IPv6 Interface Configuration on Sx500 Series Stackable Switches

Objective

IPv6 is the Internet protocol designed to replace IPv4 in order to allow the allocation of more IP addresses. Interfaces on the Sx500 Series Managed Switch are initially configured to be connected to IPv4 devices. These interfaces can be reconfigured to allow IPv6.

The following configurations need to be done before IPv6 is configured:

1. Choose whether IPv6 interface configuration needs to work on Layer 2 mode or Layer 3 mode. Please refer to the article *Stack Settings on Sx500 Series Stackable Switches* for this configuration to be done.
2. Create a VLAN if VLAN is chosen for assignment of IPv6 interface, this configuration can be found in the article *VLAN Creation on Sx500 Series Stackable Switches.*
3. Configure IPv6 tunnel, if ISATAP tunnel is chosen for the assignment of IPv6 interface then an IPv6 tunnel needs to be configured. This can be found in the article *Configuration of IPv6 Tunnel on Sx500 Series Stackable Switches*.
4. Configure IPv6 Global Configuration, which is needed to specify the time interval of error messages generated by ICMPv6. This can be found in the article *IPv6 Global Configuration on Sx500 Series Stackable Switches*.
5. Configure IPv6 Interface, which is covered in this article.

In a real time scenario, some of the configurations support IP version 6 so the configuration shown in this article needs to be completed for the other configurations to work. One such example for a configuration which supports IPv6 can be SNMP Communities Configuration.

This article explains how to configure IPv6 interfaces on the Sx500 Series Stackable Switches.

Applicable Devices

- Sx500 Series Stackable Switches

Software Version

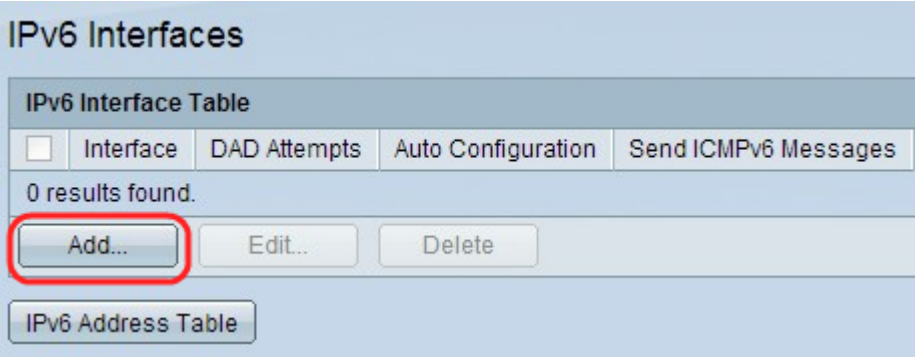
- v1.2.7.76

IPv6 Interface Configuration

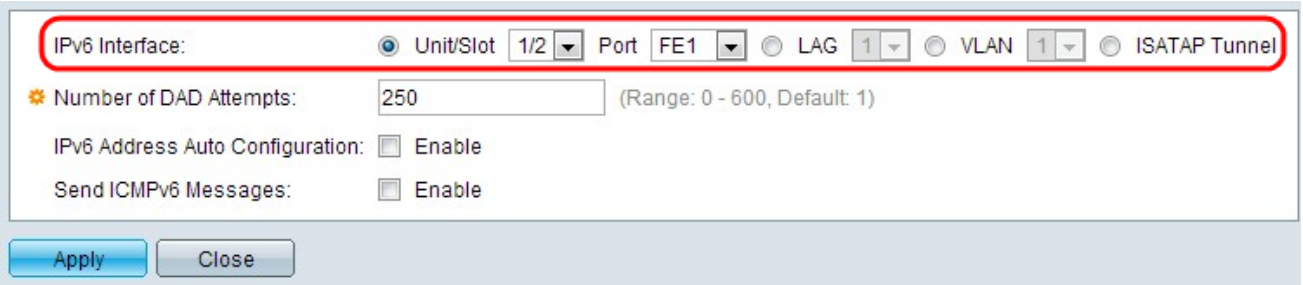
Add an IPv6 Interface

Step 1. Log in to the web configuration utility and choose **Administration > Management Interface > IPv6 Interface** for Layer 2 mode or choose **IP Configuration > Management Interface > IPv6 Interface** for Layer 3 mode. The *IPv6 Interfaces* page opens:

Note: The navigation paths for Layer 2 and Layer 3 modes are different but the configuration is same for both the modes.



Step 2. Click **Add** to add a new interface in the IPv6 Interface Table. The *Add IPv6 Interface* window appears.



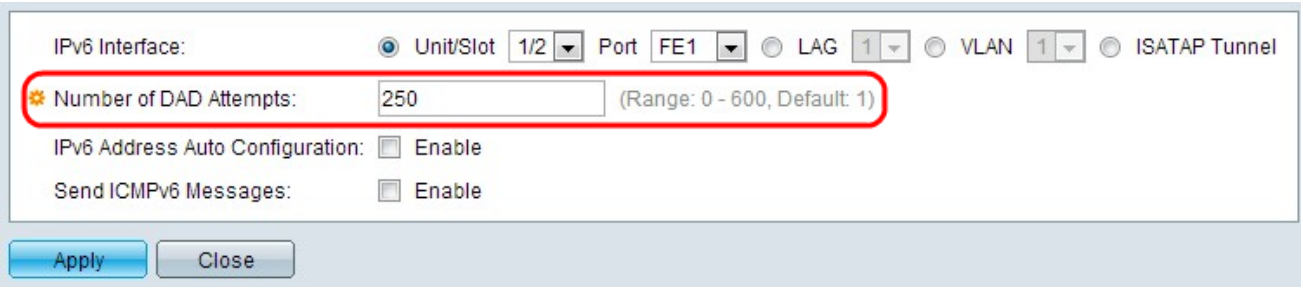
Step 3. Click the desired radio button for the port, LAG, VLAN, or ISATAP tunnel on which to configure IPv6 from the IPv6 Interface field.

- Unit/Slot and Port— Choose the unit in the stack and slot number (either 1 or 2). The unit is 1 for standalone models. Unit represents the position of the switch in the stack and slot number 1 identifies SG500 or SG500X devices while slot number 2 identifies SF500 devices. Choose the port for which you wish to configure from the Port drop-down list.

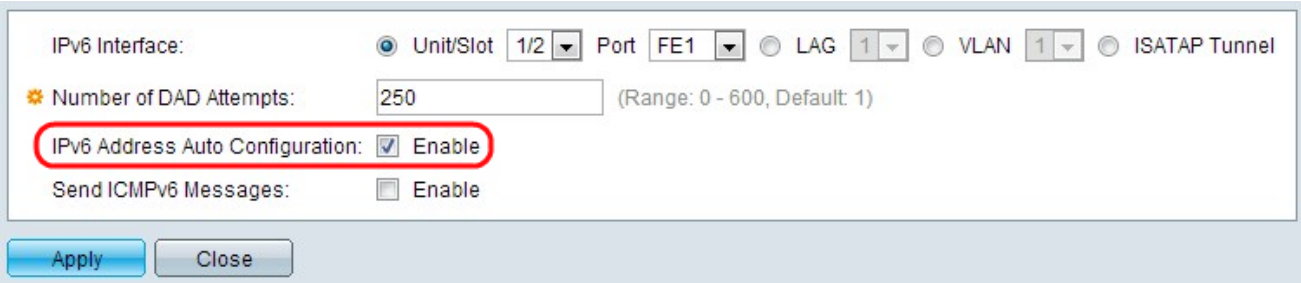
- LAG — It that can be used to utilize multiple ports as a single port when connecting to devices.

- VLAN — It can be configured through a VLAN of which that the device is a part.

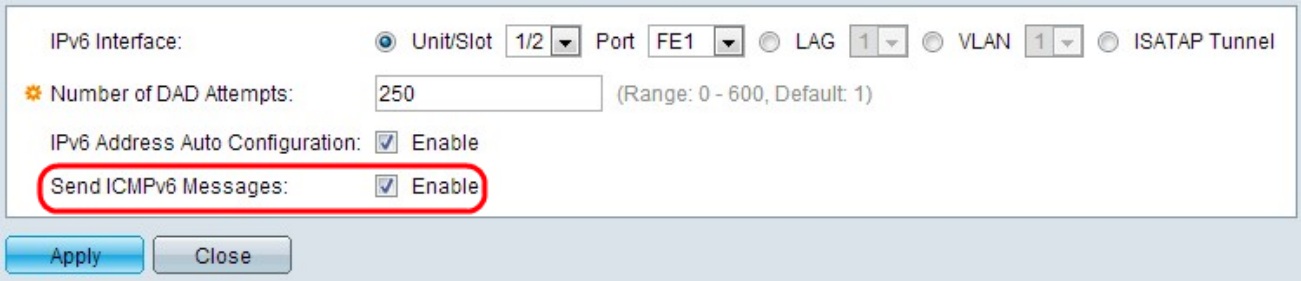
- ISATAP — It enables IPv6 packet encapsulation within IPv4 packets for transmission over IPv4 networks. IPv6 cannot be configured directly on an ISATAP tunnel interface so initial configuration is to set up the IPv6 tunnel in this case.



Step 4. Enter the number of consecutive solicitation messages that are sent to the switch while Duplicate Address Detection (DAD) is performed on the Unicast IPv6 addresses of the interface in the Number of DAD Attempts field. IPv6 interfaces allow you to configure DAD, which cycles through the Unicast IPv6 addresses to determine if a newly recognized IPv6 address is unique before the IPv6 address is assigned. If 0 is entered in this field, DAD processing is disabled on the specified interface. The default value, 1, indicates that a single transmission without follow up transmissions.

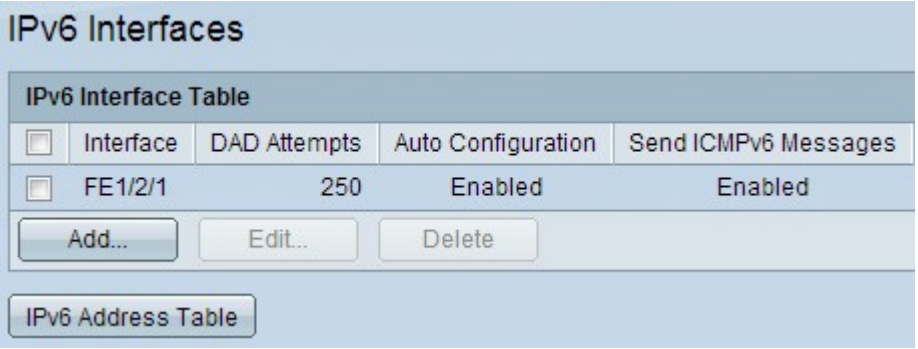


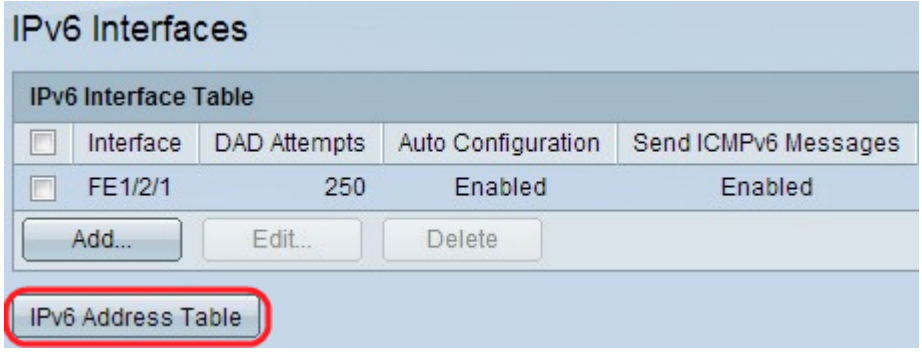
Step 5. (Optional) Check **Enable** to enable automatic address configuration from the DHCP server in the IPv6 Address Auto Configuration field. If enabled, the switch supports IPv6 address auto configuration of local and global IP addresses from the IPv6 router advertisement received on the interface. If auto-configuration is not enabled, an IPv6 address needs to be defined which is shown in the "Assign an IPv6 Address to an Interface" sub-section of the article.



Step 6. (Optional) Click **Enable** in the Send ICMPv6 Messages field to generate unreachable destination messages. This needs the initial IPv6 Global Configuration to be done.

Step 7. Click **Apply**. The IPv6 is enabled on the particular interface.

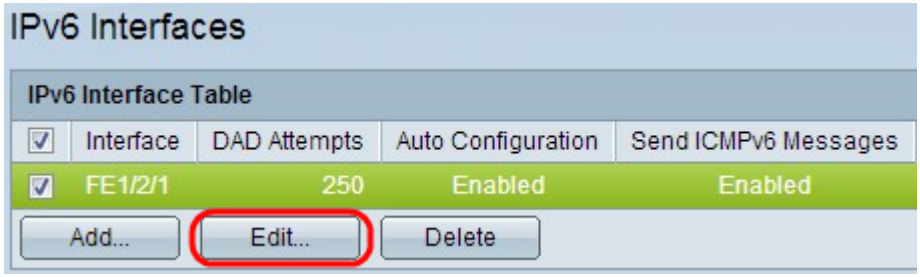




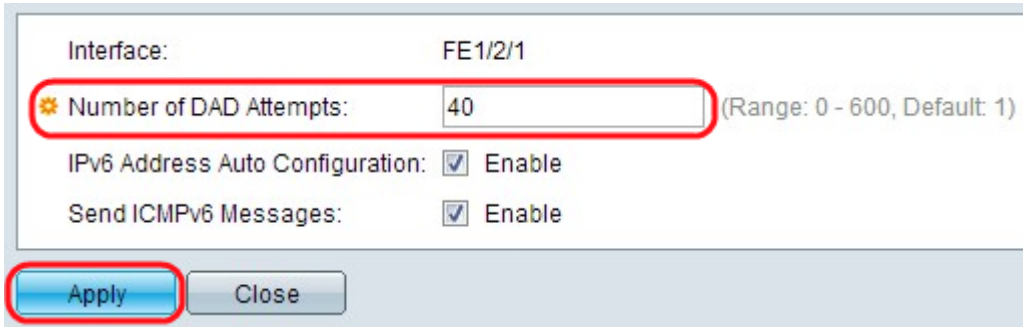
Step 8. Click **IPv6 Address Table** to manually assign IPv6 addresses to the interface. This configuration can be found in the "Assign an IPv6 Address to an Interface" section of the article.

Edit IPv6 Interface Configuration

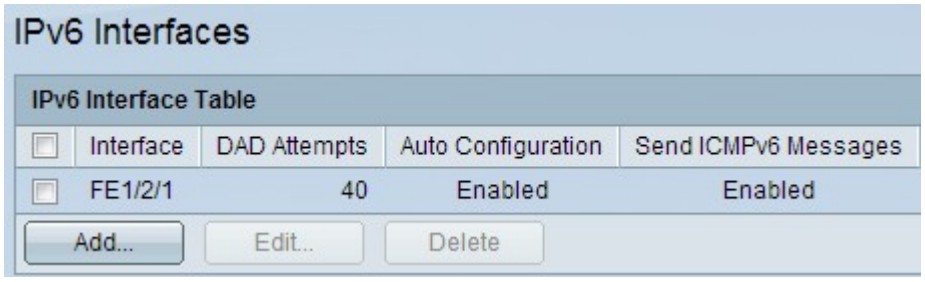
Step 1. Log in to the web configuration utility and choose **Administration > Management Interface > IPv6 Interface** for Layer 2 mode or choose **IP Configuration > Management Interface > IPv6 Interface** for Layer 3 mode. The *IPv6 Interface* page opens:



Step 2. Check the desired entry and click **Edit**. The *Edit IPv6 Interface* window appears.



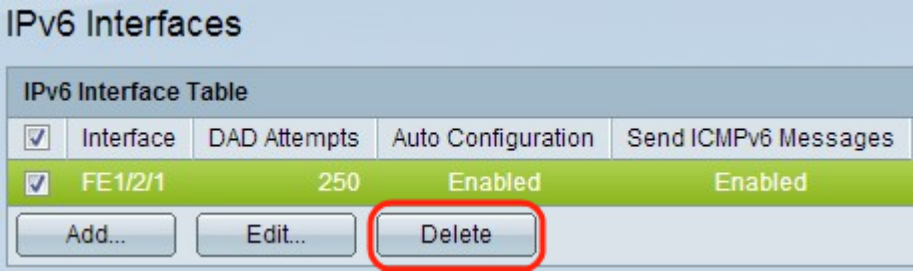
Step 3. Edit the desired fields. The description of the fields can be found in Steps 3 to 6 in the "IPv6 Interface Configuration" section of the article.



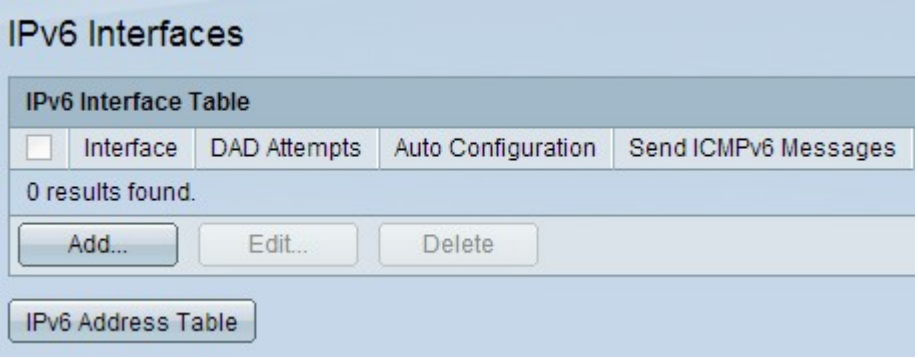
Step 4. Click **Apply** to apply the changes.

Delete IPv6 Interface Configuration

Step 1. Log in to the web configuration utility on the switch and choose **Administration > Management Interface > IPv6 Interface** for Layer 2 mode or choose **IP Configuration > Management Interface > IPv6 Interface** for Layer 3 mode.



Step 2. Check the desired entry and click **Delete**. The entry is deleted:



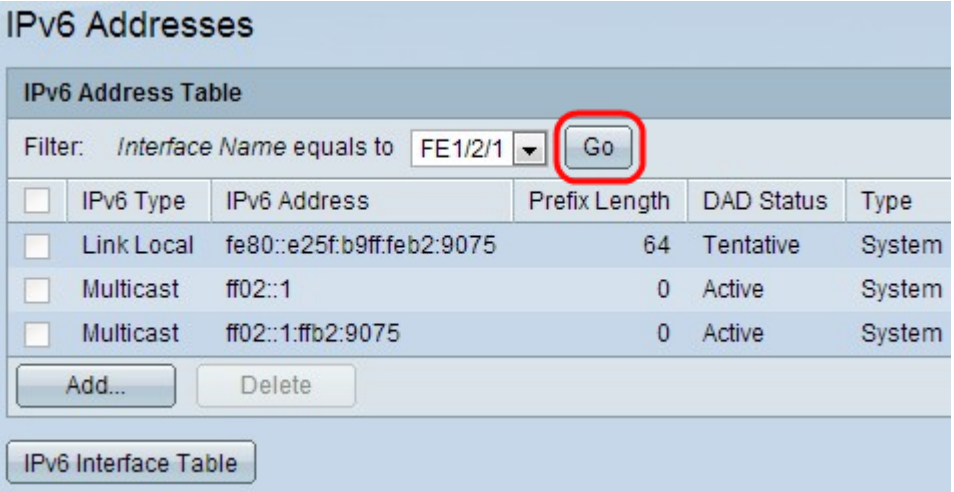
Assign an IPv6 Address to an Interface

Add an IPv6 Address

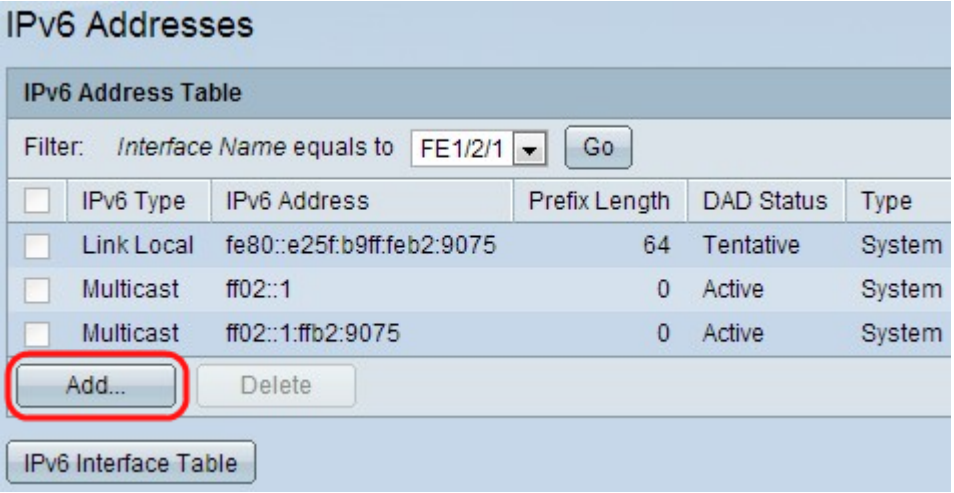
Step 1. Log in to the web configuration utility on the switch and choose **Administration > Management Interface > IPv6 Addresses** for Layer 2 mode or choose **IP Configuration > Management Interface > IPv6 Addresses** for Layer 3 mode. The *IPv6 Address* page opens:

Note: Regular IPv6 interfaces have the following addresses configured automatically.

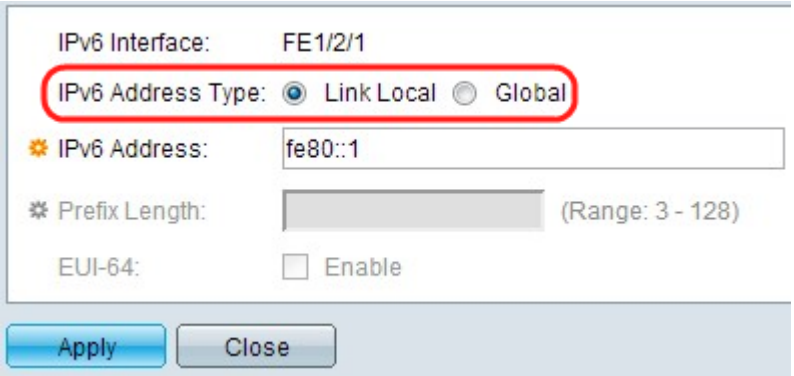
- Link local addresses that use EUI-64 format interface ID based on the MAC address of a device.
- All node link local Multicast addresses (FF02::1)
- Solicited-Node Multicast address (format FF02::1:FF*xx*:*xxxx*)



Step 2. Choose the interface name from the Interface Name equals to drop-down list in the Filter field and click **Go**. The interface is displayed in the IPv6 interface table.



Step 3. Click **Add** at the bottom of the IPv6 Address Table to add an IPv6 address. The *IPv6 Addresses* window appears.



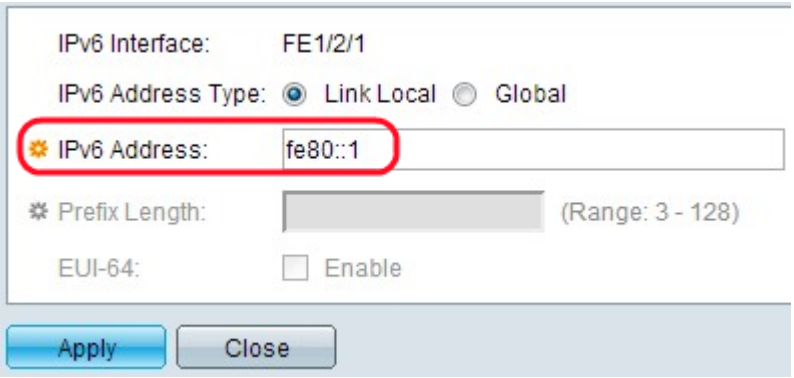
Note: The IPv6 Interface field displays the desired interface.

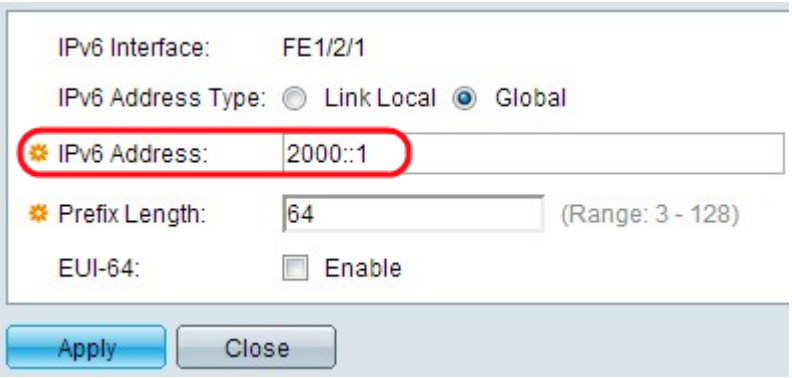
Step 4. Click the radio button from the IPv6 address type.

- Link Local — The IPv6 address uniquely identifies hosts on a single network link. A link local address is not routable and can be used for communication only on the local network. If a link local address exists on the interface, this entry replaces the address in the configuration.

- Global — The IPv6 address is a global Unicast IPv6 type that is visible and can be

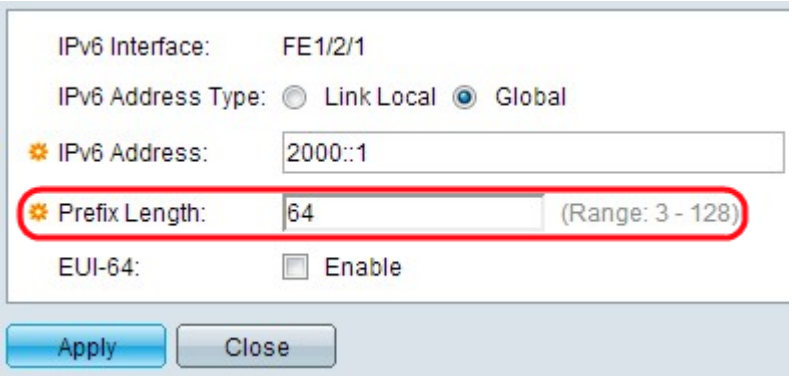
reached from other networks.



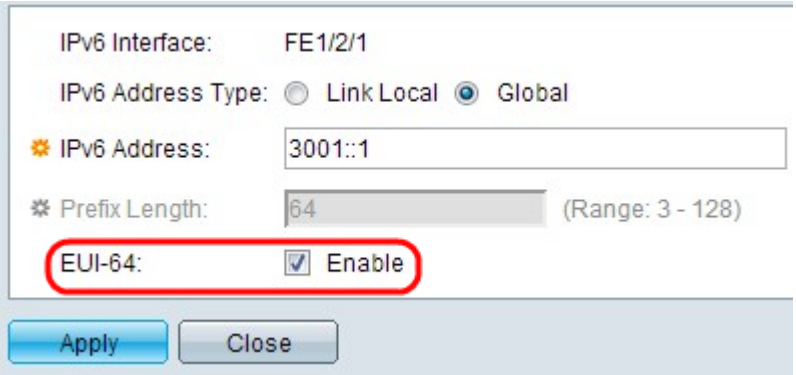


Step 5. Enter the address of the new IPv6 address in the IPv6 Address field. The switch supports one IPv6 interface. The switch can assign 128 addresses (including the default link local and Multicast addresses) on an IPv6 interface. Each address must be a valid IPv6 address that is in hexadecimal format through the use of 16-bit values separated by colons. The first image shows the link local IPv6 address and the second shows the Global IPv6 address.

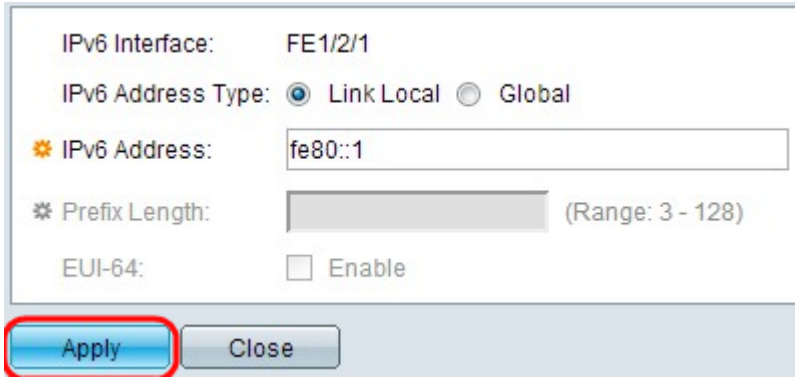
Note: If you choose Link Local as the IPv6 address type, skip to Step 8.

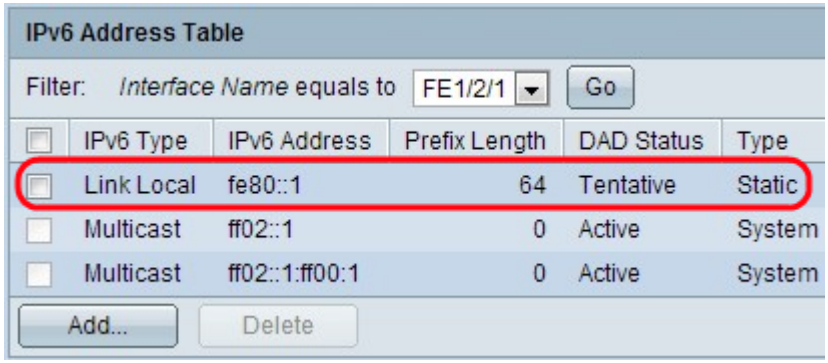


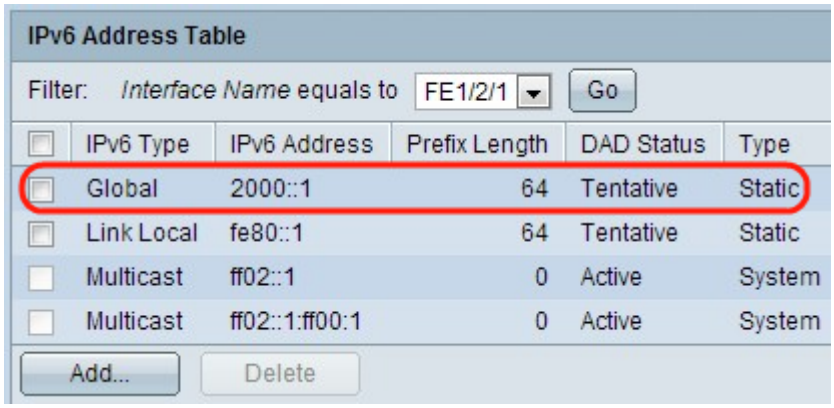
Step 6. Enter the length of the Global IPv6 prefix. This value can be from 3 to 128 and indicates the number of the high-order contiguous bits of the address that comprise the prefix (the network part of the address).

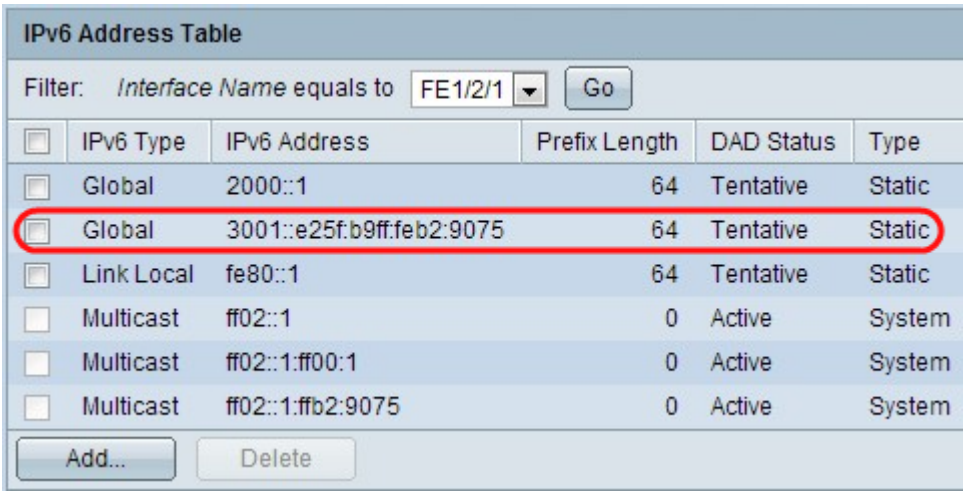


Step 7. (Optional) Check **Enable** in the EUI-64 field to use the EUI-64 parameter to identify the interface ID portion of the Global IPv6 address with the help of the EUI-64 format for the MAC address of a device.

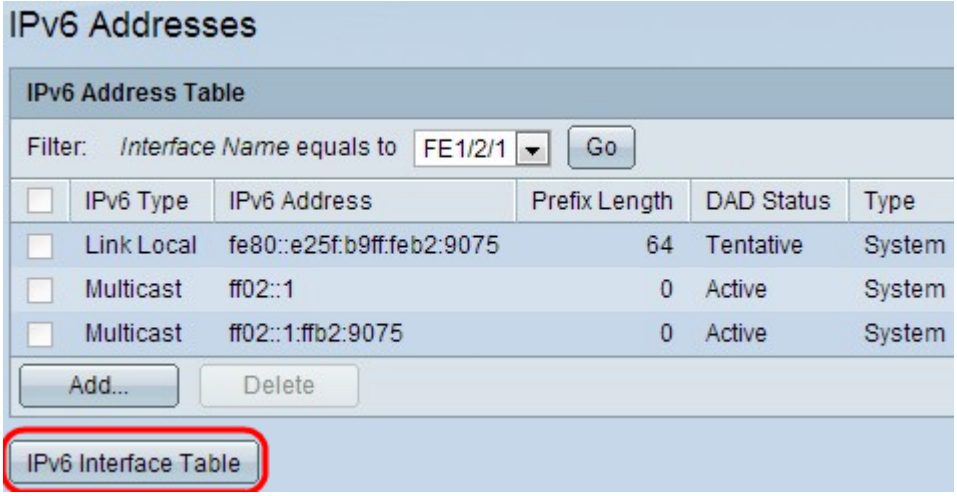








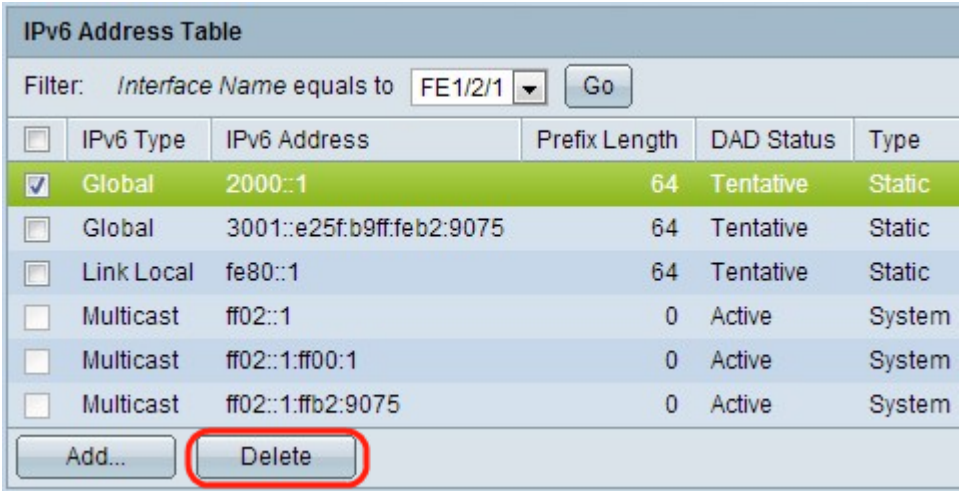
Step 8. Click **Apply**. The settings are applied and it is shown for each of the added configurations in last three images.



Step 9. Click **IPv6 Interface Table** to go to *IPv6 Interface* page. This configuration can be found in the "IPv6 Interface Configuration" section of the article.

Delete an IPv6 Address

Step 1. Log in to the web configuration utility on the switch and choose **Administration > Management Interface > IPv6 Addresses** for Layer 2 mode or choose **IP Configuration > Management Interface > IPv6 Addresses** for Layer 3 mode. The *IPv6 Address* page opens.



Step 2. Check the desired entry and click **Delete**. The entry is deleted.