x00	0b000000

Table 29: Default Class Selector Code Points to DSCP Value Mapping Table

DSCP Name	DSCP Value Decimal	DSCP Value Hexadecimal	DSCP Value Binary
cs7	56	0x38	0b111000
cs6	48	0X30	0b110000
cs5	40	0x28	0b101000
cs4	32	0x20	0b100000

Table 29: Default Class Selector Code Points to DSCP Value Mapping Table (Continued)

DSCP Name	DSCP Value Decimal	DSCP Value Hexadecimal	DSCP Value Binary
cs3	24	0x18	0b011000
cs2	16	0x10	0b010000
cs1	08	0x8	0b001000

fc *fc-name* — Enter this required parameter to specify the *fc-name* with which the code point will be associated.

Default none, for every DSCP value defined, the forwarding class must be indicated.

Values be, l2, af, l1, h2, ef, h1, nc

profile {**in** | **out**} — Enter this required parameter to indicate whether the DiffServ code point value is the in-profile or out-of-profile value.

NOTE 1: DSCP values mapping to forwarding classes Expedited (ef), High-1 (h1) and Network-Control (nc) can only be set to in-profile.

NOTE 2: DSCP values mapping to forwarding class 'be' can only be set to out-of-profile.

Default None, for every DSCP value defined, the profile must be indicated. If a DSCP value is not mapped, the default-action forwarding class and profile state will be used for that value.

Values in, out

fp-redirect-group

Syntax **fp-redirect-group broadcast-policer** *policer-id*
no fp-redirect-group broadcast-policer

Context config>qos>network>ingress>fc

Description This command is used to redirect the FC of a broadcast packet received in a VPLS service over a PW or network IP interface to an ingress forwarding plane queue-group.

It defines the mapping of a FC to a policer-id and redirects the lookup of the policer of the same ID in some ingress forwarding plane queue-group instance. However, the queue-group name and instance are explicitly provided only at the time the network QoS policy is applied to the ingress context of a spoke or mesh SDP or a network IP interface.

The broadcast-policer statement is ignored when the network QoS policy is applied to any object other than a VPLS spoke or mesh SDP or a network IP interface.

The no version of this command removes the redirection of the FC.

Parameters **policer** *policer-id* — The specified *policer-id* must exist within the queue-group template applied to the ingress context of the forwarding plane.

Values 1—32

fp-redirect-group

Syntax **fp-redirect-group unknown-policer** *policer-id*
no fp-redirect-group unknown-policer

Context config>qos>network>ingress>fc

Description This command is used to redirect the FC of an unknown packet received in a VPLS service on a PW or network IP interface to an ingress forwarding plane queue-group.

It defines the mapping of a FC to a policer-id and redirects the lookup of the policer of the same ID in some ingress forwarding plane queue-group instance. However, the queue-group name and instance are explicitly provided only at the time the network QoS policy is applied to the ingress context of a VPLS spoke or mesh SDP or a network IP interface.

The unknown-policer statement is ignored when the network QoS policy is applied to any object other than a VPLS spoke or mesh SDP or a network IP interface.

The **no** version of this command removes the redirection of the FC.

Parameters **unknown-policer** *policer-id* — TThe specified policer-id must exist within the queue-group template applied to the ingress context of the forwarding plane.

Values 1—32

fp-redirect-group

Syntax **fp-redirect-group policer** *policer-id*
no fp-redirect-group policer

Context config>qos>network>ingress>fc

Description This command is used to redirect the FC of a packet of a PW or network IP interface to an ingress forwarding plane queue-group.

It defines the mapping of a FC to a policer-id and redirects the lookup of the policer of the same ID in some ingress forwarding plane queue-group instance. However, the queue-group name and instance are explicitly provided only at the time the network QoS policy is applied to the ingress context of a spoke-sdp or a network IP interface.

The **no** version of this command removes the redirection of the FC.

Parameters **policer** *policer-id* — The specified *policer-id* must exist within the queue-group template applied to the ingress context of the forwarding plane.

Values 1—8

fp-redirect-group

Syntax **fp-redirect-group mcast-policer** *policer-id*
no fp-redirect-group mcast-policer

Context config>qos>network>ingress>fc

Description This command is used to redirect the FC of a multicast packet of a PW or network IP interface to an ingress forwarding plane queue-group.

It defines the mapping of a FC to a policer-id and redirects the lookup of the policer of the same ID in some ingress forwarding plane queue-group instance. However, the queue-group name and instance are explicitly provided only at the time the network QoS policy is applied to the ingress context of a spoke-sdp or a network IP interface.

The **no** version of this command removes the redirection of the FC.

Parameters **mcast** *policer-id* — The specified *policer-id* must exist within the queue-group template applied to the ingress context of the forwarding plane.

Values 1—32

ler-use-dscp

Syntax [**no**] **ler-use-dscp**

Context config>qos>network>ingress

Description This command is used to enable tunnel QoS mapping on all ingress network IP interfaces the network-qos-policy-id is associated with. The command may be defined at anytime after the network QoS policy has been created. Any network IP interfaces currently associated with the policy will immediately start to use the internal IP ToS field of any tunnel terminated IP routed packet received on the interface, ignoring any QoS markings in the tunnel portion of the packet.

This attribute provides the ability to ignore the network ingress QoS mapping of a terminated tunnel containing an IP packet that is to be routed to a base router or VPRN destination. This is advantageous when the mapping for the tunnel QoS marking does not accurately or completely reflect the required QoS handling for the IP routed packet. When the mechanism is enabled on an ingress network IP interface, the IP interface will ignore the tunnel's QoS mapping and derive the internal forwarding class and profile based on the precedence or DiffServe Code Point (DSCP) values within the routed IP header ToS field compared to the Network QoS policy defined on the IP interface.

The default state is not to enforce tunnel termination IP routed QoS override within the network QoS policy.

The **no** form of the command removes tunnel termination IP routed QoS override from the network QoS policy and all ingress network IP interfaces associated with the policy.

Default no ler-use-dscp

lsp-exp

Syntax **lsp-exp** *lsp-exp-value* **fc** *fc-name* **profile** {**in** | **out**}
no lsp-exp *lsp-exp-value*

Context config>qos>network>ingress

Description This command creates a mapping between the LSP EXP bits of the network ingress traffic and the forwarding class.

Ingress traffic that matches the specified LSP EXP bits will be assigned to the corresponding forwarding class. Multiple commands can be entered to define the association of some or all eight LSP EXP bit values to the forwarding class. For undefined values, packets are assigned to the forwarding class specified under the **default-action** command.

The **no** form of this command removes the association of the LSP EXP bit value to the forwarding class. The **default-action** then applies to that LSP EXP bit pattern.

Default none

Parameters *lsp-exp-value* — Specify the LSP EXP values to be associated with the forwarding class.

Default None, the lsp-exp command must define a value.

Values 0 to 8 (Decimal representation of three EXP bit field)

fc *fc-name* **—** Enter this required parameter to specify the fc-name that the EXP bit pattern will be associated with.

Default None, the lsp-exp command must define a fc-name.

Values be, l2, af, l1, h2, ef, h1, nc

profile {**in** | **out**} **—** Enter this required parameter to indicate whether the LSP EXP value is the in-profile or out-of-profile value.

Default None, the lsp-exp command must define a profile state.

Values in, out

Network Egress QoS Policy Commands

egress

Syntax **egress**

Context config>qos>network *policy-id*

Description This command is used to enter the CLI node that creates or edits egress policy entries that specify the forwarding class queues to be instantiated when this policy is applied to the network port.

The forwarding class and profile state mapping to in and out-of-profile DiffServ code points and MPLS EXP bits mapping for all labeled packets are also defined in this context.

All service packets are aggregated into DiffServ based egress queues on the network interface. The service packets are transported either with IP GRE encapsulation or over a MPLS LSP. The exception is with the IES service. In this case, the actual customer IP header has the DSCP field mapped.

All out-of-profile service packets are marked with the corresponding out-of-profile DSCP or the EXP bit value at network egress. All the in-profile service ingress packets are marked with the corresponding in-profile DSCP or EXP bit value based on the forwarding class they belong.

fc

Syntax [**no**] **fc** *fc-name*

Context config>qos>network>egress

Description This command specifies the forwarding class name. The forwarding class name represents an egress queue. The **fc** *fc-name* represents a CLI parent node that contains sub-commands or parameters describing the egress characteristics of the queue and the marking criteria of packets flowing through it. The **fc** command overrides the default parameters for that forwarding class to the values defined in the network default policy.

The **no** form of this command removes the forwarding class name associated with this queue, as appropriate. The forwarding class reverts to the defined parameters in the default network policy. If the *fc-name* is removed from the network policy that forwarding class reverts to the factory defaults.

Default Undefined forwarding classes default to the configured parameters in the default network policy policy-id 1.

Parameters *fc-name* — The case-sensitive, system-defined forwarding class name for which policy entries will be created.

Default none

Values be, l2, af, l1, h2, ef, h1, nc

Network Egress QoS Policy Forwarding Class Commands

de-mark

Syntax **de-mark** [**force** *de-value*]
no de-mark

Context config>qos>network>egress>fc

Description This command is used to explicitly define the marking of the DE bit for **fc** *fc-name* according to the in and out of profile status of the packet (fc-name may be used to identify the dot1p-value).

If no de-value is present, the default values are used for the marking of the DE bit: i.e. 0 for in-profile packets, 1 for out-of-profile ones – see 802.1ad-2005 standard.

In the PBB case, for a Network Port (B-SDP), the following rules must be used:

- the outer VID follows the rules for regular SDP
- for packets originated from a local I-VPLS/PBB-Epipe, this command dictates the marking of the DE bit for both the outer (link level) BVID and ITAG; if the command is not used the DE bit will be set to zero.
- for transit packets (B-SAP/B-SDP to B-SDP) the related ITAG bits will be preserved, same for BVID.

If the de-value is specifically mentioned in the command line it means this value is to be used for all the packets of this forwarding class regardless of their in/out of profile status.

Values 0 or 1

dot1p

Syntax **dot1p** *dot1p-priority*
no dot1p

Context config>qos>network>egress>fc

Description This command will be used whenever the dot1p bits are set to a common value regardless of the internal in | out-profile of the packets. Although it is not mandatory, it is expected that this command is used in combination with the de-mark command to enable the marking of the DE bit according to the internal profile of the packet.

This command acts as a shortcut version of configuring the two existing commands with the same dot1p-priority.

To minimize the required changes the dot1p x command should be saved in the configuration as dot1p-in-profile x and dot1p-out-profile x.

dot1p-in-profile

Syntax **dot1p-in-profile** *dot1p-priority*
no dot1p-in-profile

Context config>qos>network>egress>fc *fc-name*

Description This command specifies dot1p in-profile mappings.

The **no** form of the command reverts to the default in-profile *dot1p-priority* setting for policy-id 1.

Parameters *dot1p-priority* — This value is a required parameter that specifies the unique IEEE 802.1P value that will match the Dot1p rule. If the command is executed multiple times with the same *dot1p-value*, the previous forwarding class and enqueuing priority is completely overridden by the new parameters or defined to be inherited when a forwarding class or enqueuing priority parameter is missing.

A maximum of eight dot1p rules are allowed on a single policy.

Values 0 — 7

dot1p-out-profile

Syntax **dot1p-out-profile** *dot1p-priority*
no dot1p-out-profile

Context config>qos>network>egress>fc *fc-name*

Description This command specifies dot1p out-profile mappings.

The **no** form of the command reverts to the default out-profile *dot1p-priority* setting for policy-id 1.

Parameters *dot1p-priority* — This value is a required parameter that specifies the unique IEEE 802.1P value that will match the dot1p rule. If the command is executed multiple times with the same *dot1p-value*, the previous forwarding class and enqueuing priority is completely overridden by the new parameters or defined to be inherited when a forwarding class or enqueuing priority parameter is missing.

A maximum of eight dot1p rules are allowed on a single policy.

Values 0 — 7

dscp-in-profile

Syntax **dscp-in-profile** *dscp-name*
no dscp-in-profile

Context config>qos>network *policy-id*>egress>fc *fc-name*

Description This command specifies the in-profile DSCP name for the forwarding class. The corresponding DSCP value will be used for all IP packets requiring marking the egress on this forwarding class queue that are in profile.

When multiple DSCP names are associated with the forwarding class at network egress, the last name entered will overwrite the previous value.

The **no** form of this command reverts to the factory default in-profile dscp-name setting for policy-id 1.

Default Policy-id 1: Factory setting

Policy-id 2 — 65535: Policy-id 1 setting

Parameters *dscp-name* — System- or user-defined, case-sensitive *dscp-name.*

Default none

Values Any defined system- or user-defined *dscp-name*

dscp-out-profile

Syntax **dscp-out-profile** *dscp-name*
no dscp-out-profile

Context config>qos>network *policy-id*>egress>fc *fc-name*

Description This command specifies the out-of-profile DSCP name for the forwarding class. The corresponding DSCP value will be used for all IP packets requiring marking the egress on this forwarding class queue that are out-of-profile.

When multiple DSCP names are associated with the forwarding class at network egress, the last name entered will overwrite the previous value.

The **no** form of this command reverts to the factory default out-of-profile dscp-name setting for policy-id 1.

Default Policy-id 1: Factory setting

Policy-id 2 — 65535: Policy-id 1 setting

Parameters *dscp-name* — System- or user-defined, case-sensitive *dscp-name.*

Default none

Values Any defined system- or user-defined *dscp-name*

lsp-exp-in-profile

Syntax **lsp-exp-in-profile** *lsp-exp-value*
no lsp-exp-in-profile

Context config>qos>network *policy-id*>egress>fc *fc-name*

Description This command specifies the in-profile LSP EXP value for the forwarding class. The EXP value will be used for all LSP labeled packets requiring marking the egress on this forwarding class queue that are in-profile.

When multiple EXP values are associated with the forwarding class at network egress, the last name entered will overwrite the previous value.

The **no** form of this command reverts to the factory default in-profile EXP setting.

Default Policy-id 1: Factory setting

Policy-id 2 — 65535: Policy-id setting

Parameters *lsp-exp-value* — The 3-bit LSP EXP bit value, expressed as a decimal integer.

Default none

Values 0 — 7

lsp-exp-out-profile

Syntax **lsp-exp-out-profile** *lsp-exp-value*
no lsp-exp-out-profile

Context config>qos>network *policy-id*>egress>fc *fc-name*

Description This command specifies the out-of-profile LSP EXP value for the forwarding class. The EXP value will be used for all LSP labeled packets requiring marking the egress on this forwarding class queue that are out-of-profile.

When multiple EXP values are associated with the forwarding class at network egress, the last name entered will overwrite the previous value.

The **no** form of this command reverts to the factory default out-of-profile EXP setting.

Default Policy-id 1: Factory setting

Policy-id 2 — 65535: Policy-id setting

Parameters *mpls-exp-value* — The 3-bit MPLS EXP bit value, expressed as a decimal integer.

Default none

Values 0 — 7

policer

Syntax **policer** *policer-id*
no policer

Context *config>qos>queue-group-templates>ingress>queue-group*
config>qos>queue-group-templates>egress>queue-group

Description This command is used in ingress and egress queue-group templates to create, modify, or delete a policer.

Policers are created and used in a similar manner to queues. The policer ID space is separate from the queue ID space, allowing both a queue and a policer to share the same ID. The ingress queue-group template have up to 32 policers (numbered 1 through 32) and can be defined while the egress queue-group template supports a maximum of 8 (numbered 1 through 8). While a policer can be defined in a queue-group template, it is not actually created until the queue-group template is instantiated on ingress context of a forwarding plane or on the egress context of a port.

Once a policer is created, the policer's metering rate and profiling rates can be defined as well as the policer's maximum and committed burst sizes (MBS and CBS respectively). Unlike queues which have dedicated counters, policers allow various stat-mode settings that define the counters that will be associated with the policer. Another supported feature—packet-byte-offset—provides a policer with the ability to modify the size of each packet based on a defined number of bytes.

Once a policer is created, it cannot be deleted from the queue-group template unless any forwarding classes that are redirected to the policer are first removed.

The **no** version of this command deletes the policer.

Parameters *policer-id* — The policer-id must be specified when executing the policer command. If the specified ID already exists, the system enters that policer's context to allow the policer’s parameters to be modified. If the ID does not exist and is within the allowed range for the QoS policy type, a context for the policer ID will be created (depending on the system's current create keyword requirements which may require the create keyword to actually add the new policer ID to the QoS policy) and the system will enter that new policer’s context for possible parameter modification..

Values 1—32 ingress

Values 1—8 egress

port-redirect-group

Syntax **port-redirect-group** {**queue** *queue-id* | **policer** *policer-id* [**queue** *queue-id*]}
no port-redirect-group

Context config>qos>network>egress>fc

Description This command is used to redirect the FC of a packet of a PW or network IP interface to an egress port queue-group.

It defines the mapping of a FC to a queue-id or a policer-id and a queue-id, and redirects the lookup of the queue or policer of the same ID in some egress port queue-group instance. However, the queue-group name and instance are explicitly provided only at the time the network QoS policy is applied to egress context of a spoke-sdp or a network IP interface.

The **no** version of this command removes the redirection of the FC.

Parameters *queue-id* — This parameter must be specified when executing the **port-redirect-group** command. The specified *queue-id* must exist within the egress port queue group on each IP interface where the network QoS policy is applied.

Values 1 — 8

policer id — The specified policer-id must exist within the queue-group template applied to the ingress context of the forwarding plane.

Values 1 — 8

dscp

Syntax **dscp** *dscp-name* [**fc** *fc-name*] [**profile** {**in** | **out**}]
no dscp *dscp-name*

Context configure>qos>network>egress

Description This command defines a specific IP Differentiated Services Code Point (DSCP) value that must be matched to perform the associated reclassification actions. If an egress packet on the spoke-sdp the network QoS policy is applied to matches the specified IP DSCP value, the forwarding class and profile may be overridden.

By default, the forwarding class and profile of the packet is derived from ingress classification and profiling functions. Matching a DHCP based reclassification rule will override all IP precedence based reclassification rule actions.

The IP DSCP bits used to match against dscp reclassification rules come from the Type of Service (ToS) field within the IPv4 header or the Traffic Class field from the IPv6 header. If the packet does not have an IP header, dscp based matching is not performed.

Note that the IP precedence and DSCP based re-classification are only supported on a PW used in an IES or VPRN spoke-interface. The CLI will block the application of a network QoS policy with the egress re-classification commands to a network IP interface or to a spoke-sdp part of L2 service.

Conversely, the CLI will not allow the user to add the egress re-classification commands to a network QoS policy if it is being used by a network IP interface or a L2 spoke-sdp.

Also, the egress re-classification commands will only take effect if the redirection of the spoke-sdp to use an egress port queue-group succeeds, i.e., the following CLI command succeeds:

config>**service**>**vprn**>**interface**>**spoke-sdp**>**egress**>**qos** *network-policy-id* **port-redirect-group** *queue-group-name* **instance** *instance-id*

config>**service**>**ies**>**interface**>**spoke-sdp>egress**>**qos** *network-policy-id* **port-redirect-group** *queue-group-name* **instance** *instance-id*

Reclassification will however occur regardless of whether the queue group instance exists or not on a given egress network port.

When the redirection command fails in CLI, the PW will use the network QoS policy assigned to the network IP interface. Since the network QoS policy applied to a network IP interface does not support re-classification, the PW packets will not undergo re-classification.

The **no** version of this command removes the egress re-classification rule.

Parameters *dscp-name* — be|ef|cp1|cp2|cp3|cp4|cp5|cp6|cp7|cp9|cs1|cs2|cs3|cs4|cs5|nc1|nc2|af11|af12|af13|af21|af22|af23|af31|af32|af33|af41|af42|af43|cp11|cp13|cp15|cp17|cp19|cp21|cp23|cp25|cp27|cp29|cp31|cp33|cp35|cp37|cp39|cp41|cp42|cp43|cp44|cp45|cp47|cp49|cp50|cp51|cp52|cp53|cp54|cp55|cp57|cp58|cp59|cp60|cp61|cp62|cp63

fc *fc-name* — be|l2|af|l1|h2|ef|h1|nc

profile {**in**|**out**} — keywords - specify type of marking to be done.

prec

Syntax **prec** *ip-prec-value* [**fc** *fc-name*] [**profile** {**in** | **out**}]
no prec *ip-prec-value*

Context configure>qos>network>egress

Description This command defines a specific IP Precedence value that must be matched to perform the associated reclassification actions. If an egress packet on the spoke-sdp the network QoS policy is

applied to matches the specified IP Precedence value, the forwarding class and profile may be overridden.

By default, the forwarding class and profile of the packet is derived from ingress classification and profiling functions.

The IP Precedence bits used to match against the reclassification rules come from the Type of Service (ToS) field within the IPv4 header or the Traffic Class field from the IPv6 header. If the packet does not have an IP header, IP precedence based matching is not performed.

Note that the IP precedence and DSCP based re-classification are only supported on a PW used in an IES or VPRN spoke-interface. The CLI will block the application of a network QoS policy with the egress re-classification commands to a network IP interface or to a spoke-sdp part of L2 service.

Conversely, the CLI will not allow the user to add the egress re-classification commands to a network QoS policy if it is being used by a network IP interface or a L2 spoke-sdp.

Also, the egress re-classification commands will only take effect if the redirection of the spoke-sdp to use an egress port queue-group succeeds, i.e., the following CLI command succeeds:

config>**service**>**vprn**>**interface**>**spoke-sdp**>**egress**>**qos** *network-policy-id* **port-redirect-group** *queue-group-name* **instance** *instance-id*

config>**service**>**ies**>**interface**>**spoke-sdp**>**egress**>**qos** *network-policy-id* **port-redirect-group** *queue-group-name* **instance** *instance-id*

Reclassification will however occur regardless of whether the queue group instance exists or not on a given egress network port.

When the redirection command fails in CLI, the PW will use the network QoS policy assigned to the network IP interface. Since the network QoS policy applied to a network IP interface does not support re-classification, the PW packets will not undergo re-classification.

The **no** version of this command removes the egress re-classification rule.

Parameters *ip-prec-value* — [0..7]

fc *fc-name* — be|l2|af|l1|h2|ef|h1|nc

profile {**in**|**out**} — keywords - specify type of marking to be done.

remarking

Syntax [**no**] **remarking** [**force**]

Context config>qos>network *policy-id*>egress

Description This command remarks both customer traffic and egress network IP interface traffic; VPRN customer traffic is not remarked. The remarking is based on the forwarding class to DSCP and LSP EXP bit mapping defined under the egress node of the network QoS policy.

Normally, packets that ingress on network ports have either DSCP or, in case of MPLS packets, LSP EXP bit set by an upstream router. The packets are placed in the appropriate forwarding class based on the DSCP to forwarding class mapping or the LSP EXP to forwarding class mapping. The DSCP or LSP EXP bits of such packets are not altered as the packets egress this router, unless **remarking** is enabled.

Remarking can be required if this router is connected to a different DiffServ domain where the DSCP to forwarding class mapping is different.

Normally no remarking is necessary when all router devices are in the same DiffServ domain.

The network QoS policy supports an egress flag that forces remarking of packets that were received on trusted IES and network IP interfaces. This provides the capability of remarking without regard to the ingress state of the IP interface on which a packet was received. The effect of the setting of the egress network remark trusted state on each type of ingress IP interface and trust state is shown in the following table.

The remark trusted state has no effect on packets received on an ingress VPRN IP interface.

Ingress IP Interface Type and Trust State	Egress Network IP Interface Trust Remark Disabled (Default)	Egress Network IP Interface Trust Remark Enabled
IES Non-Trusted (Default)	Egress Remarked	Egress Remarked
IES Trusted	Egress Not Remarked	Egress Remarked
VPRN Non-Trusted	Egress Remarked	Egress Remarked
VPRN Trusted (Default)	Egress Not Remarked	Egress Not Remarked
Network Non-Trusted	Egress Remarked	Egress Remarked
Network Trusted (Default)	Egress Not Remarked	Egress Remarked

The **no** form of this command reverts to the default behavior.

Default **no remarking** — Remarking disabled in the Network QoS policy.

Parameters **force —** Specifies that all IP routed traffic egressing the associated network interface will have its EXP, DSCP, P-bit and DE bit setting remarked as defined in the associated QoS policy. Only bit fields configured in the QoS policy will be remarked; all others will be left untouched or set based on the default if the fields were not present at ingress.

Self-Generated Traffic Commands

sgt-qos

Syntax **sgt-qos**

Context config>router

Description This command enables the context to configure DSCP/Dot1p re-marking for self-generated traffic.

application

Syntax **application** *dscp-app-name* **dscp** {*dscp-value* | *dscp-name*}
application *dot1p-app-name* **dot1p** *dot1p-priority*
no application {*dscp-app-name* | *dot1p-app-name*}

Context config>router>sgt-qos

Description This command configures DSCP/Dot1p re-marking for self-generated application traffic. When an application is configured using this command, then the specified DSCP name/value is used for all packets generated by this application within the router instance it is configured. The instances can be base router, vprn or management.

Using the value configured in this command:

- Sets the DSCP bits in the IP packet.
- Maps to the FC. This value will be signaled from the CPM to the egress forwarding complex.
- Based on this signaled FC the egress forwarding complex QoS policy sets the IEEE802.1 dot1P and LSP EXP bits.
- The Dot1P and the LSP EXP bits are set by the egress complex for all packets based on the signaled FC. This includes ARP, PPPoE and IS-IS packets that, due to their nature, do not carry DSCP bits.
- The DSCP value in the egress IP header will be as configured in this command. The egress QoS policy will not overwrite this value.

Only one DSCP name/value can be configured per application, if multiple entries are configured then the subsequent entry overrides the previous configured entry.

The **no** form of this command reverts back to the default value.

Parameters *dscp-app-name* — Specifies the DSCP application name.

Values ldp, rsvp, bgp, rip, msdp, pim, ospf, igmp, mld, telnet, tftp, ftp, ssh, snmp, snmp-notification, syslog, icmp, traceroute, tacplus, dns, ntp, radius, cflowd, dhcp, ndis, vrrp, srrp

dscp-value — Specifies a value when this packet egresses the respective egress policy should provide the mapping for the DSCP value to either LSP-EXP bits or IEEE 802.1p (Dot1P) bits as appropriate otherwise the default mapping applies.

Values 0 — 63

dscp-name — Specifies the DSCP name.

Values none, be, ef, cp1, cp2, cp3, cp4, cp5, cp6, cp7, cp9, cs1, cs2, cs3, cs4, cs5, nc1, nc2, af11, af12, af13, af21, af22, af23, af31, af32, af33, af41, af42, af43, cp11, cp13, cp15, cp17, cp19, cp21, cp23, cp25, cp27, cp29, cp31, cp33, cp35, cp37, cp39, cp41, cp42, cp43, cp44, cp45, cp47, cp49, cp50, cp51, cp52, cp53, cp54, cp55, cp57, cp58, cp59, cp60, cp61, cp62, cp63

dot1p-priority — Specifies the Dot1P priority.

Values 0 — 7

dot1p-app-name — Specifies the Dot1P application name.

Values arp, isis, pppoe

dscp

Syntax **dscp** *dscp-name* **fc** *fc-name*
no dscp *dscp-name*

Context config>router>sgt-qos

Description This command creates a mapping between the DiffServ Code Point (DSCP) of the self generated traffic and the forwarding class.

Self generated traffic that matches the specified DSCP will be assigned to the corresponding forwarding class. Multiple commands can be entered to define the association of some or all sixty-four DiffServ code points to the forwarding class.

All dscp name that defines a dscp value must be explicitly defined

The **no** form of this command removes the DiffServ code point to forwarding class association.

Default none

Parameters *dscp-name* — The name of the DiffServ code point to be associated with the forwarding class. DiffServ code point can only be specified by its name and only an existing DiffServ code point can be specified. The software provides names for the well known code points.

Values be, ef, cp1, cp2, cp3, cp4, cp5, cp6, cp7, cp9, cs1, cs2, cs3, cs4, cs5, nc1, nc2, af11, af12, af13, af21, af22, af23, af31, af32, af33, af41, af42, af43, cp11, cp13, cp15, cp17, cp19, cp21, cp23, cp25, cp27, cp29, cp31, cp33, cp35, cp37, cp39, cp41, cp42, cp43, cp44,

cp45, cp47, cp49, cp50, cp51, cp52, cp53, cp54, cp55, cp57, cp58, cp59, cp60, cp61, cp62, cp63

fc *fc-name* — Specify the forwarding class name. All packets with DSCP value or MPLS EXP bits that is not defined will be placed in this forwarding class.

Default None, the fc name must be specified

Values be, l2, af, l1, h2, ef, h1, nc

dscp-table

Syntax **dscp-table** [**value** *dscp-value*]

Context show>qos

Description Displays the DSCP name to DSCP value mappings.

Parameters **value** *dscp-value* — The specific DSCP value for which to display information.

Default Show all values

Values 0 — 63

Table 30: Show QoS Network Table Output Fields

Label	Description
DSCP Name	Displays the name of the DiffServ code point to be associated with the forwarding class.
DSCP Value	Displays the DSCP values range between 0 and 63.
TOS (bin)	Displays the type of service in Binary format.
TOS (hex)	Displays the type of service in Hex format.

Sample Output

```
A:ALA-48# show qos dscp-table
===========================================================
DSCP Mapping
===========================================================
DSCP Name      DSCP Value     TOS (bin)      TOS (hex)
-----------------------------------------------------------
be             0              0000 0000      00
cp1            1              0000 0100      04
cp2            2              0000 1000      08
cp3            3              0000 1100      0C
cp4            4              0001 0000      10
cp5            5              0001 0100      14
cp6            6              0001 1000      18
cp7            7              0001 1100      1C
cs1            8              0010 0000      20
cp9            9              0010 0100      24
af11           10             0010 1000      28
cp11           11             0010 1100      2C
```

```
af12            12              0011 0000       30
cp13            13              0011 0100       34
af13            14              0011 1000       38
cp15            15              0011 1100       3C
cs2             16              0100 0000       40
cp17            17              0100 0100       44
af21            18              0100 1000       48
cp19            19              0100 1100       4C
af22            20              0101 0000       50
cp21            21              0101 0100       54
af23            22              0101 1000       58
cp23            23              0101 1100       5C
cs3             24              0110 0000       60
cp25            25              0110 0100       64
af31            26              0110 1000       68
cp27            27              0110 1100       6C
af32            28              0111 0000       70
cp29            29              0111 0100       74
af33            30              0111 1000       78
cp31            31              0111 1100       7C
cs4             32              1000 0000       80
cp33            33              1000 0100       84
af41            34              1000 1000       88
cp35            35              1000 1100       8C
af42            36              1001 0000       90
cp37            37              1001 0100       94
af43            38              1001 1000       98
cp39            39              1001 1100       9C
cs5             40              1010 0000       A0
cp41            41              1010 0100       A4
cp42            42              1010 1000       A8
cp43            43              1010 1100       AC
cp44            44              1011 0000       B0
cp45            45              1011 0100       B4
ef              46              1011 1000       B8
cp47            47              1011 1100       BC
nc1             48              1100 0000       C0
cp49            49              1100 0100       C4
cp50            50              1100 1000       C8
cp51            51              1100 1100       CC
cp52            52              1101 0000       D0
cp53            53              1101 0100       D4
cp54            54              1101 1000       D8
cp55            55              1101 1100       DC
nc2             56              1110 0000       E0
cp57            57              1110 0100       E4
cp58            58              1110 1000       E8
cp59            59              1110 1100       EC
cp60            60              1111 0000       F0
cp61            61              1111 0100       F4
cp62            62              1111 1000       F8
cp63            63              1111 1100       FC
===============================================================
A:ALA-48#


A:ALA-48# show qos dscp-table value 46
===============================================================
DSCP Mapping
```

```
=============================================================
DSCP Name      DSCP Value     TOS (bin)      TOS (hex)
-------------------------------------------------------------
ef             46             1011 1000      B8
=============================================================
A:ALA-48#
```

mc-fr-profile-ingress

Syntax **mc-fr-profile-ingress** [**detail**]

Context show>qos

Description This command displays MLFR ingress profile details.

Sample Output

```
*A:Cpm-A# show qos mc-fr-profile-ingress
===============================================================================
Multi-class Frame-Relay Ingress Profiles
===============================================================================
Profile-Id  Description
-------------------------------------------------------------------------------
1           Default ingress multi-class frame-relay profile.
===============================================================================
*A:Cpm-A#
*A:Cpm-A# show qos mc-fr-profile-ingress 1 detail
===============================================================================
Multi-class FR Ingress Profile (1)
===============================================================================
Profile-id : 1
Description: Default ingress multi-class frame-relay profile.
-------------------------------------------------------------------------------
FR Class     Reassembly Timeout
-------------------------------------------------------------------------------
0            10
1            10
2            100
3            1000
===============================================================================
Associations
-------------------------------------------------------------------------------
No Matching Entries
```

mc-fr-profile-egress

Syntax **mc-fr-profile-egress** [**detail**]

Context show>qos

Description This command displays MLFR egress profile details.

Sample Output

```
*A:Cpm-A# show qos mc-fr-profile-egress 1
===============================================================================
Multi-class FR Egress Profile (1)
===============================================================================
Profile-id : 1
Description: Default egress multi-class frame-relay profile.
===============================================================================
*A:Cpm-A#
*A:Cpm-A# show qos mc-fr-profile-egress 1 detail
===============================================================================
Multi-class FR Egress Profile (1)
===============================================================================
Profile-id : 1
Description: Default egress multi-class frame-relay profile.
===============================================================================
MCFR        Mir         Weight      Max Size
Class
-------------------------------------------------------------------------------
0           100         0           25
1           85          0           5
2           0           66          200
3           0           33          1000
===============================================================================
Associations
-------------------------------------------------------------------------------
No Matching Entries
===============================================================================
*A:Cpm-A#
```

network

Syntax **network** [*policy-id*] [**detail**]

Context show>qos

Description This command displays network policy information.

Parameters *policy-id* — Displays information for the specific policy ID.

Default all network policies

Values 1 — 65535

detail — Includes information about ingress and egress DSCP and LSP EXP bit mappings and network policy interface associations.

Network QoS Policy Output Fields — The following table describes network QoS Policy output fields.

Table 31: Show QoS Network Output Fields

Label	Description
Policy-Id	The ID that uniquely identifies the policy.
Remark	True – Remarking is enabled for all packets that egress this router where the network policy is applied. The remarking is based on the forwarding class to DSCP and LSP EXP bit mapping defined under the egress node of the network QoS policy. False – Remarking is disabled.
Description	A text string that helps identify the policy's context in the configuration file.
Forward Class/ FC Name	Specifies the forwarding class name.
Profile	Out – Specifies that IP packets requiring marking the egress on this forwarding class queue that are out of profile. In – Specifies that IP packets requiring marking the egress on this forwarding class queue that are in profile.
Accounting	Packet-based – Specifies that the meters associated with this policy do not account for packet framing overheads (such as Ethernet the Inter Frame Gap (IFG) and the preamble), while accounting for the bandwidth to be used by this flow. Frame-based – Specifies that the meters associated with this policy account for the packet framing overheads (such as for Ethernet the IFG and preamble), while accounting the bandwidth to be used by the flow.
DSCP Mapping:	
Out-of-Profile	Displays the DSCP used for out-of-profile traffic.
In-Profile	Displays the DSCP used for in-profile traffic.
LSP EXP Bit Mapping:	
Out-of-Profile	Displays the LSP EXP value used for out-of-profile traffic.
In-Profile	Displays the LSP EXP value used for in-profile traffic.
Interface	Displays the interface name.

Table 31: Show QoS Network Output Fields (Continued)

Label	Description
IP Addr	Displays the interface IP address.
Port-Id	Specifies the physical port identifier that associates the interface.

```
A:ALA-12# show qos network
===============================================================================
Network Policies
===============================================================================
Policy-Id            Remark    Description
-------------------------------------------------------------------------------
1                    True Default network QoS policy.
===============================================================================
A:ALA-12#

A:ALA-12# show qos network 1
===============================================================================
QoS Network Policy
===============================================================================
Network Policy (1)
-------------------------------------------------------------------------------
Policy-id      : 1                           Remark       : True
Forward Class  : be                          Profile      : Out-profile
Description    : Default network QoS policy.
===============================================================================
A:ALA-12#



A:ALA-12# show qos network 1 detail
===============================================================================
QoS Network Policy
===============================================================================
Network Policy (1)
-------------------------------------------------------------------------------
Policy-id      : 1                           Remark       : True
Forward Class  : be                          Profile      : Out-profile
Description    : Default network QoS policy.

-------------------------------------------------------------------------------
DSCP                                  Fowarding Class                Profile
-------------------------------------------------------------------------------
ef                                    ef                              In
nc1                                   h1                              In
nc2                                   nc                              In
af11                                  af                              In
af12                                  af                              Out
af13                                  af                              Out
af21                                  l1                              In
af22                                  l1                              Out
af23                                  l1                              Out
af31                                  l1                              In
af32                                  l1                              Out
af33                                  l1                              Out
```

```
af41                                    h2                              In
af42                                    h2                              Out
af43                                    h2                              Out

-------------------------------------------------------------------------------
LSP EXP Bit Map                         Fowarding Class                 Profile
-------------------------------------------------------------------------------
0                                       be                              Out
1                                       l2                              In
2                                       af                              Out
3                                       af                              In
4                                       h2                              In
5                                       ef                              In
6                                       h1                              In
7                                       nc                              In

-------------------------------------------------------------------------------
Egress Forwarding Class Queuing
-------------------------------------------------------------------------------
FC Name        : af
- DSCP Mapping
Out-of-Profile : af12                        In-Profile   : af11
- LSP EXP Bit Mapping
Out-of-Profile : 2                           In-Profile   : 3

FC Name        : be
- DSCP Mapping
Out-of-Profile : default                     In-Profile   : default
- LSP EXP Bit Mapping
Out-of-Profile : 0                           In-Profile   : 0

FC Name        : ef
- DSCP Mapping
Out-of-Profile : ef                          In-Profile   : ef
- LSP EXP Bit Mapping
Out-of-Profile : 5                           In-Profile   : 5

FC Name        : h1
- DSCP Mapping
Out-of-Profile : nc1                         In-Profile   : nc1
- LSP EXP Bit Mapping
Out-of-Profile : 6                           In-Profile   : 6

FC Name        : h2
- DSCP Mapping
Out-of-Profile : af42                        In-Profile   : af41
- LSP EXP Bit Mapping
Out-of-Profile : 4                           In-Profile   : 4

FC Name        : l1
- DSCP Mapping
Out-of-Profile : af22                        In-Profile   : af21
- LSP EXP Bit Mapping
Out-of-Profile : 2                           In-Profile   : 3

FC Name        : l2
- DSCP Mapping
Out-of-Profile : cs1                         In-Profile   : cs1
- LSP EXP Bit Mapping
```

```
Out-of-Profile : 1                              In-Profile   : 1

FC Name        : nc
- DSCP Mapping
Out-of-Profile : nc2                            In-Profile   : nc2
- LSP EXP Bit Mapping
Out-of-Profile : 7                              In-Profile   : 7
-------------------------------------------------------------------------------
Interface Association
-------------------------------------------------------------------------------
Interface      : system
IP Addr.       : 10.10.0.3/32                   Port Id      : vport-1
Interface      : to-ser1
IP Addr.       : 10.10.13.3/24                  Port Id      : 1/1/2
===============================================================================
A:ALA-12#


config>qos# show qos network 2 detail
===============================================================================
QoS Network Policy
-------------------------------------------------------------------------------
Network Policy (2)
-------------------------------------------------------------------------------
Policy-id      : 2                              Remark       : True
Forward Class  : be                             Profile      : Out
LER Use DSCP   : False
-------------------------------------------------------------------------------
DSCP            Forwarding Class    Profile
-------------------------------------------------------------------------------
No Matching Entries
-------------------------------------------------------------------------------
LSP EXP Bit Map Forwarding Class    Profile
-------------------------------------------------------------------------------
No Matching Entries
-------------------------------------------------------------------------------
Dot1p Bit Map                 Forwarding Class              Profile
-------------------------------------------------------------------------------
3                                      ef                   n
4                                      af                   Out
5                                      nc                   Use-DE
-------------------------------------------------------------------------------
Egress Forwarding Class Queuing
-------------------------------------------------------------------------------
FC Value       : 0                              FC Name      : be
- DSCP Mapping
Out-of-Profile : be                             In-Profile   : be

- Dot1p Mapping
Out-of-Profile : 7                              In-Profile   : 7

- LSP EXP Bit Mapping
Out-of-Profile : 0                              In-Profile   : 0

- DE Mark      : Force 1

FC Value       : 1                              FC Name      : l2
- DSCP Mapping
Out-of-Profile : cs1                            In-Profile   : cs1
```

```
- Dot1p Mapping
Out-of-Profile : 1                              In-Profile   : 1

- LSP EXP Bit Mapping
Out-of-Profile : 1                              In-Profile   : 1

- DE Mark      : None
-------------------------------------------------------------------------
config>qos#

A:PE>config>qos>network$ show qos network 10 detail

===============================================================================
QoS Network Policy
===============================================================================
-------------------------------------------------------------------------------
Network Policy (10)
-------------------------------------------------------------------------------
Policy-id        : 10                     Remark           : False
Forward Class    : be                     Profile          : Out
LER Use DSCP     : False
Description      : (Not Specified)

-------------------------------------------------------------------------------
DSCP (Ingress)                           Forwarding Class                Profile
-------------------------------------------------------------------------------
No Matching Entries


-------------------------------------------------------------------------------
DSCP (Egress)                            Forwarding Class                Profile
-------------------------------------------------------------------------------
No Matching Entries


-------------------------------------------------------------------------------
Prec (Egress)                            Forwarding Class                Profile
-------------------------------------------------------------------------------
No Matching Entries


-------------------------------------------------------------------------------
LSP EXP Bit Map                          Forwarding Class                Profile
-------------------------------------------------------------------------------
No Matching Entries


-------------------------------------------------------------------------------
Dot1p Bit Map                          Forwarding Class                Profile
-------------------------------------------------------------------------------
No Matching Entries


-------------------------------------------------------------------------------
Egress Forwarding Class Mapping
-------------------------------------------------------------------------------
FC Value         : 0                     FC Name          : be
- DSCP Mapping
```

```
Out-of-Profile   : be                    In-Profile       : be

- Dot1p Mapping
Out-of-Profile   : 0                     In-Profile       : 0

- LSP EXP Bit Mapping
Out-of-Profile   : 0                     In-Profile       : 0

DE Mark          :  None
Redirect Grp Q   :  None                 Redirect Grp Plcr:  None

FC Value         : 1                     FC Name          : l2
- DSCP Mapping
Out-of-Profile   : cs1                   In-Profile       : cs1

- Dot1p Mapping
Out-of-Profile   : 1                     In-Profile       : 1

- LSP EXP Bit Mapping
Out-of-Profile   : 1                     In-Profile       : 1

DE Mark          :  None
Redirect Grp Q   :  None                 Redirect Grp Plcr:  None

FC Value         : 2                     FC Name          : af
- DSCP Mapping
Out-of-Profile   : af12                  In-Profile       : af11

- Dot1p Mapping
Out-of-Profile   : 2                     In-Profile       : 2

- LSP EXP Bit Mapping
Out-of-Profile   : 2                     In-Profile       : 3

DE Mark          :  None
Redirect Grp Q   :  None                 Redirect Grp Plcr:  None

FC Value         : 3                     FC Name          : l1
- DSCP Mapping
Out-of-Profile   : af22                  In-Profile       : af21

- Dot1p Mapping
Out-of-Profile   : 3                     In-Profile       : 3

- LSP EXP Bit Mapping
Out-of-Profile   : 2                     In-Profile       : 3

DE Mark          :  None
Redirect Grp Q   :  None                 Redirect Grp Plcr:  None

FC Value         : 4                     FC Name          : h2
- DSCP Mapping
Out-of-Profile   : af42                  In-Profile       : af41

- Dot1p Mapping
Out-of-Profile   : 4                     In-Profile       : 4

- LSP EXP Bit Mapping
Out-of-Profile   : 4                     In-Profile       : 4
```

```
DE Mark          :  None
Redirect Grp Q   :  None                  Redirect Grp Plcr:  None

FC Value         : 5                      FC Name          : ef
- DSCP Mapping
Out-of-Profile   : ef                     In-Profile       : ef

- Dot1p Mapping
Out-of-Profile   : 5                      In-Profile       : 5

- LSP EXP Bit Mapping
Out-of-Profile   : 5                      In-Profile       : 5

DE Mark          :  None
Redirect Grp Q   :  None                  Redirect Grp Plcr:  None

FC Value         : 6                      FC Name          : h1
- DSCP Mapping
Out-of-Profile   : nc1                    In-Profile       : nc1

- Dot1p Mapping
Out-of-Profile   : 6                      In-Profile       : 6

- LSP EXP Bit Mapping
Out-of-Profile   : 6                      In-Profile       : 6

DE Mark          :  None
Redirect Grp Q   :  None                  Redirect Grp Plcr:  None

FC Value         : 7                      FC Name          : nc
- DSCP Mapping
Out-of-Profile   : nc2                    In-Profile       : nc2

- Dot1p Mapping
Out-of-Profile   : 7                      In-Profile       : 7

- LSP EXP Bit Mapping
Out-of-Profile   : 7                      In-Profile       : 7

DE Mark          :  None
Redirect Grp Q   :  None                  Redirect Grp Plcr:  None

-------------------------------------------------------------------------------

-------------------------------------------------------------------------------
Ingress Forwarding Class Mapping
-------------------------------------------------------------------------------
FC Value               : 0            FC Name                 : be
Redirect UniCast Plcr  : 1            Redirect MultiCast Plcr : 3
Redirect BroadCast Plcr : 4           Redirect Unknown Plcr   : 2

FC Value               : 1            FC Name                 : l2
Redirect UniCast Plcr  : None         Redirect MultiCast Plcr : None
Redirect BroadCast Plcr : None        Redirect Unknown Plcr   : None

FC Value               : 2            FC Name                 : af
Redirect UniCast Plcr  : None         Redirect MultiCast Plcr : None
Redirect BroadCast Plcr : None        Redirect Unknown Plcr   : None
```

```
FC Value                : 3             FC Name                 : l1
Redirect UniCast Plcr   : None          Redirect MultiCast Plcr : None
Redirect BroadCast Plcr : None          Redirect Unknown Plcr   : None

FC Value                : 4             FC Name                 : h2
Redirect UniCast Plcr   : None          Redirect MultiCast Plcr : None
Redirect BroadCast Plcr : None          Redirect Unknown Plcr   : None

FC Value                : 5             FC Name                 : ef
Redirect UniCast Plcr   : None          Redirect MultiCast Plcr : None
Redirect BroadCast Plcr : None          Redirect Unknown Plcr   : None

FC Value                : 6             FC Name                 : h1
Redirect UniCast Plcr   : None          Redirect MultiCast Plcr : None
Redirect BroadCast Plcr : None          Redirect Unknown Plcr   : None

FC Value                : 7             FC Name                 : nc
Redirect UniCast Plcr   : None          Redirect MultiCast Plcr : None
Redirect BroadCast Plcr : None          Redirect Unknown Plcr   : None

-------------------------------------------------------------------------------

-------------------------------------------------------------------------------
Match Criteria (Ingress)
-------------------------------------------------------------------------------
No Matching Entries
-------------------------------------------------------------------------------

-------------------------------------------------------------------------------
Interface Association
-------------------------------------------------------------------------------
No Interface Association Found.

===============================================================================
*A:PE>config>qos>network$
```

sgt-qos

Syntax **sgt-qos**

Context show>router

Description This command displays self-generated traffic QoS related information. In the output "none" means that the default values for each application are used, not that there is no value set. For a list of application defaults, see section “QoS for Self-Generated (CPU) Traffic” and Table 21.

application

Syntax **application** [*app-name*] [**dscp|dot1p**]

Context show>router>sgt-qos

Description This command displays application QoS settings.

Parameters *app-name* — The specific application.

Values arp, bgp, cflowd, dhcp, dns, ftp, icmp, igmp, isis, ldp, mld, msdp, ndis, ntp, ospf, pimradius, rip, rsvpsnmp, snmp-notification, srrp, ssh, syslog, tacplus, telnet, tftp, traceroute, vrrp, pppoe

dscp-map

Syntax **dscp-map** [*dscp-name*]

Context show>router>sgt-qos

Description This command displays DSCP to FC mappings.

Parameters *dscp-name* — The specific DSCP name.

be, ef, cp1, cp2, cp3, cp4, cp5, cp6, cp7, cp9, cs1, cs2, cs3, cs4, cs5, nc1, nc2, af11, af12, af13, af21, af22, af23, af31, af32, af33, af41, af42, af43, cp11, cp13, cp15, cp17, cp19, cp21, cp23, cp25, cp27, cp29, cp31, cp33, cp35, cp37, cp39, cp41, cp42, cp43, cp44, cp45, cp47, cp49, cp50, cp51, cp52, cp53, cp54, cp55, cp57, cp58, cp59, cp60, cp61, cp62, cp63