

How many layers does an aggregation switch need



Article Overview

An aggregation switch typically operates at two layers: Layer 2 and Layer 3 of the OSI model.

Aggregation switches are positioned in the middle layer of a three-tier network architecture, which includes the access layer, aggregation (or distribution) layer, and core layer . Their primary role is to consolidate traffic from multiple access switches, wireless access points, or servers and forward it to core switches or routers, ensuring efficient traffic flow and reducing bottlenecks .

OSI Layer Operation

- Layer 2 (Data Link Layer): Aggregation switches can forward traffic based on MAC addresses, manage VLANs, and implement link aggregation protocols like LACP to combine multiple physical links into a single logical connection .
- Layer 3 (Network Layer): They can perform routing between VLANs or subnets, handle IP address-based forwarding, and enforce policies such as Quality of Service (QoS) and access control lists (ACLs), .

Functional Role in Network Architecture

- Traffic Aggregation: Collects data from multiple access switches and consolidates it for the core layer .
- Redundancy and Load Balancing: Supports multiple paths and failover mechanisms...

Article Content

May 18, 2026

What is an Aggregation Switch? | Features and Practical Benefits

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

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Aggregation Layer

Aggregation-layer submodule The aggregation-layer submodule plays a pivotal role in providing a highly reliable, scalable “middle

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Data Center Multi-Tier Model Design

The recommended platform for the enterprise data center core layer is the Cisco Catalyst 6509 with the Sup720

Oct 25, 2025

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

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What is Aggregation Layer in Networking | SPOTOclub

Learn about the aggregation layer in networking, its purpose, and how it connects to the distribution layer. Discover

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Switch Engine v33.2.1 User Guide

Designing and Configuring the Aggregation Layer The network switches in the aggregation layer provide additional resiliency

Feb 22, 2026

What is an Aggregate Switch?

What is the difference between an aggregate switch and a core switch? An aggregate switch consolidates traffic from

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Which Aggregation Switch to Choose?

Aggregation Switch refers to a device used to aggregate multiple low-speed links in a network and connect them to a

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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

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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

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Link aggregation

Network architects can implement aggregation at any of the lowest three layers of the OSI model. Examples of aggregation at layer 1

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Why You Need a Fiber Aggregation Switch and How it Can ...

Aggregation Switch: These switches reside between access layer switches (to which clients connect) and core layer

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Aggregation layer | FortiSwitch 7.2.3 | Fortinet Document Library

The following figure shows an aggregation-layer building block. Multiple blocks of pairs of aggregation switches extend the design of

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What Is an Aggregation Switch and How It Works

What an Aggregation Switch Actually Does The aggregation layer is where most of the network's intelligence lives. Its

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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 configuration and topology

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Data Center Aggregation Layer Design and Configuration with ...

Introduction This chapter covers the design recommendations for a data center design deployment consisting of a Cisco Nexus®

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Aggregation Switches

Aggregation switch is the convergence point of multiple access switches, which serves to unify the accessed data

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What Is an Aggregation Switch?

An aggregation switch sits between access layer switches and the core network, acting as an intermediary. It collects

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What Is an Aggregation Switch and How It Works

Aggregation switches sit between access and core layers, bundling traffic and keeping networks fast. Here's what they

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