



## QoS for dVTI

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This module provides conceptual information for using egress QoS on Dynamic Virtual Tunnel Interfaces (dVTI). QoS for dVTI allows you to configure a single dVTI tunnel template. This template is replicated to give connectivity to remote endpoints.

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## Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see [Bug Search Tool](#) and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table at the end of this module.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to [www.cisco.com/go/cfn](http://www.cisco.com/go/cfn). An account on Cisco.com is not required.

## Restrictions for QoS dVTI

- With hierarchical egress policy-maps, the topmost policy may only have class-default
- Priority, bandwidth, fair-queue may only be configured at the lowest level of a policy-map hierarchy containing queuing features
- Only 2000 dVTI tunnels can have QoS configured
- Output QoS may not be configured on both the dVTI tunnel template and the output physical

## Information About QoS for dVTI

A single dVTI template can support numerous connections from routers with static VTI (sVTI) configuration. The dVTI template configuration is typically on a hub router. Remote spoke routers have a sVTI configuration that always points to the hub router. QoS for dVTI supports the following:

- Maximum of 4000 dynamic tunnels using QoS from the dVTI tunnel template
- Scalability for an additional 2000 dynamic tunnels with no QoS on the dVTI tunnel template
- Low latency egress queuing on dVTI tunnel templates
- Egress shaping (with and without overhead accounting) on dVTI tunnel templates

## Configuration Examples for QoS for dVTI

### Example 2 Layer Rate LLQ for dVTI

This example shows how to configure a 2 Layer egress policy-map on the virtual tunnel interface which gives the following:

- ToS-specific rate LLQ for certain traffic
- Overall rate limiting on a per-tunnel basis
- Additional overhead is considered using the account directive on the shape command in the parent shaper

```
class-map match-any real_time
  match ip dscp cs5 ef
!
class-map match-any generic_data
  match ip dscp cs1 cs2 af21 af22
  match ip dscp default
!
policy-map child
class real_time
  police cir 200000
  conform-action transmit
  exceed-action drop
  violate-action drop
  priority
class generic_data
  bandwidth remaining percent 100
!
policy-map parent
  class class-default
  shape average 1000000 account user-defined 30
  service-policy child
!
interface Virtual-Template 1 type tunnel
  service-policy output parent
```

## Example 2 Layer Rate LLQ with Bandwidth Guarantees for dVTI

This example shows how to configure a 2 Layer egress policy-map on the virtual tunnel interface which gives the following:

- ToS-specific rate LLQ for certain traffic
- Bandwidth guarantees for other traffic
- Overall rate limiting on a per-tunnel basis

```
class-map match-any real_time
match ip precedence 5
!
class-map match-any higher_data_1
match ip precedence 2
!
class-map match-any higher_data_2
match ip precedence 3
!
policy-map child
  class real_time priority
    police 5000000 conform-action transmit exceed-action drop violate-action drop
  class higher_data_1
    bandwidth remaining percent 50
  class higher_data_2
    bandwidth remaining percent 40
  class class-default
    shape average 10000000
    bandwidth remaining percent 5
!
policy-map parent
  class class-default shape average 15000000
  service-policy child
!
interface Virtual-Template 1 type tunnel
service-policy output parent
```

## Example 3 Layer QoS for dVTI

```
policy-map parent
  Class class-default
    Shape average 50000000
    Bandwidth remaining ratio 1
    Service-policy child
!
policy-map child
  Class Red
    Shape average percent 80
    Bandwidth remaining ratio 9
    Service-policy grandchild
  Class Green
    Shape average percent 80
    Bandwidth remaining ratio 2
    Service-policy grandchild
!
policy-map grandchild
  Class voice
    Priority level 1
  Class video
    Priority level 2
```

```

Class data_gold
  Bandwidth remaining ratio 100
Class class-default
  Random-detect dscp-based
!

interface virtual-template101 type tunnel
ip unnumbered loopback101
tunnel source GigabitEthernet0/3/0
service-policy output parent

```

## Additional References

### Related Documents

Related Topic	Document Title
Cisco IOS commands	<a href="#">Cisco IOS Master Commands List, All Releases</a>

### Standards and RFCs

Standard/RFC	Title

### MIBs

MB	MIBs Link
	To locate and download MIBs for selected platforms, Cisco software releases, and feature sets, use Cisco MIB Locator found at the following URL:  <a href="http://www.cisco.com/go/mibs">http://www.cisco.com/go/mibs</a>

### Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	<a href="http://www.cisco.com/cisco/web/support/index.html">http://www.cisco.com/cisco/web/support/index.html</a>

## Feature Information for QoS for dVTI

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to [www.cisco.com/go/cfn](http://www.cisco.com/go/cfn). An account on Cisco.com is not required.

**Table 1: Feature Information for QoS for dVTI**

Feature Name	Releases	Feature Information
QoS for dVTI	Cisco IOS XE Release 2.1	QoS for dVTI configures a single dVTI tunnel template.

