IPv6 Neighbor Discovery Multicast Suppress

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Some deployment environments, such as large wireless networks, have scarce bandwidth and rely on proxy features to reduce the amount of control traffic exchanged between nodes on the link. IPv6 Neighbor Discovery Multicast Suppress, which operates on the layer 2 switch (or on the wireless controller operating as a layer 2 switch), is one of the proxy features used in such situations.

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 IPv6 Neighbor Discovery Multicast Suppress

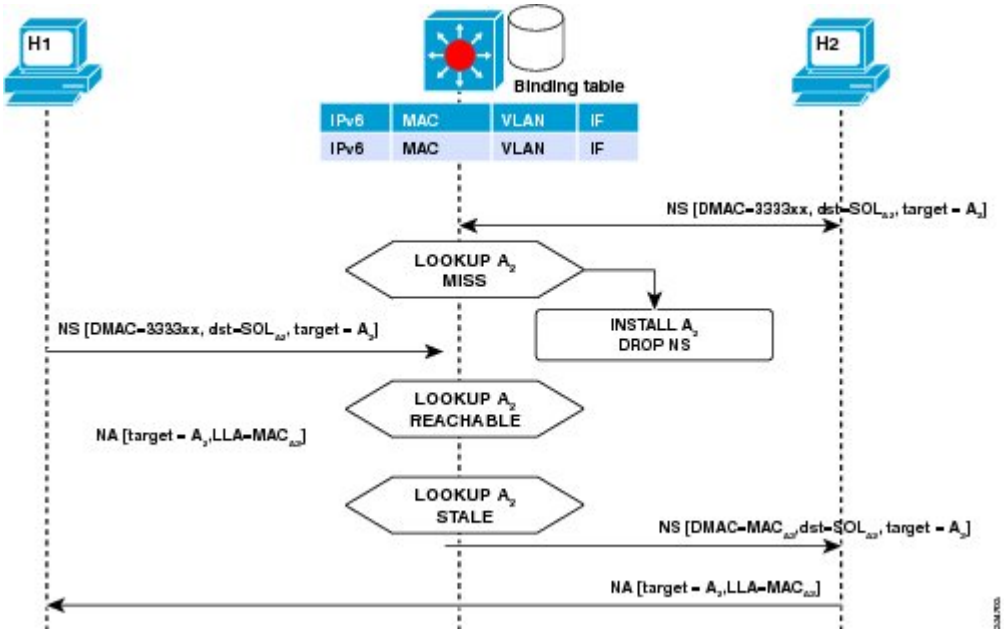
IPv6 Neighbor Discovery Multicast Suppress

The IPv6 neighbor discovery (ND) multicast suppress feature stops as many ND multicast neighbor solicit (NS) messages as possible by dropping them (and responding to solicitations on behalf of the targets) or

converting them into unicast traffic. This feature runs on a layer 2 switch or a wireless controller and is used to reduce the amount of control traffic necessary for proper link operations.

When an address is inserted into the binding table, an address resolution request sent to a multicast address is intercepted, and the device either responds on behalf of the address owner or, at layer 2, converts the request into a unicast message and forwards it to its destination.

The following figure provides an overview of this feature:

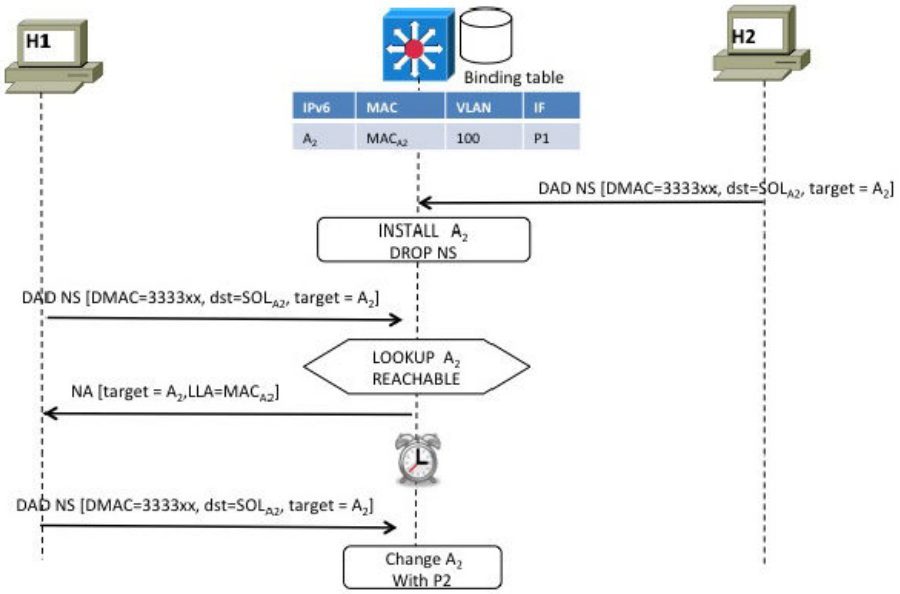


IPv6 DAD Proxy

The IPv6 duplicate address detection (DAD) proxy feature provides host-to-host connectivity in LANs where direct communication between hosts is not possible. For example, in a Service Provider (SP) deployment, hosts must not see each other directly on the layer 2 domain. Hosts often are added to private VLANs and then directed to the same primary VLAN to reach SP servers and devices. This process raises an issue with IPv6 DAD, especially with link-local addresses, which are auto-assigned by hosts using the IPv6 stateless address autoconfiguration ND protocol.

When a host needs to verify that its address is unique, it enables the DAD procedure. However, when the two hosts cannot communicate with each other at layer 2, this procedure cannot detect a duplicate address. If the DAD procedure cannot run, there is the slight possibility that two hosts will assign the same link-local address, which will cause both hosts to fail when they try to reach the DHCPv6 server. The IPv6 DAD proxy feature responds on behalf of the address's owner when an address is already in use.

The following figure provides an overview of the IPv6 DAD proxy feature:



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How to Configure IPv6 Neighbor Discovery Multicast Suppress

Configuring the IPv6 Neighbor Discovery Suppress Policy on the Device

If the IPv6 ND suppress feature and the IPv6 DAD proxy feature are both available on a device, you can perform steps 4 and 5 in this task to enable IPv6 DAD proxy, if desired.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ipv6 nd suppress policy** *policy-name*
4. **mode dad-proxy**
5. **mode full-proxy**

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 nd suppress policy** *policy-name* **Example:** `Device(config)# ipv6 nd suppress policy policy1`	Defines the ND suppress policy name and enters ND suppress policy configuration mode.
Step 4	**mode dad-proxy** **Example:** `Device(config-nd-suppress)# mode dad-proxy`	Enables ND suppress in IPv6 DAD proxy mode.
Step 5	**mode full-proxy** **Example:** `Device(config-nd-suppress)# mode full-proxy`	Enables ND suppress to proxy multicast and unicast NS messages.

Configuring IPv6 Neighbor Discovery Multicast Suppress on an Interface

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface** *type number*
4. **ipv6 nd suppress attach-policy** [*policy-name* [**vlan** {**add** | **except** | **none** | **remove** | **all**} *vlan* [*vlan1, vlan2, vlan3...*]]]
5. **exit**

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	**interface** *type number* **Example:** `Device(config)# interface ethernet 0/0`	Specifies an interface type and number, and places the device in interface configuration mode.
Step 4	**ipv6 nd suppress attach-policy** [*policy-name* [**vlan** {**add** | **except** | **none** | **remove** | **all**} *vlan* [*vlan1, vlan2, vlan3...*]]] **Example:** `Device(config-if)# ipv6 nd suppress attach-policy`	Applies the IPv6 ND suppress feature on a specific interface.
Step 5	**exit** **Example:** `Device(config-if)# exit`	Exits interface configuration mode.

Configuring IPv6 DAD Proxy

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ipv6 nd dad-proxy**

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 nd dad-proxy** **Example:** `Device(config)# ipv6 nd dad-proxy`	Enables the IPv6 ND DAD proxy feature on the device when the IPv6 ND multicast suppress feature is not available on the device platform.

Configuration Examples for IPv6 Neighbor Discovery Multicast Suppress

Example: Configuring the IPv6 Neighbor Discovery Suppress Policy on the Device

```
Device(config)# ipv6 nd suppress policy policy1
Device(config-nd-suppress)#
```

Example: Configuring IPv6 Neighbor Discovery Suppress on an Interface

```
Device(config)# interface Ethernet 0/0
Device(config-if)# ipv6 nd suppress attach-policy
```

Additional References

Related Documents

Related Topic	Document Title
IPv6 addressing and connectivity	*IPv6 Configuration Guide*
Cisco IOS commands	Cisco IOS Master Commands List, All Releases
IPv6 commands	*Cisco IOS IPv6 Command Reference*
Cisco IOS IPv6 features	Cisco IOS IPv6 Feature Mapping

Standards and RFCs

Standard/RFC	Title
RFCs for IPv6	*IPv6 RFCs*

MIBs

MIB	MIBs Link
No new or modified MIBs are supported by this feature, and support for existing MIBs has not been modified by this feature.	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 IPv6 Neighbor Discovery Multicast Suppress

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

Feature Name	Releases	Feature Information
IPv6 Neighbor Discovery Multicast Suppress	15.1(2)SG Cisco IOS XE Release 3.8S Cisco IOS XE Release 3SE	The IPv6 ND multicast suppress feature is an IPv6 snooping feature that runs on a layer 2 switch or a wireless controller and is used to reduce the amount of control traffic necessary for proper link operations. The following commands were introduced or modified: **ipv6 nd dad-proxy**, **ipv6 nd suppress attach-policy**, **ipv6 nd suppress policy**, **mode dad-proxy**, **mode md-proxy**.