



Ethernet QoS Policy Parameters

This appendix describes the parameters, both required and optional, for Ethernet QoS provisioning using the Cisco IP Solution Center (ISC) user interface.

This appendix contains the following sections:

- [Service Level Ethernet QoS Parameters, page C-1](#)
- [Link Level Ethernet QoS Parameters, page C-5](#)

Service Level Ethernet QoS Parameters

Service level Ethernet QoS parameters include the entry fields in the service class windows and dialog boxes. However, the Ethernet QoS policy is not pre-populated with any Class of Service. These must be added using the **Add CoS** button on the Edit Ethernet QoS Policy page.

You must enter the bandwidth parameter for all service classes. Typically, a value of one percent is sufficient for Routing Protocol traffic. However, it is common for customers or providers to combine the Management and Routing Protocol into one service class policy. In this case, a larger percentage of bandwidth might be required.

Any class of service can be a *class-default* class of service. You can simply name the class of service as *class-default* and ISC will generate the same. Bandwidth is not mandatory for this class of service. Traffic classification is assumed to be *rest of traffic*.



Note

Class-default is a reserved class of service name in IOS and is created by IOS if ISC does not create one.

Service Class Parameters

Each service class is characterized by a set of parameters that are defined in the Edit Service Class window ([Figure C-1](#)).

Figure C-1 Edit Service Class

Edit Service Class

Service Attributes

General

Service Name ^{*}:

☐ use "class-default"

Traffic Classification ^{*} (at least one setting is required except class-default)

All Traffic:

☐

COS (0-7):(3, 4, 5,...)

DSCP (0-63):(af41, af42, af43,...) or (34, 36, 38,...)

IP Precedence (0-7):(3, 4, 5,...)

Marking

Enabled:

☒

☒ Set

COS:

none

DSCP:

none

IP Precedence:

none

☐ Trust

☒ Trust COS

☐ Trust DSCP

☐ Trust IP Precedence

Rate Limiting

Enabled:

☒

Rate Limit Type:

☐ 1R2C ☒ 2R3C

Mean Rate (8000 - 10000000000 bps or 1 - 99 %):%

Peak Information Rate (8000 - 10000000000 bps or 1 - 99 %):%

Conformed Burst Size (1 - 14294967295 bytes or 1 - 128 ms) ^{*}:ms

Extended or Peak Burst Size (1 - 14294967295 bytes or 1 - 128 ms) ^{*}:ms

Conform Action

transmit

Exceed Action

drop

Violate Action

drop

Congestion Management

Enabled:

☒

Priority:

☐

Bandwidth (1 - 10000000 kbps or 1 - 99 %):%

Queue Limit in Packets (1 - 262144 packets):

OK

Cancel

Note: ^{*} - Required Field

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Table C-1 provides a definition for each of the service class parameters.

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Table C-1 **Edit Service Class Entry Fields**

Entry Field	Description
General	
Service Name	The name of the service class. Max. 8 characters in length. use “class-default”: Check the “use Class Default” check box if you want the service class to be a class-default class.
Traffic Classification	
All Traffic	Check this box if the policy is to be applied to all traffic.
COS (0-7)	A class of service.
DSCP	Traffic classification based on the packet’s DSCP marking.
IP Precedence	Traffic classification based on the packet’s IP Precedence marking.
Marking	
Enabled	Enable packet marking.
Set	Three options: • COS: Mark packets with 802.1p Class of Service Marking. • DSCP: Mark packets with a DSCP value. Note: You can mark packets with either DSCP or IP Precedence, but not both. • IP Precedence: Mark packets with an IP Precedence value.
Trust	Defines which markings should be trusted in the QoS Policy.
Rate Limiting (VoIP service class only)	
Enabled	Enable rate-limiting.
Rate Limit Type	This sets which type of policer is created and, therefore, which values are required. Two options: • One rate two color • Two rate three color
Mean Rate	The long-term average transmission rate.
Peak Information Rate	Allows support for sustained excess rate.
Conformed Burst Size	How large traffic bursts can be before some traffic exceeds the rate limit.
Extended or Peak Burst Size	How large traffic bursts can be before all traffic exceeds the rate limit. Configure extended burst by setting the extended burst value greater than the conformed burst value.

Table C-1 *Edit Service Class Entry Fields (continued)*

Entry Field	Description
Conform Action—	The action to take on packets that conform to the specified rate limit: • transmit—Sends the packet. • drop—Drops the packet. • policed-dscp-transmit—Marks down the DSCP value and then transmits. • set-cos-transmit—Sets the L2 CoS value and transmits the packet. • set-dscp-transmit—Sets the DSCP value and transmits the packet. • set-prec-transmit—Sets the IP precedence (0 to 7) value and sends the packet.
Exceed Action—	The action to take on packets that conform to the specified rate limit. • transmit—Sends the packet. • drop—Drops the packet. • policed-dscp-transmit—Marks down the DSCP value and then transmits. • set-cos-transmit—Sets the L2 CoS value and transmits the packet. • set-dscp-transmit—Sets the DSCP value and transmits the packet. • set-prec-transmit—Sets the IP precedence (0 to 7) value and sends the packet.
Violate Action—	The action to take on packets that conform to the specified rate limit. • transmit—Sends the packet. • drop—Drops the packet. • policed-dscp-transmit—Marks down the DSCP value and then transmits. • set-cos-transmit—Sets the L2 CoS value and transmits the packet. • set-dscp-transmit—Sets the DSCP value and transmits the packet. • set-prec-transmit—Sets the IP precedence (0 to 7) value and sends the packet.
Congestion Management	(Applicable to 3750-ME only)
Enabled	Enable congestion management.
Priority	Assign a traffic class to the strict priority queue

Table C-1 *Edit Service Class Entry Fields (continued)*

Entry Field	Description
Bandwidth	The bandwidth in kbps (absolute bandwidth) or percent for this service class to dedicate to congestion management parameters.
Queue Limit in Packets	Limit the queue depth of the congesting traffic. The range is 1 to 32768 packets.

**Note**

The process for marking packets with DSCP and IP Precedence bits is described in detail in the following document on Cisco.com:

http://www.cisco.com/en/US/tech/tk543/tk757/technologies_tech_note09186a00800949f2.shtml

Link Level Ethernet QoS Parameters

This section describes the link level QoS parameters for Ethernet link QoS settings. These settings are intended for either the VLAN level or the interface level.

Figure C-2 *Link QoS Settings*

Ethernet Link QoS Settings Editor

Set Name * :

Owner * : ☒ Customer ☐ Provider

Shape Average (bps):

Bandwidth (% or kbps): %

Trust: ☐ Enable ☒ Trust COS ☐ Enable COS Mutation ☐ Trust DSCP

0: 1: 2: 3: 4: 5: 6: 7:

Note: * - Required Field

The Ethernet Link QoS Settings window displays the current link QoS settings available for QoS service requests, including the following information about each link QoS setting:

- Set Name—The name of your link QoS setting.
- Owner—Customer or provider.
- Shape Average—Enable VLAN level average-rate traffic shaping. It limits the affected traffic to a certain data transmission rate in bps.
- Bandwidth—Desired VLAN level bandwidth. Enter this value manually in kbps or percent to allocate a minimum bandwidth for the VLAN.

- Trust—Port level trust
 - Enable—Check this box to enable trust.
 - Trust COS—Trust CE L2 CoS.
 - Enable COS Mutation—Enable CE L2 CoS classification for 7600 L2VPN EWS and VPLS. (See [General Metro Ethernet Service Types, page E-1](#) for a definition of Metro Ethernet terminology.)
 - Trust DSCP—Trust CE DSCP.