

Guest Room Core Network Switch



Overview

Different types of Ethernet switches perform different roles in the layers of high-capacity networks.

Key Takeaways

A core network switch in a guest room network serves as the backbone, aggregating traffic from distribution switches and ensuring high-speed, reliable connectivity for both wired and wireless guest services. Role of a Core Switch in Hospitality Networks

In a hotel or large hospitality environment, the core switch functions as the central hub of the network hierarchy, connecting distribution switches from each floor or zone and routing traffic efficiently to the data center, internet gateway, or other services . It handles high volumes of data, including guest internet access, staff operations, and building management systems, ensuring minimal latency and high reliability .

Network Hierarchy

A typical hotel network follows a three-tier architecture:

- Access Layer: Switches in guest rooms or floors connect directly to devices such as wired endpoints, access points, and IP phones. These switches often support VLANs to separate guest, staff, and management traffic .
- Distribution Layer: Aggregates traffic from multiple access switches, providing routing, policy enforcement, and redundancy. Distribution switches may also handle link aggregation to prevent single points of failure .

- **Core Layer:** The core switch aggregates all distribution switches, providing high-speed backbone connectivity. Core switches are usually high-capacity, Layer 3 switches capable of handling routing, VLAN segmentation, and advanced features like QoS and network access control .

Deployment Considerations

- **Location:** Core switches are typically located in a centralized comms room or data center, often on the ground floor or basement, close to ISP circuits .
 - **Redundancy:** Hotels often deploy redundant core switches to ensure continuous operation in case of hardware failure .
 - **Port Density and Speed:** Core switches must support high port density and high-speed uplinks (10/25/40/100 Gbps) to accommodate aggregated traffic from multiple floors and wireless access points .
 - **VLAN Segmentation:** Guest, staff, and management networks are separated using VLANs, often enforced at the core switch for security and traffic management .
- #### Integration with Guest Room Services

Core switches support guest room connectivity by aggregating traffic from access switches that connect to in-room wired ports and wireless access points. For example, Cisco Meraki MR access points in guest rooms can provide both wired and wireless access over a single Ethernet run, with traffic routed through the access and distribution layers to the core switch . This setup ensures high performance, seamless roaming, and secure guest access.

Summary

A guest room core network switch is the backbone of a hotel's network, providing high-speed aggregation, routing, and security for all guest and operational traffic. Proper deployment involves careful planning of hierarchical layers, redundancy, VLAN segmentation, and port capacity to ensure reliable and scalable connectivity across the property .

Article Content

Core Switch Vs Distribution Switch Vs Access Switch□What

Different types of Ethernet switches perform different roles in the layers of high-capacity networks. Core switches, distribution

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