Can the core switch communicate between Layer 2 and Layer 1

Article Overview

A core switch primarily operates at Layer 2 and Layer 3, but it inherently supports Layer 1 functions; it does not directly "communicate" between Layer 2 and Layer 1 as separate layers, since Layer 1 is the physical medium itself.

Understanding Layer 1 and Layer 2

• Layer 1 (Physical Layer): This layer deals with the actual transmission of raw bits over cables, fiber, or wireless media. It includes electrical signals, cabling standards, and connectors. Core switches provide Layer 1 support by physically connecting devices and ensuring signal integrity, but they do not perform logical processing at this layer .
• Layer 2 (Data Link Layer): This layer handles MAC addresses, switching, and VLAN segmentation. Core switches perform high-speed Layer 2 switching to forward frames between devices within the same VLAN or across VLANs when combined with Layer 3 functionality .

Core Switch Capabilities

• Core switches are designed to aggregate traffic from distribution switches and provide high-speed backbone connectivity . They can operate as Layer 2 switches, forwarding frames based on MAC addresses, or as multilayer switches, performing routing at Layer 3 while still supporting Layer 2 switching .
• While a core switch interacts with Layer 1 by transmitting and receiving signals, it...

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Article Content

Sep 10, 2025

Layer 2 and Layer 3 switch in networking

Opposite to layer 2 switch a layer 3 switch use the IP address along with MAC address for forwarding the data packets in the

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Access, Distribution, and Core Layers Explained

A hierarchical network can use dedicated hardware for each layer, or a single piece of hardware for multiple layers. A

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Layer 2, Layer 3, and Layer 4 Switches

Therefore, Layer 2 switches are used to provide cheap and easy workgroup connectivity, and Layer 3 switches are used to segment

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Layer 2 Switch vs Layer 3 Switch

Learn the key differences between Layer 2 and Layer 3 switches to choose the right one for your network''s needs

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Switching Design with Access, Distribution and Core Level

Also called workgroup layer, this is the communication point between the access and core layers. Primary functions

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Layer 2, Layer 3, and Layer 4 Switches

OSI is a layered network design framework that establishes a communication standard between devices so that they can work

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All About Layer 2 and Layer 3 Switches in Networking System

Difference Between Layer 2 and Layer 3 Switches in Computer Networking System: In this Beginner''s Networking

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Core vs Distribution vs Access Switch: Architecture Guide

Because all links between the core and distribution switches are routed Layer 3 transit links, Layer 2 loops are

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L3 or L2 Link between Core Switches

Sure, you can use this VLAN that spans both core switches to also provide a transit path for core-to-core traffic, and in

May 09, 2026

Network switch

The core function of an Ethernet switch is to provide multiple ports of layer-2 bridging. Layer-1 functionality is required in all switches

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Core Switch vs. Distribution Switch vs. Access Switch

The access layer consists of layer 3 switches, which take routed and switched data packets from the distribution switches and then

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Explore Hierarchical Networks: Access, Distribution, Core Layers

The core layer is commonly referred to as the backbone of the network because it serves as a high-speed transport

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Layer 1 2 3 and 4 Switching

Although the most common form of switching is Layer 2, it is important to know that switching can also be performed as Layers 1, 3,

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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

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Layer 2 vs Layer 3 Switch ⋆ | Differences of L2 and

In Layer 2 vs Layer 3 Switch lesson, we will compare layer 2 switches (simple switches) with layer 3

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Understanding the Hierarchical Switch Layers: Access ...

Understanding the Hierarchical Switch Layers: Access, Distribution, and Core Explained Modern enterprise networks

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Understanding Network Switches: Layer, Layer, and Layer Differences

Network switches are fundamental components in modern networking, operating at different layers of the OSI model.

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Access vs. Distribution vs. Core Switch Comparison Guide

The hierarchical network model, typically comprising access, distribution, and core layers, defines specific roles for different types of

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How to Choose Between Layer 2 Switches VS Layer 3 Switches

Among these, layer 2 switches are one of the key requirements for any high speed network. As the converged networks grow in size,

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Core Switch vs. Distribution Switch vs. Access Switch

What is a Core Switch? A core switch is the primary switch installed at the backbone of a layered or hierarchical network. These data

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L1 vs L2 vs L3 Switches: Key Differences Explained Simply

In this post, I''ll walk you through the differences between Layer 1, Layer 2, and Layer 3 switches in a way that actually

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Layer 2 vs Layer 3 Switches: Key Differences Explained

Layer 2 vs Layer 3 When it comes to network switches, you have a lot of options. Finding the perfect switch for every occasion can

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Layer 2 Vs. Layer 3 Switches Vs. Routers: Key Differences?

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Compare Layer 2 switches, Layer 3 switches & routers. Learn how each works, their use cases & which device fits

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Understanding the Hierarchical Switch Layers: Access ...

The three-tier switch hierarchy — Access, Distribution, and Core — is not just a technical blueprint, but a strategic

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Layer 2 vs. Layer 3 Switches: What''s the Difference?

Updated on February 14, 2025 When designing and managing networks, Layer 2 and Layer 3 switches are integral to ensuring

Jun 10, 2026

Difference Between Routers and Switches in TCP/IP Networks

The key difference between routers and switches in TCP/IP networks is that Switches primarily function to provide Layer 2

Contact Us

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