

Introduction to Access Layer Switches



AI Overview

Access layer switches are network devices that connect end-user devices to the LAN, providing Layer 2 switching, security, and sometimes basic Layer 3 functions. Overview Access layer switches operate at the edge of a network, serving as the first point of contact for end-user devices such as PCs, printers, IP phones, wireless access points, cameras, and IoT devices. They are a key component of the Cisco three-layer hierarchical model, which includes access, distribution, and core layers. These switches forward traffic between connected devices and the rest of the LAN, enabling users to access network resources. Key Functions Layer 2 Switching: Forwarding data based on MAC addresses, supporting VLANs, spanning tree protocol, and ARP. Security Enforcement: Implementing port security, DHCP snooping, static MAC address configuration, and 802.1X authentication to prevent unauthorized access. Power over Ethernet (PoE): Supplying power to devices like IP phones and wireless access points directly through network cables. Basic Layer 3 Capabilities: Some modern access switches support static routing or limited dynamic routing for small or high-performance networks. Traffic Management: Handling local traffic efficiently and forwarding upstream to distribution or core switches. Deployment Scenarios Access switches are deployed wherever end devices require network connectivity: Enterprise Offices: Connecting workstations, VoIP phones, printers, and wireless APs. Campus Networks: Each building or floor typically has its own access switches aggregating edge devices. Small Businesses: May operate without separate distribution or core layers. Industrial Sites and Smart Buildings: Ruggedized switches connect machines, sensors, IoT devices, and building automation systems. Design Considerations When selecting access switches, network designers consider: Port Density: Higher port counts reduce the number of switches needed. Port Speed: Commonly 10/100/1000 Mbps, with some supporting multi-gigabit speeds for high-d...

Article Content

Understanding Access Switches: Key Components of

Explore the role of access switches in your LAN setup. Understand their key components, functions in the access layer, and how they integrate into

Layer 2 vs Layer 3 Switches in 2026: Optimizing Network Roles for ...

Introduction Planning a new network or upgrading an existing one inevitably raises a critical question: Should you deploy Layer 2 switches, Layer 3 switches, or a combination—and where should each be

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We will learn about the TCP/IP and OSI networking models and how the network layers work together. We'll also cover the basics of networking devices such as cables, hubs and switches, routers,

Understanding the Hierarchical Switch Layers: Access ...

The three-tier switch hierarchy — Access, Distribution, and Core — is not just a technical blueprint, but a strategic decision-making framework for IT leaders.

What is the Access Switch?

This article will introduce what the access switch is and how to select the right access layer switches for your enterprise network. In the meanwhile, some important features of the access switch will be

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 route them to the access devices in subnets. The access devices in

Access Layer Compact Switch Deployment Guide

rt for these additional access layer ports. The Cisco Catalyst Compact Switch family supports a common feature set with the networking platforms that are a ready a part of your Cisco SBA access layer.

What Is an Access Layer Switch? Guide complet

Learn what an access layer switch is, how it works in enterprise networks, and how to choose the right Cisco access switch for your SMB.

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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, and how they integrate into your network.

SMB Network Design: Core vs. Distribution vs. Access Switches

Distribution switches are specifically engineered with more powerful CPUs and deeper memory buffers to handle high volumes of aggregated traffic and complex policies from many access

What Is an Access Switch? The Definitive Edge Network Guide

If you want to understand where the access layer fits in the full network hierarchy, start with our guide to Core vs Distribution vs Access Switches. It explains how the three layers work

Choose access layer switch for the access layer network

In each layer, the enterprise switches are categorized, among which the access switch is a key part in which local end-users are allowed into the network. This article will introduce what the

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 2 access topology provides the following unique capabilities

Access, Distribution, and Core Layers Explained

Switches in this layer are called access switches. End devices connect to the LAN through the access switches. In other words, an access

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Cisco Data Center Infrastructure 2.5 Design Guide

The ability to group these departments with Layer 2 VLANs across multiple access switches could be a critical requirement in these environments. The table in Figure 6-1 outlines the

SBA for Enterprise Organizations -

In this situation, Cisco SBA access layer provides for the capability to extend resilient ports from an existing access layer switch or switch stack out to an additional small switch located directly in the

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 your network. Read the guide now.

Switches: Support and Downloads

Cisco Category page for supported Switches - Support Documentation, Downloads, and End-of-Life status.

Module 1: Basics of Switched Networks

Using Layer 3 switching or traditional Layer 2 switching in the access layer has benefits and drawbacks. Using a design that leverages Layer 3 switching to the access layer VLANs scales better than Layer

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