

How to configure VLAN speed limiting on a core switch



Overview

You need to configure Policing that will limit the rate users can use going through a particular port/vlan.

Key Takeaways

VLAN speed limiting is achieved by classifying traffic per VLAN and applying traffic policing or rate-limiting policies on the switch interfaces.

VLAN speed limiting allows you to control bandwidth usage for specific VLANs without affecting other VLANs. This is typically done using traffic classifiers, traffic behaviors, and QoS policies applied to interfaces connected to the core switch. You can limit either ingress (incoming) or egress (outgoing) traffic depending on your network design.

Steps for Cisco Switches

- Create an Access Control List (ACL) to match VLAN traffic Example for VLAN 80 (10.10.10.0/24) limiting HTTP/HTTPS traffic:

```
ip access-list extended ACL_15Mbps permit tcp 10.10.10.0 0.0.0.255 any eq tcp 10.10.10.0 0.0.0.255 any eq 443
```

- Define a class-map to classify the traffic

```
class-map Link_15Mbps match access-group ACL_15Mbps
```

- Create a policy-map to police the traffic

```
policy-map Policy_15Mbps class Link_15Mbps police 15000000 8000 conform-action
transmit exceed-action drop
```

- Apply the policy to the interface

interface GigabitEthernet1/0 service-policy output Policy_15Mbps This limits outbound traffic to 15 Mbps for VLAN 80 while leaving other VLANs unrestricted (Cisco Community) .

Steps for Huawei Switches

- Create VLANs and assign interfaces

```
vlan 100vlan 110vlan 120interface GigabitEthernet1/0/1 port link-type trunk port
trunk allow-pass vlan 100 110 120
```

- Configure traffic classifiers based on VLAN IDs

```
traffic classifier c1 if-match vlan-id 120traffic classifier c2 if-match vlan-id 110traffic
classifier c3 if-match vlan-id 100
```

- Define traffic behaviors to limit bandwidth

```
traffic behavior b1 car cir 10000
```

- Bind classifiers and behaviors in a traffic policy and apply to interface

```
traffic policy p1 classifier c1 behavior b1interface GigabitEthernet1/0/1 traffic-policy
p1 inbound This ensures each VLAN receives a specific committed information rate
(CIR) while maintaining QoS priorities for voice, video, and data (Huawei Support) .
Best Practices
```

- Decide between ingress and egress policing: Egress policing is simpler and avoids packet drops on the core switch. Ingress policing may be needed if upstream traffic needs control.
- Use QoS priorities: Assign higher priority to latency-sensitive traffic like voice or video.
- Monitor and adjust: Use show policy-map interface (Cisco) or display traffic policy (Huawei) to verify applied limits.
- Avoid over-policing: Ensure burst sizes and CIR values are realistic to prevent unnecessary packet drops. By following these steps, you can effectively limit bandwidth per VLAN on a core switch while maintaining normal traffic flow for other VLANs, ensuring fair usage and network stability.

Article Content

Limit Internet Bandwidth for a VLAN?

What I want to do is to limit the available Internet bandwidth (say 15MB) for VLAN80 but not restrict the local LAN

Limit bandwidth per port switch/VLANs?

You need to configure Policing that will limit the rate users can use going through a particular port/vlan. Policing

VLAN Configuration Guide

Before you create VLANs, you must decide whether to use VLAN Trunking Protocol (VTP) to maintain global VLAN

How to Assign bandwidth to vlans

I have configured router-on-stick and it works alright. All the hosts on each vlan can browse the internet. My problem

Example for Configuring Rate Limiting for Services from Different

Create VLANs and configure interfaces so that the enterprise can access the Network through the Switch. Configure ACLs on the

VLAN Configuration Guide, Cisco IOS XE 17.18.x (Catalyst 9300

Before you create VLANs, you must decide whether to use VLAN Trunking Protocol (VTP) to maintain global VLAN

Example for Configuring Rate Limiting Based on VLAN IDs

Configure traffic classifiers on the Switch to classify packets based on VLAN IDs. Configure traffic behaviors on the

VLAN Configuration Commands Step by Step Explained

This tutorial explains VLAN configuration commands. Learn how to configure, test, and verify VLANs on Cisco switches.

How To Limit a VLAN to a Specific Bandwidth Quota

First I define a couple of ACL objects: Q_CBWFQ_net is used to define what traffic will be shaped; traffic will match

Configure VLANs on a Cisco Switch | ComputingForGeeks

This guide shows how to configure VLANs on a Cisco switch: creating them, putting access ports into them, adding a

How To Limit a VLAN to a Specific Bandwidth Quota

I have a Cisco Router 1900 series and I would like to limit the bandwidth used by a subnet/subinterface. This

How to Configure a Cisco Switch (step by step)

If you're looking to configure a switch for the first time, this post is for you. Learn step-by-step configuration commands

How to Configure VLANs and SVIs on Cisco Switches | NSC

How to Configure VLANs and SVIs on Cisco Switches Understanding how to configure VLANs (Virtual Local Area

Limit Internet Bandwidth for a VLAN?

Hi, I have two VLANs on my network (VLAN10 is servers and VLAN80 is client computers). Each VLAN is on it's own

Example for Configuring Rate Limiting Based on VLAN IDs

Overview In addition to an ACL, a traffic classifier in MQC defines many Layer 2 and Layer 3 matching rules such as

Cisco Catalyst 1300 Administration Guide

This directs both types of packets. Create or Configure a VLAN To create a VLAN or configure a VLAN on a switch,

How to Improve Network Speed with a LAN Switch

How to improve network speed by avoiding congestion and reducing collisions. Two experts share tips on segmenting, increasing

Step-by-Step Guide to Implementing VLANs with Network Hardware

This foundational planning phase is critical for effective configuration and ongoing management of the network. When

Switch Interface Rate Limiting

Building configuration... Current configuration : 155 bytes ! interface GigabitEthernet1/0/27 switchport access vlan 2 switchport mode

Per VLAN Rate Limiting on Cisco 3850 Switch

Hi All, I have a 3850 Switch with several Trunk Ports. Each of these Trunk Ports have several unique VLANs

Solved: Limit Bandwidth on Switch or Router

Use the `srr-queue bandwidth limit` interface configuration command to limit the maximum output on a port. Use the `no`

How to Configure VLAN on Cisco Switch: Step-by-Step ...

Learn how to configure VLAN on Cisco switch step-by-step. Covers VLAN creation, port assignment, trunk configuration, best

Example for Configuring Interface-based Rate Limiting on a Fixed Switch ...

Overview Interface-based rate limiting is easy to configure and limits the rate of all packets sent or received on an

Cisco Nexus 9000 Series NX-OS Layer 2 Switching Configuration

See the Cisco Nexus 9000 Series NX-OS Interfaces Configuration Guide for information on configuring ports as VLAN access or

Solved: Limit Bandwidth on Switch or Router

Use the `srr-queue bandwidth limit` interface configuration command to limit the maximum output on a port. Use the `no`

How to Configure VLAN on Cisco Switch: Step-by-Step ...

Learn how to configure VLAN on Cisco switch step-by-step. Covers VLAN creation, port assignment, trunk configuration, best

Example for Configuring Interface-based Rate Limiting on a Fixed Switch ...

Overview Interface-based rate limiting is easy to configure and limits the rate of all packets sent or received on an

Cisco Nexus 9000 Series NX-OS Layer 2 Switching Configuration

See the Cisco Nexus 9000 Series NX-OS Interfaces Configuration Guide for information on configuring ports as VLAN access or

What is VLAN (Virtual Local Area Network)?

What is VLAN? Discover how Virtual LANs segment networks, boost security, and improve performance—plus how to implement

Solved: Rate Limit and Traffic Shaping

I am looking for step-by-step configuration on how to enable rate-limit and traffic shaping on

VLAN Naming, Ranges, and Management Best Practices

Deep dive into VLAN naming conventions, the difference between standard and extended range VLANs, and best

Assigning Bandwidth Limitations to VLANs

Is bandwidth management over different VLANs possible with a switch that was manufactured by Cisco? If so how can

How to Set Up a VLAN in 12 Steps: Creation & Configuration

Setting up a VLAN is a 12-step process. The steps include preparing unique VLAN IDs, creating a network diagram,

Configuring VLANs

The following are prerequisites and considerations for configuring VLANs: Before you create VLANs, you must decide whether to use

Rate Limit and Storm Commands

To limit the incoming traffic rate for a VLAN in, use the rate-limit vlan command in Global Configuration mode. To disable the rate

How to Configure Cisco Switch VLANs for Effective Network

Learn how to configure Cisco switch VLANs to enhance network security, reduce broadcast traffic, and simplify

Speed limiting network switch

Use the srr-queue bandwidth command on cisco switches. You use it as percentage of a ports speed. So if you set

Traffic Filtering on Cisco Layer3 Switches using ACL and VACL

The classic Access Control List (ACL) is the core mechanism on Cisco network devices (routers, switches etc) which

How To Limit a VLAN to a Specific Bandwidth Quota

I have a Cisco Router 1900 series and I would like to limit the bandwidth used by a subnet/subinterface. This

How to Configure a Cisco Switch (step by step)

If you're looking to configure a switch for the first time, this post is for you. Learn step-by-step configuration commands

How to Configure VLANs and SVIs on Cisco Switches | NSC

How to Configure VLANs and SVIs on Cisco Switches Understanding how to configure VLANs (Virtual Local Area

Limit Internet Bandwidth for a VLAN?

Hi, I have two VLANs on my network (VLAN10 is servers and VLAN80 is client computers). Each VLAN is on it's own

Example for Configuring Rate Limiting Based on VLAN IDs

Overview In addition to an ACL, a traffic classifier in MQC defines many Layer 2 and Layer 3 matching rules such as

Cisco Catalyst 1300 Administration Guide

This directs both types of packets. Create or Configure a VLAN To create a VLAN or configure a VLAN on a switch,

How to Improve Network Speed with a LAN Switch

How to improve network speed by avoiding congestion and reducing collisions. Two experts share tips on segmenting, increasing

Step-by-Step Guide to Implementing VLANs with Network Hardware

This foundational planning phase is critical for effective configuration and ongoing management of the network. When

Switch Interface Rate Limiting

Building configuration... Current configuration : 155 bytes ! interface GigabitEthernet1/0/27 switchport access vlan 2 switchport mode

Per VLAN Rate Limiting on Cisco 3850 Switch

Hi All, I have a 3850 Switch with several Trunk Ports. Each of these Trunk Ports have several unique VLANs

Solved: Limit Bandwidth on Switch or Router

Use the srr-queue bandwidth limit interface configuration command to limit the maximum output on a port. Use the no

How to Configure VLAN on Cisco Switch: Step-by-Step ...

Learn how to configure VLAN on Cisco switch step-by-step. Covers VLAN creation, port assignment, trunk configuration, best

Example for Configuring Interface-based Rate Limiting on a Fixed Switch ...

Overview Interface-based rate limiting is easy to configure and limits the rate of all packets sent or received on an

Cisco Nexus 9000 Series NX-OS Layer 2 Switching Configuration

See the Cisco Nexus 9000 Series NX-OS Interfaces Configuration Guide for information on configuring ports as VLAN access or

Limit Internet Bandwidth for a VLAN?

What I want to do is to limit the available Internet bandwidth (say 15MB) for VLAN80 but not restrict the local LAN

Limit bandwidth per port switch/VLANs?

You need to configure Policing that will limit the rate users can use going through a particular port/vlan. Policing

VLAN Configuration Guide

Before you create VLANs, you must decide whether to use VLAN Trunking Protocol (VTP) to maintain global VLAN

How to Assign bandwidth to vlans

I have configured router-on-stick and it works alright. All the hosts on each vlan can browse the internet. My problem

Example for Configuring Rate Limiting for Services from Different

Create VLANs and configure interfaces so that the enterprise can access the Network through the Switch. Configure ACLs on the

VLAN Configuration Guide, Cisco IOS XE 17.18.x (Catalyst 9300

Before you create VLANs, you must decide whether to use VLAN Trunking Protocol (VTP) to maintain global VLAN

Example for Configuring Rate Limiting Based on VLAN IDs

Configure traffic classifiers on the Switch to classify packets based on VLAN IDs. Configure traffic behaviors on the

VLAN Configuration Commands Step by Step Explained

This tutorial explains VLAN configuration commands. Learn how to configure, test, and verify VLANs on Cisco switches.

How To Limit a VLAN to a Specific Bandwidth Quota

First I define a couple of ACL objects: Q_CBWFQ_net is used to define what traffic will be shaped; traffic will match

Configure VLANs on a Cisco Switch | ComputingForGeeks

This guide shows how to configure VLANs on a Cisco switch: creating them, putting access ports into them, adding a

Limit Internet Bandwidth for a VLAN?

What I want to do is to limit the available Internet bandwidth (say 15MB) for VLAN80 but not restrict the local LAN

Limit bandwidth per port switch/VLANs?

You need to configure Policing that will limit the rate users can use going through a particular port/vlan. Policing

VLAN Configuration Guide

Before you create VLANs, you must decide whether to use VLAN Trunking Protocol (VTP) to maintain global VLAN

How to Assign bandwidth to vlans

I have configured router-on-stick and it works alright. All the hosts on each vlan can browse the internet. My problem

Example for Configuring Rate Limiting for Services from Different

Create VLANs and configure interfaces so that the enterprise can access the Network through the Switch. Configure ACLs on the

VLAN Configuration Guide, Cisco IOS XE 17.18.x (Catalyst 9300

Before you create VLANs, you must decide whether to use VLAN Trunking Protocol (VTP) to maintain global VLAN

Example for Configuring Rate Limiting Based on VLAN IDs

Configure traffic classifiers on the Switch to classify packets based on VLAN IDs. Configure traffic behaviors on the

VLAN Configuration Commands Step by Step Explained

This tutorial explains VLAN configuration commands. Learn how to configure, test, and verify VLANs on Cisco switches.

How To Limit a VLAN to a Specific Bandwidth Quota

First I define a couple of ACL objects: Q_CBWFQ_net is used to define what traffic will be shaped; traffic will match

Configure VLANs on a Cisco Switch | ComputingForGeeks

This guide shows how to configure VLANs on a Cisco switch: creating them, putting access ports into them, adding a

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

Contact Us

Continue your research online:

Website: <https://alfa-pro.co.za>

Technical inquiry: <https://alfa-pro.co.za/contact.html>

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

