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.Overview

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

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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.

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

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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

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