

Optimal Floor for Aggregation Layer Switches



Overview

What Is an Aggregation Switch and How to Choose?

Discover the role of aggregation switches. Explore differences between aggregation, access, and core switch.

Key Takeaways

The aggregation layer switch is typically best placed on a central or intermediate floor, often in the main intermediate distribution frame (IDF), to efficiently connect access switches to the core layer.

Placement Considerations

Centralized Location: Aggregation switches serve as the bridge between access switches (at the edge) and core switches (at the top of the hierarchy). Placing them on a central or intermediate floor minimizes cable lengths from access switches across multiple floors, reducing latency and simplifying cabling management .

Redundancy and Resiliency: Aggregation switches are usually deployed in pairs with MCLAG or dual-homed connections to ensure high availability. Each switch should have dual hot-swappable power supplies and redundant fans to maintain reliability .

Separation from Access Devices: Access devices such as IP phones, wireless access points, and surveillance cameras should not connect directly to the aggregation layer. This layer is reserved for high-speed uplinks from access switches and connections to the core .

Data Center Integration: In larger campuses or multi-floor buildings, aggregation switches may also host dual-attached servers, storage, or other network services, often colocated with the core in the main IDF . This ensures efficient traffic aggregation and simplifies network operations.

Cabling Efficiency: Using a central floor reduces the need for long fiber runs and allows for structured cabling between access, aggregation, and core layers. Typically, OM3/OM4 multimode fiber is used for backbone connections between floors, while Category 6A cabling connects access switches to aggregation switches .

Summary Recommendation

- Place aggregation switches on a central or intermediate floor relative to the access switches they aggregate.
- Deploy redundant, paired switches for high availability.
- Avoid connecting end-user devices directly to this layer.
- Ensure proximity to the main IDF or core switches for efficient uplinks and simplified maintenance.

This placement strategy ensures scalability, reliability, and optimal network performance across multi-floor or campus environments .

Article Content

Access Layer vs Aggregation Layer Fiber Equipment Guide

A comprehensive comparison of access layer and aggregation layer fiber optic network equipment, covering switch

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

