



HSRP: Global IPv6 Address

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The Hot Standby Router Protocol (HSRP) protects data traffic in case of a gateway failure. The HSRP global IPv6 address feature allows users to configure multiple nonlink local addresses as virtual addresses, and it allows for the storage and management of multiple global IPv6 virtual addresses in addition to the existing primary link-local address. If an IPv6 address is used, it must include an IPv6 prefix length. If a link-local address is used, it must not have a prefix.

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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 Global IPv6 Address

HSRP: Global IPv6 Address

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How to Enable HSRP Global IPv6 Address

Enabling and Verifying an HSRP Group for IPv6 Operation

In this task, when you enter the **standby ipv6** command, a link-local address is generated from the link-local prefix, and a modified EUI-64 format interface identifier is generated in which the EUI-64 interface identifier is created from the relevant HSRP virtual MAC address.

A link-local address is an IPv6 unicast address that can be automatically configured on any interface using the link-local prefix FE80::/10 (1111 1110 10) and the interface identifier in the modified EUI-64 format. Link-local addresses are used in the stateless autoconfiguration process. Nodes on a local link can use link-local addresses to communicate; the nodes do not need site-local or globally unique addresses to communicate.

In IPv6, a device on the link advertises in RA messages any site-local and global prefixes, and its willingness to function as a default device for the link. RA messages are sent periodically and in response to router solicitation messages, which are sent by hosts at system startup.

A node on the link can automatically configure site-local and global IPv6 addresses by appending its interface identifier (64 bits) to the prefixes (64 bits) included in the RA messages. The resulting 128-bit IPv6 addresses configured by the node are then subjected to duplicate address detection to ensure their uniqueness on the link. If the prefixes advertised in the RA messages are globally unique, then the IPv6 addresses configured by the node are also guaranteed to be globally unique. Router solicitation messages, which have a value of 133 in the Type field of the ICMP packet header, are sent by hosts at system startup so that the host can immediately autoconfigure without needing to wait for the next scheduled RA message.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ipv6 unicast-routing**
4. **interface** *type number*
5. **standby** [*group-number*] **ipv6** {*link-local-address* | **autoconfig**}
6. **standby** [*group-number*] **preempt** [**delay minimum** *seconds* | **reload** *seconds* | **sync** *seconds*]
7. **standby** [*group-number*] **priority** *priority*
8. **exit**
9. **show standby** [*type number* [*group*]] [**all** | **brief**]
10. **show ipv6 interface** [**brief**] [*interface-type interface-number*] [**prefix**]

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3	ipv6 unicast-routing Example: Device(config)# ipv6 unicast-routing	Enables the forwarding of IPv6 unicast datagrams. • The ipv6 unicast-routing command must be enabled for HSRP for IPv6 to work.
Step 4	interface <i>type number</i> Example: Device(config)# interface GigabitEthernet 0/0/0	Specifies an interface type and number, and places the device in interface configuration mode.
Step 5	standby [<i>group-number</i>] ipv6 { <i>link-local-address</i> autoconfig }	Activates the HSRP in IPv6.
Step 6	standby [<i>group-number</i>] preempt [delay minimum <i>seconds</i> reload <i>seconds</i> sync <i>seconds</i>]	Configures HSRP preemption and preemption delay.

	Command or Action	Purpose
	<p>Example:</p> <pre>Device(config-if)# standby 1 preempt</pre>	
Step 7	<p>standby <i>[group-number]</i> priority <i>priority</i></p> <p>Example:</p> <pre>Device(config-if)# standby 1 priority 110</pre>	Configures HSRP priority.
Step 8	<p>exit</p> <p>Example:</p> <pre>Device(config-if)# exit</pre>	Returns the device to privileged EXEC mode.
Step 9	<p>show standby <i>[type number [group]]</i> [all brief]</p> <p>Example:</p> <pre>Device# show standby</pre>	Displays HSRP information.
Step 10	<p>show ipv6 interface [brief] <i>[interface-type interface-number]</i> [prefix]</p> <p>Example:</p> <pre>Device# show ipv6 interface GigabitEthernet 0/0/0</pre>	Displays the usability status of interfaces configured for IPv6.

Configuration Example for HSRP Global IPv6 Address

Example: Configuring HSRP Global IPv6 Addresses

```
Device(config)# interface GigabitEthernet 0/0
Device(config-if)# no ip address
Device(config-if)# ipv6 address 2001::DB8:1/64
Device(config-if)# standby version 2
Device(config-if)# standby 1 ipv6 FE80::1:CAFE
Device(config-if)# standby 1 ipv6 2001::DB8:2/64
Device(config-if)# standby 1 ipv6 2001:DB8::3/64
Device(config-if)# standby 1 ipv6 2001:DB8::4/64
Device(config-if)# end
```

Additional References

Related Documents

Related Topic	Document Title
IPv6 addressing and connectivity	<i>IPv6 Configuration Guide</i>
Cisco IOS commands	Cisco IOS Master Commands List, All Releases
IPv6 commands	<i>Cisco IOS IPv6 Command Reference</i>
Cisco IOS IPv6 features	Cisco IOS IPv6 Feature Mapping
GLBP	<i>Configuring GLBP</i>

Standards and RFCs

Standard/RFC	Title
RFCs for IPv6	<i>IPv6 RFCs</i>

MIBs

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

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: Global IPv6 Address

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: Global IPv6 Address

Feature Name	Releases	Feature Information
HSRP: Global IPv6 Address	12.2(33)SX14	<p>The HSRP global IPv6 address feature allows users to configure multiple non-link local addresses as virtual addresses.</p> <p>The following command was introduced: standby ipv6.</p>

Glossary

Virtual IP address owner—The VRRP device that owns the IP address of the virtual device. The owner is the device that has the virtual device address as its physical interface address.

Virtual device—One or more VRRP devices that form a group. The virtual device acts as the default gateway device for LAN clients. The virtual device is also known as a VRRP group.

Virtual device backup—One or more VRRP devices that are available to assume the role of forwarding packets if the virtual device master fails.

Virtual device master—The VRRP device that is currently responsible for forwarding packets sent to the IP addresses of the virtual device. Usually, the virtual device master also functions as the IP address owner.

VRRP device—A device that is running VRRP.