Interface and Layer 2 features

Starting with Cisco NX-OS Release 10.6(1s), you can configure these interface and Layer 2 features on the Cisco N9324C-SE1U, Cisco N9348Y2C6D-SE1U switches.

Q-in-Q VLAN tunnels

A Q-in-Q VLAN tunnel enables a service provider to segregate the traffic of different customers in their infrastructure, while still giving the customer a full range of VLANs for their internal use by adding a second 802.1Q tag to an already tagged frame.

For information on configuring Q-in-Q VLAN tunnels, see Configuring Q-in-Q VLAN Tunnels.

Unidirectional Link Detection (UDLD)

Unidirectional Link Detection (UDLD) is a Cisco-proprietary protocol that enables devices connected by fiber-optic or copper Ethernet cables to detect and disable unidirectional links by periodically exchanging UDLD frames, thereby preventing network issues caused by misconnected or faulty cabling.

For information on UDLD, see Unidirectional Link Detection Parameter.

Port profiles

You can create a port profile that contains many interface commands and apply that port profile to a range of interfaces.

For information on port profiles, see Port Profiles

Layer 2 access and trunk ports

A Layer 2 port can be configured as an access port, which carries traffic for a single VLAN, or as a trunk port, which carries traffic for two or more VLANs simultaneously.

For information on access and trunk ports, see About Access and Trunk Interfaces.

Native VLAN ID and Tagging Native VLAN Traffic

The native VLAN ID on a trunk port is the VLAN that carries untagged traffic, meaning all untagged packets received on the trunk port are assigned to this VLAN, while the port can simultaneously carry both untagged and 802.1Q tagged packets.

Cisco software supports the IEEE 802.1Q standard on trunk ports, allowing untagged traffic to pass through a designated native VLAN, and provides an option to retain or strip 802.1Q tags on native VLAN packets globally on all trunk ports, ensuring flexible handling of tagged and untagged traffic.

For more information, see Configuring Layer 2 Interfaces

Virtual port channel (vPC)

A virtual port channel (vPC) allows links connected to two devices to function as a single logical port channel to a third device, enabling Layer 2 multipathing for redundancy, higher bandwidth, and load balancing.

For information on VPC, see Configuring vPCs.

LACP and Port channels

A port channel is an aggregation of multiple physical interfaces that creates a logical interface.

Link Aggregation Control Protocol (LACP) for Ethernet is defined in IEEE 802.1AX and IEEE 802.3ad. This protocol controls how physical ports are bundled together to form one logical channel.

For more information on LACP and Port channels, see Configuring Port Channels

Single Hop BFD

Single-hop Bidirectional Forwarding Detection (BFD) is a protocol that provides rapid detection of failures in the path between two directly connected network devices, enabling fast convergence and improved network reliability.

For more information, see Configuring Bidirectional Forwarding Detection.

Interface and Layer 2 feature guidelines

Q-in-Q limitations

Beginning with Cisco NX-OS Release 10.6(1s), you can configure Q-in-Q on the Cisco N9324C-SE1U, Cisco N9348Y2C6D-SE1U switches.

These limitations apply to Q-in-Q.

- You cannot configure a range of allowed VLANs by using **switchport trunk allowed vlan** *vlan_list* command.

```
..!
interface Ethernet1/1  switchport mode trunk
switchport vlan mapping all dot1q-tunnel 30
switchport trunk allowed vlan 30-40
 ..!
```

  In the configuration example, trunk VLAN 30 is the provider VLAN. The VLANs 31 through 40 filter regular trunk traffic; these VLANs operate in sparse mode.

- You cannot use VLAN ACL with Q-in-Q.

- Multicast is not supported, and IGMP snooping is not supported.

- Custom EtherType is not supported.

- Variations of QinQ are not supported:

    - Q-in-VNI and Selective Q-in-VNI are not supported.

    - Selective Q-in-Q is not supported.

- You do not need the **system dot1q-tunnel transit** command for Q-in-Q tunneling when the switch acts as a transit device.