

IP Device Tracking Commands

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clear ip device tracking

To clear IP Device Tracking table entries, use the clear ip device tracking command inPrivileged EXEC mode.

Syntax

clear ip device tracking {all | interface *interface-id* | **ip** *ip-address*| **mac** *mac-address*}

Parameters

- **all** — Clears all of the entries.
- **interface** *interface-id*— Clears the entries of the specified interface.
- **ip** *ip-address*— Clears a specific entry based on the provided IP address.
- **mac** *mac-address*— Clears a specific entry based on the provided MAC address.

Command Mode

Privileged EXEC mode

Examples

Example 1. The following example clears all of the IP Device Tracking entries:

```
switchxxxxxx# clear ip device tracking all
```

Example 2. The following example clears the IP Device Tracking entries learned on interface gi1:

```
switchxxxxxx# clear ip device tracking interface gi1
```

ip device tracking probe auto-source

To define the source IP used in ARP probes sent on VLANs without an IP address, use the ip device tracking probe auto-source command in Global Configuration mode. To restore the default configuration, use the no form of this command.

Syntax

ip device tracking probe auto-source fallback host-ip mask override

no ip device tracking probe auto-source

Parameters

- *host-ip*—the Ip address to be used as the source IP in probes sent on VLANs without an IP address.
- *mask*—a mask, in IPv4 address format. This mask is applied to the host-ip parameter to determine the actual source IP to use on each VLAN.

Default Configuration

0.0.0.0 is used as the source IP address for probes that are sent on VLAN interfaces without an IP address.

Command Mode

Global Configuration mode

User Guidelines

ARP Probes sent by Layer 3 interfaces use the Interface's IP address as the source IP address for ARP probes sent by IP device tracking mechanism. This includes IP addresses configured on physical interfaces, Port-channels or VLANs

By default, the source IP address of ARP probes sent by a Layer 2 VLAN (a VLAN not configured with an IP address) is 0.0.0.0.

Use the ip device tracking probe auto-source command to change the source address used by L2 VLANs. The host-ip parameter defines the IP address to use as the ARP Probe source IP address. The mask parameter defines which bits in the host-ip parameter should be used as the ARP probe source IP, where 1 indicates "don't use" (or masked) and 0 indicates "use". The mask part of the IP address is taken from the IP address of the endpoint to which the ARP probe is sent. The mask must be contiguous from the high order bit (e.g 255.255.0.0 is a valid mask while 0.0.255.255 is not a valid mask)

Here are a few examples, where the ARP probe needs to be sent to 2 hosts: 10.10.1.100 and 20.1.1.100. The address segment taken from the host IP is highlighted:

- When the following command was specified: ip device tracking probe auto-source fallback 0.0.0.1 255.255.255.0 override:
  - The source IP address used in the ARP probe sent to host 10.10.1.100 will be – 10.10.1.1
  - The source IP address used in the ARP probe sent to host 20.1.1.100 will be – 20.1.1.1

- When the following command was specified: ip device tracking probe auto-source fallback 0.0.2.1 255.255.0.0 override:
  - The source IP address used in the ARP probe sent to host 10.10.1.100 will be – 10.10.2.1
  - The source IP address used in the ARP probe sent to host 20.1.1.100 will be – 20.1.2.1
  - 20.1.1.1
- When the following command was specified: ip device tracking probe auto-source fallback 0.3.2.1 255.0.0.0 override
  - The source IP address used in the ARP probe sent to host 10.10.1.100 will be – 10.3.2.1
  - The source IP address used in the ARP probe sent to host 20.1.1.100 will be – 20.3.2.1

Examples

The following example specifies that the probe source IP address will use the first 3 bytes of the network address and the value of 11 for the host segment (last byte):

```
switchxxxxxx(config)# ip device tracking probe auto-source fallback 0.0.0.11
255.255.255.0 override
```

ip device tracking probe count (global)

To define the global value of the number of ARP probes sent before removing an entry from the IP Device Tracking table, use the ip device tracking probe count command in Global Configuration mode. To restore the default configuration, use the no form of this command.

Syntax

ip device tracking probe count count

no ip device tracking probe count

Parameters

- *count*—the number of ARP probes sent before removing an entry from IP Device Tracking table (range: 1-255).

Default Configuration

3 probes

Command Mode

Global Configuration mode

User Guidelines

The global count value is used on interfaces that were not configured with an interface level count value.

Examples

The following example specifies 5 probes as the global probe count:

```
switchxxxxxx(config)# ip device tracking probe count 5
```

ip device tracking probe interval global

To define the global value of the interval between ARP probes sent by the device, use the ip device tracking probe interval command in Global Configuration mode. To restore the default configuration, use the no form of this command.

Syntax

ip device tracking probe interval *interval*

no ip device tracking probe interval

Parameters

- *interval*—the interval, in seconds, between ARP probes send by the device (range: 30-1814400 seconds).

Default Configuration

30 seconds

Command Mode

Global Configuration mode

User Guidelines

The global count value is used on interfaces that were not configured with an interface level interval value.

Examples

The following example specifies 35 seconds as the global probe interval:

```
switchxxxxxx(config)# ip device tracking probe interval 35
```

ip device tracking probe delay

To define the delay before sending an ARP probe to an in-active IP Device Tracking table entry, use the ip device tracking probe delay command in Global Configuration mode. To restore the default configuration, use the no form of this command.

Syntax

ip device tracking probe delay *delay*

no ip device tracking probe delay

Parameters

- *delay*—the delay, in seconds, before the device sends an ARP probe to an inactive entry (range: 1-120 seconds).

Default Configuration

By default there is no delay when sending a probe to an in-active entry.

Command Mode

Global Configuration mode

User Guidelines

Configure a probe delay value in order to prevent a false duplicate address detection for an in-active entry. The probe delay defines the number of seconds the to wait before sending an ARP Probe to an in-active host. If the in-active host sends an ARP before the probe delay time expired then the device will wait for the probe interval before sending the next probe.

The probe-delay setting only affects probe sent for in-active entries. It does not effect probe count or interval used for verifying the existence of an existing hosts.

Examples

The following example defines a probe delay of 10 seconds:

```
switchxxxxxx(config)# ip device tracking probe delay 10
```

ip device tracking probe count (interface)

To define a specific ARP probe count value for an interface, use the ip device tracking probe count command in Interface Configuration mode. To restore the default configuration, use the no form of this command.

Syntax

ip device tracking probe count *count*

no ip device tracking probe count

Parameters

- *count*—the number of ARP probes sent before removing an entry from IP Device Tracking table (range: 1-255).

Default Configuration

The default count value for an interface is the global count value.

Command Mode

Interface Configuration mode(Ethernet, Port-Channel).

User Guidelines

Use this command on an interfaces to specify a count value for the interface that is different from the global count value. The global count value is 3 by default, or the value specified using the ip device tracking probe count (global) global mode command.

Examples

The following example specifies 7 probes as the probe count for interface gi1:

```
switchxxxxxx(config)# interface gi1
switchxxxxxx(config-if)# ip device tracking probe count 7
```

ip device tracking probe interval (interface)

To define a specific ARP probe interval value for an interface, use the ip device tracking probe interval command in Interface Configuration mode. To restore the default configuration, use the no form of this command.

Syntax

ip device tracking probe interval *interval*

no ip device tracking probe interval

Parameters

- *interval*—the interval, in seconds, between ARP probes send by the device (range: 30-1814400 seconds).

Default Configuration

The default interval value for an interface is the global interval value.

Command Mode

Interface Configuration mode

User Guidelines

Use this command on an interface to specify an interval value that is different from the global interval value. The global interval value is 30 seconds by default, or the value specified using the ip device tracking probe interval (global) global mode command.

Examples

The following example specifies an interval of 50 seconds between probes for interface gi1:

```
switchxxxxxx(config)# interface gi1
switchxxxxxx(config-if)# ip device tracking probe interval 50
```

ip device tracking maximum

To define the maximum number of IP Device Tracking entries that can be learned on an interface, use the ip device tracking maximum command in Interface Configuration mode. To restore the default configuration, use the no form of this command.

Syntax

ip device tracking maximum *max-device*

no ip device tracking maximum

Parameters

- *max-device* —the maximum number of devices that are connected to this interface that can be added as entries to the IP Device Tracking table (range: 0-65534 devices).

Default Configuration

By default the number of devices that can be learned on the interface is 65,535.

Command Mode

Interface Configuration mode

User Guidelines

Use this command to define the number of connected devices that can be added to the IP Device tracking table. The configurable range of the command is 0-65,534 devices. To allow learning 65,535 devices (the default) use the no form of the command.

Configuring a max-device value between 1-65,534 will enable the IP device Tracking feature on the interface. Configuring a max-device value of 0 will disable the feature on the interface. If the max-device value is set to the default value (65,535) then the feature will be enabled on the feature if 802.1x port-control is set to auto on the interface (command: dot1x port-control)

Examples

The following example specifies an interval of 50 seconds between probes for interface gi1:

```
switchxxxxxx(config)# interface gi1
switchxxxxxx(config-if)# ip device tracking probe interval 50
```

show ip device tracking

To display IP Device Tracking settings and table entries, use the show ip device tracking command in Privileged EXEC mode.

Syntax

show ip device tracking {all | interface *interface-id* | **ip** *ip-address*| **mac** *mac-address*}

Parameters

- **all** — Displays global settings and the entire IP Device Tracking table.
- **interface** *interface-id*— Displays the IP Device Tracking setting of the specified interface and the entries that were learned on this interface.
- **ip** *ip-address*— Displays the global level settings and a specific entry based on the provided IP address.
- **mac** *mac-address*— Displays the global level settings and a specific entry based on the provided MAC address.

Command Mode

Privileged EXEC mode

Examples

Example 1. The following example displays IP Device Tracking global settings and all of the table entries:

```
switchxxxxxx# show ip device tracking all
Global IP Device Tracking for clients = Enabled
Global IP Device Tracking Probe Count = 5
Global IP Device Tracking Probe Interval = 35
Global IP Device Tracking Probe Delay Interval = 0
IP Device Tracking Probe Auto Source = Disabled
IP Address MAC Address Vlan Interface Probe-Timeout State Source
----------- -------------- ---- ------- --------- ------ -----
10.2.13.10 68:05:ca:21:28:e6 13 gi1 30 Active arp
10.2.14.20 68:05:ca:21:28:d5 14 gi2 30 Active arp
Total number interfaces enabled: 2
Enabled interfaces:
gi1, gi2
```

Example 2. The following example displays the IP Device Tracking settings and entries for interface gi1:

```
switchxxxxxx# show ip device tracking interface gi1
Interface gi1 is: STAND ALONE
IP Device Tracking = Enabled
IP Device Tracking Probe Count = 3 (Global)
IP Device Tracking Probe Interval = 30 (Global)
IP Device Tracking Enabled Features:
HOST_TRACK_CLIENT_SM
IP Address MAC Address Vlan Interface Probe-Timeout State Source
----------- -------------- ---- ------- --------- ------ -----
10.2.13.10 68:05:ca:21:28:e6 13 gi1 30 Active arp
```

Example 3. The following example displays a single IP Device Tracking entry. The entry is identified using the entry's IP address.

```
switchxxxxxx# show ip device tracking ip 10.2.14.20
Global IP Device Tracking for clients = Enabled
Global IP Device Tracking Probe Count = 5
Global IP Device Tracking Probe Interval = 35
Global IP Device Tracking Probe Delay Interval = 0
IP Address MAC Address Vlan Interface Probe-Timeout State Source
----------- -------------- ---- ------- --------- ------ -----
10.2.14.20 68:05:ca:21:28:d5 14 gi2 30 Active arp
Total number interfaces enabled: 2
Enabled interfaces:
gi1, gi2
```

Example 4. The following example displays a single IP Device Tracking entry. The entry is identified using the entry's MAC address.

```
switchxxxxxx# show ip device tracking mac 68:05:ca:21:28:d5
Global IP Device Tracking for clients = Enabled
Global IP Device Tracking Probe Count = 5
Global IP Device Tracking Probe Interval = 35
Global IP Device Tracking Probe Delay Interval = 0
IP Address MAC Address Vlan Interface Probe-Timeout State Source
----------- -------------- ---- ------- --------- ------ -----
10.2.14.20 68:05:ca:21:28:d5 14 gi2 30 Active arp
Total number interfaces enabled: 2
Enabled interfaces:
gi1, gi2
```