

QoS Configuration Commands

Table of Contents

Chapter 1 QoS Configuration Commands	1
1.1 QoS Configuration Commands	1
1.1.1 cos default	1
1.1.2 scheduler weight bandwidth	2
1.1.3 scheduler policy	2
1.1.4 policy-map	3
1.1.5 classify	4
1.1.6 action	5
1.1.7 qos policy	6
1.1.8 show policy-map	7
1.1.9 trust	8

Chapter 1 QoS Configuration Commands

1.1 QoS Configuration Commands

QoS Configuration Commands include:

- cos default
- cos map
- dscp map
- scheduler weight bandwidth
- scheduler policy
- policy-map
- classify
- action
- qos policy
- show policy-map
- trust

1.1.1 cos default

Syntax

To configure the default value of CoS, use the **cos default** command. To disable the configuration, use the no form of this command.

cos default cos

no cos default

Parameter

Parameter	Description
cos	Default cos value. The range is 0-7

Default

The default CoS value is 0.

Usage Guidelines

Use the command in layer-2 port configuration mode and global configuration mode.

In global configuration mode, the command will configure the default CoS value of all ports. However, in layer-2 port configuration mode, the command will only configure the default CoS value of the configured port.

Example

The following example shows how to set the cos value received in interface g0/1 to 4:

```
Switch_config#inter g0/1
Switch_config_g0/1#cos default 4
```

1.1.2 scheduler weight bandwidth

Syntax

To set the weight of the wrr queues, use the first one of the following commands. To return to the default value, use the no form of this command.

scheduler weight bandwidth *weight1...weightn*

no scheduler weight bandwidth

Parameter

Parameter	Description
<i>weight1...weight8</i>	Stand for the weights of 8 CoS priority queues of WRR/DRR. 0-127.

Default

The weight of each queue is 1.

Usage Guidelines

Use the command in layer-2 port configuration mode and global configuration mode.

If this command is run in global configuration mode, the bandwidth of all priority queues on all interfaces are affected. If this command is run in layer-2 port configuration mode, only the bandwidth of the priority queues on its interfaces are affected. This command validates only when the queue schedule mode is set to WRR. This command decides the bandwidth weight value of the CoS priority queue when the WRR schedule policy is used.

The weight of the third queue and following queues can be assigned to 0. Once the weight of a queue is assigned to 0, the following queue weight will be forced to 0. In this case, mixing mode is used.

Example

The following example shows how to set the weight values of eight CoS priority queues to 1, 2, 3, 4, 5, 6, 7 and 8 respectively.

```
Switch_config # scheduler weight bandwidth 1 2 3 4 5 6 7 8
```

1.1.3 scheduler policy

Syntax

scheduler policy { **sp** | **wrr** | **wfq** | **fcfs** }

no scheduler policy

To set CoS priority queue debug policy, use the scheduler policy command.

Parameter

Parameter	Description
sp	Use the sp debug strategy.
wrr	Use the wrr debug strategy
wfq	Use the wfq debug strategy
fcfs	Use the fcfs debug strategy

Default

Use SP

Usage Guidelines

Use the command in layer-2 port configuration mode and global configuration mode.

If this command is run in global configuration mode, the queue debug policy of all ports are affected. If this command is run in port configuration mode, only the queue debug policy of its port are affected.

After configure the command, the interface send debug mode is configured to specified value.

Example

The following example shows how to set configure interface send debug mode as wrr:

```
Switch_config # scheduler policy wrr
```

1.1.4 policy-map

Syntax

To set QOS policy-map, use the policy-map command.

policy-map *name*

no policy-map *name*

Parameter

Parameter	Description
<i>name</i>	Name of the policy map , the value range is 1 to 20 characters

Default

None

Usage Guidelines

Global configuration mode

After inputting this command, the system will enter QoS policy mapping configuration mode. There are following commands in this mode:

- **classify**: It is used to configure QoS flow.
- **description**: It is used to describe QoS policy mapping.
- **exit**: It is used to quit from QoS policy mapping configuration mode.
- **no**: It is used to cancel the command that formerly inputs.
- **action**: It is used to define QoS action.

Example

The following example shows how to configure QoS policy map:

```
Switch_config # policy-map myqos
```

1.1.5 classify

Syntax

To configure the matching data traffic of QoS policy, use the classify command.

classify { **any** | **cos** *cos* | **icos** *icos* | **vlan** *vlanid* | **ivlan** *ivlanid* | **ethernet-type** *ethernet-type* | **precedence** *precedence-value* | **dscp** *dscp-value* | **tos** *tos-value* | **diffserv** *diffserv-value* | **ip** *ip-access-list* | **ipv6** *ipv6-access-list* | **mac** *mac-access-list* }

no classify { **cos** | **icos** | **vlan** | **ivlan** | **ethernet-type** | **precedence** | **dscp** | **tos** | **diffserv** | **ip** | **ipv6** | **mac** }

Parameter

Parameter	Description
any	match any data packets
cos <i>cos</i>	Configures the matching COS value; the valid range is 0 to 7
icos <i>icos</i>	Configures the matching interior tag COS value; the valid range is 0 to 7.
vlan <i>vlanid</i>	Configures the matching VLAN; the valid range is 1 to 4094
ivlan <i>ivlanid</i>	Configures interior tag vlan id. 1-4094.
ethernet-type <i>ethernet-type</i>	Configures the matching Ethernet type, 0x0600-0xFFFF
precedence <i>precedence-value</i>	The priority field in tos of ip packet (5-7 of tos), 0-7.
dscp <i>dscp-value</i>	Dscp field in tos of ip packet (2-7 of tos), 0~63.
tos <i>tos-value</i>	tos in the ip packet represents delay, throughput, reliability and cost field (1-4 of tos), 0~15.
diffserv <i>diffserv-value</i>	All tos field in Ip packet: 8, 0-255.
ip <i>ip-access-list</i>	Configures the matching IP access list name; the range is 1 to 20 characters

ipv6 <i>ipv6-access-list</i>	Configures the matching IPV6 access list name. The valid range is 1 to 20 characters.
mac <i>mac-access-list</i>	Configures the matching MAC access list name. The valid range is 1 to 20 characters.

Default

Match any data packets

Usage Guidelines

QoS policy map configuration mode

All data flows in a QoS policy table must have the same mask value, and the port number in the ip access-list must be determined, not a range.

The permit rules in the IP access list and MAC access list used to match the data flow are valid, that is, the permit rule is used to match the data flow, and the deny rule is not used to configure the data flow.

When the qinq mode is enabled, that is, after the dot1q-tunnel command is configured, the downlink interface matches the vlan or cos value of the source packet with ivlan and icos values.

Example

```
Switch-policy-map#classify vlan 4
```

1.1.6 action

Syntax

To configure the matching data traffic policy of QoS policy map, use the action command.

action{**bandwidth** *max-band* | **cos** *cos* | **drop** | **dscp** *dscp-value* | **precedence** *precedence-value* | **forward** | **icos** *icos* | **ivlanID** { **add** *addvlanid* | *ivlanid* } | **monitor** *session-value* | **quequ** *quequ-value* | **redirect** *interface-id* | **stat-packet** | **stat-byte** | **vlanID** { **add** *addvlanid* | *vlanid* } | **copy-to-cpu**}

no action {**bandwidth** | **cos** | **drop** | **dscp** | **precedence** | **forward** | | **icos** | **ivlanID** | **monitor** | **quequ** | **redirect** | **stat-packet** | **stat-byte** | **vlanID** | **copy-to-cpu**}

Parameter

Parameter	Description
bandwidth <i>max-band</i>	Maximum bandwidth to a class, the range is 1 to 163840. Unit: 64Kbps.
cos <i>cos</i>	Sets cos field as cos-value 0~7.
drop	Drops the configured packets
dscp <i>dscp-value</i>	Define the dscp field of the matching traffic as dscp-value; the range is 0 to 63

precedence <i>precedence-value</i>	Sets tos priority field of the matching flow ip packets (5~7 of tos). The range is 0-7.
forward	No operation for the matching packet.
icos <i>icos</i>	Configures the matching interior tag COS value; the valid range is 0 to 7.
ivlan { add <i>ivlanid</i> <i>ivlanid</i> }	Configures to replace or add interior tag vlan id. 1-4094.
monitor <i>session-value</i>	Send the packets to monitor interface; the range is 1-4.
queue <i>queue-value</i>	Sets mapping queue; the range is 1-8.
redirect <i>interface-id</i>	Redirects the exit of the matching traffic.
stat-packet	Calculate the number of packets.
stat-byte	Calculate the number of bytes.
vlanID { add <i>vlanid</i> <i>vlanid</i> }	Sets replacing or adding exterior vlanid; the range is 1-4094.
copy-to-cpu	Forward to CPU simultaneously.

Default

None

Usage Guidelines

QoS policy map configuration mode.

vlan and cos can be effective on the non-dot1q-tunnel-uplink interface when ivlan and icos are configured.

A policymap needs to be configured independently when Monitor is applied on the egress, or the result is abnormal.

In ingress direction, vlan, ivlan cannot configure with dscp, precedence, bandwidth, cir, mirror, stat, redirect.

In ingress direction, cos, icos cannot configure with dscp, precedence, bandwidth, cir, mirror, stat, redirect.

In egress direction, cos, icos cannot configure with dscp, precedence, bandwidth, cir, mirror, stat, redirect.

Example

```
Switch-policy-map#action redirect g0/1
```

1.1.7 qos policy

Syntax

To configure the QoS policy on interface, use the qos policy command.

```
[no] qos policy name { ingress }
```


Parameter

Parameter	Description
<i>name</i>	Name of QoS policy maps
ingress	Affect the entrance

Default

None

Usage Guidelines

Use the command in layer-2 port configuration mode and global configuration mode.

When applied in egress direction, for most actions, the incoming flow must be a known unicast to correctly match.

Example

Apply the QoS policy named pmap on the g0/1 interface

```
Switch_config#inter g0/1
```

```
Switch_config_g0/1# qos policy pmap ingress
```

1.1.8 show policy-map

Syntax

show policy-map {*policy-map-name* | **interface** [*interface-id*] | **global** }

Displays all or some designated QoS policy maps.

Parameter

Parameter	Description
<i>policy-map-name</i>	Stands for the name of a QoS policy map.
interface <i>interface-id</i>	Displays the QoS strategy of a port.
global	Global configuration strategy

Default

None

Usage Guidelines

None

Example

The following example displays all QoS strategy mapping tables.

```
Switch_config#show policy-map
policy-map      1
  classify any
  action redirect g0/1
policy-map      11
  classify any
  action
Switch_config#
```

1.1.9 trust

Syntax

[no]qos trust { *cos* | *dscp* | *untrust* }

To configure in trust mode, use **qos trust** command.

Parameter

Parameter	Description
<i>cos</i>	Modes of trust.
<i>dscp</i>	Trust mode.
<i>untrust</i>	Untrust mode.

Default

None

Usage Guidelines

Use the command in global configuration mode.

Example

The following example shows how to configure trust cos:

```
Switch_config#qos trust cos
```