



# IPv6 Stateless Autoconfiguration

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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 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 <http://www.cisco.com/go/cfn>. An account on Cisco.com is not required.

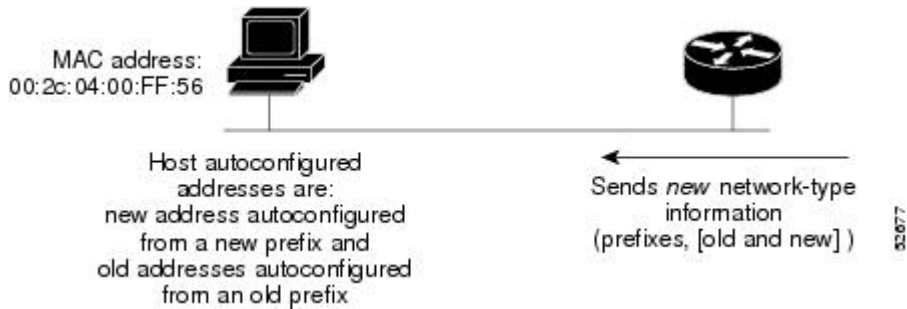
## IPv6 Stateless Autoconfiguration

The IPv6 stateless autoconfiguration feature can be used to manage link, subnet, and site addressing changes.

## Simplified Network Renumbering for IPv6 Hosts

The strict aggregation of the global routing table requires that networks be renumbered when the service provider for the network is changed. When the stateless autoconfiguration functionality in IPv6 is used to renumber a network, the prefix from a new service provider is added to RA messages that are sent on the link. (The RA messages contain both the prefix from the old service provider and the prefix from the new service provider.) Nodes on the link automatically configure additional addresses by using the prefix from the new service provider. The nodes can then use the addresses created from the new prefix and the existing addresses created from the old prefix on the link. Configuration of the lifetime parameters associated with the old and new prefixes means that nodes on the link can make the transition to using only addresses created from the new prefix. During a transition period, the old prefix is removed from RA messages and only addresses that contain the new prefix are used on the link (the renumbering is complete) (see the figure below).

Figure 1: IPv6 Network Renumbering for Hosts Using Stateless Autoconfiguration



## Configuring IPv6 Stateless Autoconfiguration

### SUMMARY STEPS

1. `enable`
2. `configure terminal`
3. `interface type number`
4. `ipv6 address autoconfig`

### DETAILED STEPS

|               | Command or Action                                                                               | Purpose                                                                                                                                           |
|---------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Step 1</b> | <b>enable</b><br><b>Example:</b><br>Device> enable                                              | Enables privileged EXEC mode. <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul>                                |
| <b>Step 2</b> | <b>configure terminal</b><br><b>Example:</b><br>Device# configure terminal                      | Enters global configuration mode.                                                                                                                 |
| <b>Step 3</b> | <b>interface type number</b><br><b>Example:</b><br>Device(config)# interface FastEthernet 1/0   | Specifies an interface type and number, and places the device in interface configuration mode.                                                    |
| <b>Step 4</b> | <b>ipv6 address autoconfig</b><br><b>Example:</b><br>Device(config-if)# ipv6 address autoconfig | Enables automatic configuration of IPv6 addresses using stateless autoconfiguration on an interface and enables IPv6 processing on the interface. |

## Example: Displaying IPv6 Interface Statistics

In the following example, the **show ipv6 interface** command is used to verify that IPv6 addresses are configured correctly for FastEthernet interface 1/0. Information may also be displayed about the status of IPv6 neighbor redirect messages, IPv6 neighbor discovery messages, stateless autoconfiguration, and MTU size.

```
Device# show ipv6 interface fastethernet 1/0

Ethernet0 is up, line protocol is up
  IPv6 is stalled, link-local address is FE80::1
  Global unicast address(es):
    2001:DB8:2000::1, subnet is 2001:DB8:2000::/64
    2001:DB8:3000::1, subnet is 2001:DB8:3000::/64
  Joined group address(es):
    FF02::1
    FF02::2
    FF02::1:FF00:1
  MTU is 1500 bytes
  ICMP error messages limited to one every 100 milliseconds
  ICMP redirects are enabled
  ND DAD is enabled, number of DAD attempts: 1
  ND reachable time is 30000 milliseconds
  ND advertised reachable time is 0 milliseconds
  ND advertised retransmit interval is 0 milliseconds
  ND router advertisements are sent every 200 seconds
  ND router advertisements live for 1800 seconds
  Hosts use stateless autoconfig for addresses.
```

