Inter-access between multiple IP segments of the core switch

Article Overview

To enable inter-access between multiple IP segments on a core switch, configure VLANs with IP addresses, enable inter-VLAN routing on the Layer 3 switch, and optionally use static or dynamic routing for external connectivity.

Core Switch Role

A core switch acts as the high-speed backbone of the network, connecting distribution switches and handling large volumes of traffic with low latency and high reliability. Unlike Layer 2 switches, Layer 3 core switches can route traffic between different IP segments or VLANs, enabling inter-VLAN communication without requiring a separate router .

Steps for Inter-VLAN Communication
o Create VLANs on the Core Switch Assign each IP segment to a separate VLAN. For example, VLAN 10 for user devices and VLAN 20 for servers .
o Configure VLAN Interfaces (SVIs) Assign an IP address to each VLAN interface (Switch Virtual Interface, SVI). These IP addresses act as the default gateways for devices in each VLAN .
o Enable Inter-VLAN Routing On a Layer 3 switch, enable routing between VLANs. This allows devices in different IP segments to communicate directly through the core switch without external routers .
o Configure Routing
o Static Routing: Suitable for small, stable networks. Manually define routes between VLANs or to external networks .
o Dynamic Routing: Use protocols like OSPF or EIGRP for larger, changing networks. Dynamic routing automatically adapts to topology changes but requires more system resources .

o Trunk Ports for Uplink Connections Configure trunk ports between the core switch and distribution switches or firewalls to carry multiple VLANs using 802.1Q tagging .
o Firewall Integration (Optional) If a firewall is used for external access or ISP routing, create subinterfaces on the firewall for each VLAN. Assign each subinterface to the corresponding VLAN and configure routing or policy-based rules to control traffic between VLANs and the internet .

Best Practices

o Use Layer 3 switches for inter-VLAN routing to reduce latency and simplify network design.
o Assign SVI IP addresses as default gateways for devices in each VLAN.
o For multiple ISPs or external networks, consider policy-based routing on the firewall or core switch to direct traffic appropriately .

o Maintain redundancy and high availability by deploying multiple core switches or using routing protocols that support failover. By following these steps, a core switch can efficiently manage communication between multiple IP segments, simplify network management, and maintain high performance and security across the network .

I have an old catalyst switch and I want to connect these 2 switches together. One of them will be used as core and the

As switched networks evolve to distributed VLANs, Cisco IOS software provides key inter-VLAN communications and allows the

Core switches and access layer switches have different functions in a single network. Core switches facilitate the

Example for Configuring Communication Between Different Network Segments Through Static Routes Overview In addition to

Basically your switch is now exposed to the internet before traffic has to go through the firewall. So even if they could

This is actually really common, you"d be surprised how many networks take connections in to a switch and then do L3 on a

You"ll need to configure the inter-switch links appropriately as Trunk ports to carry traffic for all of the VLAN"s. You"ll

Compare Access, Distribution, and Core switches: understand their roles, features, and differences in enterprise network hierarchy.

That simple IP-based setup is the key. Anyone wondering which interface allows remote

In this section, you configure inter-VLAN routing using Layer 3 switches. Layer 3 Switch Inter-VLAN Routing (4.3.1) Modern

Routing between the core switches will then be through this L2 interconnection and through the SVIs. What is even

If you just created it on core 1 your static routes on core 2 would not have a valid next hop because core 2

needs an

Distribution Layer Switches: Positioned between the access and core layers, distribution switches aggregate traffic from multiple

Access Switches On the Access switches that end user devices are going to connect to, all we really have to do is

Now the router will transmit traffic between each of the VLANs. How to configure inter-VLAN

Inter-VLAN routing is a network configuration technique that allows communication between devices on different

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