



QoS on Subinterface

Table 1: Feature History

Feature Name	Release Information
QoS on Subinterface	This feature enables Quality of Service (QoS) policies to be applied to individual subinterfaces.

A physical interface may be treated as multiple interfaces by configuring one or more logical interfaces called subinterfaces. One use case is separating the traffic of different VLANs by using a separate subinterface for each VLAN.

Quality of Service (QoS) policies may be applied to individual subinterfaces. Configure QoS as usual, specifying the interface and subinterface using the *interface.subinterface* notation. For example, for GigabitEthernet interface 4, subinterface 100:

GigabitEthernet4.100

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- [Configuration Example: QoS on Subinterface, on page 2](#)

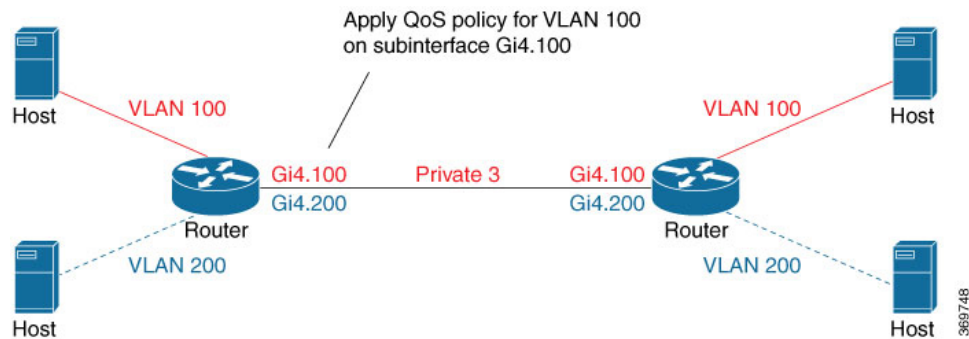
Limitations

- Do not configure a QoS policy on both a main interface and one of its subinterfaces. The exception is a class-default shape policy on the main interface.
- A QoS policy that is applied to a subinterface must have shaping defined. This configured with the shape command. Example:

```
policy-map shape_GigabitEthernet4.100
  class class-default
    service-policy xyz_QoS-model
    shape average 100000000
```

Configuration Example: QoS on Subinterface

This example applies a QoS policy to subinterface GigabitEthernet4.100 (shown in red in the figure below). This subinterface handles traffic for VLAN 100. The QoS policy affects only subinterface GigabitEthernet4.100, and not subinterface GigabitEthernet4.200, which is on the same physical interface.



Configuration by CLI

```
class-map match-any DATA
  match qos-group 1
class-map match-any Queue0
  match qos-group 0
class-map match-any Queue1
  match qos-group 1
class-map match-any Queue2
  match qos-group 2
class-map match-any Queue7
  match qos-group 7
class-map match-any WEB
  match qos-group 7

policy-map xyz_QoS-model
  class Queue0
    priority percent 37
  class Queue1
    bandwidth percent 33
  class Queue7
    random-detect
    bandwidth percent 10
  class class-default
    random-detect
    bandwidth percent 20
policy-map shape_GigabitEthernet4.100
  class class-default
    service-policy xyz_QoS-model
    shape average 100000000
!

interface GigabitEthernet4.100
  no shutdown
  encapsulation dot1q 100
  ip address 173.10.0.2 255.255.255.0
  ip mtu 1496
  service-policy output shape_GigabitEthernet4.100
exit
```

```
exit
interface Tunnel3
  no shutdown
  ip unnumbered GigabitEthernet4.100
  tunnel source GigabitEthernet4.100
  tunnel mode sdwan
exit

sdwan
interface GigabitEthernet4.100
  tunnel-interface
  encapsulation ipsec
  color private3 restrict
  max-control-connections 0

policy
class-map
class Queue0 queue 0
class VOICE queue 0
class DATA queue 1
class Queue1 queue 1
class Queue2 queue 2
class Queue7 queue 7
class WEB queue 7
!
```

Configuration by vManage

To apply a QoS policy to a subinterface using vManage, the procedure is similar to that used for configuring policies on a main interface. Add a subinterface feature template to the device template for the target device. This enables loading the QoS policy onto the subinterface.

Preparation

- **Configure a QoS Policy**

Configuration > Policies > Localized Policy > Custom Options > Forwarding Class/QoS

- **Apply a QoS Policy to a Subinterface**

Apply a QoS policy and define shaping.

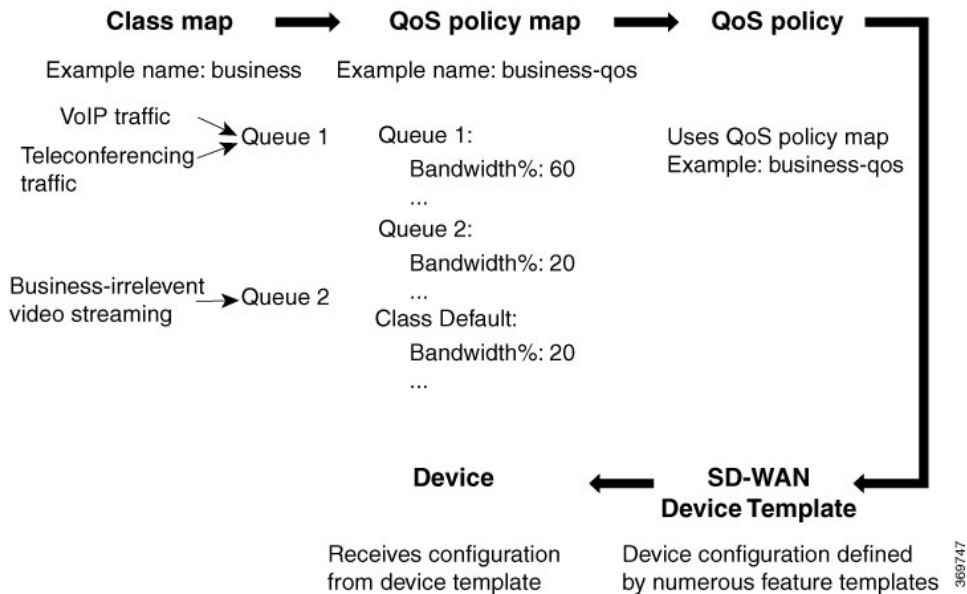
1. Configuration > Feature > feature-name > ACL/QoS
2. Configure the following fields:
 - Shaping Rate (Kbps)
 - QoS Map

Procedure

This procedure applies a QoS policy to a subinterface.

Prerequisite: One or more class maps have been defined. These assign classes of traffic (for example, VoIP traffic) to specific queues.

Figure 1: Overview of Workflow for Applying a QoS Policy



1. Create a QoS policy map.
 - a. Configuration > Policies
 - b. Click **Localized Policy** at the top.
 - c. Click the **Add Policy** button to create a new policy map.
 - d. Click **Next**.
 - e. Click the **Add QoS Map** button and select **Create New** from the dropdown menu.
 - f. (This step relies on class maps that have been defined. The class maps assign classes of traffic to specific queues. The queues then represent those classes of traffic. This step uses the queues to control how the traffic will be handled.)

In the Add Queue dialog box, select queues that represent the types of traffic relevant to the QoS objectives. Configure parameters such as Bandwidth% and Buffer% for the queues. For example, to configure bandwidth for audio traffic, select a queue that represents audio traffic and configure the bandwidth parameter. Click the **Save Queue** button.
 - g. Click the **Save Policy** button.
2. Create a QoS policy that uses the QoS policy map defined above.

See the documentation for creating a QoS policy.
3. Use a device template to push the QoS policy to the target device.

(Note: The device policy defines other parts of the device configuration also. This procedure only affects the QoS policy portion.)

 - a. Configuration > Templates
 - b. In the list of templates, locate the device template for the target device.

- c. In table row for that template, click the ... button at the right, and select Edit.
 - d. In the Additional Templates area, in the Policy field, click the dropdown menu and select the policy name.
 - e. Click **Update**.
 - f. Click **Next**.
 - g. In the left pane, select the target device. The configuration appears in the right pane.
 - h. Click the **Configure Devices** button to push the policy to the device. SD-WAN displays the Task View, showing the status of the update tasks.
4. Load the QoS policy onto the subinterface.

Prerequisite: The subinterface feature template must already have been added to the device template.

 - a. Configuration > Templates
 - b. Click **Feature** at the top.
 - c. In the list of templates, locate the feature template for the subinterface. (This is the subinterface to which you are assigning the QoS policy.)
 - d. In the Device Templates column, confirm that the feature template is assigned to a device template.
 - e. In the Devices Attached column, confirm that the feature template is assigned to a device.
 - f. In table row for the template, click the ... button at the right, and select Edit.
 - g. Click **ACL/QoS** to jump to the ACL/QoS section.
 - h. In the Shaping Rate field, use the dropdown menu to select **Global** or **Device Specific**, and enter a shaping rate value.
 - i. In the QoS Map field, use the dropdown menu to select **Global** and enter the QoS policy map name.
 - j. Click **Update**.
 - k. In the left pane, select the device to display the configuration in the right pane.
 - l. Click the **Configure Devices** button to push the policy map to the subinterface. SD-WAN displays the Task View, showing the status of the update tasks.

