

Layer 3 Switch Core Layer Aggregation Layer



Summary of Content

Layer 3 switches operate at both the switching and routing level, often deployed in core or aggregation layers to efficiently route traffic between VLANs and subnets.

Core Layer

The core layer is the backbone of a network, responsible for high-speed, non-blocking data transport between distribution or aggregation switches across the network or data center. Core switches are typically Layer 3 devices with high throughput, low latency, and redundancy features such as dual power supplies and stacking. They focus solely on fast packet forwarding and do not perform resource-intensive tasks like ACL enforcement or PoE. In large enterprises, the core layer ensures connectivity between multiple buildings, server farms, or data centers.

Aggregation (Distribution) Layer

The aggregation layer, also called the distribution layer, sits between the access and core layers. Its main role is to aggregate traffic from multiple access switches, enforce policies, and provide inter-VLAN routing. Aggregation switches can operate at Layer 2 or Layer 3, depending on network requirements, and often handle QoS, ACLs, load balancing, and traffic filtering. In data centers, aggregation switches may also host services like firewalls or load balancers, consolidating traffic before it reaches the core.

Layer 3 Switches

Article Content

Three-Layer Hierarchical Model in Cisco

This layer is considered the backbone of a network, as it is used to connect multiple Distribution Layer devices

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

Core, Aggregation, or Access Switches? Choose the Perfect Fits

Discover the crucial differences between core, aggregation, and access switches. Find out which type can best

Core vs Aggregation vs Access Switches | Network Design Guide

Compare core, aggregation and access switches. Learn their roles, port speeds, PoE, Layer 3 routing, redundancy,

Deployment Differences Between Two-Layer and Three-Layer

Figure 2-2 shows a three-layer network architecture that consists of a core layer, an aggregation layer, and an access layer.

What Is an Aggregation Switch and How to Choose?

What Is an Aggregation Switch and How to Choose? The three layers of a traditional three-layer network design are

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

The layering is mainly based on the principle of internal and external partial flow, and the data center network is

Data Center Multi-Tier Model Design

In a large data center, a single pair of data center core switches typically interconnect multiple aggregation modules

Two-tier and three-tier switch architectures

Core-layer switches make up the top layer or core of the network. The aggregation or distribution switches are the intermediary layer

3-Layer Enterprise Switching Architecture: Core vs Access

Explore enterprise switching architecture and see how core, aggregation, and access layers integrate with PoE,

Contact Us

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