

VLAN partitioning via aggregation switch



AI Overview

VLAN partitioning in core and aggregation layers uses sub-VLANs aggregated into super-VLANs to optimize broadcast domains, IP usage, and traffic flow across hierarchical networks.

Core and Aggregation Switch Roles

Core switches act as the high-speed backbone, connecting distribution/aggregation switches and handling large traffic volumes with low latency and high reliability. They primarily operate at Layer 3, providing routing between VLANs and inter-subnet communication, and often support advanced redundancy and ECMP for deterministic convergence.

Aggregation (distribution) switches sit between access and core layers. They aggregate traffic from multiple access switches, enforce policies like QoS and ACLs, and may provide Layer 2 and Layer 3 services. Aggregation switches often implement link aggregation and VLAN management to efficiently transport traffic to the core.

VLAN Aggregation Concepts

VLAN aggregation, also called super-VLAN, allows multiple sub-VLANs to share a single Layer 3 interface and subnet. Key points include:

- Super-VLAN:** A logical Layer 3 construct that contains multiple sub-VLANs. Only the Layer 3 interface exists; physical ports are not directly assigned. It provides a shared default gateway for all sub-VLANs.
- Sub-VLAN:** Contains physical ports and isolates broadcast domains. Sub-VLANs do not require independent Layer 3 interfaces and can share the super-VLAN's IP subnet.

Benefits: Reduces the number of required IP addresses, allows multiple broadcast domains to coexist in the same subnet, and simplifies Layer 3 routing. For example, a super-VLAN can include several sub-VLANs, each representing a different access switch or group of hosts. All sub-VLANs share the same subnet and default gateway, while maintaining separate broadcast domains. This approach optimizes IP address usage and reduces the overhead of creating multiple Layer 3 interfaces.

Deployment Strategy

Access Layer: Connect end devices to access switches, assign them to sub-VLANs.

Aggregation Layer: Aggregate sub-VLAN traffic into super-VLAN...

Article Content

Huawei Data Communication Switching Technology: Detailed

1. Overview of VLAN Aggregation Technology VLAN aggregation is an innovative network virtualization technology that effectively addresses the low utilization of IP addresses in traditional

Private VLAN

Private VLAN, also known as port isolation, is a technique in computer networking where a VLAN contains switch ports that are restricted such that they can only communicate with a given uplink.

How to divide VLAN? 6 ways to divide VLAN.

We summarize 6 methods of divide VLAN to apply in different network environments. What is VLAN and how to divide VLAN? We will share our approach in this article.

Overview of VLAN Aggregation

VLAN aggregation, also called super-VLAN, partitions a broadcast domain on a physical network into multiple VLANs (sub-VLANs) and aggregates them into a single logical VLAN (super-VLAN).

VLAN Aggregation Configuration

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VLAN Aggregation Configuration

S1720, S2700, S5700, and S6720 V200R011C10 Configuration Guide - Ethernet Switching This document describes the configuration of Ethernet services, including configuring link aggregation,

Example for Configuring VLAN Aggregation

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Data Center Aggregation Layer Design and Configuration with ...

This chapter covers the design recommendations for a data center design deployment consisting of a Cisco Nexus® 7000 Series Switch at the aggregation layer and a Cisco Nexus 5000 Series Switch at

LAN Switching Configuration Guide

Where an aggregation route performs inter-VLAN routing for multiple VLANs, traffic can be switched autonomously on-card or between cards rather than through the central Route Switch

VLAN Aggregation

Background of VLAN Aggregation VLAN is widely applied to switching networks because of its flexible control of broadcast domains and convenient deployment. On a Layer-3 switch, the

Introduction to VLAN Aggregation

VLAN aggregation, also called super-VLAN, partitions a broadcast domain into multiple VLANs (sub-VLANs) on a physical network and aggregates the sub-VLANs into a single logical VLAN (super

VLAN Aggregation

Using VLAN aggregation, a superVLAN is defined with the desired IP address. The subVLANs use the IP address of the superVLAN as the default router address. Groups of clients are then assigned to

Segmenting a Network Using VLANs

s are assigned to a switch port. However, when a network is separated using VLANs, the devices are logically separated by Switches with VLAN capability can assign the tagged frames to specific

Wired Aggregation | Validated Solution Guide

In this procedure, point-to-point routed-only ports (ROPs) are configured on aggregation switches connected to the core, and a routed-transit VLAN is configured between each aggregation

VLANs Explained: Network Segmentation for Beginners

Learn VLANs and network segmentation basics to organize traffic, improve security, and reduce broadcasts. Follow beginner examples and start segmenting today.

What Is Super VLAN?

Super VLAN, also called VLAN aggregation, partitions a broadcast domain on a physical network into multiple VLANs (sub-VLANs) and aggregates them into a single logical VLAN (super

VLAN Aggregation

The VLAN aggregation technology, also known as the super-VLAN, provides a mechanism that partitions the broadcast domain using multiple VLANs in a physical network so that

Solved: Aggregating Two VLAN Trunks

Solved: Hello, I'm kinda new in VLAN and setup my own lab via packet tracer. I'm trying to aggregate the two trunk connection that I setup but can't seem to make it work.

Port Aggregation Configurations

Port Aggregation Port aggregation allows you to group multiple physical ports into one unit. Port aggregation is useful for implementing load balancing and provides a redundant link backup. To

Overview of VLAN Aggregation

Definition VLAN aggregation, also called super-VLAN, partitions a broadcast domain into multiple VLANs (sub-VLANs) on a physical network and aggregates the sub-VLANs into a single logical

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A VLAN addresses both the issues as it only broadcasts the data to the workstations within the VLAN. Furthermore, it uses switches and bridges,

Example for Configuring VLAN Aggregation

Configure VLAN aggregation on Switch B to add VLANs of different departments to a super-VLAN so that PCs in different departments can access the Internet using the super-VLAN.

How to configure VLAN and NIC Teaming step by step

Learn how to configure VLAN and NIC Teaming on Windows, VMware, and Linux, with clear examples, aggregation modes, and network best practices.

Understanding VLAN Aggregation

Implementation VLAN aggregation technology, also known as super VLAN technology, uses multiple VLANs to isolate broadcast domains on a physical network so that different VLANs belong to the

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://www.dknconsulting.co.za>

Email: info@dknconsulting.co.za

Phone: +31 6 2948 7351

Address: Herengracht 123, 1015 BT Amsterdam, Netherlands

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