

Multi-network access via Layer 3 switch



AI Overview

A Layer 3 switch enables devices on multiple VLANs or subnets to communicate by performing routing functions directly on the switch using SVIs or routed ports. Overview of Layer 3 Switching

A Layer 3 switch, also called a multilayer switch, combines the functions of a traditional Layer 2 switch and a router. It can forward frames based on MAC addresses (Layer 2) and route IP packets based on destination IP addresses (Layer 3) at high speeds using hardware-based switching (ASICs) rather than software-based routing, which reduces latency and improves throughput. This makes it ideal for connecting multiple networks or VLANs within a LAN environment.

Enabling Multi-Network Access

1. Switch Virtual Interfaces (SVIs) To allow communication between multiple VLANs, a Layer 3 switch uses Switch Virtual Interfaces (SVIs). Each SVI is a logical interface associated with a VLAN and configured with an IP address corresponding to that VLAN's subnet. Devices in each VLAN use the SVI IP as their default gateway. When a packet arrives at the switch destined for another VLAN, the switch routes it internally using the SVI, eliminating the need for an external router. Configuration example:
`Code Copy`
`interface Vlan10 ip address 192.168.10.1 255.255.255.0 no shutdown`
`interface Vlan20 ip address 192.168.20.1 255.255.255.0 no shutdown`
`ip routing`
This enables inter-VLAN routing directly on the switch.
2. Routed Ports For point-to-point connections between switches, routers, or firewalls, routed ports can be used. Unlike SVIs, routed ports are physical interfaces configured as Layer 3 interfaces without VLAN association. They create separate Layer 3 segments, confining broadcast traffic to the subnet and allowing reuse of VLAN IDs elsewhere.
3. Routing Protocols Layer 3 switches can support standard routing protocols such as OSPF, RIP, EIGRP, and IS-IS to dynamically route traffic between multiple networks. This allows the switch to participate in larger routed networks and manage multiple subnets efficiently.

Benefits of Using a Layer...

Article Content

Layer 3 Switches in Cisco

In simple words, a Layer 3 Switch is a networking device that can perform switching (functions of layer 2) as well as routing (functions of Layer 3).

What Is a Layer 3 Switch? Definition, How It Works,

What is a Layer 3 switch? Learn the definition, how it works, use cases, pros and cons, and when to choose a multilayer switch for enterprise LANs.

What Is a Layer 3 Switch? Definition, How It Works,

A Layer 3 switch (multilayer switch) combines Layer 2 Ethernet switching with Layer 3 IP routing. It switches traffic within the same VLAN/subnet

Understanding Layer 3 Switches: A Comprehensive Guide

Conclusion Layer 3 switches are powerful networking devices that provide the advanced routing capabilities of routers combined with the high-speed data forwarding of switches. They are

How to configure a Cisco Layer 3 Switch-InterVLAN

UPDATED: 2020 – Cisco Catalyst switches equipped with the Enhanced Multilayer Image (EMI) can work as Layer 3 devices with full routing capabilities. For

Routing Between VLANs & Layer 3 Switches

Routing Between VLANs & Layer 3 Switches Routing Between VLANs & Layer 3 Switches We wrote an article which covers Virtual Local Area Networks (VLANs)

[munisaivith19-sketch/Enterprise-Multi-Branch-Network-OSPF](#)

Designed and implemented a multi-branch enterprise network using Cisco Packet Tracer with VLANs, Router-on-a-Stick, DHCP, OSPF, Layer 3 Core Switching, and Wireless Access Points. -

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Layer 3 switches explained

Layer 3 switches, on the other hand, use a switch backplane that has bandwidth capacity far greater than that of a single or multiple Ethernet interfaces combined in a port channel. In other

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Today at the Open Compute Project Global Summit, we introduced Caliptra 2.1, an open-source silicon Root of Trust (RoT) security subsystem

Layer 3 switches explained

A Layer 3 switch -- also referred to as a multilayer switch -- combines the duties of a switch and a router. It acts as a switch because it connects devices that are on the same IP subnet

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Overview This blog supplements the Migrate to Azure SQL documentation and tries to summarize the Microsoft first party ways to copy or migrate SQL Server...

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Step-by-step (with video!) to connect Azure Sphere to Azure IoT Edge and authenticate a device.

InterVLAN routing using Layer 3 switch

InterVLAN routing using Layer 3 switch In this lesson, we will learn to configure a multilayer switch (also called Layer 3 switch) to perform inter-VLAN routing,

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GWN78xx - Multi-Layer Switching Guide

In this guide, we will walk through the configuration of a GWN78xx multilayer switch, connected to access switches that will result in an inter-VLAN routing.

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Cross-Tenant Teams Guest Access (GCCH) This video shows the most requested feature in GCCH which is now Generally Available (GA): Teams Guest Access. Organizations can

InterVLAN routing using Layer 3 switch | NetworkAcademy.IO

In this lesson, we will learn to configure a multilayer switch (also called Layer 3 switch) to perform inter-VLAN routing, which was previously done using an actual router.

Routers and L3 Switches | NetworkAcademy.IO

Learn how routers and Layer 3 switches connect networks, route IP packets, and enable fast inter-VLAN communication in modern network designs.

HPE Aruba Networking CX switches

HPE Aruba Networking CX 6300 Switch Series Layer 3 stackable access and aggregation switches with Multi-Gigabit Ethernet, High Power PoE, and up to

MS Layer 3 Switching and Routing

Layer 3 routing capabilities are available on most Cisco Meraki switches. This allows the switches to route traffic between VLANs in a campus network without the need for an additional layer

Multilayer Switch

To configure your Cisco router for MLS, perform the tasks described in the following sections. The first section contains a required task; the remaining tasks are optional. To ensure a successful MLS

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