

Access Network Layer 2 Switch

Article Overview

An Access Network Layer 2 switch connects end devices within a LAN, forwarding traffic based on MAC addresses and providing VLAN segmentation, security, and PoE support.

Role in the Network

A Layer 2 switch operates at the Data Link layer (Layer 2) of the OSI model, primarily forwarding Ethernet frames between devices within the same LAN using MAC addresses to identify destinations. In a hierarchical network, it functions at the access layer, serving as the entry point for end devices such as computers, IP phones, printers, and wireless access points. It connects these devices to the distribution layer, which then links to the core network.

Key Functions

- **MAC Address Table:** Maintains a table mapping each connected device's MAC address to its port, enabling precise frame forwarding and reducing unnecessary traffic.
- **VLAN Support:** Segments the network into Virtual LANs, improving security and traffic management.
- **Traffic Management:** Each port acts as its own collision domain, minimizing collisions and improving data flow.
- **Security Features:** Implements port security, DHCP snooping, and static MAC address configuration to prevent unauthorized access.
- **Power over Ethernet (PoE):** Supplies power to devices like IP phones and cameras...

Article Content

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L1 vs L2 vs L3 Switches: Key Differences Explained Simply

Confused between L1, L2, and L3 switches? Learn the key differences, features, and use cases to pick the right one

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Layer 2, Layer 3, and Layer 4 Switches

Layer 2, Layer 3, and Layer 4 Switches What Is a Layer? A network switch connects devices and switches data between ports.

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What Is a Layer 2 Network?

Learn what a layer 2 network is, how it works, and its main components and protocols in this data link layer networking

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Core Switch vs. Distribution Switch vs. Access Switch

Core Switch vs. Distribution Switch vs. Access Switch: Understand Their Roles in Ethernet Networks Ethernet networks are growing

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Understanding the Role of an Access Switch in Your Network

An access layer switch refers to a network device that is designed in such a way that it connects end users' devices

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

A Layer 2 switch forwards traffic within the same VLAN using MAC addresses, while a Layer

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Computer network

Computer networks are also used by security hackers to deploy computer viruses or computer worms on devices connected to the

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Data Center Access Layer Design

In a Layer 2 looped access topology, a pair of access layer switches are connected to the aggregation layer using

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Understanding Layer 2 Switches: A Comprehensive Guide

A Layer 2 switch is a network device that operates at the Data Link layer (Layer 2) of the OSI model. It uses MAC

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how can i access to a layer 2 switch without ip default-gateway?

There is a 2960 switch with a management IP address of 10.199.3.20/24. My IP address is 10.20.3.251/24 and i

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Data Center Access Layer Design

Overview of Access Layer Design Options Access layer switches are primarily deployed in Layer 2 mode in the data center. A Layer

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Understanding Access Switches: Key Components of Your Network Switch ...

Explore the role of access switches in your LAN setup. Understand their key components, functions in the access layer,

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Access, Distribution, and Core Layers Explained

Switches in this layer are called access switches. End devices connect to the LAN through

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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

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L2 vs L3 switching explained (and when you need each)

A Layer 2 switch forwards traffic using MAC addresses within a single network segment. It's the workhorse of the

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The Basics of Layer 2 Network Mapping

Layer 2 of the network, or the data link layer is how data moves and how switches in your network talk to each other.

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Configuring Layer 2 Switching

You can configure Layer 2 switching ports as access or trunk ports. Trunks carry the traffic of multiple VLANs over a single link and

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Cisco Switch Layer2 Layer3 Design and Configuration

Network Diagram The diagram above shows one Layer 3 switch used for Aggregation, three Layer 2 switches used for access

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Overview of Layer 2 Switched Networks and Communication

Media Access Control (MAC): Perform Layer 2 functions like switching, physical addressing etc. Basically what I am

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What Is a Layer 2 Switch? Features, Benefits, and Use

Layer 2 switches are essential for Local Area Networks (LANs), enabling smooth communication and

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Two-tier and three-tier switch architectures

Two-tier and three-tier switch architectures When structuring the logical architecture of an enterprise network, decisive factors

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How to Choose the Right Access Layer Switch?

Learn 8 key factors—ports, PoE, speed, security & TCO—to choose the right access layer switch and future-proof

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L2 vs L3 Switch: How to Choose for Your Access Layer

Learn how to choose between L2 and L3 switches and build an access network that's reliable, scalable, and easy to

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Layer 2 Switch

Layer 2 switches are generally used in combination with routers to create larger networks. Layer 2 switches are used

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Layer 2 vs Layer 3 switches — Understanding the ...

Layer 2 vs. layer 3 switch: Understanding the differences that impact IT Switch ports are essential components of network

Contact Us

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