ARP Optimization

The ARP Optimization feature improves Address Resolution Protocol (ARP) performance by using an improved data structure to reduce ARP searching time.

Feature History for the ARP Optimization Feature

Release	Modification
12.0(22)S	This feature was introduced.
12.2(15)T	This feature was integrated into Cisco IOS Release 12.2(15)T.
12.2(18)S	This feature was integrated into Cisco IOS Release 12.2(18)S.
12.2(27)SBC	This feature was integrated into Cisco IOS Release 12.2(27)SBC.

Finding Support Information for Platforms and Cisco IOS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS software image support. Access Cisco Feature Navigator at http://www.cisco.com/go/fn. You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

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Information About the ARP Optimization Feature

This section provides the following information about ARP optimization:

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ARP Optimization Feature Design

ARP is used to map a Layer 3 IP address to a Layer 2 MAC address. A Cisco router stores this mapped information in an ARP table. The ARP table provides MAC rewrite information when the router is forwarding a packet using Cisco Express Forwarding (CEF) or other IP switching technologies.

In previous versions of Cisco IOS software, the ARP table was organized for easy searching on an entry based on the IP address. However, there are cases such as interface flapping on the router and a topology change in the network where all related ARP entries need to be refreshed for correct forwarding. This situation could consume a substantial amount of CPU time in the ARP process to search and clean up all the entries. The ARP Optimization feature improves ARP performance by reducing the ARP searching time by using an improved data structure.

No configuration tasks are associated with this feature.

ARP Optimization Benefits

This feature improves CPU utilization and provides a more efficient ARP table searching capability when a topology change occurs.

Additional References

The following sections provide references related to the ARP Optimization feature.

Related Documents

Related Topic	Document Title
IP addressing and services commands	*Cisco IOS IP Command Reference, Volume 1 of 4: Addressing and Services*, Release 12.3 T
IP addressing and services tasks	*Cisco IOS IP Configuration Guide*

Standards

Standards	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature.	—

MIBs

MIBs	MIBs Link
No new or modified MIBs are supported by this feature, and support for existing MIBs has not been modified by this feature.	To obtain lists of supported MIBs by platform and Cisco IOS release, and to download MIB modules, go to the Cisco MIB website on Cisco.com at the following URL: http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml

RFCs

RFCs	Title
No new or modified RFCs are supported by this feature, and support for existing RFCs has not been modified by this feature.	—

Technical Assistance

Description	Link
Technical Assistance Center (TAC) home page, containing 30,000 pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/public/support/tac/home.shtml

Command Reference

This section documents a new command. All other commands used with this feature are documented in the Cisco IOS Release 12.3T command reference publications.

- **clear arp interface**

clear arp interface

To clear the entire Address Resolution Protocol (ARP) cache on an interface, use the **clear arp interface** command in privileged or user EXEC mode.

clear arp interface *type number*

Syntax Description

type	Interface type.
number	Interface number.

Defaults

No default behavior or values.

Command Modes

Privileged or User EXEC

Command History

Release	Modification
12.0(22)S	This command was introduced.
12.2(15)T	This command was integrated into Cisco IOS Release 12.2(15)T.
12.2(27)SBC	This command was integrated into Cisco IOS Release 12.2(27)SBC.

Usage Guidelines

Use the **clear arp interface** command to clean up ARP entries associated with an interface.

Examples

The following example clears the ARP cache from Ethernet interface 0:

```
Router# clear arp interface ethernet 0
```

Glossary

ARP—Address Resolution Protocol. Internet protocol used to map an IP address to a MAC address. Used to obtain the physical address when only the logical address is known.

MAC address—Media Access Control address. Standardized data link layer address that is required for every port or device that connects to a LAN. Also known as a hardware address, MAC-layer address, and physical address.

Note Refer to *Internetworking Terms and Acronyms* for terms not included in this glossary.

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