

How many layers can a switch aggregate



Article Overview

A switch can aggregate multiple access layer switches, typically within a three-tier network, but the exact number depends on switch capacity, port availability, and network design rather than a fixed limit.

Understanding Switch Aggregation

Switch aggregation refers to consolidating multiple access layer switches into a single aggregation (distribution) layer switch. This aggregation allows the network to handle traffic efficiently, provide uplinks to the core layer, and implement policies such as routing, QoS, and access control (filtering, VLANs, multicast management) .

Aggregation switches can operate at Layer 2 or Layer 3, with Layer 3 switches providing routing and policy enforcement directly, while Layer 2 aggregation relies on the core switch for routing decisions .

Practical Aggregation Limits

There is no strict numeric limit on how many switches a single aggregation switch can handle. Instead, the practical limit is determined by:

- Port density: The number of physical ports available on the aggregation switch to connect access switches .
- Bandwidth and throughput: The switch must handle the combined traffic from all aggregated access switches without creating bottlenecks .
- Redundancy and failover: Aggregation often uses protocols like LACP (Link Aggregation Control Protocol) to combine multiple links for higher bandwidth and re...

Article Content

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Aggregation layer | FortiSwitch 7.6.0 | Fortinet Document Library

Aggregation-layer platforms The most appropriate FortiSwitch unit to form the aggregation layer comprises many 10/25/40 gigabit

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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.

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Switch Layer Levels

Network segmentation into two or more Virtual LANs (VLANs) Enhanced security controls

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Layer 2, Layer 3, and Layer 4 Switches

Therefore, network switches that operate on the different layers of the OSI model are described as Layer 2, Layer 3, or Layer 4

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What is Switch Aggregation, Its Role and Selection Advice

4. Functional management: Unlike core switches, aggregation switches can be either Layer 2 or Layer 3 switches.

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Link Aggregation: What is it, and How Does it Work?

That way you can expect fairly even use of all the links, which will provide the best possible performance. On a

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Understanding Switch Aggregation: A Comprehensive

Layer 2 switches are usually sufficient for small networks, while Layer 3 switches are

Feb 03, 2026

Aggregation Layer

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

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Link Aggregation Switches: A Guide to LACP, LAG, and Throughput

By establishing a Link Aggregation Group (LAG), you can bundle two or more physical ports—such as connecting separate switches

Nov 19, 2025

Layer 2, Layer 3, and Layer 4 Switches

Layer 2 switches are perfect for applications with small networks that do not transmit a ton of data. The majority of networks use a

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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

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Understanding Switch Aggregation: A Comprehensive

A: An access switch is typically located at the edge of the network and connects end-user

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Aggregation Switch

Aggregation applications typically need to aggregate massive intermediate results from different worker servers to get final results,

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What is an Aggregation Switch? | Features and Practical Benefits

Users can immediately connect to or access the network from the location of the access switch. The aggregation

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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

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Link_Aggregation_Config_Guide

Supermicro switches support only Layer 2 level link aggregation. Hence, only switching ports can be aggregated.

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Link Aggregation: What is it, and How Does it Work?

Link aggregation is a way of bundling a bunch of individual Ethernet links together so they

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Core, Aggregation, or Access Switches? Choose the

Selecting between core, aggregation, and access switches is not only technical — it's

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What is an Aggregate Switch?

An aggregate switch consolidates traffic from access switches, while a core switch forms the backbone of the

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Link Aggregation and Load Balancing

This is often referred to as link aggregation, link bonding or EtherChannel. To configure two or more ports, up to eight,

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Comparing Layer 3 and Layer 2 Switches

This article discusses the difference between layer 2 and layer 3 switches and the appropriate use cases for each.

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SMB Switch: Access Switch vs Aggregation Switch vs Core Switch

There are so many kinds of switches in the market, which one should we buy? For most companies, they only need to

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Data Center Network Switch Design

Core Layer: The core layer is the backbone of the network, responsible for high-speed data forwarding, and is usually

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Core, Aggregation, or Access Switches? Choose the

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

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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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Port Aggregation FAQs - Ubiquiti Help Center

All UniFi Switches support aggregation, except USW-Flex, USW-Flex-Mini and USW-Ultra. Port aggregation is not supported on

Dec 06, 2025

What is Link Aggregation (LAG) in Networking?

Link aggregation is a technique used in networking to bundle multiple physical ports on a network device to operate as a single link.

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What are Link Aggregation Groups (LAGs) and how do they work with

What are Link Aggregation Groups (LAGs) and how do they work with my managed switch? Link aggregation lets a

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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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What is an Aggregation Switch?

The aggregation switch's main function is to aggregate the data of the access layer switch

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Everything You Need to Know About Aggregation Switch

What is an Aggregation Switch and How Does it Work? An aggregation switch consolidates

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Which Aggregation Switch to Choose?

In-depth discussion of the key role and selection points of aggregation switches in network architecture, and

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In-depth analysis: What is an aggregation switch?

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

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