FS.COM

FiberstoreOS

Traffic Management Command Line Reference

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1 QOS Commands

1.1 show qos

Use this command to show whether QoS is enable globally.

Command Syntax

show qos

Command Mode

Priviledge EXEC

Defaults

Disabled

Usage

This command is used to show QoS configurations globally.

Examples

This example shows how to enable QoS globally.

Switch# show qos

```
Disable
```

Related Commands

qos enable

1.2 show qos interface

Use this command to show QoS configurations for an interface.

Command Syntax

show qos interface *NAME*

NAME	interface name

Command Mode

Privileged EXEC

Defaults

None

Usage

This command is used to show QoS configurations for an interface.

Examples

Switch#show qos interface eth-0-1

```
  Interface QoS domain: 0
  Interface trust state: cos
  Interface default CoS value: 0
    Schedule mode: SP(between Class), WDRR(between queue in the same Class)
    The number of class on interface: 4
    Strict priority class ID: 3 2 1 0
    The number of egress queue: 16
      Queue 0 class 1, DRR weight 1
        Tail drop mode
        Tail drop threshold(Tresh0 Tresh1 Tresh2): 224  240  256
      Queue 1 class 1, DRR weight 25
        Tail drop mode
        Tail drop threshold(Tresh0 Tresh1 Tresh2): 224  240  256
      Queue 2 class 1, DRR weight 4
        Tail drop mode
        Tail drop threshold(Tresh0 Tresh1 Tresh2): 224  240  256
      Queue 3 class 1, DRR weight 10
        Tail drop mode
        Tail drop threshold(Tresh0 Tresh1 Tresh2): 224  240  256
      Queue 4 class 1, DRR weight 10
        Tail drop mode
        Tail drop threshold(Tresh0 Tresh1 Tresh2): 224  240  256
      Queue 5 class 1, DRR weight 10
        Tail drop mode
        Tail drop threshold(Tresh0 Tresh1 Tresh2): 224  240  256
      Queue 6 class 1, DRR weight 10
        Tail drop mode
        Tail drop threshold(Tresh0 Tresh1 Tresh2): 224  240  256
```

```
    Queue 7 class 3, DRR weight 1
      Tail drop mode
      Tail drop threshold(Tresh0 Tresh1 Tresh2): 224  240  256
      Queue shape with CIR 300000 kbps, PIR 300000 kbps, burst size 4294967295 bytes
    Queue 8 class 3, DRR weight 1
      Tail drop mode
      Tail drop threshold(Tresh0 Tresh1 Tresh2): 224  240  256
    Queue 9 class 3, DRR weight 1
      Tail drop mode
      Tail drop threshold(Tresh0 Tresh1 Tresh2): 224  240  256
    Queue 10 class 3, DRR weight 1
      Tail drop mode
      Tail drop threshold(Tresh0 Tresh1 Tresh2): 224  240  256
    Queue 11 class 3, DRR weight 1
      Tail drop mode
      Tail drop threshold(Tresh0 Tresh1 Tresh2): 224  240  256
    Queue 12 class 3, DRR weight 1
      Tail drop mode
      Tail drop threshold(Tresh0 Tresh1 Tresh2): 224  240  256
    Queue 13 class 3, DRR weight 1
      Tail drop mode
      Tail drop threshold(Tresh0 Tresh1 Tresh2): 224  240  256
    Queue 14 class 3, DRR weight 1
      Tail drop mode
      Tail drop threshold(Tresh0 Tresh1 Tresh2): 224  240  256
    Queue 15 class 3, DRR weight 1
      Tail drop mode
      Tail drop threshold(Tresh0 Tresh1 Tresh2): 224  240  256
```

Related Commands

qos domain

trust

cos

queue class

queue random-detect

queue tail-drop threshold

queue drr-weight

1.3 show qos aggregator-policer

Use this command to show aggregator-policer information.

Command Syntax

show qos aggregator-policer (*NAME*| (**statistics**|)）

NAME	aggregate policer name
statistics	Show the statistics of the aggregator policer

Command Mode

Privileged EXEC

Defaults

None

Usage

This command is used to show aggregator-policer information.

Examples

Switch# show qos aggregator-policer

```
AGGREGATOR-POLICER-NAME: agg_plc
   CIR 40000 kbps, CBS 40000 bytes, PBS 40000 bytes, color aware mode, drop color is red use-l3-length
```

Related Commands

policer-aggregate

aggregate-policer

1.4 show policy-map statistics interface

Use this command to show the statistics of policy-map on interface.

Command Syntax

show policy-map statistics interface *NAME* (**input|output**) (**ace-based|class-based|**) (**class** *CMAP-NAME|*)

NAME	interface name
input	The statistics of input direction will be shown
output	The statistics of output direction will be shown

ace-based	The statistics of matching ace will be shown
class-based	statistics of class-map will be shown
class *CMAP-NAME*	statistics of the specified class-map can be shown

Command Mode

Privileged EXEC

Defaults

None

Usage

Using this command, the flow policer stats can be shown when class-based is specified and flow policer stats is enabled.

The statistics of ace-based and class-based have results only when the statistics is enabled.

Examples

Switch# show policy-map statistics interface eth-0-1 input ace-based class cmap

```
 Interface: eth-0-1
 Ingress service policy: pmap
Class name: cmap, operator : match-any
 access-group ipacl
  10 permit any any any ( 1 match 64 bytes)
total 1 match 64 bytes
```

Related Commands

policy-map

show policy-map

show running-config policy-map

1.5 show qos domain map-table all

Use this command to display the both ingress and egress information of QoS map-table.

Command Syntax

show qos domain map-table all (default |running)

DOMAIN-NUMBER	QoS domain form 0 to 7
default	default configuration
running	running configuration

Command Mode

Priviledge EXEC

Defaults

None

Usage

Using this command, the mapping table for qos domain can be shown.

Examples

This example shows how to display the default information of map-table in QoS domain 1.

Switch# show qos domain 1 map-table all default

This example shows how to display the running information of map-table in QoS domain 1.

Switch# show qos domain 1 map-table all running

Related Commands

show qos domain map-table egress

show qos domain map-table ingress

1.6 show qos domain map-table ingress

Use this command to display the ingress information of qos map-table.

Command Syntax

show qos domain *DOMAIN-NUMBER* **map-table ingress** (**all** |**cos-priority-color** |**dscp-priority-color** |**exp-priority-color** |**ip-prec-priority-color**) (**default** |**running**)

DOMAIN-NUMBER	QoS domain form 0 to 7

all	All ingress map table
cos-priority-color	cos map to priority and color
dscp-priority-color	dscp map to priority and color
exp-priority-color	exp map to priority and color
ip-prec-priority-color	ip precedence map to priority and color
default	default configuration
running	running configuration

Command Mode

Priviledge EXEC

Defaults

None

Usage

Using this command, the ingress mapping table for qos domain can be shown.

Examples

This example shows how to display the ingress information of qos map-table.

Switch# show qos domain 1 map-table ingress all default

Related Commands

show qos domain map-table all

show qos domain map-table egress

1.7 show qos domain map-table egress

Use this command to display the egress information of qos map-table.

Command Syntax

show qos domain *DOMAIN-NUMBER* **map-table egress** (**all** |**priority-color-cos** | **priority-color-dscp** |**priority-color-exp** |**phb-cos** |**phb-dscp** |**phb-exp** |**phb-all**) (**default** |**running**)

DOMAIN-NUMBER	QoS domain form 0 to 7
all	All ingress map table
priority-color-cos	priority and color map to cos
priority-color-dscp	priority and color map to dscp
priority-color-exp	priority and color map to exp
phb-cos	PHB map to cos
phb-dscp	PHB map to dscp
phb-exp	PHB map to exp
phb-all	PHB map to all
default	default configuration
running	running configuration

Command Mode

Priviledge EXEC

Defaults

None

Usage

Using this command, the egress mapping table for qos domain can be shown.

Examples

This example shows how to display the egress information of qos map-table.

Switch# show qos domain 1 map-table egress all default

Related Commands

show qos domain map-table all

show qos domain map-table ingress

1.8 show qos map-table priority-color-qid-tid

Use this command to display mapping between priority/color and queueId/thresholdId of qos map-table.

Command Syntax

show qos map-table priority-color-qid-tid (default |running)

show qos map-table phb-qid-tid (default |running)

priority-color-qid-tid	priority and color map to queueId and thresholdId
phb-qid-tid	phb map to queueId and thresholdId
default	default configuration
running	running configuration

Command Mode

Priviledge EXEC

Defaults

None

Usage

Using this command, the priority/color and queue/threshold mapping relation can be shown.

Examples

This example shows how to display the default map for priority and color to queueId and thresholdId.

Switch# show qos map-table priority-color-qid-tid default

This example shows how to display the default map for phb to queueId and thresholdId.

Switch# show qos map-table phb-qid-tid default

Related Commands

show qos domain map-table all

show qos domain map-table egress

1.9 show qos map-table phb-priority-color

Use this command to display mapping between priority/color and phb. The mapping between priority/color and PHB isn't configurable.

Command Syntax

show qos map-table phb-priority-color

phb-priority-color	PHB map to priority and color

Command Mode

Priviledge EXEC

Defaults

None

Usage

Using this command, the phb to priority/color mapping relation can be shown.

Examples

This example shows how to display the map for phb to priority and color.

Switch# show qos map-table phb-priority-color

```
QoS PHB map to priority/color:
PHB Name  | Priority Color
-------------------------------------------
cs1       | 0        green
df        | 1        green
af11      | 2        green
af12      | 2        yellow
af13      | 2        red
af21      | 3        green
af22      | 3        yellow
af23      | 3        red
af31      | 4        green
af32      | 4        yellow
af33      | 4        red
af41      | 5        green
af42      | 5        yellow
af43      | 5        red
cs2       | 6        green
cs3       | 7        green
cs6       | 8        green
cs7       | 9        green
cs4       | 10       green
cs5       | 11       green
ef        | 12       green
```

Related Commands

None

1.10 show class-map

Use this command to show class-map information

Command Syntax

show class-map (*NAME*|)

NAME	class-map name

Command Mode

Privileged EXEC

Defaults

None

Usage

This command is used to show class-map information.

Examples

Switch# show class-map

```
    CLASS-MAP-NAME: class-default (match-any)
    CLASS-MAP-NAME: cmap (match-any)
      match access-group: macacl
    CLASS-MAP-NAME: cmap2 (match-all)
```

Related Commands

show running-config class-map

1.11 show policy-map

Use this command to show policy-map information.

Command Syntax

show policy-map (*NAME*|)

NAME	policy-map name

Command Mode

Privileged EXEC

Defaults

None

Usage

This command is used to show policy-map information.

Examples

Switch# show policy-map plc_map

```
  POLICY-MAP-NAME: pmap
    State: detached
    CLASS-MAP-NAME: cmap
      match access-group: macacl
        CIR 1000 kbps, CBS 100000 bytes, PIR 2000 kbps, PBS 100000 bytes, color blind mode, drop
color is red
    CLASS-MAP-NAME: cmap2
        CIR 2000 kbps, CBS 100000 bytes, PIR 3000 kbps, PBS 100000 bytes, color blind mode, drop
color is red
```

Related Commands

policy-map

show running-config policy-map

1.12 qos enable

Use this command to enable QoS globally. To disable QoS, use the no form of this command.

Command Syntax

qos enable

no qos enable

Command Mode

Global Configuration

Defaults

Disabled

Usage

Using this command, the qos can be enable globally.

Examples

This example shows how to enable QoS globally.

Switch(config)# qos enable

This example shows how to enable QoS globally.

Switch(config)# no qos enable

Related Commands

show qos

1.13 ipg shaping enable

Use the ipg shaping enable to let shaping calculate IPG bytes. Use the no form of this command to return to the default setting.

Command Syntax

ipg shaping enable

no ipg shaping enable

Command Mode

Global Configuration

Defaults

Disabled

Usage

This command can be configured on global configure mode.

Examples

This example shows how to configure shaping to calculate IPG bytes.

Switch(config)# ipg shaping enable

This example shows how to disable shaping to calculate IPG bytes.

Switch(config)# no ipg shaping enable

Related Commands

None

1.14 ipg policer enable

Use the ipg policer enable to let policer calculate IPG bytes. Use the no form of this command to return to the default setting.

Command Syntax

ipg policer enable

no ipg policer enable

Command Mode

Global Configuration

Defaults

Disabled

Usage

This command can be configured on global configure mode.

Examples

This example shows how to configure policer to calculate IPG bytes.

Switch(config)# ipg policer enable

This example shows how to disable policer to calculate IPG bytes.

Switch(config)# no ipg policer enable

Related Commands

None

1.15 policy-map

Use this command to create a policy map. To remove the policy-map, use the no form of this command.

Command Syntax

policy-map *NAME*

no policy-map *NAME*

NAME	Specify a policy-map name

Command Mode

Global Configuration

Defaults

None

Usage

The policy-map can be attached to multiple physical ports at both ingress and egress directions.

Examples

Create a policy-map named pm1

Switch(config)# policy-map pm1

Switch(config-pmap)#quit

Delete a policy-map named pm1

Switch(config)# no policy-map pm1

Switch(config)#

Related Commands

show policy-map

1.16 class-map

Use this command to create a class-map. To remove the class-map, use the **no** form of this command.

Command Syntax

class-map (**match-all**|**match-any**|) *NAME*

no class-map *NAME*

match-all	Logical-AND all matching statements under this class-map
match-any	Logical-OR all matching statements under this class-map
NAME	Specify a class-map name, the name of “class-default” is reserved

Command Mode

Global Configuration

Defaults

None

Usage

This command is used to define the traffic class template.

Examples

Create a class-map

Switch(config)# class-map match-any cm1

Remove a class-map

Switch(config)# no class-map cm1

Related Commands

show class-map

1.17 qos domain map cos-pri-color

Use this command to modify the COS-to-Priority/Color or COS-to-PHB map. To return to the default value, use the no form of this command. The command of cos-phb is a alias command for cos-pri-color.

Command Syntax

qos domain *DOMAIN-NUMBER* **map cos-pri-color cos** *COS* **to** *PRIORIITY COLOR*

qos domain *DOMAIN-NUMBER* **map cos-phb cos** *COS* **to** *PHB-TYPE*

no qos domain *DOMAIN-NUMBER* **map cos-pri-color (***COS***)**

DOMAIN-NUMBER	QoS domain form 0 to 7
COS	Select which CoS will be specified map. The range of CoS is from 0 to 7.
PRIORIITY	The internal priority of packet from 0 to 63
COLOR	Color for packet, should be green, red or yellow
PHB-TYPE	The type of PHB, that can be one of af11, af12, af13, af21, af22, af23, af31, af32, af33, af41, af42, af43, ef, df, cs1, cs2, cs3, cs4, cs5, cs6 and cs7.

Command Mode

Global Configuration

Defaults

CoS	0	1	2	3	4	5	6	7
Priority	1	2	3	4	5	12	8	9
Color	green	green	green	green	green	green	green	green
PHB	df	af11	af21	af31	af41	ef	cs6	cs7

Usage

This command is used to define the mapping table of cos to priority/color.

Examples

This example shows how to modify the cos-to-priority/color map to map cos 7 to outgoing priority value 63, and to set the color value green for a QoS domain.

Switch(config)# qos domain 1 map cos-pri-color cos 7 to 63 green

This example shows how to return to the default value.

Switch(config)#no qos domain 1 map cos-pri-color

This example shows how to modify the cos-to-phb map to map cos 5 to outgoing phb af11 for a QoS domain.

Switch(config)# qos domain 1 map cos-phb cos 5 to af11

Related Commands

show qos domain map-table

1.18 qos domain cfi enable

Use this command to enable canonical format indicator drop in the priority/color or PHB to COS map and COS to PHB or priority/color map. To return to the default value, use the no form of this command.

Command Syntax

qos domain *DOMAIN-NUMBER* **cfi enable**

no qos domain *DOMAIN-NUMBER* **cfi enable**

DOMAIN-NUMBER	QoS domain form 0 to 7

Command Mode

Global Configuration

Defaults

Disabled

Usage

The field named as Canonical Format Indicator (CFI) of VLAN tag is re-defined at IEEE 802.1ad. The new definition is Drop Eligible Indicator (DEI). Using this command, the DEI bit will be considered on color mapping.

Examples

This example shows how to enable Drop Eligible Indicator (DEI) processing in the priority/color or PHB to COS map and COS to PHB or priority/color map.

Switch(config)# qos domain 1 cfi enable

This example shows how to return to the default value.

Switch(config)# no qos domain 1 cfi enable

Related Commands

show qos domain map-table

1.19 qos domain map ip-prec-pri-color

Use this command to modify the IP Precedence to Pri/Color for PHB map. To return to the default value, use the no form of this command. The command of ip-prec-phb is a alias command for ip-prec-pri-color.

Command Syntax

qos domain *DOMAIN-NUMBER* **map ip-prec-pri-color ip-prec** *IP-PREC* **to** *PRIORIITY COLOR*

no qos domain *DOMAIN-NUMBER* **map ip-prec-pri-color (***IP-PREC***)**

DOMAIN-NUMBER	QoS domain form 0 to 7
IP-PREC	Select which IP Precedence will be specified. The range of IP Precedence is from 0 to 7.
PRIORIITY	The internal priority of packet from 0 to 63
COLOR	Color for packet, should be green, red or yellow

Command Mode

Global Configuration

Defaults

IP Precedence	0	1	2	3	4	5	6	7
Priority	1	0	6	7	10	11	8	9
Color	green	green	green	green	green	green	green	green

Usage

This command is used to define the mapping table of IP Precedence to priority/color.

Examples

This example shows how to modify the ip precedence to pri/color map to map ip prec 7 to outgoing priority value 63, and to set the color value green for a QoS domain.

Switch(config)# qos domain 1 map ip-prec-pri-color ip-prec 7 to 63 green

This example shows how to return to the default value.

Switch(config)# no qos domain 1 map ip-prec-pri-color

Related Commands

show qos domain map-table

1.20 qos domain map dscp-pri-color

Use this command to modify the dscp-priority-color or dscp-phb map for a particular QoS domain. To return to the default value, use the no form of this command. The command of dscp-phb is a alias command for dscp-pri-color.

Command Syntax

qos domain *DOMAIN-NUMBER* **map dscp-pri-color** *DSCP* **to** *PRIORIITY COLOR*

no qos domain *DOMAIN-NUMBER* **map dscp-pri-color (***DSCP***)**

DOMAIN-NUMBER	QoS domain form 0 to 7
DSCP	Select which DSCP will be specified map. The range of DSCP is from 0 to 63.
PRIORIITY	The internal priority of packet from 0 to 63
COLOR	Color for packet, should be green, red or yellow

Command Mode

Global Configuration

Defaults

DSCP	Priority	Color
8	0	green
10	2	green
12	2	yellow
14	2	red
16	6	green
18	3	green
20	3	yellow
22	3	red
24	7	green
26	4	green
28	4	yellow
30	4	red
32	10	green
34	5	green
36	5	yellow
38	5	red
40	11	green
46	12	green
48	8	green
56	9	green
Other	1	green

Usage

This command is used to define the mapping table of DSCP to priority/color.

Examples

This example shows how to modify dscp-priority-color map to map incoming dscp value 63 to outgoing priority value 63, and to set the color value green for domain 1.

Switch(config)# qos domain 1 map dscp-pri-color 63 to 63 green

This example shows how to return to the default value.

Switch(config)#no qos domain 1 map dscp-pri-color

Related Commands

show qos domain map-table

1.21 qos domain map exp-pri-color

Use this command to modify the exp-to-priority/color or exp-to-phb map. To return to the default value, use the no form of this command. The command of exp-phb is a alias command for exp-pri-color.

Command Syntax

qos domain *DOMAIN-NUMBER* **map exp-pri-color exp** *EXP* **to** *PRIORIITY COLOR*

no qos domain *DOMAIN-NUMBER* **map exp-pri-color (***EXP*|**)**

DOMAIN-NUMBER	QoS domain form 0 to 7
EXP	Select which EXP will be specified map. The range of EXP is from 0 to 7.
PRIORIITY	The internal priority of packet from 0 to 63
COLOR	Color for packet, should be green, red or yellow

Command Mode

Global Configuration

Defaults

EXP	0	1	2	3	4	5	6	7
Priority	1	2	3	4	5	12	8	9
Color	green	green	green	green	green	green	green	green

Usage

This command is used to define the mapping table of EXP to priority/color.

Examples

This example shows how to modify the exp-to-priority/color map to map exp 7 to outgoing priority value 63, and to set the color value green for a QoS domain.

Switch(config)# qos domain 1 map exp-pri-color exp 7 to 63 green

This example shows how to return to the default value.

Switch(config)# no qos domain 1 map exp-pri-color

Related Commands

show qos domain map-table

1.22 qos domain map pri-color-cos

Use this command to modify the priority/color or PHB to CoS map. To return to the default value, use the no form of this command. The command of phb-cos is a alias command for pri-color-cos.

Command Syntax

qos domain *DOMAIN-NUMBER* **map pri-color-cos** *PRIORIITY COLOR* **to** *COS*

qos domain *DOMAIN-NUMBER* **map phb-cos** *PHB-TYPE* **to** *COS*

no qos domain *DOMAIN-NUMBER* **map pri-color-cos** (*PRIORIITY COLOR*|)

DOMAIN-NUMBER	QoS domain form 0 to 7
COS	Select which CoS will be specified map. The range of CoS is from 0 to 7.
PRIORIITY	The internal priority of packet from 0 to 63
COLOR	Color for packet, should be green, red or yellow
PHB-TYPE	The type of PHB, that can be one of af11, af12, af13, af21, af22, af23, af31, af32, af33, af41, af42, af43, ef, df, cs1, cs2, cs3, cs4, cs5, cs6 and cs7.

Command Mode

Global Configuration

Defaults

The default mapping table for priority color to cos.

Priority	CoS for Red	CoS for Yellow	Cos for Green
0	0	0	0
1	0	0	0
2	1	1	1
3	2	2	2
4	3	3	3
5	4	4	4
6	6	6	6
7	6	6	6
8	6	6	6
9	7	7	7
10	5	5	5
11	5	5	5
12	5	5	5
13 to 63	0	0	0

The default mapping table for PHB to CoS.

PHB	CoS
cs1	0
df	0
af11	1
af12	1
af13	1
af21	2
af22	2
af23	2
af31	3
af32	3

PHB	CoS
af33	3
af41	4
af42	4
af43	4
cs2	6
cs3	6
cs6	6
cs7	7
cs4	5
cs5	5
ef	5

Usage

This command is used to define the mapping table of priority/color to CoS.

Examples

This example shows how to modify the priority/color to CoS map to map outgoing priority value 63 to the color value green and cos value 7.

Switch(config)# qos domain 1 map pri-color-cos 63 green to 7

This example shows how to return to the default value.

Switch(config)# no qos domain 1 map pri-color-cos

This example shows how to modify the PHB to CoS map to map outgoing PHB af33 to cos value 7.

Switch(config)# qos domain 0 map phb-cos af33 to 7

Related Commands

show qos domain map-table

1.23 qos domain map pri-color-dscp

Use this command to modify the priority/color or PHB to DSCP map. To return to the default value, use the no form of this command. The command of phb-dscp is a alias command for pri-color-dscp.

Command Syntax

qos domain *DOMAIN-NUMBER* **map pri-color-dscp** *PRIORIITY COLOR* **to** *DSCP*

qos domain *DOMAIN-NUMBER* **map phb-dscp** *PHB-TYPE* **to** *DSCP*

no qos domain *DOMAIN-NUMBER* **map pri-color-dscp** (*PRIORIITY COLOR*|)

DOMAIN-NUMBER	QoS domain form 0 to 7
DSCP	Select which DSCP will be specified map. The range of DSCP is from 0 to 63.
PRIORIITY	The internal priority of packet from 0 to 63
COLOR	Color for packet, should be green, red or yellow
PHB-TYPE	The type of PHB, that can be one of af11, af12, af13, af21, af22, af23, af31, af32, af33, af41, af42, af43, ef, df, cs1, cs2, cs3, cs4, cs5, cs6 and cs7.

Command Mode

Global Configuration

Defaults

The default mapping table for priority color to DSCP.

Priority	DSCP for Red	DSCP for Yellow	DSCP for Green
0	8	8	8
1	0	0	0
2	14	12	10
3	22	20	18
4	30	28	26
5	38	36	34
6	16	16	16
7	24	24	24
8	48	48	48
9	56	56	56

Priority	DSCP for Red	DSCP for Yellow	DSCP for Green
10	32	32	32
11	40	40	40
12	46	46	46
13 to 63	0	0	0

The default mapping table for PHB to DSCP.

PHB	DSCP
cs1	8
df	0
af11	10
af12	12
af13	14
af21	18
af22	20
af23	22
af31	26
af32	28
af33	30
af41	34
af42	36
af43	38
cs2	16
cs3	24
cs6	48
cs7	56
cs4	32
cs5	40
ef	46

Usage

This command is used to define the mapping table of priority/color to DSCP.

Examples

This example shows how to modify the priority/color to DSCP map to map priority value 63 and the color value green to dscp 63.

Switch(config)# qos domain 1 map pri-color-dscp 63 green to 63

This example shows how to return to the default value.

Switch(config)# no qos domain 1 map pri-color-dscp

This example shows how to modify the PHB to DSCP map to map PHB ef to dscp 63.

Switch(config)# qos domain 0 map phb-dscp ef to 63

Related Commands

show qos domain map-table

1.24 qos domain map pri-color-exp

Use this command to modify the priority/color or PHB to EXP map. To return to the default value, use the no form of this command. The command of phb-exp is a alias command for pri-color-exp.

Command Syntax

qos domain *DOMAIN-NUMBER* **map pri-color-exp** *PRIORIITY COLOR* **to** *EXP*

qos domain *DOMAIN-NUMBER* **map phb-exp** *PHB-TYPE* **to** *EXP*

no qos domain *DOMAIN-NUMBER* **map pri-color-exp** (*PRIORIITY COLOR*|)

DOMAIN-NUMBER	QoS domain form 0 to 7
EXP	Select which EXP will be specified map. The range of EXP is from 0 to 7.
PRIORIITY	The internal priority of packet from 0 to 63
COLOR	Color for packet, should be green, red or yellow
PHB-TYPE	The type of PHB, that can be one of af11, af12, af13, af21, af22, af23, af31, af32, af33, af41, af42, af43, ef, df, cs1, cs2, cs3, cs4, cs5, cs6 and cs7.

Command Mode

Global Configuration

Defaults

The default mapping table for priority color to EXP.

Priority	EXP for Red	EXP for Yellow	EXP for Green
0	0	0	0
1	0	0	0
2	1	1	1
3	2	2	2
4	3	3	3
5	4	4	4
6	6	6	6
7	6	6	6
8	6	6	6
9	7	7	7
10	5	5	5
11	5	5	5
12	5	5	5
13 to 63	0	0	0

The default mapping table for PHB to EXP.

PHB	EXP
cs1	0
df	0
af11	1
af12	1
af13	1
af21	2
af22	2

PHB	EXP
af23	2
af31	3
af32	3
af33	3
af41	4
af42	4
af43	4
cs2	6
cs3	6
cs6	6
cs7	7
cs4	5
cs5	5
ef	5

Usage

This command is used to define the mapping table of priority/color to EXP.

Examples

This example shows how to modify the priority/color to EXP map to map priority value 32 and the color value green to exp 4.

Switch(config)# qos domain 1 map pri-color-exp 32 green to 4

This example shows how to return to the default value.

Switch(config)# no qos domain 1 map pri-color-exp

This example shows how to modify the PHB to EXP map to map PHB af33 to exp 2.

Switch(config)# qos domain 1 map phb-exp af33 to 2

Related Commands

show qos domain map-table

1.25 qos map pri-color-queue-threshold

Use this command to modify the priority/color or PHB to queue and threshold map. To return to the default value, use the no form of this command. The command of phb-queue-threshold is a alias command for pri-color-queue-threshold.

Command Syntax

qos map pri-color-queue-threshold *PRIORIITY COLOR* **to** *QUEUE-ID THRESHOLD-ID*

qos map phb-queue-threshold *PHB-TYPE* **to** *QUEUE-ID THRESHOLD-ID*

no qos map pri-color-queue-threshold (*PRIORIITY COLOR*|)

PRIORIITY	The internal priority of packet from 0 to 63
COLOR	Color for packet, should be green, red or yellow
PHB-TYPE	The type of PHB, that can be one of af11, af12, af13, af21, af22, af23, af31, af32, af33, af41, af42, af43, ef, df, cs1, cs2, cs3, cs4, cs5, cs6 and cs7.
QUEUE-ID	The id of queue for egress port. The range of queue id is from 0 to 15.
THRESHOLD-ID	The id of drop precedence mapping to threshold value

Command Mode

Global Configuration

Defaults

The default mapping table for priority color to queue-id and threshold-id.

Priority	queue-id/threshold-id for Red	queue-id/threshold-id for Yellow	queue-id/threshold-id for Green
0	0,0	0,1	0,2
1	1,0	1,1	1,2
2	2,0	2,1	2,2
3	3,0	3,1	3,2
4	4,0	4,1	4,2
5	5,0	5,1	5,2

Priority	queue-id/threshold-id for Red	queue-id/threshold-id for Yellow	queue-id/threshold-id for Green
6	6,1	6,1	6,1
7	6,0	6,0	6,0
8	6,2	6,2	6,2
9	6,2	6,2	6,2
10	7,0	7,1	7,2
11	7,0	7,1	7,2
12	7,0	7,1	7,2
13 to 63	1,0	1,1	1,2

The default mapping table for PHB is to queue-id and threshold-id.

PHB	queue-id	threshold-id
cs1	0	2
df	1	2
af11	2	2
af12	2	1
af13	2	0
af21	3	2
af22	3	1
af23	3	0
af31	4	2
af32	4	1
af33	4	0
af41	5	2
af42	5	1
af43	5	0
cs2	6	1
cs3	6	0
cs6	6	2

PHB	queue-id	threshold-id
cs7	6	2
cs4	7	2
cs5	7	2
ef	7	2

Usage

This command is used to define the mapping table of priority/color to queue-id and threshold-id.

Examples

This example shows how to modify the priority/color to queueId/thresholdId map to map priority value 32 and the color value green to queue 10, threshold 2.

Switch(config)# qos map pri-color-queue-threshold 32 green to 10 2

This example shows how to return to the default value.

Switch(config)# qos map pri-color-queue-threshold 32 green

This example shows how to modify the PHB to queueId/thresholdId map to map PHB af22 to queue5, threshold2.

Switch(config)# qos map phb-queue-threshold af22 to 5 2

Related Commands

show qos map-table priority-color-qid-tid

1.26 qos policer flow-first

Use this command to configure the order of executing between port-policing and flow-policing. To return to the default policing execution sequence, use the no form of this command.

Command Syntax

qos policer flow-first

no qos policer flow-first

Command Mode

Global Configuration

Defaults

Disabled

Usage

If both port policer and flow policer are configured for an interface, the default policing execution sequence is to do port policer first and then flow policer. Use this command the change that execution sequence.

Examples

This example shows how to set flow policing first.

Switch(config)# qos policer flow-first

Related Commands

policer

port-policer

1.27 qos aggregate-policer

Use this command to create an aggregate policer instance. The aggregate policer can be shared by multiple classes of traffic. To remove the aggregate policer instance, use the no form of this command.

Command Syntax

qos aggregate-policer *NAME* (**color-blind**|**color-aware**|) **cir** *CIR-RATE* (**cbs** *CBS-SIZE*|) (**ebs** *EBS-SIZE*|**pir** *PIR-RATE* (**pbs** *PBS-SIZE*|)|) (**drop-color** *COLOR*|) (**use-l3-length**|)) (**stats**|)

no qos aggregate-policer *NAME*

NAME	Specify an aggregate-policer name
color-blind	Color blind mode policer
color-aware	Color aware mode policer
cir *CIR-RATE*	CIR - Commit Information Rate with the range of 1 to 10,000,000 kbps
cbs *CBS-SIZE*	CBS - Commit Burst Size with the range of 0 to 4,000,000 bytes

ebs *EBS-SIZE*	EBS - Excess Burst Size with the range of 0 to 4,000,000 bytes
pir *PIR-RATE*	PIR - Peak Information Rate with the range of 1 to 10,000,000 kbps
pbs *PBS-SIZE*	PBS - Peak Burst Size with the range of 0 to 4,000,000 bytes
drop-color *COLOR*	drop color configuration includes yellow and red
use-l3-length	Use l3 length for policing
stats	enable policer statistics

Command Mode

Global Configuration

Defaults

Disabled

Usage

This command is used to create aggregate-policer instance. Color-blind or Color-aware, SRTCM or TRTCM can be configured.

The max number of aggregate policer and flow policer, which is configured in policy-map, is 128 per line-card.

If policer with statistics is configured, and stats are entered when the policer is created, policer statistics is working.

The statistics cannot be modified after the policer is created.

Examples

This example shows how to create an aggregate-policer named agg_plc for SRTCM mode

Switch(config)# qos aggregate-policer agg_plc color-aware cir 10000 cbs 40000 ebs 40000 drop-color red

Remove aggregate-policer

Switch(config)# no qos aggregate-policer agg_plc

Related Commands

show qos aggregator-policer

policer-aggregate

qos statistics policer

1.28 qos statistics policer

Use this command enable the policer statistics. To disable it, use the no form of this command.

Command Syntax

qos statistics policer

no qos statistics policer

Command Mode

Global Configuration

Defaults

Disabled

Usage

Using this command, the statistics of policer can be enabled.

Examples

This example shows how to enable the policer statistics.

Switch(config)# qos statistics policer

This example shows how to disable the policer statistics.

Switch(config)# no qos statistics policer

Related Commands

clear qos flow-policer statistics

1.29 clear qos aggregate-policer statistics

Use this command to clear aggregate policing statistics.

Command Syntax

clear qos aggregate-policer *NAME* **statistics**

NAME	aggregate policer name

Command Mode

Privileged EXEC

Defaults

None

Usage

This command is used to clear aggregate policing statistics.

Examples

Switch# clear qos aggregate-policer plc_agg statistics

Related Commands

qos statistics policer

1.30 qos statistics queue

Use this command enable the queue statistics. To disable it, use the no form of this command.

Command Syntax

qos statistics queue

no qos statistics queue

Command Mode

Global Configuration

Defaults

Disabled

Usage

This command is used to enable en-queue statistics.

Examples

This example shows how to enable the queue statistics.

Switch(config)# qos statistics queue

This example shows how to disable the queue statistics.

Switch(config)# no qos statistics queue

Related Commands

clear qos statistics

1.31 service-policy

Use this command to apply a policy-map to an interface to affect the traffic classification rules. To remove the policy-map from the interface, use the no form of this command.

Command Syntax

service-policy (**input** | **output**) *NAME*

no service-policy (**input** | **output**)

NAME	the policy-map name
input	apply policy-map to the inbound of an interface
output	apply policy-map to the outbound of an interface

Command Mode

Interface Configuration

Defaults

None

Usage

Use the service-policy interface configuration command to apply a policy map defined by the policy-map command to the input or output of a particular interface.

The interface can be physical interface, vlan interface, linkagg interface.

Examples

Configure a policy to ingress of a physical interface

Switch(config)# interface eth-0-1

Switch(config-if)# service-policy input plc_map1

Remove a policy from ingress of a physical interface

Switch(config-if)# no service-policy input

Related Commands

show qos interface

policy-map

1.32 qos domain

Use this command to configure QoS domain for an interface. To return to the default value, use the no form of this command.

Command Syntax

qos domain *DOMAIN-NUMBER*

no qos domain

DOMAIN-NUMBER	QoS domain form 0 to 7

Command Mode

Interface Configuration

Defaults

The default QoS domain for each interface is 0.

Usage

This command is used to change the QoS domain of interface.

Examples

This example shows how to configure QoS domain for an interface.

Switch(config-if)# qos domain 5

This example shows how to cancel this setting.

Switch(config-if)# no qos domain

Related Commands

show qos interface

1.33 cos

Use this command to configure default cos value for an interface. To cancel this setting, use the no form of this command.

Command Syntax

cos *COS*

no cos

COS	Select which CoS will be specified for interface. The range of CoS is from 0 to 7.

Command Mode

Interface Configuration

Defaults

The default CoS for each interface is 0.

Usage

The port CoS value is used to map the priority and color proprieties that are assigned to all incoming packets, if the port trust state is set to trust port.

Examples

This example shows how to configure default cos value to 5.

Switch(config-if)# cos 5

This example shows how to cancel this setting.

Switch(config-if)# no cos

Related Commands

show qos interface

trust port

1.34 trust

Use this command to configure the port trust state. To return to the default value, use the no form of this command.

Command Syntax

trust (**port** | **cos** (**inner** |) | **dscp-exp** | **ip-prec**)

no trust

port	Trust port indicates all incoming packets will be assigned with the priority and color according to the port CoS value.
cos	Select which CoS will be specified for interface. The range of CoS is from 0 to 7.
inner	Trust CoS inner indicates all incoming packets will be assigned with the priority and color according to the packet inner CoS field if the packet is double-tagged. If that packet is carried with only one VLAN tag or it is untagged, the behavior should be the same as that of trust CoS.
dscp-exp	Trust DSCP indicates all incoming IP packets will be assigned with the priority and color according to the packet DSCP field, MPLS packets will be assigned with the priority and color according to the packet EXP field, and for other packets, the priority and color of that packet will be mapped the same as trust CoS.
ip-prec	Trust ip-prec indicates all incoming packets will be assigned with the priority and color according to the packet IP-Precedence field. If the packet is not an IP packet, the priority and color of that packet will be mapped the same as trust CoS

Command Mode

Interface Configuration

Defaults

Trust the CoS value in packets.

Usage

The port trust state is the criteria for classifying incoming packets from the port. All classified packets will be indentified with a priority and color according to the trust state. The default port trust state is trust cos.

Examples

This example shows how to configure the trust state.

Switch(config-if)# trust dscp-exp

Related Commands

show qos interface

1.35 shape average percent

Use this command to configure shaping for a physical port in percentage mode. To remove port shaping, use the no form of this command.

Command Syntax

shape average percent *SHAPE-PERCENTE*

no shape

SHAPE-PERCENTE	Percent of interface link speed with the range of 0 to 99.

Command Mode

Interface Configuration

Defaults

Disabled

Usage

It is highly recommend that do not configure shape average percent to 0. It is not normally usage of shaping.

If the queue shaping of this port has been applied as two rate, the sum of CIR of each queue should not large than the minimum between port shaping and port bandwidth. If IPG for shaping is disabled, the port bandwidth should be converted by IPG size. By default, the CIR of each queue is infinite. You should configure each queue shaping to confirm this condition.

Examples

This example shows how to configure shaping for a physical port.

Switch(config)# interface eth-0-1

Switch(config-if)# shape average percent 60

Remove shape configuration

Switch(config-if)# no shape

Related Commands

shape average rate

1.36 shape average rate

Use this command to configure shaping for a physical port in absolute value mode. To remove port shaping, use the no form of this command.

Command Syntax

shape average rate *SHAPE-RATE*

no shape

SHAPE-RATE	Shaping rate with the range of 0 to 10,000,000.

Command Mode

Interface Configuration

Defaults

Disabled

Usage

It is highly recommend that do not configure shape average rate to 0. It is not normally usage of shaping.

If the queue shaping of this port has been applied as two rate, the sum of CIR of each queue should not large than the minimum between port shaping and port bandwidth. If IPG for shaping is disabled, the port bandwidth should be converted by IPG size. By default, the CIR of each queue is infinite. You should configure each queue shaping to confirm this condition.

Examples

This example shows how to configure shaping for a physical port.

Switch(config)# interface eth-0-1

Switch(config-if)# shape average rate 60000

Remove shape configuration

Switch(config-if)# no shape

Related Commands

shape average percent

1.37 port-policer

Use this command to configure a port-policer for an interface matching all traffic transmitted or received in different direction. To cancel the rate limit, use the no form of this command.

Command Syntax

port-policer (**input**|**output**) (**color-blind**|**color-aware**|) **cir** *CIR-RATE* (**cbs** *CBS-SIZE*|) (**ebs** *EBS-SIZE*|**pir** *PIR-RATE* (**pbs** *PBS-SIZE*|)|) (**drop-color** *COLOR*|) (**use-l3-length**|))

no port-policer (**input**|**output**)

input	limit the inboud traffic entering the interface
output	limit the outboud traffic leaving from the interface
color-blind	Color blind mode policer

color-aware	Color aware mode policer
cir *CIR-RATE*	CIR - Commit Information Rate with the range of 1 to 10,000,000 kbps
cbs *CBS-SIZE*	CBS - Commit Burst Size with the range of 0 to 4,000,000 bytes
ebs *EBS-SIZE*	EBS - Excess Burst Size with the range of 0 to 4,000,000 bytes
pir *PIR-RATE*	PIR - Peak Information Rate with the range of 1 to 10,000,000 kbps
pbs *PBS-SIZE*	PBS - Peak Burst Size with the range of 0 to 4,000,000 bytes
drop-color *COLOR*	drop color configuration includes yellow and red
use-l3-length	Use l3 length for policing

Command Mode

Interface Configuration

Defaults

Disabled

Usage

This command is used to configure policing on port level.

Examples

Configure a port-policing to ingress of eth-0-1

Switch(config)# interface eth-0-1

Switch(config-if)# port-policer input color-aware cir 200000 cbs 30000 pir 400000 pbs 40000 drop-color red

Remove port-policing from ingress of eth-0-1

Switch(config-if)# no port-policer input

Related Commands

show qos interface

1.38 clear qos port-policer statistics

Use this command to clear port policing statistics.

Command Syntax

clear qos port-policer statistics *IFNAME* (**input**|**output**)

IFNAME	interface name
input	clear inbound port policing statistics
output	clear outbound port policing statistics

Command Mode

Privileged EXEC

Defaults

None

Usage

This command is used to clear port policing statistics.

Examples

Switch# clear qos port-policer statistics eth-0-1 input

Related Commands

qos statistics policer

1.39 clear qos queue statistics

Use this command to clear the queue statistics on specified interface.

Command Syntax

clear qos statistics *IFNAME* **queue** *QUEUE-ID*

IFNAME	interface name
QUEUE-ID	The id of queue for egress port. The range of queue id is from 0 to 15.

Command Mode

Privileged EXEC mode

Defaults

None

Usage

This command is used to clear the statistics on the specified interface. The clear behavior can be control with per-queue level.

Examples

This example shows how to clear queue 0 statistics on interface eth-0-21.

Switch# clear qos statistics eth-0-21 queue 0

Related Commands

qos statistics queue

1.40 queue drr-weight

Use this command to the WDRR scheduling weight for each queue. To return it to default value, use the no form of this command.

Command Syntax

queue *QUEUE-ID* **drr-weight** *WEIGHT*

queue *QUEUE-ID* **drr-weight infinity**

no queue *QUEUE-ID* **drr-weight**

QUEUE-ID	The id of queue for egress port. The range of queue id is from 0 to 15.
WEIGHT	The value of DRR weight with the range of 1 to 100
infinity	Infinity DRR weight, if you want to configure the DRR weight of queue obviously greater than other normal queue, the DRR weight of other queue is highly recommend to configure to 1.

Command Mode

Interface Configuration

Defaults

Queue	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DRR	1	25	4	10	10	10	10	10	1	1	1	1	1	1	1	1

Usage

In some DRR weight ratio, user should enlarge queue threshold to ensure the DRR weight is precision. The DRR weight is only consider the normal frame size. Jumbo frame size cannot get the precision results.

Examples

This example shows how to configure the WDRR scheduling weight for queue 5.

Switch(config-if)# queue 2 drr-weight 20

This example shows how to return the queue bandwidth to default value.

Switch(config-if)# no queue 2 drr-weigh

Related Commands

show qos interface

1.41 replace cos

Use this command to replace the cos field in packets on egress. To remove this setting, use the no form of this command.

Command Syntax

replace cos

no replace cos

Command Mode

Interface Configuration

Defaults

On trunk port, the default behavior is replace CoS, otherwise is not replace.

Usage

This command is used to replace the cos field in packets on egress, which is generated according to the Priority-Color-CoS map from the internal priority color value.

Examples

This example shows how to replace the cos field in packets on egress.

Switch(config-if)# replace cos

This example shows how to remove this setting,

Switch(config-if)# no replace cos

Related Commands

show qos interface

1.42 replace dscp-exp

Use this command to replace the dscp or exp field in packets on egress. To remove this setting, use the no form of this command.

Command Syntax

replace dscp-exp

no replace dscp-exp

Command Mode

Interface Configuration

Defaults

Not replace DSCP/EXP on all port.

Usage

This command is used to replace the DSCP field for IP packets on egress, which is generated according to the Priority-Color-DSCP map from the internal priority color value, or replace the exp field for MPLS packets on egress, which is generated according to the Priority-Color-EXP map from the internal priority color value.

Examples

This example shows how to replace the dscp or exp field in packets on egress.

Switch(config-if)# replace dscp-exp

This example shows how to remove this setting.

Switch(config-if)# no replace dscp-exp

Related Commands

show qos interface

1.43 queue tail-drop threshold

Use this command to configure the interface queue threshold. To return this setting to default, use the no form of this command.

Command Syntax

queue *QUEUE-ID* **tail-drop threshold** *THRESHOLD0 THRESHOLD1 THRESHOLD2*

no queue *QUEUE-ID* **tail-drop threshold**

QUEUE-ID	The id of queue for egress port. The range of queue id is from 0 to 15.
THRESHOLD0	Tail drop threshold0 with the range of 0 to 24571
THRESHOLD1	Tail drop threshold1 with the range of 1 to 24572. The value should greater than threshold0
THRESHOLD2	Tail drop threshold2 with the range of 2 to 24573. The valye should greater than threshold1

Command Mode

Interface Configuration

Defaults

The default Tail-Drop threshold is 224 240 256 for three drop precedence on GE port and 576 592 608 for three drop precedence on XG port. The threshold value is based on buffer cell. The buffer cell stands for the granularity of the packet stored on the switch. Each buffer cell is up to 256 bytes. One buffer cell cannot store more than 1 packet. Thus, if the packet is larger than 258 bytes, it can be stored via several buffer cells.

Usage

The command is used to configure the tail drop threshold of different colored packets. Tail drop is the default congestion-avoidance technique on every egress queue. With tail drop, packets are queued until the thresholds are exceeded.

Examples

This example shows how to configure interface queue threshold to 160 320 480

Switch(config-if)# queue 1 tail-drop threshold 160 320 480

This example shows how to return this setting to default.

Switch(config-if)# no queue 1 tail-drop threshold

Related Commands

queue random-detect

queue random-detect max-threshold

queue random-detect min-threshold

queue random-detect drop-probability

1.44 queue random-detect

Use this command to enable random detect mode. To disable it, use the no form of this command.

Command Syntax

queue *QUEUE-ID* **random-detect**

queue *QUEUE-ID* **random-detect** *EWMA*

no queue *QUEUE-ID* **random-detect**

QUEUE-ID	The id of queue for egress port. The range of queue id is from 0 to 15.
EWMA	WRED Exponential-Weighted-Moving-Average (EWMA) factor

Command Mode

Interface Configuration

Defaults

The default drop mode is Tail-Drop mode.

Usage

If the queue length does not reach the min-threshold, the packets will en-queue normally without any discard. If the queue length reaches min-threshold but not exceed max-threshold, the packets will be discarded randomly according to the drop-probability. The dropping ratio is (drop-probability)/65536. If the queue length exceeds max-threshold, all the packets will be discarded. There are some different drop precedence for WRED behavior. All of them will use the same EWMA factor. If the EWMA is omitted, the default value is 9.

Examples

This example shows how to enable random detect mode.

Switch(config-if)# queue 1 random-detect

This example shows how to disable random detect mode.

Switch(config-if)# no queue 1 random-detect

Related Commands

show qos interface

queue random-detect max-threshold

queue random-detect min-threshold

queue random-detect drop-probability

1.45 queue random-detect min-threshold

Use this command to configure random detect mode min-threshold. To remove this setting, use the no form of this command.

Command Syntax

queue *QUEUE-ID* **random-detect min-threshold** *THRESHOLD0 THRESHOLD1 THRESHOLD2*

no queue *QUEUE-ID* **random-detect min-threshold**

QUEUE-ID	The id of queue for egress port. The range of queue id is from 0 to 15.
THRESHOLD0	Random-detect min threshold0 with the range of 0 to 24573. The min threshold0 should less than the max threshold0.
THRESHOLD1	Random-detect min threshold1 with the range of 0 to 24573. The min threshold1 should less than the max threshold1.
THRESHOLD2	Random-detect min threshold2 with the range of 0 to 24573. The min threshold2 should less than the max threshold2.

Command Mode

Interface Configuration

Defaults

The default WRED minimum threshold is 16 24 32 for three drop precedence. The threshold value is based on buffer cell. The buffer cell stands for the granularity of the packet stored on the switch. Each buffer cell is up to 256 bytes. One buffer cell cannot store more than 1 packet. Thus, if the packet is larger than 258 bytes, it can be stored via several buffer cells.

Usage

If the queue length does not reach the min-threshold, the packets will en-queue normally without any discard. If the queue length reaches min-threshold but not exceed max-threshold, the packets will be discarded randomly according to the drop-probability. The dropping ratio is (drop-probability)/65536. If the queue length exceeds max-threshold, all the packets will be discarded. Each threshold is for the different drop precedence for WRED behavior.

Examples

This example shows how to configure queue 1 random detect mode min-threshold to 16, 20 and 24.

Switch(config-if)# queue 1 random-detect min-threshold 16 20 24

This example shows how to return this setting to default.

Switch(config-if)# no queue 1 random-detect min-threshold

Related Commands

queue random-detect drop-probability

queue random-detect max-threshold

queue random-detect

1.46 queue random-detect max-threshold

Use this command to configure random detect mode max-threshold. To return this setting to default, use the no form of this command.

Command Syntax

queue *QUEUE-ID* **random-detect max-threshold** *THRESHOLD0 THRESHOLD1 THRESHOLD2*

no queue *QUEUE-ID* **random-detect max-threshold**

QUEUE-ID	The id of queue for egress port. The range of queue id is from 0 to 15.
THRESHOLD0	Random-detect min threshold0 with the range of 1 to 24574. The min threshold0 should less than the max threshold0.
THRESHOLD1	Random-detect min threshold1 with the range of 1 to 24574. The min threshold1 should less than the max threshold1.
THRESHOLD2	Random-detect min threshold2 with the range of 1 to 24574. The min threshold2 should less than the max threshold2.

Command Mode

Interface Configuration

Defaults

The default WRED maximum threshold is 480 496 512 for three drop precedence. The threshold value is based on buffer cell. The buffer cell stands for the granularity of the packet stored on the switch. Each buffer cell is up to 256 bytes. One buffer cell cannot store more than 1 packet. Thus, if the packet is larger than 258 bytes, it can be stored via several buffer cells.

Usage

If the queue length does not reach the min-threshold, the packets will en-queue normally without any discard. If the queue length reaches min-threshold but not exceed max-threshold, the packets will be discarded randomly according to the drop-probability. The dropping ratio is (drop-probability)/65536.

If the queue length exceeds max-threshold, all the packets will be discarded. Each threshold is for the different drop precedence for WRED behavior.

Examples

This example shows how to configure queue 1 random detect mode max-threshold to 90, 92 and 94.

Switch(config-if)# queue 1 random-detect max-threshold 90 92 94

This example shows how to return this setting to default.

Switch(config-if)# no queue 1 random-detect max-threshold

Related Commands

queue random-detect drop-probability

queue random-detect min-threshold

queue random-detect

1.47 queue random-detect drop-probability

Use this command to configure random detect mode drop probability. To change back to the default configuration, use the no form of this command.

Command Syntax

queue *QUEUE-ID* **random-detect drop-probability** *PROBABILITY0 PROBABILITY1 PROBABILITY2*

no queue *QUEUE-ID* **random-detect drop-probability**

QUEUE-ID	The id of queue for egress port. The range of queue id is from 0 to 15.
PROBABILITY0	Random-detect threshold0 drop probability with the range of 0 to 65535.
PROBABILITY1	Random-detect threshold1 drop probability with the range of 0 to 65535.
PROBABILITY2	Random-detect threshold2 drop probability with the range of 0 to 65535.

Command Mode

Interface Configuration

Defaults

The default WRED drop probability is 1024 for all drop precedence.

Usage

If the queue length does not reach the min-threshold, the packets will en-queue normally without any discard. If the queue length reaches min-threshold but not exceed max-threshold, the packets will be discarded randomly according to the drop-probability. The dropping ratio is (drop-probability)/65536. If the queue length exceeds max-threshold, all the packets will be discarded. Each threshold is for the different drop precedence for WRED behavior.

Examples

This example shows how to configure queue 1 random detect mode drop probability to 128, 130 and 132.

Switch(config-if)# queue 1 random-detect drop-probability 128 130 132

This example shows how to return this setting to default.

Switch(config-if)# no queue 1 random-detect drop-probability

Related Commands

queue random-detect max-threshold

queue random-detect min-threshold

queue random-detect

1.48 queue class

Use this command to map the queue to specified class. To change back to the default configuration, use the no form of this command.

Command Syntax

queue *QUEUE-ID* **class** *CLASS-ID*

no queue *CLASS-ID* **class**

QUEUE-ID	The id of queue for egress port. The range of queue id is from 0 to 15.
CLASS-ID	The class level of queue with the range of 0 to 3.

Command Mode

Interface Configuration

Defaults

queue-id	0	1	2	3	4	5	6	7
class-id	0	0	1	1	2	2	3	3

Usage

Every queue belongs to a class. The class range is from 0 to 3. Class 3 is the highest priority. Several queues can be in a same class, or non queue in some class. Packets are scheduled by SP between classes and WDRR between queues in one class. More details can be found in the User Guide.

Examples

This example shows how to map the queue 1 to class 1.

Switch(config-if)# queue 1 class 1

This example shows how to change back to the default configuration.

Switch(config-if)# no queue 1 class

Related Commands

show qos interface

1.49 queue shape average percent

Use this command to configure shaping for a queue of a physical port in percentage mode. To remove queue shaping for a physical port, use the no form of this command.

Command Syntax

queue *QUEUE-ID* **shape average percent** *CIR*

no queue *QUEUE-ID* **shape**

QUEUE-ID	The id of queue for egress port. The range of queue id is from 0 to 15.
CIR	Percent value of interface max bandwidth for commit information rate. The range of value should be 0 to 100.

Command Mode

Interface Configuration

Defaults

By default, only queue 7 is applying a shaping with the percent of 30%.

Usage

It is highly recommend that do not configure queue shape average percent to 0. It is not normally usage of shaping.

If the queue shaping of its port has been applied as two rate, the sum of CIR of each queue should not large than the minimum between port shaping and port bandwidth. If IPG for shaping is disabled, the port bandwidth should be converted by IPG size. By default, the CIR of each queue is infinite. You should configure each queue shaping to confirm this condition.

Examples

This example shows how to configure shaping for a queue.

Switch(config)# interface eth-0-1

Switch(config-if)# queue 5 shape average percent 15

Remove queue shaping

Switch(config-if)# no queue 5 shape

Related Commands

queue shape average rate

1.50 queue shape average rate

Use this command to configure shaping for a queue of a physical port in absolute value mode. To remove queue shaping for a physical port, use the no form of this command.

Command Syntax

queue *QUEUE-ID* **shape average rate** *CIR*

no queue *QUEUE-ID* **shape**

QUEUE-ID	The id of queue for egress port. The range of queue id is from 0 to 15.
CIR	The value for commit information rate with the range of 0 to 10,000,000.

Command Mode

Interface Configuration

Defaults

By default, only queue 7 is applying a shaping with the percent of 30%.

Usage

It is highly recommend that do not configure queue shape average rate to 0. It is not normally usage of shaping.

If the queue shaping of its port has been applied as two rate, the sum of CIR of each queue should not large than the minimum between port shaping and port bandwidth. If IPG for shaping is disabled, the port bandwidth should be converted by IPG size. By default, the CIR of each queue is infinite. You should configure each queue shaping to confirm this condition.

Examples

This example shows how to configure shaping for a queue.

Switch(config)# interface eth-0-1

Switch(config-if)# queue 5 shape average rate 150000

Remove queue shaping

Switch(config-if)# no queue 5 shape

Related Commands

queue shape average percent

1.51 match access-group

Use this command to configure a match criterion by referencing an access list in a class-map. To remove the access-list from a class-map, use the no form of this command.

Command Syntax

match access-group *NAME*

no match access-group *NAME*

NAME	Specify an access-list name.

Command Mode

Class-map mode

Defaults

None

Usage

Use access-list for match criterion in a class-map.

Examples

Switch(config)# class-map match-any cm2

Configure an access-list match criterion

Switch(config-cmap)# match access-group acl1

Remove an access-list match criterion

Switch(config-cmap)# no match access-group acl1

Related Commands

mac access-list

ip access-list

policy-map

1.52 class

Use this command to define the traffic class in policy-map by referencing a class-map. To remove the traffic class from the policy-map, use the no form of this command.

Command Syntax

class *NAME*

no class *NAME*

NAME	Specify a class-map name.

Command Mode

Policy-map mode

Defaults

None

Usage

A policy-map can include multiple class-maps.

Examples

Add and delete a class in a policy-map

Switch(config)# policy-map pm1

Switch(config-pmap)# class cm1

Switch(config-pmap-c)#quit

Switch(config-pmap)# no class cm1

Related Commands

policy-map

show policy-map

1.53 class class-default

Use this command to create a default traffic class in a policy-map. To remove the default traffic class from a policy-map, use the no form of this command.

Command Syntax

class class-default

no class class-default

Command Mode

Policy-map mode

Defaults

None

Usage

If a packet does not match any traffic class in the policy-map, then the packet is classified into the default traffic class, and corresponding actions configured for the default class will be performed on that packet.

Examples

Add and delete a default traffic class in a policy-map.

Switch(config)# policy-map pm1

Switch(config-pmap)# class class-default

Switch(config-pmap-c)# quit

Switch(config-pmap)# no class class-default

Related Commands

policy-map

show policy-map

1.54 trust (config-pmap-c mode)

Use this command to set trust value for the traffic class in a policy-map. To remove the trust state, use the no form of this command.

Command Syntax

trust (**dscp-exp**|**cos**|**ip-prec**|**port**)

no trust

dscp-exp	trust dscp or exp value in classified packets
cos	trust cos value in classified packets
ip-prec	trust ip precedence in classified packets
port	trust port default cos value in classified packets

Command Mode

Config-pmap-c mode

Defaults

Trust the CoS value in classified packets.

Usage

This command is used to set trust value for the traffic class.

Examples

Switch(config)# policy-map pm1

Switch(config-pmap)# class cm1

Switch(config-pmap-c)# trust cos

Related Commands

show policy-map

1.55 set priority color

Use this command to set priority and color or PHB for traffic class in the policy-map. To remove this setting, use the no form of this command.

Command Syntax

set priority *PRIORIITY* **color** *COLOR*

set phb *PHB-TYPE*

no set priority color

DOMAIN-NUMBER	QoS domain form 0 to 7
PRIORIITY	The internal priority of packet from 0 to 63
COLOR	Color for packet, should be green, red or yellow
PHB-TYPE	The type of PHB, that can be one of af11, af12, af13, af21, af22, af23, af31, af32, af33, af41, af42, af43, ef, df, cs1, cs2, cs3, cs4, cs5, cs6 and cs7.

Command Mode

config-pmap-c mode

Defaults

The priority and color is not configured.

Usage

This command is used to set priority and color of traffic matching this class-map.

Examples

Switch(config)# policy-map pm1

Switch(config-pmap)# class cm1

Switch(config-pmap-c)# set priority 34 color red

Switch(config-pmap-c)# no set priority color

Related Commands

show policy-map

1.56 policer

Use this command to rate-limit traffic matching this traffic class for a specified interface. To cancel rate limit, use the no form of this command.

Command Syntax

policer (**color-blind**|**color-aware**|) **cir** *CIR-RATE* (**cbs** *CBS-SIZE*|) (**ebs** *EBS-SIZE*|**pir** *PIR-RATE* (**pbs** *PBS-SIZE*|)|) (**drop-color** *COLOR*|) (**use-l3-length**|)) (**stats**|)

no policer

color-blind	Color blind mode policer
color-aware	Color aware mode policer
cir *CIR-RATE*	CIR - Commit Information Rate with the range of 1 to 10,000,000 kbps
cbs *CBS-SIZE*	CBS - Commit Burst Size with the range of 0 to 4,000,000 bytes
ebs *EBS-SIZE*	EBS - Excess Burst Size with the range of 0 to 4,000,000 bytes

pir *PIR-RATE*	PIR - Peak Information Rate with the range of 1 to 10,000,000 kbps
pbs *PBS-SIZE*	PBS - Peak Burst Size with the range of 0 to 4,000,000 bytes
drop-color *COLOR*	drop color configuration includes yellow and red
use-l3-length	Use l3 length for policing
stats	enable policer statistics

Command Mode

config-pmap-c mode

Defaults

None

Usage

Define a policer for classified traffic. Color-blind or Color-aware, SRTCM or TRTCM can be configured.

The max munber of aggregate policer and this flow policer is 128 per line-card.

If qos statistics policer is configured, and stats are entered when the policer is created, policer statistics is working.

The statistics cannot be modified after the policer is created.

Examples

Switch(config)# policy-map pm1

Switch(config-pmap)# class cm1

Switch(config-pmap-c)# policer color-aware cir 5000000 cbs 40000 ebs 40000 drop-color red

Switch(config-pmap-c)# no policer

Related Commands

show policy-map

qos statistics policer

1.57 policer-aggregate

Use this command to rate-limit the aggregate traffic matching this traffic class for all interfaces in the same slot. To cancel rate limit, use the no form of this command.

Command Syntax

policer-aggregate *NAME*

no policer

NAME	Aggregate policer name.

Command Mode

config-pmap-c mode

Defaults

None

Usage

If an aggregate policer is applied on many interfaces, the aggregate traffic matching this traffic class for these interfaces is limited by the aggregate policer.

Examples

Switch(config)# policy-map pm1

Switch(config-pmap)# class cm1

Switch(config-pmap-c)# policer-aggregate agg_plc

Switch(config-pmap-c)# no policer

Related Commands

aggregate-policer

show policy-map

1.58 redirect

Use this command to redirect classified traffic to a specified interface. Use the no form of this command to cancel the redirection configuration.

Command Syntax

redirect to interface *IFNAME*

no redirect

IFNAME	Destination interface name.

Command Mode

config-pmap-c mode

Defaults

None

Usage

The flow redirection is not effective when the policy-map is applied on output direction.

If a policy-map is applied on input direction of many interfaces, all classified traffic coming into these interfaces will be redirected.

The traffic matching the deny rules in policy-map should not be redirected.

Examples

Switch(config)# policy-map pm1

Switch(config-pmap)# class cm1

Switch(config-pmap-c)# redirect to interface eth-0-1

Switch(config-pmap-c)# no redirect

Related Commands

show policy-map

1.59 flow mirror

Use this command to set mirror source session. Use the no form of this command to cancel the mirror configuration.

Command Syntax

monitor to session *SESSION-ID*

no monitor

SESSION-ID	Monitor session number with the range of 1 to 3.

Command Mode

config-pmap-c mode

Defaults

None

Usage

If a policy-map is applied on input, output or both direction of many interfaces, all classified traffic coming into, leaving from or both these interface will be monitored.

Examples

Switch(config)# monitor session 1 destination interface eth-0-1

Switch(config)# policy-map pm1

Switch(config-pmap)# class cm1

Switch(config-pmap-c)# monitor session 1 source

Switch(config-pmap-c)# no monitor

Related Commands

show policy-map

1.60 statistics enable

Use this command to enable statistics for each ace in class map. Use the no form of this command to disable statistics.

Command Syntax

statistics enable

no statistics enable

Command Mode

config-pmap-c mode

Defaults

Disabled

Usage

If the class-map operator is match-all, only total statistics of the class-map can be shown.

If it is fail to enable the statistics function, some warning message will be given.

Examples

Switch(config)# policy-map pm1

Switch(config-pmap)# class cm1

Switch(config-pmap-c)# statistics enable

Switch(config-pmap-c)# no statistics enable

Related Commands

show policy-map statistics interface

clear qos policy-map statistics interface

1.61 clear qos policy-map statistics interface

Use this command to clear flow policing and ace matching statistics.

Command Syntax

clear qos policy-map *NAME* **statistics interface (***IFNAME***|) (policer-stats | ace-stats|)**

NAME	policy-map name
IFNAME	interface name
policer-stats	Clear the statistics of policers in policy-map
ace-stats	Clear the ace matching statistics in policy-map

Command Mode

Privileged EXEC

Defaults

None

Usage

This command is used to clear flow policing and ace matching statistics.

Examples

Switch# clear qos policy-map plcy statistics interface eth-0-1 input

Related Commands

qos statistics policer

statistics enable

1.62 vlan replace dscp-exp

Use this command to replace the DSCP or EXP field in packets on egress for specified VLAN. To remove this setting, use the no form of this command.

Command Syntax

vlan *VLAN-ID* **replace dscp-exp**

no vlan *VLAN-ID* **replace dscp-exp**

VLAN-ID	ID of VLAN with the range of 1 to 4094

Command Mode

VLAN Configuration

Defaults

Disabled

Usage

This command is used to replace the DSCP field for IP packets on egress for specified VLAN, which is generated according to the Priority-Color-DSCP map from the internal priority color value, or replace the exp field for MPLS packets, which is generated according to the Priority-Color-EXP map from the internal priority color value.

Examples

This example shows how to replace the dscp/exp field in packets on egress for vlan 10.

Switch(config-vlan)# vlan 10 replace dscp-exp

This example shows how to remove this setting,

Switch(config-vlan)# no vlan 10 replace dscp-exp

Related Commands

show vlan

1.63 show running-config policy-map

Use this command to show running-config policy-map information.

Command Syntax

show running-config policy-map

Command Mode

Privileged EXEC

Defaults

None

Usage

This command is used to show running-config for policy-map information.

Examples

Switch# show running-config policy-map

```
policy-map pmap
 class cmap
  policer color-blind cir 1000 cbs 100000 pir 2000 pbs 100000 drop-color red
 class cmap2
  policer color-blind cir 2000 cbs 100000 pir 3000 pbs 100000 drop-color red
```

Related Commands

policy-map

show policy-map

1.64 show running-config class-map

Use this command to show running-config class-map information.

Command Syntax

show running-config class-map

Command Mode

Privileged EXEC

Defaults

None

Usage

This command is used to show running-config for class-map information.

Examples

Switch# show running-config class-map

```
class-map match-any cmap
 match access-group macacl
!
class-map match-all cmap2
```

Related Commands

show class-map