

What cable should be used for the aggregation switch AC



Overview

How can these requirements be translated into a specific configuration of RJ45, SFP, and SFP+ 10G ports?

Key Takeaways

For connecting an AC to an aggregation switch, SFP+ or equivalent high-speed cables such as DAC, ACC, or Cat6a/Cat7 Ethernet are recommended depending on port type and distance. Recommended Cable Types

- SFP+ or SFP28 Modules
- Use SFP+ (10G) or SFP28 (25G) transceivers if the aggregation switch supports these ports. These modules provide high throughput and low latency, ideal for uplinks between ACs and aggregation switches .
- Direct Attach Copper (DAC)
- DAC cables are passive copper cables suitable for short distances (≤ 5 meters). They offer ultra-low latency, zero power consumption, and cost efficiency, making them ideal for in-rack connections between ACs and aggregation switches .
- Active Copper Cable (ACC)
- ACC cables include a redriver chip to extend signal integrity over longer distances than DAC. They are suitable for connections slightly beyond DAC limits while maintaining high-speed performance .

- High-Quality Ethernet Cables
- For 10G RJ45 ports, use Cat6a or Cat7 twisted-pair cables. These support 10G speeds over copper and are suitable for distances up to 100 meters, providing flexibility if fiber or SFP modules are not available .

Additional Considerations

- Port Aggregation (LAG/LACP): If multiple links are aggregated for higher throughput, ensure the cables are identical in type and length to maintain signal integrity and avoid misconfigurations .
- Distance and Environment: DAC is limited to very short distances, ACC extends slightly further, while Cat6a/Cat7 can cover longer runs. Fiber may be considered for distances beyond 100 meters.
- Connector Compatibility: Ensure the cable matches the port type on both the AC and aggregation switch (SFP+, SFP28, or RJ45).

Summary

For short in-rack connections, DAC cables are cost-effective and low-latency. For slightly longer runs, ACC cables are suitable. For standard 10G RJ45 ports, Cat6a or Cat7 Ethernet cables are recommended. When using SFP+ or SFP28 ports, select the corresponding transceiver modules. Always consider port aggregation, distance, and compatibility to ensure optimal network performance .

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