



HSRP Gratuitous ARP

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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.

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 HSRP Gratuitous ARP

HSRP and ARP

HSRP works when the hosts are configured for proxy ARP. When the active HSRP device receives an ARP request for a host that is not on the local LAN, the device replies with the MAC address of the virtual router. If the active device becomes unavailable or its connection to the remote LAN goes down, the device that becomes the active device receives packets addressed to the virtual router and transfers them accordingly. If the Hot Standby state of the interface is not active, proxy ARP responses are suppressed.

HSRP Gratuitous ARP

The HSRP Gratuitous ARP feature configures HSRP to check that the entries in the ARP cache are correct and to send periodic gratuitous ARP packets from one or more HSRP active groups. By default, HSRP sends out three gratuitous ARP packets from an HSRP group when the group state changes to Active. HSRP sends the first gratuitous ARP packet when the group becomes active. The second two gratuitous ARP packets are sent 2 and 4 seconds later.

The HSRP Gratuitous ARP feature enhances the capability of HSRP so that the number and frequency of gratuitous ARP packets sent by an active HSRP group are configurable. Use the **standby arp gratuitous** command in interface configuration mode to configure a specific number of gratuitous ARP packets to be sent at a specified interval.

Use the **standby send arp** command in EXEC mode to configure HSRP to send a single gratuitous ARP packet for each active group. When the **standby send arp** command is configured, HSRP checks that the entries in the ARP cache are correct prior to sending a gratuitous ARP packet. If an ARP entry is incorrect, HSRP will try to readd it. Static or alias ARP entries cannot be overwritten by HSRP.

Configuring the **standby send arp** command ensures that a host ARP cache is updated prior to heavy CPU-usage processes or configurations are started.

When CPU usage is above 50 percent due to heavy ARP traffic combined with moderate software switched IP traffic, ARP refresh requests could fail, causing some application servers to lose their default gateway ARP entries and fail to communicate with the rest of the network. In some scenarios, operations such as enabling a large access list can cause ARP requests from hosts to be delayed, causing the host to have no default gateway for a short time. A periodic gratuitous ARP packet sent from the HSRP active device refreshes the host ARP cache before it expires.

How to Configure HSRP Gratuitous ARP

Configuring HSRP Gratuitous ARP

Perform this task to configure HSRP to check that the entries in the ARP cache are correct and to send periodic gratuitous ARP packets from one or more HSRP active groups. By default, HSRP sends out three gratuitous ARP packets from an HSRP group when the group state changes to Active. HSRP sends the first gratuitous ARP packet when the group becomes active. The second two gratuitous ARP packets are sent 2 and 4 seconds later.

SUMMARY STEPS

1. **enable**
2. **standby send arp** [*interface-type interface-number* [*group-number*]]
3. **configure terminal**
4. **interface** *type number*
5. **standby arp gratuitous** [*count number*] [*interval seconds*]
6. **end**
7. **show standby arp gratuitous** [*type-number*]

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	standby send arp [<i>interface-type interface-number</i> [<i>group-number</i>]] Example: Device# standby send arp Ethernet 1/1 1	(Optional) Configures HSRP to send a single gratuitous ARP packet for each active HSRP group.
Step 3	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 4	interface <i>type number</i> Example: Device(config)# interface Ethernet1/1	Configures an interface type and enters interface configuration mode.
Step 5	standby arp gratuitous [<i>count number</i>] [<i>interval seconds</i>] Example: Device(config-if)# standby arp gratuitous count 3 interval 4	Configures the number of gratuitous ARP packets sent by an active HSRP group, and how often they are sent.
Step 6	end Example: Device(config-if)# end	(Optional) Returns to privileged EXEC mode.
Step 7	show standby arp gratuitous [<i>type-number</i>] Example: Device# show standby arp gratuitous ethernet1/1	(Optional) Displays the number and configured interval of gratuitous ARP packets sent by HSRP.

Example

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

```

Device# show standby arp gratuitous ethernet 1/1

HSRP Gratuitous ARP
Interface      Interval  Count
Ethernet1/1 4          3

```

Configuration Examples for HSRP Gratuitous ARP

Example: Configuring HSRP Gratuitous ARP

The following example shows how to configure HSRP to check that the entries in the ARP cache are correct and to send three gratuitous ARP packets at 4-second intervals when an HSRP group on the interface changes to active state:

```

Device> enable
Device# standby send arp Ethernet 1/1 1
Device# configure terminal
Device(config)# interface Ethernet 1/1
Device(config-if)# standby arp gratuitous count 3 interval 4
Device(config-if)# end
Device# show standby arp gratuitous ethernet 1/1

HSRP Gratuitous ARP
Interface  Interval  Count
Ethernet1/1 4          3

```

Additional References

Related Documents

Related Topic	Document Title
Cisco IOS commands	Cisco IOS Master Commands List, All Releases
HSRP commands: complete command syntax, command mode, command history, defaults, usage guidelines, and examples	<i>Cisco IOS First Hop redundancy Protocols Command Reference</i>
HSRP for IPv6	“HSRP for IPv6” module
Troubleshooting HSRP	Hot Standby Router Protocol: Frequently Asked Questions

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
CISCO-HSRP-MIB CISCO-HSRP-EXT-MIB	To locate and download MIBs for selected platforms, Cisco software releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFCs	Title
RFC 792	<i>Internet Control Message Protocol</i>
RFC 1828	<i>IP Authentication Using Keyed MD5</i>
RFC 2281	<i>Cisco Hot Standby Router Protocol</i>

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 HSRP Gratuitous ARP

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.

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Table 1: Feature Information for HSRP Gratuitous ARP

Feature Name	Releases	Feature Information
HSRP Gratuitous ARP	12.2(33)SXI 12.2(50)SY 15.0(1)SY	<p>The HSRP Gratuitous ARP feature configures HSRP to check that the entries in the ARP cache are correct and to send periodic gratuitous ARP packets from one or more HSRP active groups.</p> <p>The following commands were introduced by this feature: show standby arp gratuitous, standby arp gratuitous, standby send arp.</p> <p>The following commands were modified by this feature: show standby, debug standby events.</p>