

Core switch ARP lookup

Article Overview

To perform an ARP lookup on a core switch, use the switch's ARP table to map IP addresses to MAC addresses, then correlate with the MAC address table to identify physical ports.

Understanding ARP and MAC Tables

- o ARP Table: Populated on Layer 3 interfaces, it maps IP addresses to MAC addresses. It is built when the switch or router communicates with devices in its subnet or receives traffic from them .
- o MAC Address Table: Populated on Layer 2 interfaces, it maps MAC addresses to physical switch ports. It is built as frames are received on the switch ports . A core switch that performs Layer 3 routing will maintain an ARP table for its VLAN interfaces, but may not automatically have all MAC addresses of connected hosts unless traffic has passed through it .

Commands for ARP Lookup

o View ARP Table:

`show ip arp` This displays IP-to-MAC mappings for devices the switch has communicated with .

o View MAC Address Table:

`show mac address-table` This shows which MAC addresses are associated with which physical ports .

o Correlate IP to Port:

o First, find the MAC address of the IP in the ARP table.

o Then, locate that MAC in the MAC address table to determine the switch port .

Forcing ARP Discovery

- o Ping devices in the subnet from the switch management interface to populate ARP entries. Only active hosts will appear in the ARP table .
- o Proxy ARP can be enabled with:
`ip proxy-arp` to allow the switch to respond to ARP requests on behalf of other devices .
- o Tools like nmap followed by `arp -an` can also help discover active hosts and populate the ARP table .

Notes and Best Practices

- o Only managed switches with a Layer 3 interface can maintain an ARP table. Unmanaged switches cannot be queried for ARP entries .
- o ARP entries have a timeout (commonly 4 hours on Cisco devices), after which they are removed unless refreshed .
- o For mapping IP addresses to switch ports in VLANs, ensure the switch has an IP address configured in the same VLAN as the devices . By combining the ARP table and MAC address table, network administrators can

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effectively identify which devices are connected to which ports on a core switch and troubleshoot connectivity issues.

Perform the following tasks to clear the Address Resolution Protocol (ARP) cache of entries associated with an

Understanding how to check the ARP table in Linux is essential for network troubleshooting, security auditing, and

Both arp and ip neigh are great commands for displaying information on local systems. Being able to check

How to Configure Extreme switch / router as IP Helper using SSH / Telnet and multiple commands to fetch ARP table information as

ARP Table Configuration Use the ARP Table Configuration page to change the configuration parameters for the Address Resolution

Display all entries in the Address Resolution Protocol (ARP) table. To display entries for a particular logical system

This document provides information on how to troubleshoot Address Resolution Protocol (ARP) or Content

To view the IP ARP table entries and configuration, use the show iparp command.

show arp show arp counters vlan <vlanid> Description This command show Address Resolution Protocol (ARP) entries for the

Are you specifically looking for an ARP table, and not the bridge MAC table? Most switches won't have anything more

Solved: show arp vs show mac-address-table I am using GNS3. For switch, I am attaching switch 16 module for

Connect to your Cisco switch via console, SSH, or telnet. The go-to command is show arp in privileged EXEC mode (enable first).

IP Addressing: ARP Configuration Guide, Cisco IOS XE Release 3SE (Catalyst 3850 Switches)

This article describes the Address Resolution Protocol (ARP) table on a Cisco router. The ARP table fields are

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also explained in this

With CIM Cisco Internetworking Basics, you can gain a practical understanding of the fundamental technologies, principles, and

The Linux arp command is used to view and manipulate the system's Address Resolution Protocol (ARP) table. This table maps IP

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