

Article Overview

Configuring an access layer switch involves setting up basic switch parameters, VLANs, management interfaces, access ports, and security settings in a sequential workflow.

1. Physical Setup and Console Access

Begin by rack-mounting the switch, connecting power, and linking it to the network using StackWise or uplink cables if applicable. Use a console cable (RJ-45 to USB or serial) and a terminal application like PuTTY to access the switch CLI for initial configuration .

2. Set Hostname and Secure Access

Assign a hostname to identify the switch in the network. Configure privileged EXEC mode passwords and user accounts with appropriate privilege levels. Disable unencrypted protocols like Telnet and HTTP, and enable SSH and HTTPS for secure management .

3. Configure Management Interface

Set up a Switch Virtual Interface (SVI) for management traffic. Assign an IP address, subnet mask, and default gateway to allow remote management and monitoring. Ensure the VLAN used for the SVI exists and has at least one active port .

4. VLAN Configuration

Create the required Layer 2 VLANs for different departments or user groups. Use the vlan database or configure terminal commands to define VLAN IDs and names. Assign access ports to the appropriate VLANs, ensuring that each port is untagged for its VLAN .

5. Configure Access Ports

Set each user-facing port as an access port and assign it to the correct VLAN. Example commands include interface GigabitEthernet0/1, switchport mode access, and switchport access vlan . Disable unused ports to enhance security.

6. Optional Trunk Ports

If the switch connects to other switches or distribution layers, configure trunk ports to carry multiple VLANs

using switchport mode trunk and switchport trunk allowed vlan .

7. Port Security and Access Control

Enable port security to limit the number of MAC addresses per port and prevent unauthorized devices. Configure Access Control Lists (ACLs) if needed to restrict traffic between VLANs or to the internet .

8. Configure Logging and Monitoring

Set up logging to local buffers or a syslog server for monitoring switch activity. Optionally, configure NetFlow or SNMP for traffic analysis and network management .

9. Save Configuration

After completing all configurations, save the running configuration to NVRAM using write memory or copy running-config startup-config to ensure settings persist after a reboot .

10. Verification

Verify the configuration using commands like show vlan brief, show running-config, ping , and show interface status to ensure VLANs, ports, and management interfaces are operational .

Following this sequential workflow ensures that an access layer switch is secure, manageable, and properly segmented for end-user connectivity in a Cisco network environment.

As far as the design goes I will try to use Cisco's hierarchical internetworking model (Distribution, Aggregation and Access Layers)

The three-tier switch hierarchy -- Access, Distribution, and Core -- is not just a technical blueprint, but a strategic

The access layer consists of layer 3 switches, which take routed and switched data packets from the distribution switches and then

Access Layer Security Design One of the most vulnerable points of the network is the access edge. The access layer is where end

All Access layer switches connect to a pair of Distribution layer switches. In this scenario, each building is a

switch

Basic Switch Configuration Guide with Examples A Cisco switch is different from a regular plug-and-play switch. It

The three-tier (or three-layer) hierarchical model is a Cisco-advocated network design that divides an enterprise LAN

Technology Overview and other devices in the work environment. The primary Access Layer switches are designed to be housed in

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Each layer is served by specialized switches, with the access switch connecting end-user devices, the distribution switch aggregating

This tutorial provides an overview of the access, distribution, and core layers and explains

Learn 8 key factors--ports, PoE, speed, security & TCO--to choose the right access layer switch and future-proof

For campus designs requiring simplified configuration, common end-to-end troubleshooting tools and the fastest

The many configuration modes included the interface configuration, the global configuration mode, the privileged

Access-layer deployment recommendations Depicting what the access layer should look like is difficult because it depends on

What is the main function of an access layer? What does an access layer switch do? How to choose the right network

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