

# Layer 3 switch as the core layer



## Overview

In enterprise networks, Layer 3 switches are commonly deployed at the core layer or aggregation layer. A core switch is a high-capacity, high-performance Layer 3 switch positioned at the physical backbone of an enterprise network. Engineered to aggregate massive volumes of data from distribution switches, it provides ultra-low latency and maximum throughput to ensure uninterrupted routing and packet. A core switch is the backbone of a large-scale network, designed to handle massive volumes of traffic with ultra-low latency and maximum reliability. It's responsible for accurately routing communication among layers and departments of different sections. It works in our network by simply allowing connected devices that are on the same subnet or virtual LAN (VLAN) to exchange information at lightning speed, just like a switch. A Layer-3 switch works at the third layer of the OSI mode and it has features of both a switch and a router. Layer-3 switches are characterized by: Routing Capabilities: Layer - 3 switches are. Layer 3 Switch, also known as a three-layer switch, is a network device that combines the functions of traditional routers and layer 2 switches, playing a key role in modern network architecture.



## Article Content

Understanding Core Switch: What It Is and How to

Typically, core switches are Layer 3 switches equipped with robust network management capabilities. They are characterized by numerous ports and

How to Choose Layer-3 /Core Switches for Enterprise Networks□

However, they are also more expensive than fixed switches. In order to guarantee the availability of the network, it is common to choose medium/large scale chassis-based switches for

What Is a Core Switch? Network Backbone Architecture Guide

To achieve backbone speeds, a core switch must operate at Layer 3 of the OSI model, bridging the gap between traditional MAC-based switching and IP-based routing.

What is Layer 3 Switch and How Does it Works?

An introduction to Layer 3 switch and how it works within the network to further understand its benefits and capabilities.

Layer 2 vs. Layer 3 Switching: Network Layers

Learn about the Layer 2 and Layer 3 switching, OSI model, & choosing the right switches to optimize network architecture with RAD's analysis.

Data Center Design: Basic 3 Layers, Core ...

Nowadays, building a data center to provide services for enterprise or providers is more and more important. However, it cost much to build an available

How to Add Layer 3 Switch in GNS3 | A Practical Guide!

Learn how to add and configure Layer 3 Switch (L3) to the GNS3 emulator seamlessly. Follow our step-by-step practical guide for networking!

Understanding the Core Switch: Key Differences and Uses

Explore the core switch's role as the backbone of your network. Discover key differences, uses, and insights into layer 3 core switch technology.

Core Differences Between Layer 2 and Layer 3 Switches

Layer 3 Switch · Layer Positioning: The network layer (Layer 3) of the OSI model, integrating switching and routing capabilities, and supporting dual parsing of MAC addresses and IP addresses.

What Is a Core Switch?

Unlike access or distribution switches, a core switch is optimized for Layer 3 performance, modular scalability, and redundancy. In smaller networks, it may be combined with the distribution layer in a

Cisco three-layer hierarchical model

This article describes the Cisco three-layer hierarchical model which includes the Access, Distribution, and Core layers.

Cisco Switch Selection Guide for Enterprise Campus

Learn how to choose Cisco campus switches by layer, site size, PoE, uplinks, redundancy, and lifecycle risk. A practical enterprise campus switch

Difference between layer-2 and layer-3 switches

Layer 2 switches operate at the data link layer, forwarding data based on MAC addresses, while layer 3 switches route traffic using IP addresses.

What Is a Switch? What Is It Used for?

What Is a Switch? A switch enables network communication for connected IT devices. Switches fall into different categories from different perspectives, including Ethernet switches, Layer

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 Layer 3 switches, covering L2 switching, IP routing, ASIC

What Is Network Layer in OSI Model? Functions

A key example of this is the Network Layer in OSI model (Layer 3); it is one of the most critical layers of the OSI Model because it facilitates the

How to Understand Layer 3 Switch? What Are Its Main Functions and ...

Layer 3 Switch operates at the third layer of the OSI model, namely the network layer. It can not only efficiently process layer 2 packets like a layer 2 switch but also process layer 3 packets

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Data Link Layer in OSI Model

The data link layer is the second layer from the bottom in the OSI (Open System Interconnection) network architecture model. Responsible for the

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HPE Aruba Networking CX switches

HPE Aruba Networking CX 5420 Switch Series Layer 3 modular chassis with half-width slot granularity, MACsec capability and high-power PoE switches for

Aggregation layer | FortiSwitch 7.6.0 | Fortinet Document Library

Aggregation layer Aggregation layer The aggregation (sometimes also called distribution) layer is a real crossroad. Its primary goal is to increase network scalability by providing a single place to

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

A network switch is a fundamental piece of any network, so it's critical that you as an IT professional understand the role of a switch in a properly

Which Layer Is the Core Switch Really In? 2026 L2 vs

Usually, layer 3 switches offer such features. The core switch can receive the data packets, analyze them, define their routes, and transfer them. All

## Contact Us

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