

How to interconnect the three core switches

Article Overview

The most efficient way to connect three core switches is to use a triangular (mesh) topology with link aggregation and spanning tree enabled for redundancy and optimal performance.

Recommended Topology

For three core switches, a triangle (full mesh) topology is ideal. Each switch connects to the other two switches, forming a loop. This setup provides:

- o Redundancy: If one link fails, traffic can reroute through the remaining links.
- o Load balancing: Multiple links can share traffic using link aggregation (LAG or EtherChannel).
- o Scalability: Easy to expand if additional switches are added later .

Cabling and Link Aggregation

- o Use multiple ports per connection: Bundle two or more ports between each pair of switches to increase bandwidth.
- o Prefer SFP or fiber connections for uplinks to handle high traffic and reduce latency .
- o Configure LAG/EtherChannel on each link to combine multiple physical connections into a single logical link, improving throughput and redundancy.

Spanning Tree Protocol (STP)

- o Enable STP on all switches before completing the final connections to prevent loops.
- o STP ensures that only one active path exists between switches at a time, automatically blocking redundant paths until needed.
- o This is critical in a triangular topology to avoid broadcast storms and network instability .

Hierarchical Considerations

- o Even with three core switches, it's useful to follow a hierarchical network model:
- o Core layer: The three switches act as the backbone, handling high-speed routing and switching.
- o Distribution layer: Connect access switches or other distribution switches to the core.
- o Access layer: Connect end devices like PCs, IP phones, and wireless access points .

Practical Steps

- o Connect each switch to the other two using fiber or high-speed copper links.

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- o Configure LAG/EtherChannel on each link for aggregated bandwidth.
- o Enable STP to prevent loops.
- o Test redundancy by temporarily disabling one link to ensure traffic reroutes correctly.
- o Document port usage for future expansion and troubleshooting. By following this approach, your three core switches will provide high performance, redundancy, and scalability, forming a robust backbone for your network .

The post introduces how to connect multiple switches together by three methods including cascade, stack, and cluster.

If the port is acting as a routed port, do both ports on the each switch needs to be on the same subnet? If I have

This article will explore three common connection methods: switch cascading, switch stacking, and switch clustering,

This tutorial provides an overview of the access, distribution, and core layers and explains two-tier and three-tier

Efficiently plan and implement 3-tier switch architectures with core, aggregation, and access switches from LANCOM!

Discover what a Core Switch is, its pivotal role in network architecture, and how it boosts performance and reliability in

We have two 4507s at our core, running HSRP. We have three other 4507s at the edge, plus eight 2950s. All edge switches and

In the star topology, all devices need to be connected to the central hub, which means the core switch must have

Discover what a core switch does in a 3-tier network model. Learn about ASIC routing, collapsed core vs dedicated

All these switches are connected to each core via L2/L3 SVI Point-To-Point links. These distro"s also contain their own

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I have two switches one in L3 and the other in L2. Several vlans on the network. Should I use a trunk connection between

There are three switches in the building and some of the ports on these switches need to have their own VLANs that the

Replace the layer 2 switches with layer 3 switches and configure them such that clients communicating from two

Hello Everyone, I currently have 3 core switches on my campus. They are 6509 catalyst switches. They currently are

When a single switch cannot meet the network's growing demands (such as an insufficient number of ports or certain

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