

What is a Layer 3 aggregation switch



Summary of Content

A Layer 3 aggregation switch consolidates traffic from multiple access switches and performs routing between VLANs or subnets, acting as a high-performance intermediary between the access and core layers of a network.

Overview

A Layer 3 aggregation switch is a network device positioned between the access layer and the core layer in a multi-tier network architecture. Its primary role is to aggregate traffic from multiple access switches, wireless access points, servers, and other edge devices, and forward it efficiently to the core network or data center . Unlike a Layer 2 aggregation switch, a Layer 3 switch can perform routing functions, enabling inter-VLAN communication and IP-based traffic management .

Key Functions

- **Routing and Forwarding:** Supports Layer 3 routing protocols and inter-VLAN routing, determining optimal paths for data transmission within the network .
- **Traffic Aggregation:** Combines multiple lower-layer connections into high-bandwidth uplinks to the core, often using link aggregation protocols like LACP or static link aggregation for redundancy and increased throughput .
- **Quality of Service (QoS):** Prioritizes critical traffic to ensure performance for latency-sensitive applications .
- **Access Control and Security:** Implements filtering, ACLs, and other security measures to control traffic between network segments .

Article Content

Layer 3 Switches Explained: Architecture, Routing Logic, Use Cases,

Layer 3 Switches Explained: Architecture, Routing Logic, Use Cases, and Network Design Guide Technical guide to

6 New Layer 3 Aggregation & Core Switches Powered By SONiC

Asterfusion introduced five Layer 3 aggregation and core switches powered by their cutting-edge SONiC-based

Link Aggregation: Static vs Dynamic, LACP, and MLAG

Understand how link aggregation (LACP, MLAG, static vs dynamic) improves bandwidth

What is an Aggregate Switch?

An aggregate switch is a high-capacity network switch that consolidates connections from multiple access switches,

What is an Aggregation Switch? | Features and Practical Benefits

The aggregation switch conducts uploading and distributing in addition to other tasks including policy implementation,

Understanding Switch Aggregation: A Comprehensive

Aggregation layer switches aggregate data from multiple access switches and routes it to

Here's Why Your Network Might Need a Layer 3 Switch

What Is a Layer 3 Switch? A Layer 3 switch is a specialized hardware device used in

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

Key Features of 3 layers design of Data Center: Data center network is divided into 3 standard three-layer structure.

What Is a Layer 3 Switch? Definition, How It Works,

What is a Layer 3 switch? Learn the definition, how it works, use cases, pros and cons, and

Link Aggregation and Load Balancing

Link Aggregation and Load Balancing Last updated Jun 16, 2026 Save as PDF Table of contents Link bonding Load

Layer 2 vs Layer 3 Switch: Key Differences and Use Cases

Layer 2 vs Layer 3 switch explained. Learn MAC vs IP forwarding, inter-VLAN routing, Aggregation Network Switches | Grandstream Networks

Layer 3 aggregation switches that allow enterprises to build scalable, secure, high performance and smart business networks that

Layer 2 vs Layer 3 Switch: What's the Difference? | Auvik

Layer 2 vs Layer 3 switches The OSI networking model defines a number of network "layers." (Getting into each layer

What Is a Layer 3 Switch? Definition, How It Works,

A Layer 3 switch is a network device that combines switching and routing capabilities.

Layer 3 Link Aggregation

In this example, 3 links are configured between the two switches R1 and R2. These three links are assigned the same administrative

Layer 2 vs Layer 3 Switch * | Differences of L2 and

In Layer 2 vs Layer 3 Switch lesson, we will compare layer 2 switches (simple switches) with layer 3

Datacenter Core and Aggregation Design

Introduction Layered Datacenter Architecture Datacenter Core Layer Datacenter Aggregation Layer Datacenter

Link aggregation

Aggregation at layer 3 (network layer) in the OSI model can use round-robin scheduling, hash values computed from fields in the

In-depth analysis: What is an aggregation switch?

In many network constructions, we have all heard of switches. So do you really understand

Understanding Switch Aggregation: A Comprehensive Guide

Layer 3 Switches: Layer 3 switches, or network layer switches, have routing capabilities in addition to the functions of

What is Switch Aggregation, Its Role and Selection Advice

Switch aggregation refers to the concept of consolidating multiple access layer switches into a single aggregation

Everything You Need to Know About Aggregation Switch

An aggregation switch operates at Layer 2 or Layer 3 of the OSI model, depending on the

Data Center Multi-Tier Model Design

Data Center Core Layer The data center core layer provides a fabric for high-speed packet switching between

Layer 2, Layer 3, and Layer 4 Switches

Therefore, Layer 2 switches are used to provide cheap and easy workgroup connectivity, and Layer 3 switches are used to segment

What is an Aggregation Switch?

Aggregate and connect access switches for users into aggregation switches and within the

What is an Aggregation Switch? | Features and Practical Benefits

Additionally, the access switch includes user management features like address authentication, user authentication,

Contact Us

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

Website: <https://madibabayelectrical.co.za>

Email: sales@madibabayelectrical.co.za

Phone: +27 63 947 2185

Address: 15 Fredman Drive, Sandton, Johannesburg, 2196, South Africa

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