Configure the optical port of a Layer 3 switch

Overview

All Ethernet ports are switched interfaces by default. You can change this default behavior with the CLI setup script or through the system default switchport command.

Key Takeaways

An optical port on a Layer 3 switch can be used as a routed interface by connecting the fiber module and configuring it with an IP address for Layer 3 routing.

Physical Connection

Insert the SFP/SFP+ module into the optical port of the switch. Ensure the module type matches the fiber cable (single-mode or multi-mode) and the distance requirements. Connect the fiber optic cable to the module, observing proper polarity (TX to RX and RX to TX) to ensure signal integrity.

Verify link status using the switch CLI or management interface to confirm the port is operational. Configuring the Optical Port as a Layer 3 InterfaceOptical ports on Layer 3 switches function like any other physical interface and can be configured as routed ports: Enter interface configuration mode for the optical port: CodeCopyinterface TenGigabitEthernet1/1/1 Replace with the actual port identifier. Convert the port to a routed interface (disable Layer 2 switching): CodeCopyno switchport This allows the port to operate at Layer 3, forwarding IP packets instead of Ethernet frames only.

Assign an IP address to the port: CodeCopyip address 192. 168. 1.

1 255. 255. 255.

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0 This IP will serve as the gateway for devices on the connected subnet. Enable routing protocols if needed: For static routing, configure routes pointing to the next-hop IP. For dynamic routing, enable protocols like OSPF or EIGRP on the interface.

Verify configuration: CodeCopyshow ip interface brief The optical port should appear as a Layer 3 interface with the assigned IP and an "up/up" status.

Optional Configurations

Subinterfaces: If the optical link carries multiple VLANs, create subinterfaces with unique IP addresses for inter-VLAN routing. Layer 3 EtherChannel: Aggregate multiple optical ports into a single routed port channel for higher bandwidth and redundancy.

SV

I vs Routed Port: Use a routed port for a single physical connection to a subnet. Use an SVI if multiple ports connect to the same VLAN internally.

Summary

Using an optical port on a Layer 3 switch involves physically connecting the fiber module, converting the port to a routed interface, and assigning an IP address for Layer 3 routing. This enables the optical port to forward IP traffic, participate in routing protocols, and interconnect networks efficiently, just like a copper routed port.

Article Content

Configuring Layer 3 Interfaces

All Ethernet ports are switched interfaces by default. You can change this default behavior with the CLI setup script or through the system default switchport command. You can assign an IP address to the

Configuring Layer 3 Interfaces

Layer 3 interfaces forward IPv4 and IPv6 packets to another device using static or dynamic routing protocols. You can use Layer 3 interfaces for IP routing and inter-VLAN routing of Layer 2 traffic. You

Configuring Layer 3 Interfaces

Follow these steps to create an Layer 3 interface. You can create a VLAN interface, a loopback interface, a routed port or a port-channel interface according to your needs.

Layer 3 Switching

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This document describes the configuration of Ethernet services, including configuring link aggregation, VLANs, Voice VLAN, VLAN mapping, QinQ, GVRP, MAC table, STP/RSTP/MSTP, SEP, and so on.

Example for Switching an Interface to Layer 3 Mode

To enable SwitchA and SwitchB to communicate with each other and provide high link bandwidth, Layer 3 Eth-Trunk interfaces need to be used between SwitchA and SwitchB.

Configuring a layer 3 interface

This example creates the following configuration: Configures interface 1/1/2 as a layer 3 interface. Defines an IPv6 address of 2001:0db8:85a3::8a2e:0370:7334 with a 24-bit mask. Enables layer 3

Layer 3 Switch Example

This article outlines a basic example of how layer 3 routing functionality on MS series switches could be implemented. Before proceeding, please refer to the Layer 3 Switch Overview for general information

Basic & Advanced Catalyst Layer 3 Switch Configuration: Creating

Configuration commands covered in this article are applicable to all Cisco Catalyst Layer-3 switches. Cisco''s portfolio of catalyst switches is designed to meet any network requirement (in speed,

SEL-2730M Managed 24-Port Ethernet Switch

The SEL-2730M is a managed 24-port layer-2 switch. Apply the switch to build reliable, safe Ethernet networks in electrical substations, plants, and other

Cisco Networking for Service Providers

Cisco Routed Optical Networking Converge IP and optical layers for scalable, efficient, and reliable connectivity—while reducing CapEx, energy costs, and operational complexity.

Layer 3 Etherchannel on Cisco IOS Switch

The switch won''t “switch” traffic on this interface but route it. Because it''s a layer three interface, we configure an IP address on it. I''ll be using two switches for

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MS130 Datasheet

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Overview Cisco Meraki MS130 switches provide Layer 2 access switching, ideal for branch and campus deployments. The MS130 series features a variety of options designed to meet the diverse needs of

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Use the Juniper Networks Documentation (TechLibrary) to find all the information and documentation you need to evaluate, configure, or manage a Juniper Networks product.

KB: Creating protection for Hyper-V VMs on Windows Server 2012

The symptoms vary based on the configuration of the Hyper-V server. For stand-alone Hyper-V server In DPM, creation of the protection group will fail with the error: Type: Replica creation

Configuring Layer 3 Interfaces

Routed Interfaces You can configure a port as a Layer 2 interface or a Layer 3 interface. A routed interface is a physical port that can route IP traffic to another device. A routed interface is a Layer 3

Cisco Switch Layer2 Layer3 Design and Configuration

Layer2 and Layer3 switches are the foundation of any network. After all, any network devices (routers, firewalls, computers, servers etc) have to be connected to a switch. Sooner or later, as a network

Basic & Advanced Catalyst Layer 3 Switch Configuration: Creating

This article covers basic and advanced configuration of Cisco Catalyst Layer-3 switches such as the Cisco Catalyst 3560G, 3560E, 3560-X, 3750, 3750E, 3750-X, 3850, 4500, 6500, 9300, 9400 series,

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