

## Configuring a Parameter Definition to Adjust Frame Shaping Rates for VDSL Traffic

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Packet fragmentation can occur at a DSLAM because of the associated segment header that is added for VDSL2 in frame shaping mode. Because the segment header is not included in the ANCP rate report, the forwarding rate on an E Series router can be higher than the DSLAM rate, which can result in packet loss.

You can use a QoS parameter expression with the frame byte-adjustment application to reduce the forwarding rate so that it matches the VDSL downstream rate at the DSLAM. You can also configure the cell mode application to account for ADSL downstream traffic that is also being received.

To configure a QoS parameter definition to adjust frame shaping rates and manage packet fragmentation:

1. Configure the QoS parameter definition to accept downstream shaping rate instantiation from ANCP.

```
host1(config)#qos-parameter-define ancp-downstream application  
qos-downstream-rate
```

2. Configure the QoS parameter definition for the frame byte-adjustment application to adjust the packet header.

```
host1(config)#qos-parameter-define frame-byte application  
qos-frame-byte-adjustment
```

You can also configure the qos-byte-adjustment application with a different value.

3. Create the QoS parameter definition for the cell mode application to track the subscriber DSL type.

```
host1(config)#qos-parameter-define sp-qos-cell-mode application qos-cell-mode
```

The ADSL type corresponds to cell mode and VDSL corresponds to frame mode.

4. Configure the parameter expression to reduce the shaping rate to account for packet fragmentation.

In the following expression, the adjustment is applied to traffic with frame shaping mode only. The byte adjustment value is 8 and the shaping rate is reduced by 2 percent.

```
host1(config)#scheduler-profile service-provider-business  
host1(config-scheduler-profile)# shaping-rate ancp-downstream -  
(ancp-downstream % 2 * (1 - sp-qos-cell-mode))
```



**TIP:** To determine the expression value and the byte adjustment required, you must account for the actual segmentation header overhead added by the DSLAM. DSLAMs have different segmentation header overheads.

If the user packet size changes, you must change the expression value and the byte adjustment value.

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5. To ensure that the router handles the byte adjustment value consistently for VDSL and ADSL networks, apply the QoS parameter for frame shaping mode globally.

```
host1(config)#qos-parameter frame-byte 8
```



**NOTE:** The ancp-downstream rate and sp-qos-cell-mode QoS parameters are dynamically applied to QoS by ANCP.

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- Related Topics**
- Byte Adjustment for ADSL and VDSL Traffic Overview
  - qos-parameter
  - qos-parameter-define
  - qos-profile
  - scheduler-profile
  - shaping-rate

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