

Firewall and Core Switches Main Network



AI Overview

Core switches handle high-throughput routing and switching, while firewalls enforce security boundaries and inspect cross-zone traffic.

Core Switch Role Core switches form the backbone of an enterprise network, aggregating traffic from distribution and access layers and providing high-speed routing between VLANs and VRFs. They rely on ASIC-based hardware forwarding to achieve line-rate performance, often supporting 10G, 40G, or 100G+ throughput with microsecond latency. Core switches are ideal for east-west traffic within the network, ensuring minimal latency for internal communications and inter-VLAN routing. They also support VRF-lite for logical segmentation without duplicating physical hardware.

Firewall Role Firewalls primarily function as security enforcement points, controlling traffic between security zones such as DMZ, internal networks, and external connections. Next-Generation Firewalls (NGFWs) like Fortinet or Palo Alto can combine routing with deep packet inspection, threat prevention, and compliance monitoring. However, routing all traffic through firewalls can introduce latency and session processing overhead, so they are best used for cross-zone traffic inspection rather than high-volume core routing.

Integration Between Core Switches and Firewalls Modern enterprise designs often combine both approaches: Core switches handle inter-VLAN routing within VRFs for performance efficiency. Firewalls inspect traffic crossing security zones or leaving the network. Transit networks or VLAN trunks connect core switches to firewalls, allowing static routes or default routes per VRF to direct traffic appropriately. For high availability, firewalls in HA pairs can be connected via independent trunked port-channels from the core, carrying all required VLANs.

Best Practices

Routing Placement: Keep high-throughput routing on core switches; delegate security-sensitive routing to firewalls.

VLAN and VRF Management: Use VRFs on core switches for logical isolation; extend VLANs to firewalls only when necessary for inspection. S...

Article Content

Gateways on Core Switch vs Firewall : r/networking

Gateways on Core Switch vs Firewall I'm struggling with some design options for a network redesign I'm planning at my company. The background: Today I'm running a relatively simple network topology.

Router vs Switch vs Firewall – Networking Guide

Learn the difference between routers, switches, and firewalls in networking. This beginner-friendly guide explains how each device works using

Routing on firewall or core switches? : r/networking

In my research I'm getting mixed suggestions - Some say that core switches are for routing, when others say that core switches have to be as fast as possible and have minimal tasks dedicated to them.

Solved: Firewall to 2 core switches

The distribution switches are Cisco Catalyst 3850-24XS and the Core switches are Cisco Catalyst 6503-E. There will be loads of traffic, but the network

What is a Core Switch

Network aggregation switches, on the other hand, connect many networks over a single link. As a result, it increases the network's bandwidth. This article explained the question of what is

When it Comes to Networking, Keep It Simple

They will either pass traffic between locally connected access switches or forward traffic to the core to be routed Access Switches that provide

MikroTik · Routers and Wireless

MikroTik makes networking hardware and software, which is used in nearly all countries of the world. Our mission is to make existing Internet technologies

Differences among Firewalls, Routers, and Switches

This article provides a comprehensive overview of three core network components—firewalls, routers, and switches—detrving into their functions, working principles, and

Firewall at Edge vs Core : r/networking

Obviously I would think having a firewall at the Core switch is ideal, however sometimes this may not be possible, (depending where the ISP connection is).

Internet Connection Termination: Core Switch vs Firewall

I recently had a spirited discussion with a colleague about the best practice for terminating internet connections in a corporate network setup. My colleague argued that internet connections should not

23 Best security settings to change on Windows 11 (2026)

The best security settings you should enable and configure on Windows 11, include virus and phishing protection, encryption, biometric, more.

Router vs Firewall vs Switch: Who Controls Your Network?

A router controls traffic paths, a switch controls LAN forwarding, a firewall controls security. See how they work together in real Cisco business

Home Assistant IoT VLAN Guide [2026 Setup]

You wouldn't leave the keys to your workshop just lying on the front porch. Yet, most people connect dozens of untrusted, foreign-made IoT devices

Solved: Connectivity from Core to Firewall

We already have a default route on our core and that points to the ASA firewall and then its routed back to the Core switch (Depending on the prefix) of course and then specific routes to the

Network Components Explained: Understanding

Learn the 3 core network components—switches, routers, and firewalls. Understand how they work together for exams, troubleshooting, and

Network Trio: Firewall vs Switch vs Router | Field Engineer

There are 3 main pieces of equipment, known as the network trio that are needed to secure a network. We take an in-depth look at all 3 - Firewall vs

switching

If you are provides internet connectivity through firewall and you needs to filter all traffic in common manner for all VLANs, you can use different VLAN between core switch and firewall. then

Recommendation for a connection between Core Switch and Firewall

There is a transit network between the switch and the firewall. The VLANs 10, 20 and 30 are in the same VRF, are routed on the L3 and are allowed to reach each other.

Link between Firewall and Core Switches : r/networking

We will soon be deploying some core switches. When going upstream (towards outside) from the core L3 switches to a set of firewalls, I'm unsure if the the links between the firewall and core switches

Network Segmentation

We usually deploy the FortiGate as the gateway of the server's network and also the gateway of the backup network (don't activate any type of UTM feature or deep inspection for the traffic between the

When to Route on Core Switches vs Next-Gen Firewalls in Enterprise

Learn when to use core switch routing vs next-generation firewall routing in enterprise networks. Explore performance, security zones, VRF design, and hardware platform selection.

Network Segmentation

We're currently using a pair of Fortigate 600E's in Active-Passive HA, presenting 1Gb interfaces for our LAN, Management, STZ, DMZ which sit on separate switches. My idea was to route everything

Core Switch vs. Distribution Switch vs. Access Switch

Comprehensive guide to Core, Distribution, and Access Switches. Roles in the network and important parameters explained.

Understanding Enterprise Network Infrastructure: From

A complete guide to enterprise network infrastructure—covering DMZ, firewalls, core networks, and hybrid cloud integration. Includes best

Ultimate OPNsense 26.1.6 Guide: Hardware, VLANs,

If your network is the castle, your firewall is the main gate, the high walls, and the guard towers all in one. We're not going to use the flimsy

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