

Packet loss across different VLANs on the same core switch



Article Overview

Packet loss between VLANs on the same switch is often caused by misconfigurations in inter-VLAN routing, duplex mismatches, trunking issues, or hardware/software forwarding limitations.

Common Causes

1. Duplex and Speed Mismatches If a port on the switch or connected device is set to half-duplex while the other side is full-duplex, packet loss can occur, especially under higher traffic loads. This typically affects inter-VLAN traffic more noticeably than intra-VLAN traffic because inter-VLAN packets traverse the Layer 3 routing path, which is more sensitive to collisions and retransmissions . 2. Inter-VLAN Routing Issues When a Layer 3 switch performs inter-VLAN routing, misconfigurations can force packets to be routed via the CPU (slow path) instead of hardware-based Multilayer Switching (MLS). This can drastically reduce forwarding rates and cause packet drops between VLANs, while traffic within the same VLAN remains unaffected . 3. Trunk and VLAN Tagging Problems Incorrect trunk configuration or mismatched VLAN IDs can result in dropped packets. For example, if a trunk port does not allow a specific VLAN or if the native VLAN is inconsistent across switches, inter-VLAN traffic may be dropped. Similarly, in virtualized environments, mismatches between ESXi portgroups and physical switch VLAN tagging can lead to packet loss . 4. Overloaded or Oversubscribed Links High traffic on uplinks or inter-VLAN routing interfaces can cause congestion, leading to packet drops. This is more pronounced when multiple VLANs share the same physical interface or when the switch CPU is handling routin...

Article Content

Inter-VLAN Routing: RoAS, SVIs & What Breaks First

Learn inter-VLAN routing with step-by-step Cisco configs for router-on-a-stick and Layer 3 SVIs. Includes HSRP

Common Causes of Slow IntraVLAN and InterVLAN Connectivity in ...

Ingress errors on a cut-through switch can also contribute to interVLAN routing slowness. Cut-through switches use

Routing Between VLANs Overview [Networking

Security VLANs improve security by isolating groups. High-security users can be grouped into a VLAN,

Troubleshooting VLAN Connectivity Issues

There can be a few different causes for VLAN connectivity issues: Incorrect configurations of the virtual portgroups

The same MAC in different VLANs

As far as I know, switch should not have any issues with the same MAC address being in the different VLAN, because

ping in the same VLAN with multiple switches in between

Refreshing VLAN knowledge with PT7.3, I came across some unexpected behavior. Why does a chain of switches having proper

Common Problems with Inter-VLAN Routing and How to Fix Them

Inter-VLAN routing allows devices in different VLANs to talk to each other. This is very useful for managing traffic and

Troubleshooting VLAN issues

Learn few of the common problems that arise while managing a VLAN and how to troubleshoot them.

Inter-Vlan packet loss on subnet gateway

I manage a Wide Area Network with 50 + subnets all connected through Intern Vlan Routing via Layer 3 switched

Configure Inter VLAN Routing with Multiple Switches

The question comes up often when talking about inter vlan routing and how this is done with multiple switches in a

Inter-VLAN Routing | LogicMonitor

Learn why inter-VLAN routing is required, understand the different models used for

Fix VLAN Misconfiguration: Step-by-Step Guide

Incorrect VLAN settings can cause traffic disruptions, unauthorized access, and inefficient network performance. This guide will help

packet loss between networks / VLANs

Hi all, what is an acceptable amount of packet loss between networks / VLANs. for example what would you expect in

Single VLAN Dropping packets about every 5-10 minutes.

On our production VLAN, about every 10-15 minutes, we spike to around 100% packet loss for about 20 or 30 seconds. This

Troubleshooting Common VLAN and SVI Configuration Issues

One common issue is VLANs not propagating through the network as expected, often due to misconfiguration of VLAN

Routing Between VLANs Overview

Security VLANs improve security by isolating groups. High-security users can be grouped into a VLAN, possibly on the same

Inter VLAN Routing Explained for Network Pros.

Inter-VLAN routing allows devices in different VLANs to communicate with each other using

How to perform VLAN troubleshooting

Trunking On trunking links, admins need to set the native VLAN, which tells the switch which VLAN to use for any

A sysadmin's guide to troubleshooting VLANs

The upstream switch port may not be configured with the correct VLANs, or the VLANs may not exist on the switch at

Troubleshooting VLAN Related Issues on a Switch in packet tracer

In this article, I describe the steps for Troubleshooting VLAN Related Issues on a Switch in packet tracer. Virtual LANs (VLANs) are a

Troubleshooting VLAN Connectivity Issues

Pinging between VLANs or capturing traffic between VLANs shows packet loss, even though the physical NICs

Create a single VLAN on multiple switches

The problem is you have routed connections between your switches so you cannot have the same vlan (or more

Common Causes of Slow IntraVLAN and InterVLAN Connectivity in

This article offers practical tips and solutions for VLAN troubleshooting, including how to verify VLAN tagging, and

Intermittent Packet Loss on Switch Only on Secondary VLAN ...

We are seeing intermittent ping drops on VMs on VLAN 999 (the secondary VLAN) as well as to VLAN 999 devices connected to the

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