Configuration of Aggregation Layer and Access Layer Switches



Overview

What Is an Aggregation Switch and How to Choose?

Discover the role of aggregation switches. Explore differences between aggregation, access, and core switc.

Key Takeaways

Configuring an aggregation layer switch involves creating a Link Aggregation Group (LAG) using protocols like LACP to combine multiple physical links into a single logical interface for higher bandwidth and redundancy. Step 1: Plan Your AggregationIdentify member ports: Choose the physical interfaces on the switch that will participate in the aggregation. Ensure they are of the same speed and duplex settings for optimal performance.

Determine VLA

Ns: Decide which VLANs will traverse the aggregated link. Aggregation can carry multiple VLANs as a trunk or a single VLAN as an access port. Select protocol: Use LACP (Link Aggregation Control Protocol) for dynamic aggregation, which provides automatic failover and prevents misconfigurations.

Static aggregation is possible but lacks automatic negotiation. Step 2: Configure the Aggregated InterfaceCreate the LAG: On most switches, this involves defining a logical interface (e.g., ae0 on Juniper or Port-channel 1 on Cisco) and assigning member ports to it.

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Assign VLA

Ns: Configure the aggregated interface as a trunk or access port depending on your network design. For trunking, include all relevant VLANs. Set link speed and minimum links: Ensure all member links have the same speed.

Optionally, define the minimum number of active links required for the LAG to be operational. Step 3: Configure LACP (if using dynamic aggregation)Enable LACP on each member port.

Set the LAC

P mode to active or passive depending on whether the switch initiates negotiation or waits for the peer. Verify that both ends of the link agree on the aggregation settings to prevent misconfigurations. Step 4: Verify and TestCheck LAG status: Use commands like show lacp or show etherchannel summary to confirm all member ports are active and forwarding traffic.

Test redundancy: Disconnect one member link and ensure traffic continues over the remaining links. Monitor load balancing: Ensure traffic is distributed across all member links according to the configured hashing algorithm. Step 5: Best PracticesConfigure downstream first: Apply aggregation settings on the access or downstream switch before upstream switches or core aggregation switches.

Avoid conflicting port settings: Remove port security, MAC authentication, or 802. 1X from member ports before adding them to a LAG. Consider MC-LAG for high availability: Multi-Chassis LAG allows two switches to act as a single logical unit, providing redundancy and load balancing across chassis.

By following these steps, you can configure an aggregation layer switch to increase uplink bandwidth, provide redundancy, and ensure efficient traffic distribution across multiple physical links.

Article Content

What Is an Aggregation Switch and How to Choose?

Discover the role of aggregation switches. Explore differences between aggregation, access, and core switches, and choose the right model for your network.

Core, Aggregation, or Access Switches? Choose the

Discover the crucial differences between core, aggregation, and access switches. Find out which type can best transform your network''s

Data Center Aggregation Layer Design and Configuration with ...

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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

Access, Distribution, and Core Layers Explained

This tutorial provides an overview of the access, distribution, and core layers and explains two-tier and three-tier campus LAN designs.

A Guide to Simple Two-Tier, Three-Tier, and Spine-Leaf Designs

• Access Layer: This is where devices like computers, phones, and printers connect. • Aggregation/Distribution Layer: Collects traffic from access-layer switches and sends it to the internet

Two-tier and three-tier switch architectures

The aggregation or distribution switches are the intermediary layer between the core and access layers. The lowest tier is the access layer, which is used to connect all of the various end devices, such as

LAN Topologies

In most designs, the aggregation layer of the LAN limits cable distance to access devices, isolates the network core from Layer 2 traffic, and provides Layer 3 services to access VLANs.

Access Layer vs Aggregation Layer Fiber Equipment Guide

A comprehensive comparison of access layer and aggregation layer fiber optic network equipment, covering switch selection, SFP module matching, fiber interface types, port density

Access vs. Distribution vs. Core Switch Comparison Guide

Each layer is served by specialized switches, with the access switch connecting end-user devices, the distribution switch aggregating traffic and enforcing policies, and the core switch acting as the high

Aggregation layer | FortiSwitch 7.6.0 | Fortinet Document Library

The most appropriate FortiSwitch unit to form the aggregation layer comprises many 10/25/40 gigabit Ethernet ports to address the access layer and a few 100-GbE ports towards the core layer.

ITPro Today, Network Computing, IoT World Today combine

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RouterOS

RouterOS Documentation This webpage contains the official RouterOS user manual. RouterOS is the operating system of MikroTik devices. Documentation applies for the latest stable

What Is an Aggregation Switch and How to Choose?

These aggregation switches typically operate at Layer 2 or Layer 3 of the OSI model, depending on the network topology and configuration requirements. They support link aggregation

Data Center Design: Basic 3 Layers, Core, Aggregation, and Access

Data Center Basic Layered Design of Core, Aggregation, and Access The data center network design is based on a proven layered approach, which has been tested and improved over

Data Center Access Layer Design

Some access layer designs permit a larger number of access layer switches per aggregation module than others. • Inter-switch link bandwidth

Understanding the Different Layers of Routing and Switching

Routing and switching layers are integral components of an enterprise network that managers can identify and separate to optimize performance.

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What is Switch Aggregation, Its Role and Selection Advice

What is switch aggregation? Switch aggregation refers to the concept of consolidating multiple access layer switches into a single aggregation layer switch in a traditional three-tier network

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