

How to aggregate VLANs after dividing them into VLANs on a switch



Overview

VLAN Configuration Guide VLANs allow you to separate network devices into distinct groups, even if those devices connect to the same physical VLAN. Aggregating VLANs allows you to combine multiple VLANs into a single logical entity while maintaining inter-VLAN communication.

Key Takeaways

VLAN aggregation can be achieved by creating a super-VLAN or using link aggregation with tagged VLANs to combine multiple VLANs into a single logical entity while maintaining inter-VLAN communication. Using Super-VLANs

A super-VLAN (or VLAN aggregation) allows you to combine multiple sub-VLANs into a single logical VLAN. This approach reduces the number of IP addresses required because all sub-VLANs share the same IP subnet and default gateway. For example, VLAN 21 and VLAN 22 can be aggregated into Super VLAN 2, and VLAN 31 and VLAN 32 into Super VLAN 3. After enabling Proxy ARP on the switch, hosts in different sub-VLANs within the same super-VLAN can communicate with each other without requiring separate Layer 3 interfaces for each VLAN.

Steps for Super-VLAN Configuration

- Identify the sub-VLANs you want to aggregate.
- Create a super-VLAN on the switch.
- Assign the sub-VLANs to the super-VLAN.
- Configure a single IP address for the super-VLAN.

- Enable Proxy ARP to allow communication between sub-VLANs. This method is particularly useful when you want to conserve IP addresses and simplify routing in large networks.

Using Link Aggregation with Tagged VLANs

If your goal is to pass multiple VLANs across switches, you can use link aggregation (LACP) combined with VLAN tagging:

- Aggregate multiple physical ports into a single logical link (trunk) to increase bandwidth and provide redundancy.
- Configure the aggregated link as a tagged port for all VLANs you want to pass through it.
- Ensure that the same VLAN IDs exist on both switches and that the aggregated ports are tagged members of each VLAN.
- This allows traffic from multiple VLANs to traverse the same physical link while remaining logically separated .

Best Practices

- Always match VLAN IDs across switches to avoid misrouting.
- Use tagged ports on aggregated links to maintain VLAN separation.
- Avoid assigning aggregated ports as untagged members of multiple VLANs to prevent loops.
- Consider using super-VLANs for IP address efficiency and link aggregation for bandwidth and redundancy. By combining super-VLANs and link aggregation, you can efficiently manage multiple VLANs, reduce IP wastage, and maintain high-performance inter-switch connectivity.

Article Content

How to divide VLAN? 6 ways to divide VLAN.

This method of dividing VLANs is based on the switch port of the Ethernet switch. It divides the physical port on the

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