

# Understand Upstream and Downstream Bandwidth Use on vEdge Router

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## Introduction

This document describes how to configure and monitor upstream and downstream bandwidth utilization on a transport interface on vEdge routers.

## Prerequisites

### Requirements

Cisco recommends that you have knowledge of these topics:

- Cisco Software-defined Wide Area Network (SD-WAN)

### Components Used

This document is based on these software and hardware versions:

- SD-WAN Controllers (20.9.4.1)
- vEdge Cloud Router (20.6.4)

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

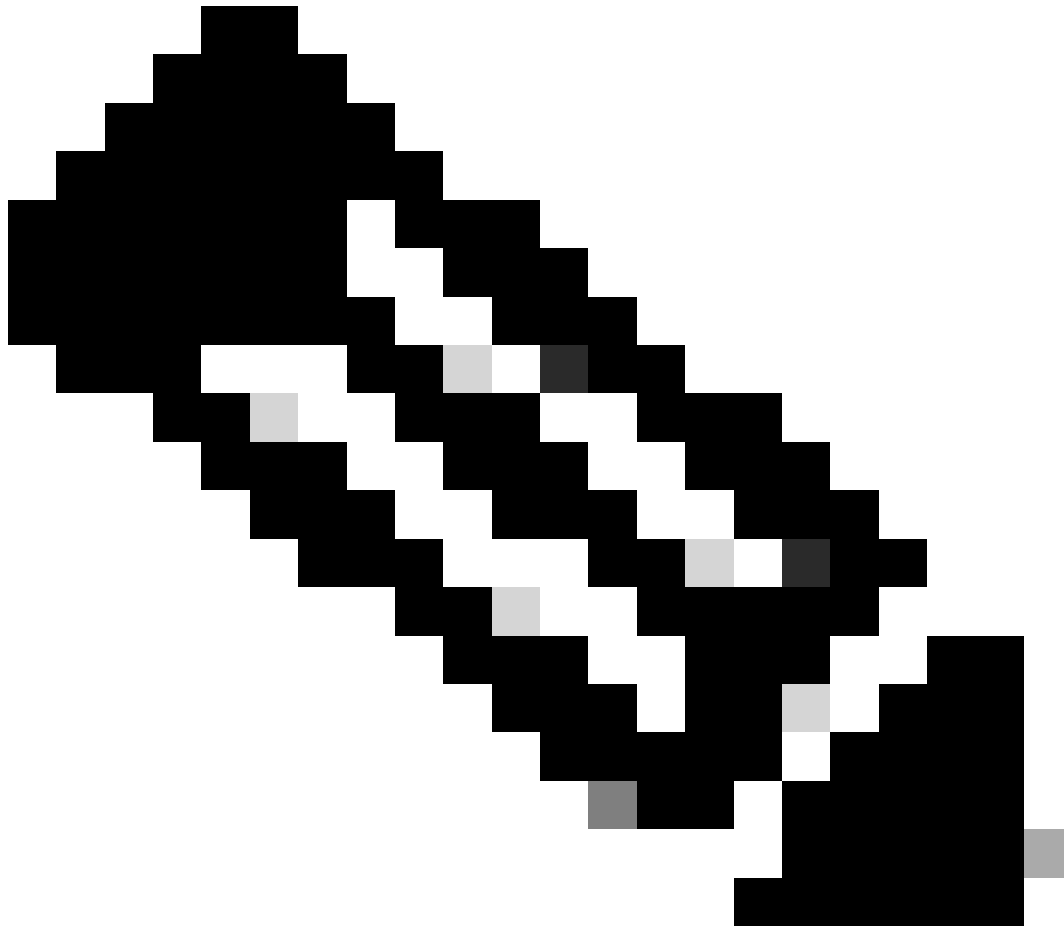
## Background Information

Upstream and Downstream bandwidth feature helps to generate notification events when the traffic exceeds 85% of the total bandwidth available on the VPN 0 WAN interface.

- To generate alarms when the traffic received on the WAN interface exceeds 85% of the available bandwidth, configure the **downstream bandwidth** command.
- To generate alarms when the traffic transmitted on the WAN interface exceeds 85% of the available bandwidth, configure the **upstream bandwidth** command.

The value of the **bandwidth-upstream** and **bandwidth-downstream** are given in kilo bits per seconds (kbps). If the interface reaches 85% of the specific limit configured an event is generated.

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**Note:**The events generated locally in the router are sent out to the Cisco Catalyst SD-WAN Manager via Network Configuration Protocol (NETCONF).

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## Restrictions

- This feature is not supported on Cisco® IOS XE SDWAN devices but on vEdge running Viptela OS.
  - Cisco bug ID [CSCvq89912](#).

## Configuration

## Configuration via CLI

Enter the desired values in kbps and **save** the configuration.

```
<#root>
vEdge#
config
vEdge(config)#
vpn 0

vEdge(config-vpn-0)#
interface ge0/0

vEdge(config-interface-ge0/0)#
bandwidth-upstream 5

vEdge(config-interface-ge0/0)#
bandwidth-downstream 5

vEdge(config-interface-ge0/0)#
commit
```

## Configuration via Template

### Feature Template

Navigate to **Configuration > Templates > Feature Template > Add Template > VPN Interface Ethernet**.

Enter the desired values and **save** the template.

[Feature Template](#) > [Add Template](#) > Cisco VPN Interface Ethernet

Bandwidth Upstream



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Bandwidth Downstream



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## Verify

Use these commands to verify that the configuration is correctly applied.

<#root>

vEdge#

show run vpn 0

vpn 0

```
interface ge0/0
 ip dhcp-client
 ipv6 dhcp-client
 tunnel-interface
 encapsulation ipsec
 allow-service all
 !
 no shutdown

bandwidth-upstream 5
```

```
bandwidth-downstream 5
```

vEdge#

show interface detail | begin ge0/0

----- output omitted -----

```
bandwidth-upstream          5
bandwidth-downstream        5
```

----- output omitted -----

Verify the alarm on the Viptela Edge device.

<#root>

vEdge#

show notification stream viptela

notification

```
eventTime 2024-04-11T17:13:57.072397+00:00
interface-bw
 severity-level major
 host-name vEdge
 system-ip 192.168.4.1
 vpn-id 0
 if-name ge0/0
```

if-cfg-bw-kbps 5

```
traffic-direction upstream
```

```
duration 300
```

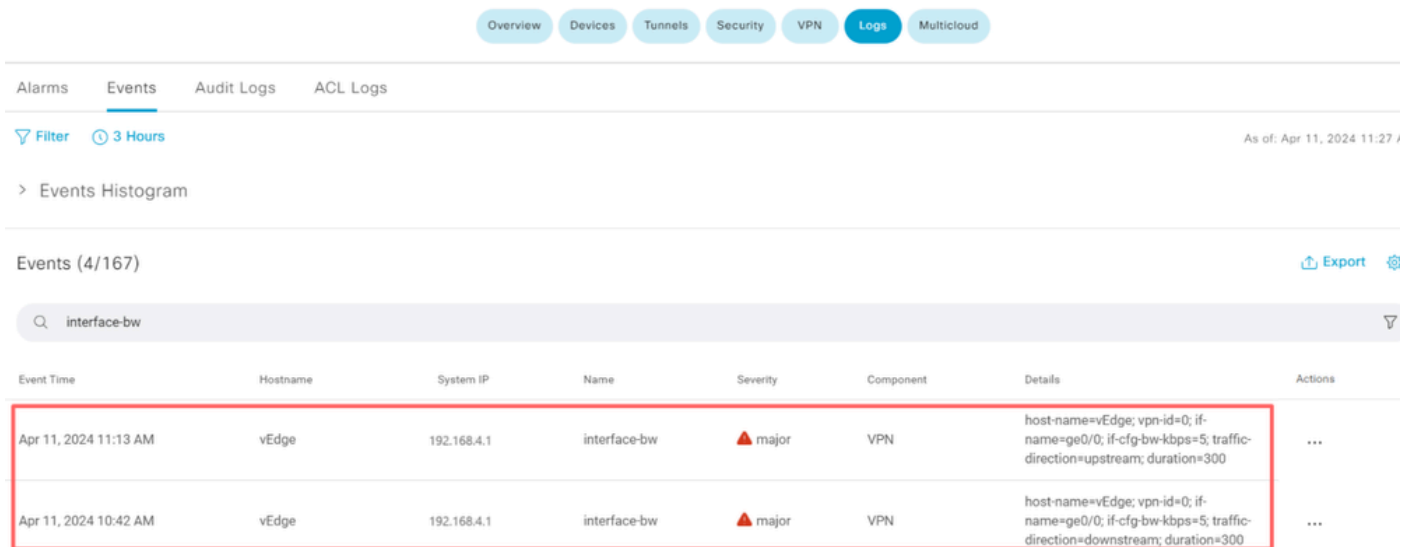
```
!
notification
  eventTime 2024-04-11T16:42:57.072397+00:00
  interface-bw
    severity-level major
    host-name vEdge
    system-ip 192.168.4.1
    vpn-id 0
    if-name ge0/0
```

```
if-cfg-bw-kbps 5
```

```
traffic-direction downstream
```

```
duration 300
```

On the Cisco Catalyst SD-WAN Manager Graphic User Interface (GUI), the notification is visible under **Monitor > logs > Events**.



Navigate to the **alarm** and click the three dots of the alarm (...) > **Device details**. Cisco Catalyst SD-WAN Manager GUI provides all the related information of the alarm:

- In which direction is the traffic is transmitted.
- The threshold configured.
- Interface name and duration (in seconds).

# Device Details

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Host Name	vEdge
Vpn Id	0
If Name	ge0/0
If Cfg-bw-kbps	5
Traffic Direction	upstream
Duration	300

## Related Information

- [Command Reference](#)
- [Monitoring bandwidth on a Transport Circuit](#)