QoS Configuration Examples

This chapter contains the following sections:

QoS Example 1

This example shows how to configure traffic in the entire system matching an access control list to have the frame CoS fields rewritten to the value 5.

Procedure

	Command or Action	Purpose

Step 1	Set up the ingress classification policy (the access control list was defined previously).	`(config)# class-map type qos cmap-qos-acl`
		`(config-cmap-qos)# match access-group ACL-CoS`
		`(config-cmap-qos)# exit`
		`(config)# policy-map type qos pmap-qos-acl`
		`(config-pmap-qos)# class cmap-qos-acl`
		`(config-pmap-c-qos)# set qos-group 4`
		`(config-pmap-c-qos)# exit`
		`(config-pmap-qos)# exit`

Step 2	Attach the classification policy to the system.	`(config)# system qos`
		`(config-sys-qos)# service-policy type qos input pmap-qos-acl`
		`(config-sys-qos)# exit`

Step 3	Set up the system class allocation and rewrite policy. Allocate the system class for qos-group 4 and define the rewrite action.	`(config)# class-map type network-qos cmap-nq-acl`
		`(config-cmap-nq)# match qos-group 4`
		`(config-cmap-nq)# exit`
		`(config)# policy-map type network-qos pmap-nq-acl`
		`(config-pmap-nq)# class type network-qos cmap-nq-acl`
		`(config-pmap-c-nq)# set cos 5`
		`(config-pmap-c-nq)# exit`
		`(config-pmap-nq)# exit`

Step 4	Attach the allocation and rewrite policy to the system.	`(config)# system qos`
		`(config-sys-qos)# service-policy type network-qos pmap-nq-acl`
		`(config-sys-qos)# exit`

QoS Example 2

This example shows how to use an access control list to apply 50% bandwidth to traffic on Ethernet interface 1/3 that matches traffic on Ethernet interface 1/1.

Procedure

	Command or Action	Purpose

Step 1	Set up the ingress classification policy.	`(config)# class-map type qos cmap-qos-bandwidth`
		`(config-cmap-qos)# match access-group ACL-bandwidth`
		`(config-cmap-qos)# exit`
		`(config)# policy-map type qos pmap-qos-eth1-1`
		`(config-pmap-qos)# class cmap-qos-bandwidth`
		`(config-pmap-c-qos)# set qos-group 2`
		`(config-pmap-c-qos)# exit`
		`(config-pmap-qos)# exit`

Step 2	Attach the classification policy to the interface Ethernet 1/1.	`(config)# interface ethernet 1/1`
		`(config-if)# service-policy type qos input pmap-qos-eth1-1`
		`(config-if)# exit`

Step 3	Set up the system-wide definition of the qos-group first.	`(config)# class-map type queuing cmap-que-bandwidth`
		`(config-cmap-que)# match qos-group 2`
		`(config-cmap-que)# exit`

Step 4	Set up the egress bandwidth policy.	**Note** Before you can successfully allocate bandwidth to the user-defined class cmap-que-bandwidth, you must first reduce the default bandwidth configuration on class-default and class-fcoe.
		`(config)# policy-map type queuing pmap-que-eth1-2`
		`(config-pmap-que)# class type queuing class-default`
		`(config-pmap-c-que)# bandwidth percent 10`
		`(config-pmap-c-que)# exit`
		`(config-pmap-que)# class type queuing class-fcoe`
		`(config-pmap-c-que)# bandwidth percent 40`
		`(config-pmap-c-que)# exit`
		`(config-pmap-que)# class type queuing cmap-que-bandwidth`
		`(config-pmap-c-que)# bandwidth percent 50`
		`(config-pmap-c-que)# exit`
		`(config-pmap-que)# exit`

	Command or Action	Purpose

Step 5	Attach the bandwidth policy to the egress interface.	`(config)# interface ethernet 1/3`
		`(config-if)# service-policy type queuing output pmap-que-eth1-2`
		`(config-if)# exit`

Step 6	Allocate the system class for qos-group 2.	`(config)# class-map type network-qos cmap-nq-bandwidth`
		`(config-cmap-nq)# match qos-group 2`
		`(config-cmap-nq)# exit`

Step 7	Set up the network-qos policy.	`(config)# policy-map type network-qos pmap-nq-bandwidth`
		`(config-pmap-nq)# class type network-qos cmap-nq-bandwidth`
		`(config-pmap-c-nq)# exit`
		`(config-pmap-nq)# exit`

Step 8	Attach the network-qos policy to the system.	`(config)# system qos`
		`(config-sys-qos)# service-policy type network-qos pmap-nq-bandwidth`
		`(config-sys-qos)# exit`

QoS Example 3

This example shows how to attach a 802.1p tag with a CoS value of 3 to incoming untagged packets, and force priority-flow-control negotiation on Ethernet interface 1/15.

Procedure

	Command or Action	Purpose

Step 1	Set up the ingress classification policy (the access control list was defined previously).	`(config)# interface Ethernet 1/15`
		`(config-if)# untagged cos 3`
		`(config-if)# priority-flow-control mode on`
		`(config-if)# exit`