DANI ALONSO OPTICAL CONNECTIVITY

The switch has two layers of access ports

Overview

Modern commercial switches primarily use Ethernet interfaces. The core function of an Ethernet switch is to provide multiple ports of layer-2 bridging. Layer-1 functionality is required in all switches in support of the higher layers. Many switches also perform operations at other layers. A device capable of more than bridging is known as a multilayer switch.

Key Takeaways

Standard switches do not have "two layers of access ports"; instead, they operate at specific OSI layers, with Layer 2 switches providing access-level connectivity and Layer 3 switches adding routing capabilities.Understanding Switch Layers

Layer 2 (L2) switches operate at the Data Link layer of the OSI model. They manage traffic based on MAC addresses, forward frames within VLANs, and provide port-level access for end devices like PCs, IP phones, and wireless access points. Each port on an L2 switch functions as a separate collision domain, ensuring efficient local network communication . L2 switches are typically used at the access layer of a network to connect end-user devices and enforce VLAN segmentation, security policies, and PoE support . Layer 3 (L3) switches, also called multilayer switches, combine L2 switching with IP routing capabilities. They can forward traffic within VLANs like an L2 switch but also perform inter-VLAN routing and support routing protocols such as OSPF or RIP . L3 switches are often deployed at the distribution layer, aggregating traffic from multiple access switches and enforcing policies like QoS and ACLs .

Clarifying "Two Layers of Access Ports"

Switches do not physically have two separate layers of access ports. Instead:

• L2 switches provide access ports for end devices at the access layer.

• L3 switches can also provide access ports but add routing functionality, effectively combining Layer 2 and Layer 3 capabilities in one device .

• The term "two layers" may refer to multilayer switches that support both L2 switching and L3 routing, not to a physical separation of ports .
Network Hierarchy Context

In a typical enterprise network:

• Access layer: L2 switches connect end devices.

• Distribution layer: L3 switches aggregate traffic and route between VLANs.

• Core layer: High-speed L3 switches form the backbone . Thus, while a switch can support multiple OSI layers, it does not have two distinct sets of access ports; all ports are generally capable of L2 connectivity, with L3 features applied logically through configuration.

Article Content

Network switch

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Modern commercial switches primarily use Ethernet interfaces. The core function of an Ethernet switch is to provide multiple ports of layer-2 bridging. Layer-1 functionality is required in all switches in support of the higher layers. Many switches also perform operations at other layers. A device capable of more than bridging is known as a multilayer switch.

Dumb question

Another office, sales may have 15 people connected to layer 2 ethernet ports on a second switch. To combine the two networks both

Cisco Nexus 3000 Series NX-OS Layer 2 Switching Configuration

Ethernet interfaces can be configured either as access ports or a trunk ports, as follows: An access port can have

What is a network switch? | Switch vs. router

A network switch forwards data between devices, unlike routers, which forward data between networks. Learn about Ethernet

Configuring Access and Trunk Interfaces

Configuring Access and Trunk Interfaces Ethernet interfaces can be configured either as access ports or a trunk ports,

What is a Switch Port?

A port is an essential component of network hardware such as home Ethernet switches or business network switches.

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