

Aggregation switches need to be configured with VLANs



Overview

Example for Configuring VLAN Aggregation Configure VLAN aggregation on Switch B to add VLANs of different departments to a super-VLAN so that PCs in differ.

Key Takeaways

Yes, aggregation switches typically need VLAN configuration if they are handling traffic from multiple broadcast domains or if VLAN tagging is required for link aggregation. Role of VLANs in Aggregation Switches

Aggregation switches combine traffic from multiple access switches or servers, often using link aggregation (LACP, EtherChannel, or NIC teaming) to increase bandwidth and provide redundancy . When multiple VLANs exist on the network, the aggregation switch must be aware of these VLANs to properly forward traffic. VLANs allow the switch to separate traffic logically, maintain broadcast domains, and ensure that traffic from different VLANs does not mix .

VLAN Tagging and Trunks

To carry multiple VLANs over a single aggregated link, the switch ports are configured as trunk ports with VLAN tagging (IEEE 802.1Q). Each VLAN is assigned a tag, and the aggregation switch forwards traffic based on these tags . Without VLAN configuration, the switch cannot distinguish between traffic from different VLANs, which can lead to broadcast storms or misrouted packets.

When VLANs May Not Be Required

If the aggregation switch is only connecting devices within a single VLAN or a flat network, VLAN configuration is not strictly necessary. In such cases, the aggregated links can operate as untagged ports, and all traffic is treated as belonging to the same broadcast domain . However, this is uncommon in enterprise or data center environments, where multiple VLANs are used for management, storage, production, and backup traffic.

Best Practices

- Configure VLANs on all aggregation switch ports that connect to access switches or servers carrying multiple VLANs .
- Use trunk ports for aggregated links to carry multiple VLANs simultaneously .
- Ensure VLAN consistency across all switches in the aggregation topology to prevent misconfigurations and traffic loss .
- Consider VLAN aggregation (super-VLANs) in large networks to reduce IP address waste and simplify management . In summary, while VLANs are not strictly mandatory for a single flat network, aggregation switches in modern networks almost always require VLAN configuration to properly handle multiple broadcast domains, enable trunking, and maintain network segmentation and security.

Article Content

Link Aggregation and Ethernet Bonding Feature Overview and ...

Link aggregation interfaces have names like "po1" and "sa1" depending on the aggregation method in use. Ethernet bonding is used to

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