

Firewall accessing Layer 2 switch



AI Overview

A Layer 2 access switch forwards frames based on MAC addresses, while the firewall handles Layer 3 routing, security policies, and Internet access, making the firewall the gateway for users.

Layer 2 Switch Overview

A Layer 2 (L2) switch operates at the data link layer, forwarding traffic based on MAC addresses within a LAN. It supports VLANs for logical segmentation, trunk ports for carrying multiple VLANs, and basic QoS and security features such as port security and storm control. L2 switches are ideal for access-layer deployment where routing is handled by a firewall or Layer 3 switch at the network edge.

Firewall Role in L2 Deployment

In a Layer 2 deployment, the firewall provides Layer 3 services, including routing between VLANs, DHCP, NAT/PAT, and security policies. The firewall can operate in Layer 2 mode or transparent mode, forwarding frames between ports while inspecting traffic and enforcing security rules. It often serves as the default gateway for all VLANs connected to the access switch.

Typical Configuration Steps

VLAN Assignment on the Switch:

Configure access ports for end devices and assign them to VLANs. For example, port link-type access and port default vlan 2 for user ports.

Trunk Port to Firewall:

Configure the uplink port to the firewall as a trunk to carry multiple VLANs, e.g., port trunk allow-pass vlan 2 3.

Firewall VLAN Interfaces:

Configure sub-interfaces or VLANIF interfaces on the firewall to terminate VLAN tags and perform Layer 3 routing between network segments.

DHCP and NAT:

The firewall can act as a DHCP server and implement PAT/NAT to allow internal users to access the Internet.

Security Policies:

Define interzone policies on the firewall to control traffic between VLANs and enforce security rules.

Best Practices

Use access ports for end devices and trunk ports for uplinks to firewalls or other switches. Ensure VLAN consistency between the switch and firewall to avoid connectivity issues. Deploy inline firewalls in Layer 2 or virtual wire mode for environments using security group tags (SGTs) to inspect traffic with...

Article Content

Understanding Layer 2 Switches: A Comprehensive Guide

By understanding how Layer 2 switches work, their key features, and best practices for deployment, network administrators can optimize their networks for reliability and performance.

Can a Firewall be deployed on a L2 device defined Network?

Transparent mode (layer 2) firewalls are operationally more problematic than routing or NATing (layer3) firewalls. Presumably the box marked "ISP" is also doing NAT, so you could insert a routing firewall

Cisco Secure Firewall Management Center Device Configuration

Physical switch port—Switch ports forward traffic at Layer 2, using the switching function in hardware. Switch ports on the same VLAN can communicate with each other using hardware

What are access control lists (ACLs) and how do they

What are access control lists (ACLs) and how do they work with my NETGEAR Smart Switch or fully managed switch? Access control lists (ACLs)

Network Switches

Cisco network switches deliver performance, flexibility, and security. Cisco switches are scalable and cost-efficient and meet the demands of hybrid work.

how to config Firewall routing with Layer 2 Switch

It may be easier to use the firewall to terminate both vlans by creating a sub-interface for each one (1.1.1.0 and 2.2.2.0) and have a layer-3 link between the firewall and the router.

Example for Configuring a Layer 2 Switch to Work with a Firewall for ...

Example for Configuring a Layer 2 Switch to Work with a Firewall for Internet Access
Layer 2 Switch Layer 2 switches perform only Layer 2 forwarding instead of Layer 3 forwarding. That is, Layer 2

Layer 2 Interfaces

In a Layer 2 deployment, the firewall provides switching between two or more networks. Devices are connected to a Layer 2 segment; the firewall forwards the frames to the proper port, which is

Layer 2 Security Features of Switching: Enhancing Network Protection

In this article, we will explore the key Layer 2 security features provided by switches, along with examples of popular switch platforms that support these features.

2 Firepower 1120 Firewalls connected to a layer-2 switch

You need to setup the firewalls to allow the traffic in question. I'll be honest, it seems like you are setting them up backward because you seem to be

Layer 2 Firewalls for the Data Center

Being able to deploy firewalls in the data center in a model that requires minimal changes or disruption to the existing infrastructure are security

How to Configure FortiGate Firewall Interface: Layer 2, Aggregated ...

Master the configuration of FortiGate Firewall interfaces in this in-depth tutorial! Learn to set up and optimize various interface types to enhance your network's functionality and security.

Security and VPN Configuration Guide, Cisco IOS XE 17.x

A Layer 2 transparent firewall operates on bridged packets and is enabled on a pair of locally-switched Ethernet ports. Embedded IP packets forwarded through these ports are inspected

Re: Routing between 2 firewalls on layer 3 switch

I have two fortigate firewalls on different subnet and I want to do routing between them on a layer 3 switch guide me on how to do that mind you that I still have my switch enabled for routing.

How to Configure a Firewall in Cisco Switch?

Configure a Firewall on Cisco Switch: Access lists are supported for network traffic filtering by the Cisco 850 and Cisco 870 series routers. The

3 Firewalls in 1 layer-2 switch, 1 acts as Default Gateway

Hello everyone. I am currently trying to setup a network madeup of a large layer-2 switch, some computers connected to that switch, 3 Cisco Firepower 1120 ASA Firewalls, and other

Example for Configuring a Layer 2 Switch to Work with a Firewall for ...

Two methods are available to configure a firewall: one is to configure sub-interfaces and the other is to configure VLANIF interfaces. Configure the firewall to terminate VLAN tags through sub-interfaces to

Example for Configuring a Layer 3 Switch to Work with a Firewall for ...

In Figure 1-2, a company has multiple departments that belong to different network segments, and each department needs to access the Internet. It is required that users access the Internet through the

Layer 3 Switch Example

This article will cover 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

Layer 2 Transparent Firewalls

Layer 2 Transparent Firewalls A Layer 2 transparent firewall operates on bridged packets and is enabled on a pair of locally-switched Ethernet ports. Embedded IP packets forwarded through these ports are

Layer 2 vs Layer 3 switches — Understanding the

Layer 2 vs. layer 3 switch: Understanding the differences that impact IT Switch ports are essential components of network communication processes in modern IT

Example for Configuring a Layer 2 Switch to Work with a Firewall for ...

Layer 2 switches perform only Layer 2 forwarding instead of Layer 3 forwarding. That is, Layer 2 switches support only Layer 2 features instead of Layer 3 features such as routing. Layer 2

Security Configuration Guide: Zone-Based Policy Firewall, Cisco IOS

You can configure a Layer 2 transparent firewall using the same configuration as the zone-based firewalls. For more information, see the “ Zone-Based Firewalls ” module.

Configure a Layer 2 Interface

Configure a Layer 2 interface on the firewall so it can act as a switch in your layer 2 network (not at the edge of the network). The Layer 2 hosts are probably geographically close to each other and belong

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