

Parameter Instances for QoS Clients Overview

The QoS administrator implements a QoS architecture for the provider based on QoS profiles and parameter definitions. The QoS client creates the parameter instances and attaches QoS profiles to logical interfaces. The QoS client can be a user accessing parameters through CLI or through client software such as RADIUS or SRC.

As a QoS client, you can use QoS parameter instances to set the following attributes of a node or queue:

- Assured rate
- Shaping rate
- Shared-shaping rate
- Scheduler weight

Global QoS Parameter Instance Overview

In the following example, a parameter instance is created in Global Configuration mode.

```
host1(config)#qos-parameter max-subscriber-bandwidth 8000000
```

When you create a parameter instance in Global Configuration mode, the value that you set for a rate becomes the default value for the router. We recommend that you create a global default value for a parameter instance to provide a minimal level of service by default for the router.

QoS Parameters for Interfaces Overview

When you attach a parameter instance to an interface in Interface Configuration mode, the default value for the chassis overrides the default value for the router. When attached to subinterfaces, parameter instances override both interface and global configurations.

In the following example, a parameter instance is created on a Fast Ethernet interface in Interface Configuration mode.

```
host1(config)#interface fastEthernet 9/0.2  
host1(config-if)#qos-parameter max-subscriber-bandwidth 8000000
```

Parameter instances have hierarchical scope. The scope of a parameter instance is the set of logical interfaces stacked above the interface upon which you create it. Any interface stacked above the instance that is one of the controlled-interface types that are configured in the parameter definition can have its nodes or queues controlled by that instance. For example, a parameter named max-sub-bw might have logical interface types of IP and l2tp-session; therefore, it controls rates only for nodes and queues associated with those interface types.

For example, the scope of a parameter instance at a S-VLAN can be all VLANs stacked above that particular S-VLAN. Scopes can overlap, for example, if a parameter instance

is created for both an S-VLAN and a VLAN. The most specific instance overrides the other instances.

However, you cannot configure QoS parameter instances to downreference through the interface stack. For example, you cannot create a parameter instance with an interface type of ATM VP on an ATM1483 subinterface.

When you attach the parameter instance to an interface, it provides a default subscriber bandwidth for terminated and tunneled subscribers that terminate over that interface. To set parameter instances for a subscriber, a parameter instance is attached to a subscriber interface such as a vlan or atm-vc. The QoS administrator defines the available subscriber-interface types in the parameter definition. The parameter instance overrides the QoS profile attachment lower down the interface stack, providing a subscriber-specific value.

You can attach QoS profiles and QoS parameters to a logical interface in either order. If a scheduler profile calls for a parameter and no parameter instance is defined, the system behaves as if there is no shaping rate, shared-shaping rate, or assured rate for that node or queue.

- Related Topics**
- Creating Parameter Instances
 - For more information about using global parameter instances for IP multicast bandwidth adjustment, see IP Multicast Bandwidth Adjustment for QoS Overview