VRF-Aware ARP Debug

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The VRF-Aware ARP Debug feature provides debugging capability for Address Resolution Protocol (ARP) in a VPN routing and forwarding (VRF) environment. This feature is an enhancement to the ARP Rewrite feature.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table at the end of this module.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Information About VRF-Aware ARP Debug

VRF-Aware ARP

You can enable debugging Address Resolution Protocol (ARP) on a particular VPN routing and forwarding (VRF) instance, a VRF on an interface, or both. Use the **debug arp vrf** *vrf-name* command to enable debugging ARP for a VRF. When you enable the **debug arp vrf** *vrf-name* command on an interface, the command displays only information about the VRF configured on the interface.

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Note The **debug interface** *interface* command must be enabled before the **debug arp vrf** *vrf-name* command is used on an interface.

How to Enable VRF-Aware ARP Debug

Enabling VRF-Aware ARP Debug

Perform this task to enable debug trace for Address Resolution Protocol (ARP) transactions to monitor the ARP subsystem.

Debug trace can be enabled for all IP ARP packet traffic, or it can be enabled for an individual type of ARP event, such as the following:

- ARP entry events:
  - Any dynamic ARP entry event
  - Any interface ARP entry event
  - Any static ARP entry event
  - Any ARP entry subblock event
- ARP table events:
  - ARP table operations (entry insertion, modification, or deletion)
  - ARP table timer events
  - ARP table database events (database read/write events)
- ARP high availability (HA) events
- ARP interface events:
  - ARP/Cisco Express Forwarding Adjacency interface transactions
  - ARP Application interface transactions
- VPN routing and forwarding (VRF) or VRF on a particular interface

The amount of ARP debug information displayed is filtered according to the interface and access list specified by the **debug list** command.

SUMMARY STEPS

1. **enable**
2. **debug list** [*list*] [*interface*]
3. **debug arp** [**vrf** *vrf-name* | **global**] [*arp-entry-event* | *arp-table-event* | **ha** | *interface-interaction*]
4. **show debugging**
5. **no debug arp** [**vrf** *vrf-name* | **global**] [*arp-entry-event* | *arp-table-event* | **ha** | *interface-interaction*]

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**debug list** [*list*] [*interface*] **Example:** `Device# debug list 1102 serial`	(Optional) Enables the filtering of ARP debugging information (or debugging information for any of the other protocols supported by this command). The filtering is performed by using either or both of the following criteria: • To display debugging information for a specific interface rather than for all interfaces on a device, identify the interface by using the *interface* argument. If the interface needs to be configured, use the **interface** command. • To display information for a specific type of packet rather than for all packets, identify the packet details by using the *list* argument to identify an extended ACL. The ACL specifies a source MAC Ethernet address, the destination MAC Ethernet address, and arbitrary bytes in the packet. If the extended access list needs to be configured, use the **access-list** (extended-ibm) command.
Step 3	**debug arp** [**vrf** *vrf-name* | **global**] [*arp-entry-event* | *arp-table-event* | **ha** | *interface-interaction*] **Example:** `Device# debug arp static`	Enables debug trace for ARP packets. • Enables debug trace for one of the following specific types of ARP events: ◦ VRF on an interface ◦ ARP entry events ◦ ARP table events ◦ ARP HA events (on HA-capable platforms) ◦ Interactions on an ARP interface
Step 4	**show debugging** **Example:** `Device# show debugging`	Lists the debugging options enabled on this device.
Step 5	**no debug arp** [**vrf** *vrf-name* | **global**] [*arp-entry-event* | *arp-table-event* | **ha** | *interface-interaction*] **Example:** `Device# no debug arp static`	(Optional) Disables debug trace for ARP packets. • This command disables debug trace for one of the following specific types of ARP events according to the specified keyword or argument: ◦ VRF on an interface ◦ ARP entry events ◦ ARP table events ◦ ARP HA events (on HA-capable platforms) ◦ Interactions on an ARP interface

Configuration Examples for VRF-Aware ARP Debug

Example: VRF-Aware ARP

The following example shows that debugging information related to vpn1 on Ethernet interface 0/0 will be logged:

```
Device> enable
Device# configure terminal
Device(config)# interface ethernet0/0
Device(config-if)# vrf forwarding vpn1
Device(config-if)# end
Device# debug arp vrf vpn1
```

Additional References for VRF-Aware ARP Debug

Related Documents

Related Topic	Document Title
Cisco IOS commands	*Cisco IOS Master Command List, All Releases*
IP addressing commands	*Cisco IOS IP Addressing Services Command Reference*
IP addressing tasks	*Configuring IPv4 Addresses*
ARP configuration tasks	*Configuring Address Resolution Protocol Options*
ARP trace information	*Monitoring and Maintaining ARP Information*

Standards and RFCs

Standard/RFC	Title
RFC 1812	*Requirements for IP Version 4 Routers*

Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

Feature Information for VRF-Aware ARP Debug

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Table 1 Feature Information for VRF-Aware ARP Debug

Feature Name	Releases	Feature Information
VRF-Aware ARP Debug	15.1(1)SY	The VRF-Aware ARP Debug feature provides debugging capability for ARP in an VRF environment. This feature is an enhancement to the ARP Rewrite feature. The following command was introduced or modified: **debug arp.**