ARP Commands

This chapter describes the commands used to configure and monitor the Address Resolution Protocol (ARP) on Cisco ASR 9000 Series Aggregation Services routers .

For detailed information about ARP concepts, configuration tasks, and examples, see the *Cisco ASR 9000 Series Aggregation Services Router IP Addresses and Services Configuration Guide*.

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arp

To add a permanent entry in the Address Resolution Protocol (ARP) cache, use the **arp** command in global configuration mode. To remove an entry from the ARP cache, enter the **no** form of this command.

arp [**vrf** *vrf-name*] *ip-address hardware-address encapsulation-type* **[alias]**

no arp [**vrf** *vrf-name*] *ip-address hardware-address encapsulation-type* **[alias]**

Syntax Description

vrf	(Optional) Specifies VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) VRF instance that identifies a VPN.
ip-address	IPv4 (network layer) address for which a permanent entry is added to the ARP cache. Enter the IPv4 address in a four-part dotted-decimal format that corresponds to the local data-link address (a 32-bit address).
hardware-address	Hardware (data link layer) address that the IPv4 address is linked to. Enter the local data-link address (a 48-bit address), such as 0800.0900.1834.
encapsulation-type	Encapsulation type. The encapsulation types are: • arpa • srp • srpa • srpb For Ethernet interfaces, this is typically the arpa keyword.
alias	(Optional) Causes the software to respond to ARP requests as if it were the owner of both the specified IP address and hardware address, whether proxy ARP is enabled or not.

Command Default

No entries are permanently installed in the ARP cache.

Command Modes

Global configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The software uses ARP cache entries to translate 32-bit IP addresses into 48-bit hardware addresses.

Because most hosts support dynamic resolution, you generally need not specify static ARP cache entries.

Static entries are permanent entries that map a network layer address (IPv4 address) to a data-link layer address (MAC address). If the **alias** keyword is specified when creating the entry, the interface to which the entry is attached will act as if it is the owner of the specified addresses, that is, it will respond to ARP request packets for this network layer address with the data link layer address in the entry.

The software does not respond to any ARP requests received for the specified IP address unless proxy ARP is enabled on the interface on which the request is received. When proxy ARP is enabled, the software responds to ARP requests with its own local interface hardware address.

To remove all nonstatic entries from the ARP cache, enter the clear arp-cache, page 9 in EXEC mode.

Task ID

Task ID	Operations
cef	read, write

Examples

The following is an example of a static ARP entry for a typical Ethernet host:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# arp 192.168.7.19 0800.0900.1834 arpa
```

Related Commands

Command	Description
clear arp-cache, page 9	Deletes all dynamic entries from the ARP cache.
show arp, page 21	Displays the ARP cache.

arp dagr

To configure Direct Attached Gateway Redundancy (DAGR), use the **arp dagr** command in interface configuration mode.

arp dagr

Syntax Description

This command has no arguments or keywords.

Command Default

Disabled

Command Modes

Interface configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
cef	write

Examples

The following example enables DAGR configuration:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface gigabitethernet 0/1/0/0.1
RP/0/RSP0/CPU0:router(config-if)# arp dagr
RP/0/RSP0/CPU0:router(config-if-dagr)#
```

Related Commands

Command	Description
peer (DAGR), page 11	Creates a DAGR group for a virtual IP address.
priority-timeout, page 13	Configures the timeout for a high-priority DAGR route.

Command	Description
route distance, page 17	Configures the route distances for a given DAGR group.
route metric, page 19	Configures the route metrics for a given DAGR group.
show arp dagr, page 25	Displays the operational state of all DAGR groups.
timers (DAGR), page 30	Configures the DAGR timers for sending ARP requests.

arp purge-delay

To delay purging Address Resolution Protocol (ARP) entries when an interface goes down, use the **arp purge-delay** command in interface configuration mode. To turn off the purge delay feature, use the **no** form of this command.

arp purge-delay *value*

no arp purge-delay *value*

Syntax Description

v alue	Sets the purge delay time in seconds. Range is 1 to 65535.

Command Default

Default value is off.

Command Modes

Interface configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **arp purge-delay** command to delay purging ARP entries when an interface goes down. If the interface comes up within the delay time, then the ARP entries are restored to prevent packet loss with Equal Cost Multipath (ECMP) configured.

Task ID

Task ID	Operations
cef	read, write

Examples

The following is an example of setting the purge delay to 50 seconds:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface MgmtEth 0/RP1/CPU0/0
RP/0/RSP0/CPU0:router(config-if)# arp purge-delay 50
```

arp timeout

To specify how long dynamic entries learned on an interface remain in the Address Resolution Protocol (ARP) cache, enter the **arp timeout** command in interface configuration mode. To remove the **arp timeout** command from the configuration file and restore the system to its default condition with respect to this command, enter the **no** form of this command.

arp timeout *seconds*

no arp timeout *seconds*

Syntax Description

seconds	Indicates the time, in seconds, for which an entry remains in the ARP cache. Range is 30 to 4294967295.

Command Default

Entries remain in the ARP cache for 14,400 seconds (4 hours).

Command Modes

Interface configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

This command is ignored when issued on interfaces that do not use ARP. Also, ARP entries that correspond to the local interface or that are statically configured by the user never time out.

The **arp timeout** command applies only to the interface that is entered. When the timeout is changed for an interface the change applies only to that interface.

The **show interfaces** command displays the ARP timeout value in hours:minutes:seconds, as follows:

```
ARP type: ARPA, ARP Timeout 04:00:00
```

Task ID

Task ID	Operations
cef	read, write

Examples

The following example shows how to set the ARP timeout to 3600 seconds to allow entries to time out more quickly than the default:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface MgmtEth 0/RP1/CPU0/0
RP/0/RSP0/CPU0:router(config-if)# arp timeout 3600
```

Related Commands

Command	Description
clear arp-cache, page 9	Deletes all dynamic entries from the ARP cache.
show arp, page 21	Displays the ARP cache.
show interfaces	Displays statistics for all interfaces configured on the networking device. For information on using the **show interfaces** command, see the *Cisco ASR 9000 Series Aggregation Services Router* Cisco IOS XR software *Interface and Hardware Component Command Reference*.

clear arp-cache

To delete all dynamic entries from the Address Resolution Protocol (ARP) cache, clear the fast-switching cache, and clear the IP route cache, use the **clear arp-cache** command in EXEC mode.

clear arp-cache {**traffic** *type interface-path-id*| **location** *node-id*}

Syntax Description

traffic	Deletes traffic statistics on the specified interface.
t ype	Interface type. For more information, use the question mark (?) online help function.
interface- path-id	Either a physical interface instance or a virtual interface instance as follows: • Physical interface instance. Naming notation is *rack/slot/module/port* and a slash between values is required as part of the notation. ◦ *rack*: Chassis number of the rack. ◦ *slot*: Physical slot number of the modular services card or line card. ◦ *module*: Module number. A physical layer interface module (PLIM) is always 0. ◦ *port*: Physical port number of the interface. **Note** In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RSP0) and the module is CPU0. Example: interface MgmtEth0/RSP0 /CPU0/0. • Virtual interface instance. Number range varies depending on interface type. For more information about the syntax for the router, use the question mark (?) online help function.
location *node-id*	Clears the ARP entries for a specified location. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

When issued without keywords or arguments, the **clear arp-cache** command clears all entries in the ARP cache.

Task ID

Task ID	Operations
cef	execute

Examples

The following example shows how to remove traffic statistic entries from the ARP cache that match the specified interface:

```
RP/0/RSP0/CPU0:router# clear arp-cache traffic gigabitEthernet 0/1/5/1 location 0/1/CPU0
```

The following example shows how to remove entries from the ARP cache that match the specified location:

```
RP/0/RSP0/CPU0:router# clear arp-cache location 0/1/CPU0
```

Related Commands

Command	Description
arp, page 2	Adds a permanent entry in the ARP cache.
show arp, page 21	Displays the ARP cache.

peer (DAGR)

To create a Direct Attached Gateway Redundancy (DAGR) group for a virtual IP address, use the **peer** command in DAGR interface configuration mode.

peer ipv4 *IP-address*

Syntax Description

IP-address	Virtual IPv4 address for the DAGR group.

Command Default

None

Command Modes

DAGR interface configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
cef	write

Examples

The following example configures a DAGR group peer:

```
RP/0/RSP0/CPU0:router(config-if-dagr)# peer ipv4 192.168.7.19
RP/0/RSP0/CPU0:router(config-if-dagr-peer)#
```

Related Commands

Command	Description
arp dagr, page 4	Configures DAGR.
priority-timeout, page 13	Configures the timeout for a high-priority DAGR route.
route distance, page 17	Configures the route distances for a given DAGR group.

Command	Description
route metric, page 19	Configures the route metrics for a given DAGR group.
show arp dagr, page 25	Displays the operational state of all DAGR groups.

priority-timeout

To configure the timer to time out a high-priority Direct Attached Gateway Redundancy (DAGR) route and reverting to normal priority, use the **priority-timeout** command in DAGR peer interface configuration mode.

priority-timeout *time*

Syntax Description

time	Time in seconds after which a high-priority route reverts to a normal priority route. The range of values is 1 to 10000.

Command Default

Default for *time* is 20 seconds.

Command Modes

DAGR peer interface configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

When this function is applied, the DAGR group configuration is updated in the database.

The new timer values take effect the next time the timer is set. No immediate timer restarts are triggered on the basis of this event.

Task ID

Task ID	Operations
cef	write

Examples

The following example configures a priority timeout of 25 seconds:

```
RP/0/RSP0/CPU0:router(config-if-dagr-peer)# priority-timeout 25
RP/0/RSP0/CPU0:router(config-if-dagr-peer)#
```

Related Commands

Command	Description
arp dagr, page 4	Configures DAGR.
peer (DAGR), page 11	Creates a DAGR group for a virtual IP address.

Command	Description
route distance, page 17	Configures the route distances for a given DAGR group.
route metric, page 19	Configures the route metrics for a given DAGR group.
show arp dagr, page 25	Displays the operational state of all DAGR groups.
	Configures the DAGR timers for sending ARP requests.

proxy-arp

To enable proxy Address Resolution Protocol (ARP) on an interface, enter the **proxy-arp** command in interface configuration mode. To disable proxy ARP on the interface, enter the **no** form of this command.

proxy-arp

no proxy-arp

Syntax Description

This command has no arguments or keywords.

Command Default

Proxy ARP is disabled on all interfaces.

Command Modes

Interface configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

When proxy ARP is disabled, the networking device responds to ARP requests received on an interface only if one of the following conditions is met:

- The target IP address in the ARP request is the same as the interface IP address on which the request is received.
- The target IP address in the ARP request has a statically configured ARP alias.

When proxy ARP is enabled, the networking device also responds to ARP requests that meet all of the following conditions:

- The target IP address is not on the same physical network (LAN) on which the request is received.
- The networking device has one or more routes to the target IP address.
- All of the routes to the target IP address go through interfaces other than the one on which the request is received.

Using the **no** form of the command removes the specified command from the configuration file and restores the system to its default condition with respect to the command.

Task ID

Task ID	Operations
cef	read, write

Examples

The following example shows how to enable proxy ARP on MgmtEth interface 0/RP1/CPU0/0:

```
RP/0/RSP0/CPU0:router#(config)# interface MgmtEth 0/RP1/CPU0/0
RP/0/RSP0/CPU0:router#(config-if)# proxy-arp
```

route distance

To configure route distance for a given Direct Attached Gateway Redundancy (DAGR) group, use the **route distance** command in DAGR peer interface configuration mode.

route distance normal *normal-distance* **priority** *priority-distance*

Syntax Description

normal *normal-distance*	Sets normal route (administrative) distance. Range is 0 to 256.
priority *priority-distance*	Sets priority route (administrative) distance. Range is 0 to 256.

Command Default

Default for *normal-distance* default is 150 and the default for *priority-distance* is 5.

Command Modes

DAGR peer interface configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The default setting for a priority distance takes precedence over that of a typical Internet Gateway Protocol (IGP). The normal distance setting does not.

When this setting is applied, the DAGR group is updated in the database.

Task ID

Task ID	Operations
cef	write

Examples

The following example configures a DAGR group peer with a normal route distance of 48 and priority route distance of 5:

```
RP/0/RSP0/CPU0:router(config-if-dagr-peer)# route distance normal 48 priority 5
RP/0/RSP0/CPU0:router(config-if-dagr-peer)#
```

Related Commands

Command	Description
arp dagr, page 4	Configures DAGR.

Command	Description
peer (DAGR), page 11	Creates a DAGR group for a virtual IP address.
priority-timeout, page 13	Configures the timeout for a high-priority DAGR route.
route metric, page 19	Configures the route metrics for a given DAGR group.
show arp dagr, page 25	Displays the operational state of all DAGR groups.
timers (DAGR), page 30	Configures the DAGR timers for sending ARP requests.

route metric

To configure normal and priority route metrics for a given Direct Attached Gateway Redundancy (DAGR) group, use the **route metric** command in DAGR peer interface configuration mode.

route metric normal *normal-metric* **priority** *priority-metric*

Syntax Description

normal *normal-metric*	Sets a normal value for routes installed in the Routing Information Base (RIB). The range of values is 0 to 256.
priority *priority-metric*	Sets a priority value for routes installed in the RIB. The range of values is 0 to 256.

Command Default

The default for *normal-metric* is 100, and the default for *priority-metric* is 90.

Command Modes

DAGR peer interface configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The route metric values are of less significance than the **route distance** command values. Setting a route metric allows the configuration of values for routers installed in the RIB.

When this setting is applied, the DAGR group is updated in the database.

Task ID

Task ID	Operations
cef	write

Examples

The following example configures a DAGR group peer with a normal metric of 48 and a priority metric of 5:

```
RP/0/RSP0/CPU0:router(config-if-dagr-peer)# route metric normal 48 priority 5
RP/0/RSP0/CPU0:router(config-if-dagr-peer)#
```

Related Commands

Command	Description
arp dagr, page 4	Configures DAGR.
peer (DAGR), page 11	Creates a DAGR group for a virtual IP address.
priority-timeout, page 13	Configures the timeout for a high-priority DAGR route.
route distance, page 17	Configures the route distances for a given DAGR group.
show arp dagr, page 25	Displays the operational state of all DAGR groups.
timers (DAGR), page 30	Configures the DAGR timers for sending ARP requests.

show arp

To display the Address Resolution Protocol (ARP) , enter the **show arp** command in EXEC mode.

show arp vrf *vrf-name* *[ip-address* | *hardware-address* | *interface-path-id]* **location** *node-id*

Syntax Description

vrf	(Optional) Specifies VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) VRF instance that identifies a VPN.
ip-address	(Optional) The ARP entries you want to display.
hardware-address	(Optional) The ARP entries that match the 48-bit MAC address are displayed.
interface- path-id	(Optional) Either a physical interface instance or a virtual interface instance as follows: • Physical interface instance. Naming notation is *rack/slot/module/port* and a slash between values is required as part of the notation. ◦ *rack*: Chassis number of the rack. ◦ *slot*: Physical slot number of the modular services card or line card. ◦ *module*: Module number. A physical layer interface module (PLIM) is always 0. ◦ *port*: Physical port number of the interface. **Note** In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RSP0) and the module is CPU0. Example: interface MgmtEth0/RSP0/CPU0/0. • Virtual interface instance. Number range varies depending on interface type. For more information about the syntax for the router, use the question mark (?) online help function.
location *node-id*	(Optional) Displays the ARP entry for a specific location. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

The active RSP is the default location.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

ARP establishes correspondences between network addresses (an IP address, for example) and Ethernet hardware addresses. A record of each correspondence is kept in a cache for a predetermined amount of time and then discarded.

For **show arp** *interface-type interface-instance* form, the **location** *node-id* keyword and argument is mandatory for Bundle and VLAN-on-Bundle interfaces to indicate which location the cache entries for the bundle should be displayed. For physical interfaces, specifying the **location** *node-id* keyword and argument is optional since the interface can only exist on one node.

Task ID

Task ID	Operations
cef	read

Examples

The following is sample output from the **show arp** command with no location specified:

```
RP/0/RSP0/CPU0:router# show arp

-------------------------------------------------------------------------------
0/3/CPU0
-------------------------------------------------------------------------------

Address         Age        Hardware Addr   State      Type  Interface
10
.4.1.1       -          000c.cfe6.3336  Interface  ARPA GigabitEthernet0/3/1/3
10
.4.1.2       01:37:50   0000.c004.0102  Dynamic    ARPA GigabitEthernet0/3/1/3
10
.1.4.2         -        000c.cfe6.33b5  Interface  ARPA FastEthernet0/3/3/4
10
.1.0.2         -        000c.cfe6.33b1  Interface  ARPA FastEthernet0/3/3/0
10
.1.0.1         00:37:56 000a.8b08.857a  Dynamic    ARPA FastEthernet0/3/3/0
10
.1.4.1         01:37:51 000a.8b08.857e  Dynamic    ARPA FastEthernet0/3/3/4
10
.11.1.1        -        000c.cfe6.32fa  Interface  ARPA FastEthernet0/3/0/6
10
.1.5.2         -        000c.cfe6.33b6  Interface  ARPA FastEthernet0/3/3/5
10
.1.1.2         -        000c.cfe6.33b2  Interface  ARPA FastEthernet0/3/3/1
10
.1.1.1         01:37:51 000a.8b08.857b  Dynamic    ARPA FastEthernet0/3/3/1
10
.1.5.1         01:37:50 000a.8b08.857f  Dynamic    ARPA FastEthernet0/3/3/5

-------------------------------------------------------------------------------
0/2/CPU0
-------------------------------------------------------------------------------
Address         Age        Hardware Addr   State      Type  Interface
10
.6.9.1        01:11:55   0003.fe4c.0bff  Dynamic    ARPA MgmtEth0/2/CPU0/0
10
.6.25.6       01:09:29   000c.cfe6.2000  Dynamic    ARPA MgmtEth0/2/CPU0/0
10
.6.5.10       00:39:58   0009.7b49.0bff  Dynamic    ARPA MgmtEth0/2/CPU0/0
```

The following is sample output from the **show arp** command with the *interface-type interface-instance* argument:

```
RRP/0/RSP0/CPU0:router# show arp MgmtEth 0/RP1/CPU0/0

Address         Age        Hardware Addr   State      Type  Interface
10.4.9.2        00:35:55   0030.7131.abfc  Dynamic    ARPA  MgmtEth0/RP1/CPU0/0
10.4.9.1        00:35:55   0000.0c07.ac24  Dynamic    ARPA  MgmtEth0/RP1/CPU0/0
10.4.9.99       00:49:12   0007.ebea.44d0  Dynamic    ARPA  MgmtEth0/RP1/CPU0/0
10.4.9.199      -          0001.c9eb.dffe  Interface  ARPA  MgmtEth0/RP1/CPU0/0
```

The following is sample output from the **show arp** command with the *hardware-address* designation:

```
RP/0/RSP0/CPU0:router# show arp 0005.5f1d.8100

Address Age Hardware Addr State Type Interface
172.16.7.2 - 0005.5f1d.8100 Interface ARPA GigabitEthernet2/0/1/2
```

The following is sample output from the **show arp** command with the **location** keyword and *node-id* argument:

```
RP/0/RSP0/CPU0:router# show arp location 0/2/CPU0

Address Age Hardware Addr State Type Interface
192.168.15.1 - 00dd.00ee.00ff Alias ARPA
192.168.13.1 - 00aa.00bb.00cc Static ARPA
172.16.7.1 00:35:49 0002.fc0e.9600 Dynamic ARPA GigabitEthernet2/0/1/2
172.16.7.2 - 0005.5f1d.8100 Interface ARPA GigabitEthernet2/0/1/2
```

This table describes the significant fields shown in the display.

Table 1: show arp Command Field Descriptions

Field	Description
Address	Displays the network address that corresponds to the hardware address.
Age	Displays the age in hours:minutes:seconds of the cache entry. A hyphen (-) means the address is local.
Hardware Addr	Displays the LAN hardware address of a MAC address that corresponds to the network address.
State	Displays the current state of the cache entry. Values are: • Dynamic • Interface • Alias • Static • "-" (indicates global static and alias entries)
Type	Displays the encapsulation type the Cisco IOS XR software is using for the network address in this entry. Value is ARPA.

Field	Description
Interface	Displays the interface associated with this network address.
ARP statistics	Displays ARP packet and error statistics.
ARP cache	Displays general information about the IP address and MAC address association entries in the ARP cache.
IP Packet drop count for node */*/*	Displays the number of IP packets dropped because the buffer ran out of space before an ARP response was received. **Note** */*/* represents the node ID in the format *rack/slot/module*.

Related Commands

Command	Description
arp, page 2	Adds a permanent entry to the ARP cache.
clear arp-cache, page 9	Deletes all dynamic entries from the ARP cache.
show arp traffic, page 27	Displays ARP traffic statistics.

show arp dagr

To display the operational state of all Direct Attached Gateway Redundancy (DAGR) groups, use the **show arp dagr** command in EXEC mode.

show arp dagr [*interface* [*IP-address*]]

Syntax Description

interface [*IP-address*]	(Optional) Restricts the output to a specific interface and virtual IP address.

Command Default

None

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
cef	read, write

Examples

The following example shows the current operational state of the DAGR groups:

```
RP/0/RSP0/CPU0:router# show arp dagr

-------------------------------------------------------------------------------
0/1/CPU0
-------------------------------------------------------------------------------
Interface                 Virtual IP      State     Query-pd Dist Metr
GigabitEthernet0/1/0/2    192.168.7.19    Active    None     150  100
GigabitEthernet0/1/0/2    193.24.0.45     Query     1        None None
GigabitEtherget0/1/0/3    192.66.0.45     Init      None     None None
```

Related Commands

Command	Description
arp dagr, page 4	Configures DAGR.

Command	Description
peer (DAGR), page 11	Creates a DAGR group for a virtual IP address.
priority-timeout, page 13	Configures the timeout for a high-priority DAGR route.
route distance, page 17	Configures the route distances for a given DAGR group.
route metric, page 19	Configures the route metrics for a given DAGR group.
timers (DAGR), page 30	Configures the DAGR timers for sending ARP requests.

show arp traffic

To display Address Resolution Protocol (ARP) traffic statistics, enter the **show arp traffic** command in EXEC mode.

show arp traffic [**vrf** *vrf-name*] [*interface-path-id*] [**location** *node-id*]

Syntax Description

vrf	(Optional) Specifies VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) VRF instance that identifies a VPN.
interface- path-id	(Optional) Either a physical interface instance or a virtual interface instance as follows: • Physical interface instance. Naming notation is *rack/slot/module/port* and a slash between values is required as part of the notation. ◦ *rack*: Chassis number of the rack. ◦ *slot*: Physical slot number of the modular services card or line card. ◦ *module*: Module number. A physical layer interface module (PLIM) is always 0. ◦ *port*: Physical port number of the interface. **Note** In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RSP0) and the module is CPU0. Example: interface MgmtEth0/RSP0/CPU0/0. • Virtual interface instance. Number range varies depending on interface type. For more information about the syntax for the router, use the question mark (?) online help function.
location *node-id*	(Optional) Displays the ARP entry for a specific location. The *node-id* argument is entered in the *rack/slot/module* notation.

Note The active RSP is the default location.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

ARP establishes correspondences between network addresses (an IP address, for example) and Ethernet hardware addresses. A record of each correspondence is kept in a cache for a predetermined amount of time and then discarded.

For **show arp traffic,** *interface-instance*, the **location***node-id* keyword and argument is mandatory for Bundle and VLAN-on-Bundle interfaces to indicate which location the cache entries for the bundle should be displayed. For physical interfaces, specifying the **location** *node-id* keyword and argument is optional since the interface can only exist on one node.

Task ID

Task ID	Operations
cef	read

Examples

The following is sample output from the **show arp traffic** command :

```
RP/0/RSP0/CPU0:router# show arp traffic

ARP statistics:
  Recv: 2691 requests, 91 replies
  Sent: 67 requests, 2 replies (0 proxy, 1 gratuitous)
  Resolve requests rcvd: 1
  Resolve requests dropped: 0
  Errors: 0 out of memory, 0 no buffers

ARP cache:
  Total ARP entries in cache: 4
  Dynamic: 3, Interface: 1, Standby: 0
  Alias: 0,   Static: 0

  IP Packet drop count for node 0/0/CPU0: 1
```

The following is sample output from the **show arp traffic** command with the **location** keyword and *node-id* argument:

```
RP/0/RSP0/CPU0:router# show arp traffic location 0/2/CPU0

ARP statistics:
Recv: 0 requests, 1 replies
Sent: 0 requests, 2 replies (0 proxy, 2 gratuitous)
Resolve requests rcvd: 0
Resolve requests dropped: 0
Errors: 0 out of memory, 0 no buffers

ARP cache:
Total ARP entries in cache: 4
Dynamic: 1, Interface: 1, Static: 1

Alias: 1, Standby: 0

  IP Packet drop count for node 0/2/CPU0: 1
```

Related Commands

Command	Description
arp, page 2	Adds a permanent entry to the ARP cache.
clear arp-cache, page 9	Deletes all dynamic entries from the ARP cache.
show arp, page 21	Displays ARP statistics.

timers (DAGR)

To configure the Direct Attached Gateway Redundancy (DAGR) timers for sending ARP requests, use the **timers** command in DAGR peer interface configuration mode.

timers query *query-time* **standby** *standby-time*

Syntax Description

query *query-time*	The value is a time (in seconds) between successive ARP requests being sent out to the virtual IP address, when the group is in the query state. The range of values is 1 to 10000.
standby *standby-time*	The value is a time (in seconds) between successive ARP requests being sent out to the virtual IP address, when the group is in the standby state. The range of values is 1 to 10000.

Command Default

The default for *query-time* is 1 second, and the default for *standby-time* is 20 seconds.

Command Modes

DAGR peer interface configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

When this function is applied, the DAGR group configuration is updated in the database.

The new timer values take effect the next time the timer is set. No immediate timer restarts are triggered on the basis of this event.

Task ID

Task ID	Operations
cef	write

Examples

The following example configures a DAGR group peer with a query time of 2 and a standby time of 40:

```
RP/0/RSP0/CPU0:router(config-if-dagr-peer)# timers query 2 standby 40
RP/0/RSP0/CPU0:router(config-if-dagr-peer)#
```

Related Commands

Command	Description
arp dagr, page 4	Configures DAGR.
peer (DAGR), page 11	Creates a DAGR group for a virtual IP address.
priority-timeout, page 13	Configures the timeout for a high-priority DAGR route.
route distance, page 17	Configures the route distances for a given DAGR group.
route metric, page 19	Configures the route metrics for a given DAGR group.
show arp dagr, page 25	Displays the operational state of all DAGR groups.