

Article Overview

Transmission (core/distribution) switches handle high-speed data routing across the network backbone, while access switches connect end-user devices to the network at the edge.

Access Switches

Access switches operate at the network edge, connecting end-user devices such as PCs, IP phones, Wi-Fi access points, and cameras to the network . They are typically Layer 2 switches with high port density and cost-effective designs, optimized for:

- o High port diversity: Supporting 10/100/1000 Mbps Ethernet ports to accommodate various devices .
- o Ease of management: Configurable via web UI or CLI for VLANs, security, and QoS .
- o Power over Ethernet (PoE): Supplying power to devices like IP phones and cameras.
- o Scalability: Stacking or expansion options allow growth without replacing hardware . Access switches are deployed in offices, small equipment rooms, or departmental networks, providing the first point of network entry for users and devices.

Transmission Switches

Transmission switches, often referred to as core or distribution switches, operate in the middle and backbone layers of hierarchical networks :

- o Distribution switches aggregate traffic from multiple access switches, enforce policies (QoS, ACLs), and perform inter-VLAN routing at Layer 3. They prevent congestion by managing traffic before it reaches the core .
- o Core switches form the high-speed backbone, handling massive data volumes with ultra-low latency. They connect distribution switches and ensure reliable, high-capacity data transmission across the network . Transmission switches are designed for high throughput, low latency, and fault tolerance, supporting large-scale enterprise or campus networks.

Key Differences

Feature	Access Switch	Transmission Switch (Core/Distribution)
Network Layer	Edge (Layer 2)	Distribution: Layer 3, Core: Layer 3/Layer 2
Primary Function	Connect end devices	Aggregate and route traffic between switches
Port Density	High	Moderate to low, optimized for speed
Cost	Low per port	High, due to performance and reliability
Use Case	Offices, small networks, end-user access	Backbone networks, inter-VLAN routing, policy enforcement
Power	Often PoE	Rarely PoE; focus on throughput

Summary

Transmission and Access Switches

Access switches provide connectivity for end devices and are optimized for port density, cost, and ease of management, while transmission switches (distribution and core) handle high-speed data aggregation, routing, and backbone transmission. Together, they form a hierarchical network that balances performance, scalability, and manageability .

Comprehensive guide to Core, Distribution, and Access Switches. Roles in the network and important parameters explained.

Network switch Avaya ERS 2550T-PWR, a 50-port Ethernet switch A network switch (also called switching hub, bridging hub,

Low-voltage automatic transfer switch assemblies provide a reliable means of transferring essential load

There are several types of network switches and understanding the differences can help you make the right choices for your small

Switching is the process of transferring data from one device to another within the same network or across different

What is the Access Switch? A typical enterprise hierarchical LAN campus network design includes an access layer, distribution layer,

The essential features of access switches, including high port density, PoE, Layer 3 capabilities, security, and QoS for efficient

Reduced congestion and transmission delays: Network segmentation reduces the difficulty users have in accessing the

If you want to understand where the access layer fits in the full network hierarchy, start with our guide to Core vs

Computer networking is the process of connecting two or more computing devices to enable the transmission and exchange of

WAGO's industrial Ethernet switches ensure continuous access to machines and systems. Top Features Security Functions

By understanding these nuances, I'm sure you can understand "what is access switch" is and confidently

navigate the

Learn what an access switch is, how it works at the network edge, why PoE and port density matter, and how Wi-Fi 7

While access switches provide end-device connectivity, distribution switches aggregate traffic and enforce policies, and core

This guide will help you understand what an access switch is, explore its key features, and highlight popular FS access

Six most common bus configurations in distribution, transmission & switching substations at

Web: <https://bssoda.pl>

