

Switch Port Access Information Table



AI Overview

A Switch Port Access Information Table maps switch ports to connected devices, showing MAC addresses, VLANs, and port security status to control and manage network access.

Overview of the Table

A Switch Port Access Information Table (commonly called a MAC address table or CAM table) is maintained by a switch to track which devices are connected to which ports. This table allows the switch to forward Ethernet frames efficiently, sending traffic only to the port associated with the destination MAC address rather than flooding all ports. Each entry typically includes:

- MAC Address:** The unique 48-bit identifier of the connected device.
- Port:** The physical interface on the switch where the device is connected.
- VLAN:** The VLAN ID associated with the port, if VLANs are configured.
- Entry Type:** Static, dynamic, or sticky, indicating how the MAC address was learned or configured.

Types of Entries

- Static:** Manually configured by the administrator; remains in the table until removed.
- Dynamic:** Learned automatically by the switch when a device sends traffic; removed after an aging period or switch restart.
- Sticky:** Dynamically learned but can be saved to the running configuration, persisting across reboots.

Port Security Integration

Switches can enforce port security using the MAC address table to restrict access. Key points include:

- Limiting the number of MAC addresses per port.** If exceeded, a security violation occurs.
- Assigning specific MAC addresses to a port** ensures only authorized devices can communicate.
- Violations can be triggered** if a secure MAC address is seen on a different port or if an unknown device attempts access.

Viewing and Managing the Table

Common Cisco CLI commands include:

- `show mac address-table` - Displays the current MAC address table with port and VLAN information.
- `switchport port-security` - Configures port security settings on a specific interface.
- Filtering output using the pipe command** (e.g., `| include`) helps locate specific entries.

Operational Notes

Each VLAN maintains a separate MAC address ta...

Article Content

Assign an Interface VLAN as an Access or Trunk Port on a Switch

Access port — A port that carries traffic only to and from the specific VLAN assigned to it. Trunk port — A port that is capable of carrying traffic for any or all the VLANs that are accessible by

7-3 Types of Switch Ports

7-3 Types of Switch Ports A switch port can be in one of two modes: access and trunk. There are two ways a switch port can settle down into one of these two modes: static and dynamic. You can

Network Plus Exam Questions What Information is Added to the Switch ...

Conclusion The switch table is a fundamental concept in networking, especially for those preparing for the N10-008 exam. By understanding how the switch table works, how information is

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By default, Layer 2 switch ports are set to dynamic auto (trunking on). Therefore, in the example, the port is configured with the switchport mode access interface configuration command.

Switchport Port Security Explained With Examples

This tutorial explains Switchport security modes (Protect, Restrict, and Shutdown), the maximum number of hosts, and Switchport security violation rules in detail.

How to find the port a device is connected to, based on IP, on a Cisco ...

If you issue the command show mac address-table address x, you could also see this MAC being learned on a trunk port. If that is the case (and assuming you're connected to another Cisco device),

Configuring Access and Trunk Interfaces

Ethernet interfaces can be configured either as access ports or trunk ports. Trunks carry the traffic of multiple VLANs over a single link and allow you to extend VLANs across the network.

Port Security

Port security only supports trunks configured with these commands: switchport switchport trunk encapsulation switchport mode trunk switchport nonegotiate If you reconfigure a secure access port

Interface

If a port is configured as a secure port and the maximum number of secure MAC addresses is reached, when the MAC address of a station attempting to access the port is different from any of the identified

Switchport Port Security Explained With Examples

This tutorial explained the commands and configuration steps you need to secure switch ports. Learning these commands and configuration steps allows you to secure your network from

Security Configuration Guide, Cisco IOS XE Gibraltar 16.10.x (Catalyst ...

When a trunk port configured with port security and assigned to an access VLAN for data traffic and to a voice VLAN for voice traffic, entering the switchport voice and switchport priority

Switch port security configuration and verification

This lesson covers switch port security configuration and verification. Port security is a security feature of Cisco switches that allows you to control what source MAC addresses are allowed

Forwarding information base

A forwarding information base (FIB), also known as a forwarding table or MAC (address) table, is most commonly used in network bridging, routing, and similar functions to find the proper output network

show mac address-table - CAM Table, MAC Learning, Port Security ...

What Is the MAC Address Table (CAM Table)? The MAC address table — also called the CAM table (Content Addressable Memory table) — is the switch's forwarding database. It maps Layer 2 MAC

Port Security

Static secure MAC addresses—These are manually configured by using the switchport port-security mac-address mac-address interface configuration command, stored in the address table, and added

Configuring Port Security

When a switch (either the active switch or a stack member) leaves the stack, the remaining stack members are notified, and the secure MAC addresses configured or learned by that switch are

Network switch port allocation details

This post provides the detailed explanation about the Network switch port allocation details and why it's important.

What is a Switch Port? A Complete Guide

What is a switch port? A switch port is a physical switch that evolves with the network and the type of transmission media. Connecting different devices to a port on a network switch allows

Commands to Find Device Mac Address on Cisco Switch Port

To find the MAC Address on a Cisco switch port, we use the command `show mac-address-table`. Let's understand the step by step process under different scenarios.

Configuring VLAN Trunks

If you do not intend to trunk across those links, use the `switchport mode access` interface configuration command to disable trunking.

MAC Address Table On a Cisco Switches

The switch keeps track of the other Ethernet interfaces on the network to which it is linked in the MAC address table. Instead of broadcasting the data over all ports, the table allows the switch

Port security commands

You can set the MAC age out time using the CLI, SNMP, Web, or menu interfaces. For more information on the `mac-age-time` command see "Interface Access and System Information" in the management

Mapping out network interfaces using `mac-addr-table`, `arp`, and

Basically determine what each port is connected to, for the entire core and distribution layer of this network topology. To do this, I've gathered the following from each switch: local switchport info, mac

Configuring Port Security on Cisco IOS Switch

Step-2 : By default, only 1 MAC address is allowed by the Cisco switch on a single port and if any other device tries to connect using that port, switch automatically shutdown its port to

MAC Address Table (CAM Table) Explained - Learning, Aging,

The MAC Address Table — also called the CAM table (Content Addressable Memory table) — is the central database a Layer 2 switch maintains to map MAC addresses to the physical port and VLAN

Contact Us

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