Configure Simple Network Time Protocol (SNTP) Unicast Server Settings on a Switch

Objective

System time configuration is of great importance in a network. Synchronized system clocks provide a frame of reference between all devices on the network. Network time synchronization is critical because every aspect of managing, securing, planning, and debugging a network involves determining when events occur. Without synchronized clocks, accurately correlating log files between devices when tracking security breaches or network usage is impossible.

Synchronized time also reduces confusion in shared file systems, as it is important for the modification times to be consistent, regardless of the machine on which the file systems reside.

The Cisco Small Business Switches support Simple Network Time Protocol (SNTP) and when enabled, the switch dynamically synchronizes the device time with time from an SNTP server. The switch operates only as an SNTP client, and cannot provide time services to other devices.

This article provides instructions on how to configure the SNMP unicast server settings on your switch.

Applicable Devices

- Sx250 Series
- Sx300 Series
- Sx350 Series
- SG350X Series
- Sx500 Series
- Sx550X Series

Software Version

- 1.4.7.05 — Sx300, Sx500
- 2.2.8.04 — Sx250, Sx350, SG350X, Sx550X

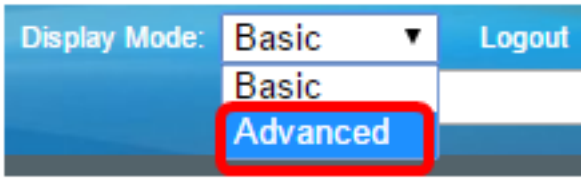
Configure SNTP Unicast Server Settings on your Switch

Enable SNTP Client Unicast

The System Time page of the web-based utility provides ways to configure system time, time zone, and Daylight Saving Time (DST).

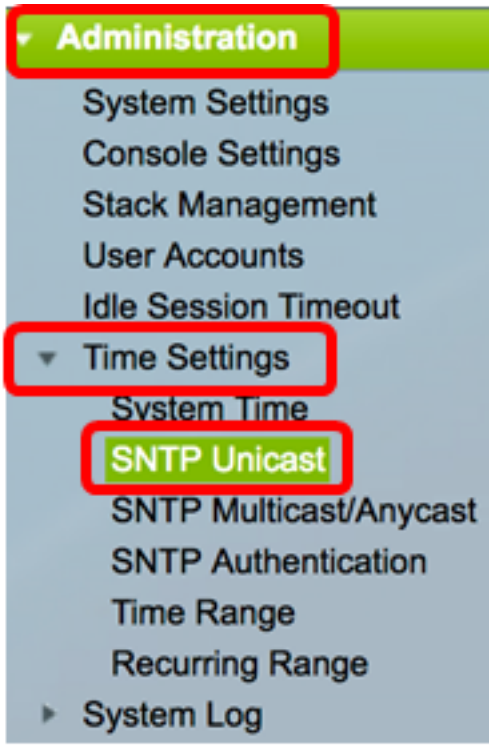
Step 1. Log in to the web-based utility of your switch then choose **Advanced** in the Display Mode drop-down list.

Note: In this example, SG350X-48MP switch is used.



Note: If you have an Sx300 or Sx500 Series switch, skip to Step 2.

Step 2. Choose **Administration > Time Settings > SNTP Unicast**.



Note: The Main Clock Source (SNTP Servers) must be enabled for SNTP Client Unicast to operate. To learn how to enable this feature, click here for instructions.

Step 3. Check the **Enable** SNTP Client Unicast check box to enable the device to use SNTP-predefined Unicast clients with Unicast SNTP servers.



Step 4. In the IPv4 Source Interface area, choose the IPv4 interface whose IPv4 address will be used as the source IPv4 address in messages used for communication with the SNTP server.

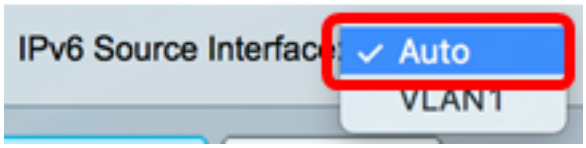
Note: If the Auto option is chosen, the system takes the source IP address from the IP address defined on the outgoing interface.



Note: In this example, VLAN1 is chosen.

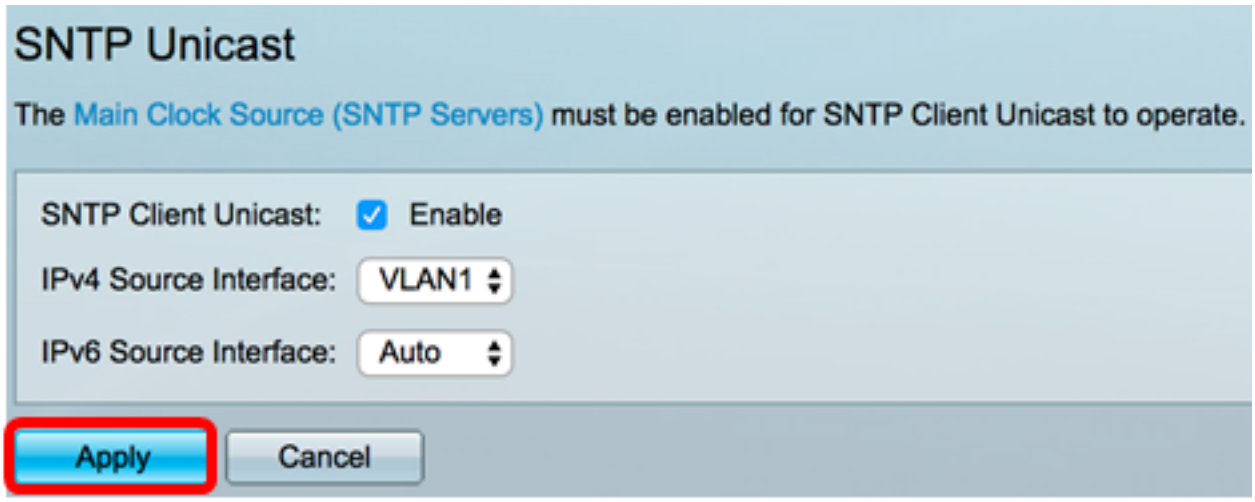
Step 5. In the IPv6 Source Interface area, choose the IPv6 interface whose IPv6 address will be used as the source IPv6 address in messages used for communication with the SNTP server.

Note: This option is only available to Sx250, Sx350, SG350X, and Sx550X Series switches.



Note: In this example, Auto is chosen.

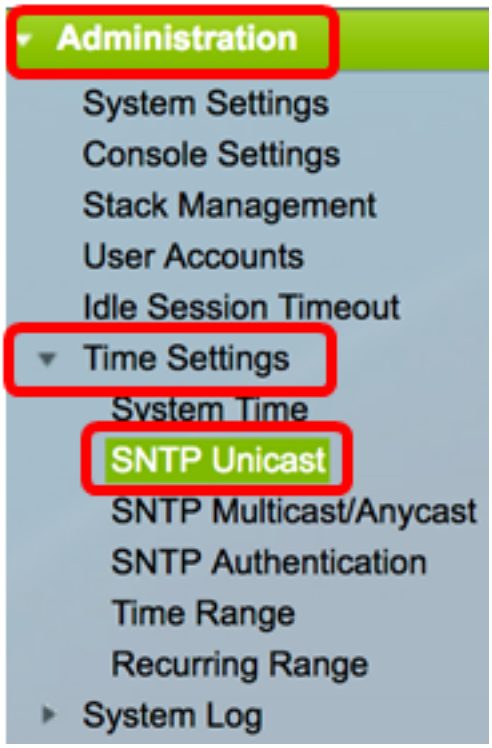
Step 6. Click **Apply** to save the settings.



You should now have enabled the SNTP Client Unicast feature on your switch.

Add Unicast SNTP Server

Step 1. Choose **Administration > Time Settings > SNTP Unicast**.



Note: The Sx250, Sx350, SG350X, and Sx550X Series switches have three default Unicast SNTP Servers in the Unicast SNTP Server Table.

- The Unicast SNTP Server Table displays the following information for each Unicast SNTP server:
- SNTP Server — SNTP server IP address. The preferred server, or hostname, is chosen according to its stratum level.
- Poll Interval — Displays whether polling is enabled or disabled.
- Authentication Key ID — Key Identification used to communicate between the SNTP server and device.
- Stratum Level — Distance from the reference clock expressed as a numerical value. An SNTP server cannot be the primary server (stratum level 1) unless polling interval is enabled.
- Status — SNTP server status. The possible values are:

  - Up — SNTP server is currently operating normally.

  - Down — SNTP server is currently not available.

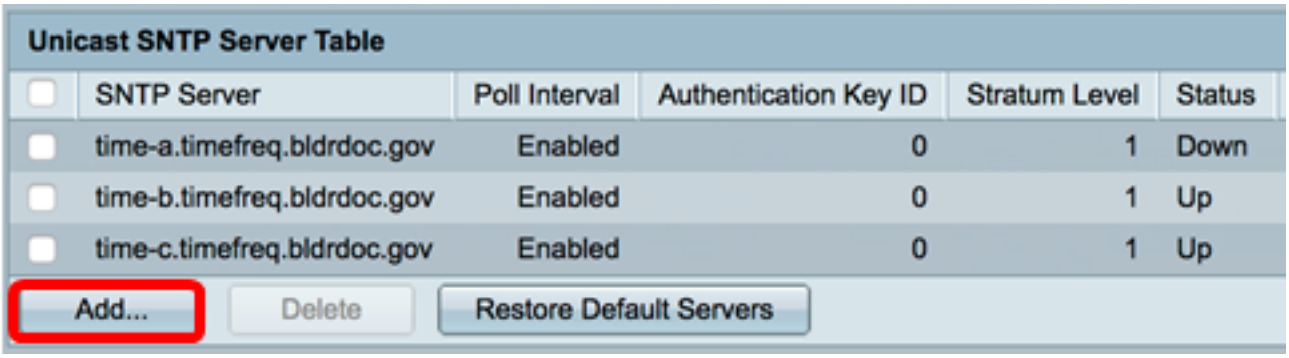
  - Unknown — SNTP server status is unknown.

  - In Process — Connection to SNTP server currently in process.

- Last Response — Last date and time a response was received from this SNTP server.
- Offset — Estimated offset of the server clock relative to the local clock, in milliseconds. The host determines the value of this offset using the algorithm described in RFC 2030.
- Delay — Estimated round-trip delay of the server clock relative to the local clock over the network path between them, in milliseconds. The host determines the value of this delay using the algorithm described in RFC 2030.
- Source — How the SNTP server was defined, for example: manually or from DHCPv6 server.

- Interface — The interface on which packets are received.

Step 2. Click **Add** to add the unicast SNTP server.



Step 3. Click one of the following radio buttons of Server Definition that specifies the method by which the server is identified.



The options are:

- By IP address — Indicates that the SNTP server is identified by its IP address.
- By name — Indicates that the SNTP server is identified by name from the SNTP server list. If this option is chosen, skip to Step 7.

Note: In this example, By IP address is chosen.

Step 4. Click the desired IP version radio button.

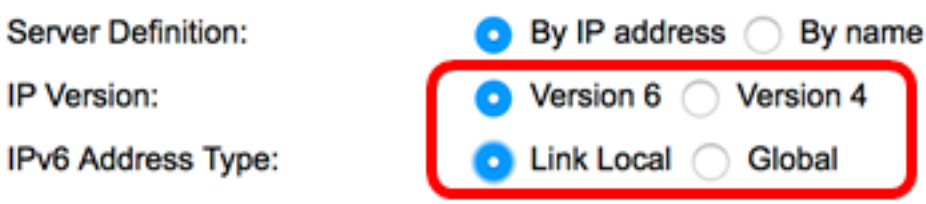


The options are:

- Version 6 — Denotes the IPv6 address type.
- Version 4 — Denotes the IPv4 address type. If this option is chosen, skip to Step 7.

Note: In this example, Version 4 is chosen.

Step 5. (Optional) If the Version 6 IP address type is chosen, click the desired IPv6 address type.



The options are:

- Link Local — Denotes the IPv6 address uniquely identifies the host on a single network link.

- Global — Denotes the IPv6 address is a global unicast that is visible and reachable from other networks. If this option is chosen, skip to Step 7.

Note: In this example, Link Local is chosen.

Step 6. (Optional) If the Link Local IPv6 address type is chosen, choose a link local interface from the Link Local Interface drop-down list.



Note: In this example, VLAN 1 is chosen.

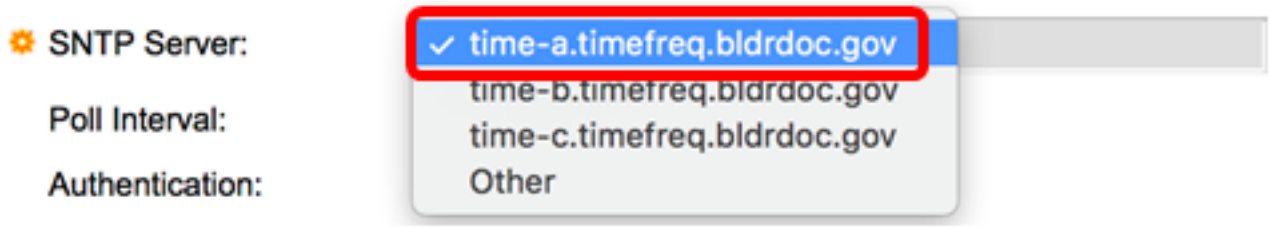
Step 7. Enter the SNTP server IP address or name. The format depends on which address type was selected.



Note: In this example, 24.56.178.141 is the IP address used.

Step 8. (Optional) If the Server Definition is chosen as By name, choose the name of the SNTP server from the SNTP Server drop-down list. If other is chosen, enter name of SNTP server in the adjacent field.

Note: This option is only available to Sx300 and Sx500 Series switches.



Note: In this example, time-a.timefreq.bldrdoc.gov is chosen.

Step 9. (Optional) Check the **Enable** check box of Poll Interval to enable polling of the SNTP server for system time information. The NTP servers that are registered for polling are polled, and the clock is selected from the server with the lowest stratum level.

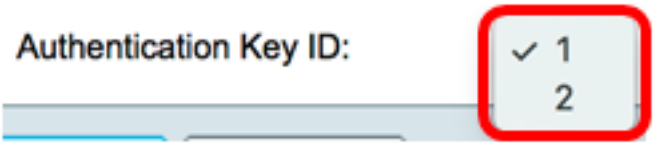


Step 10. (Optional) Check the **Enable** check box of Authentication to enable the authentication.

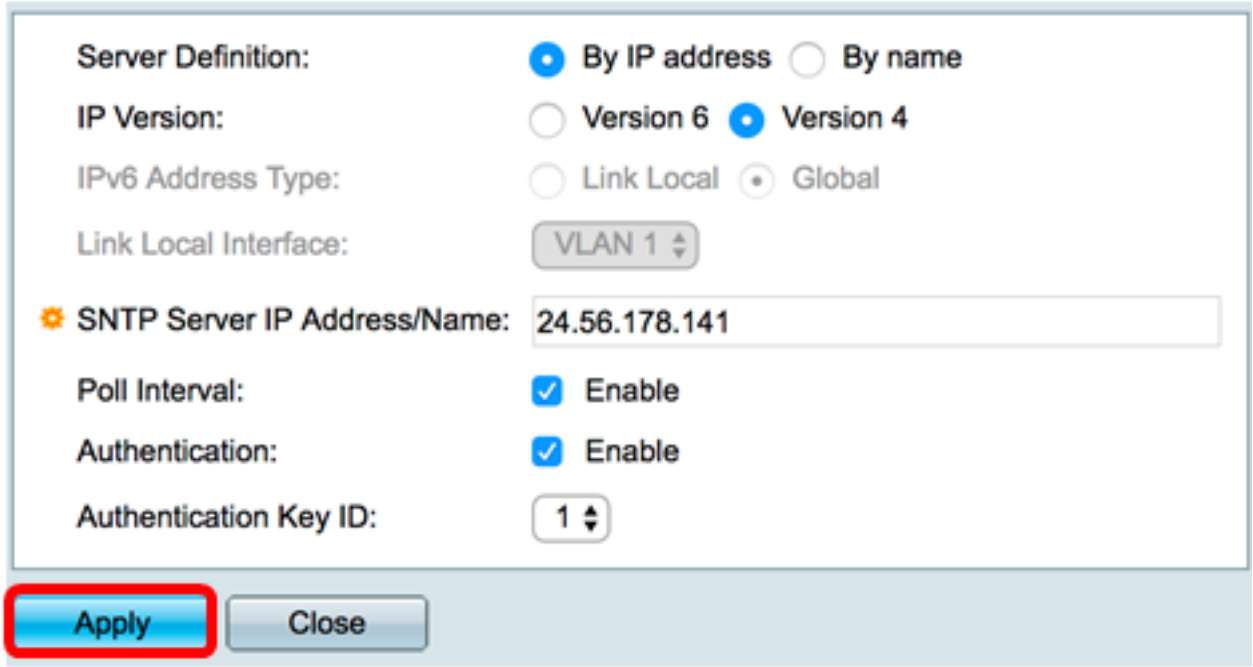


Note: To learn how to configure the SNTP Authentication settings on your switch, click here for instructions.

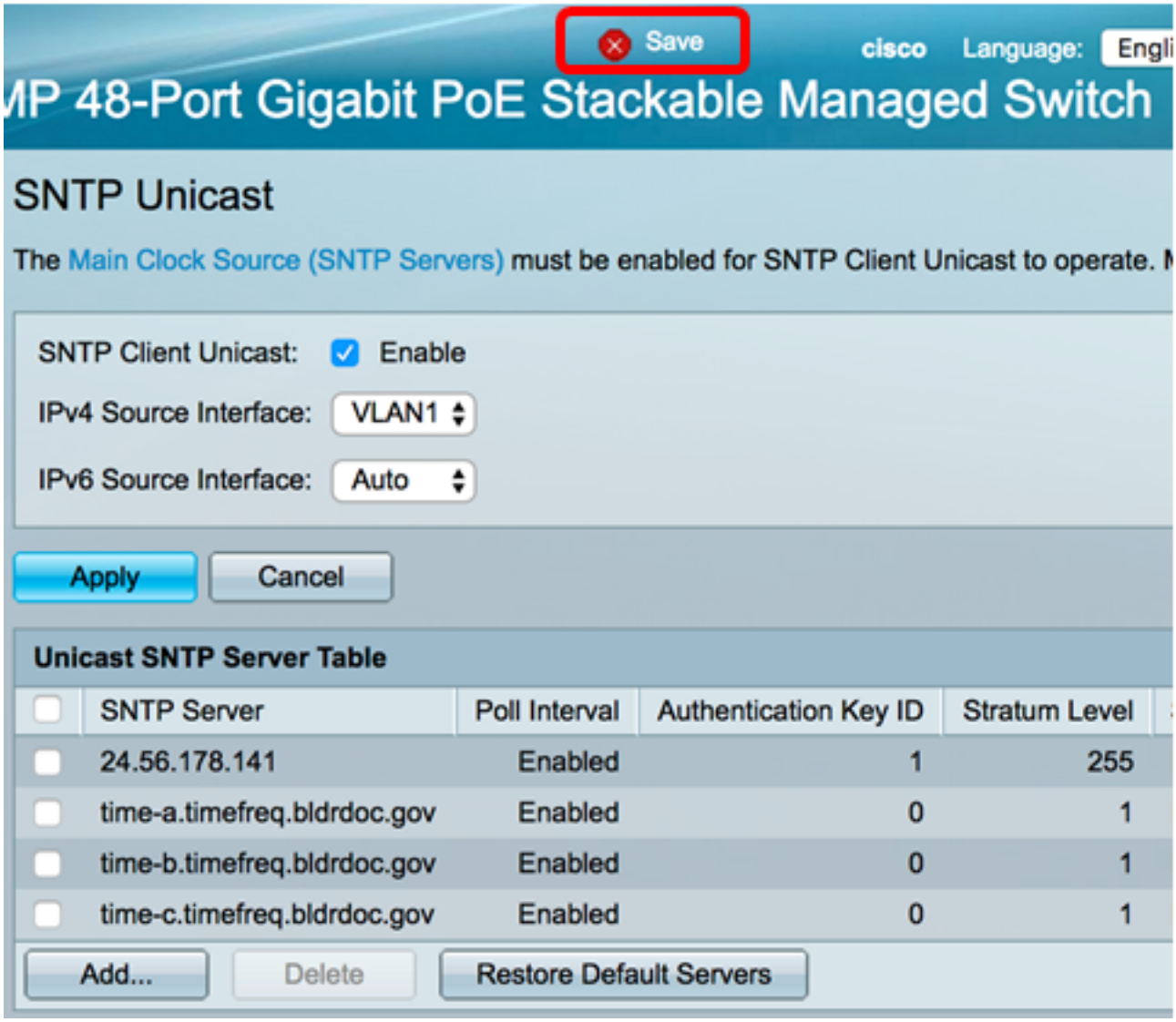
Step 11. (Optional) If authentication is enabled, choose the key ID from the Authentication Key ID drop-down list.



Step 12. Click **Apply** then click **Close**.



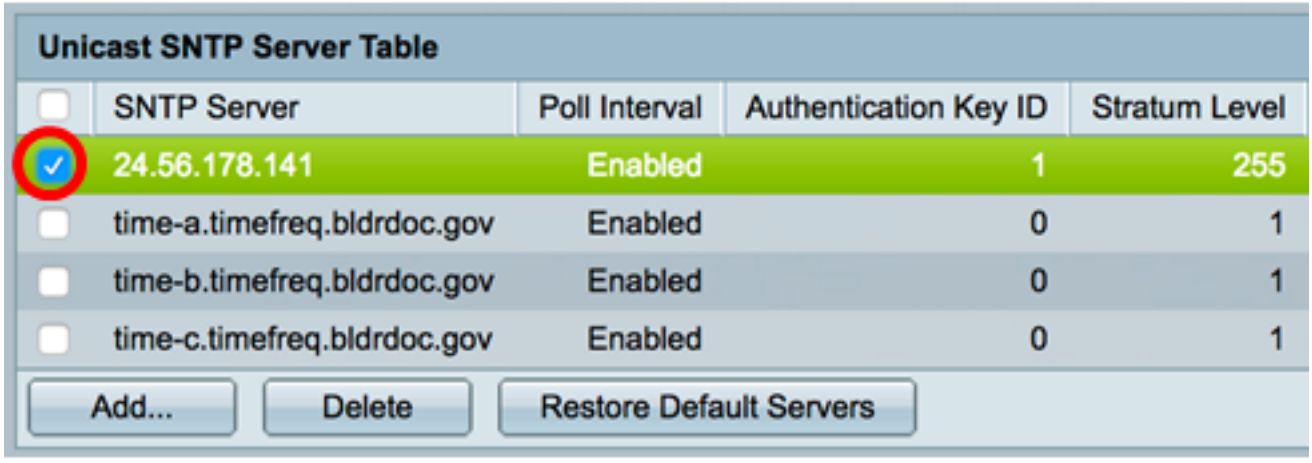
Step 13. (Optional) Click **Save** to save settings to the startup configuration file.



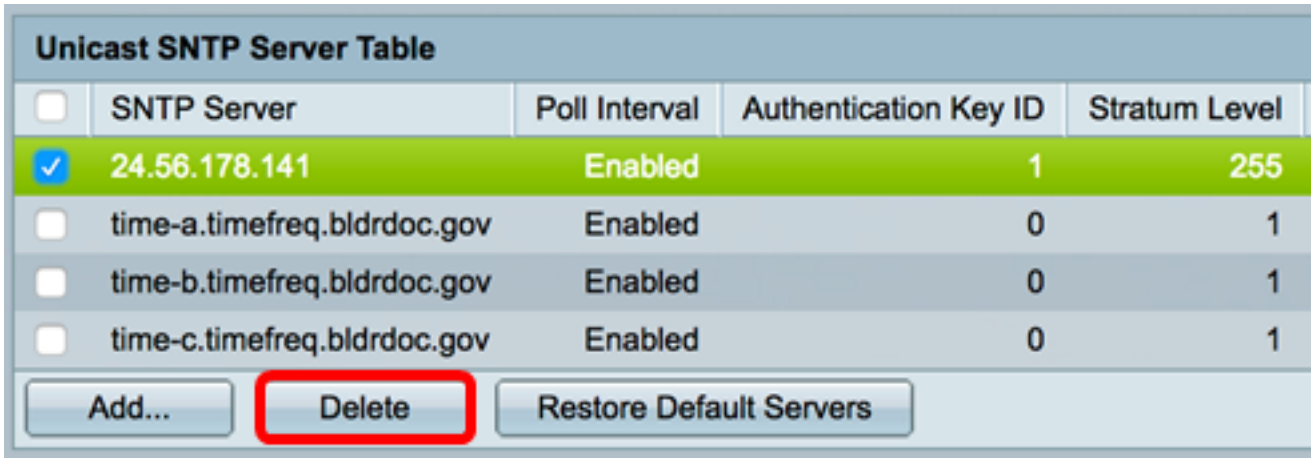
You should now have successfully added a new SNTP Server on your switch.

Delete a Unicast SNTP Server

Step 1. In Unicast SNTP Server Table, check the box next to the SNTP Server that you would like to delete.

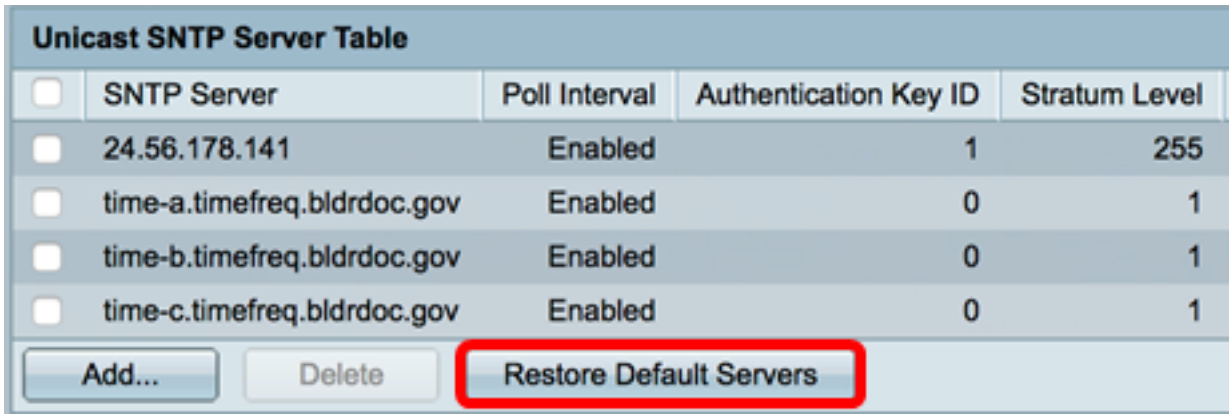


Step 2. Click the **Delete** button to remove the SNTP server.

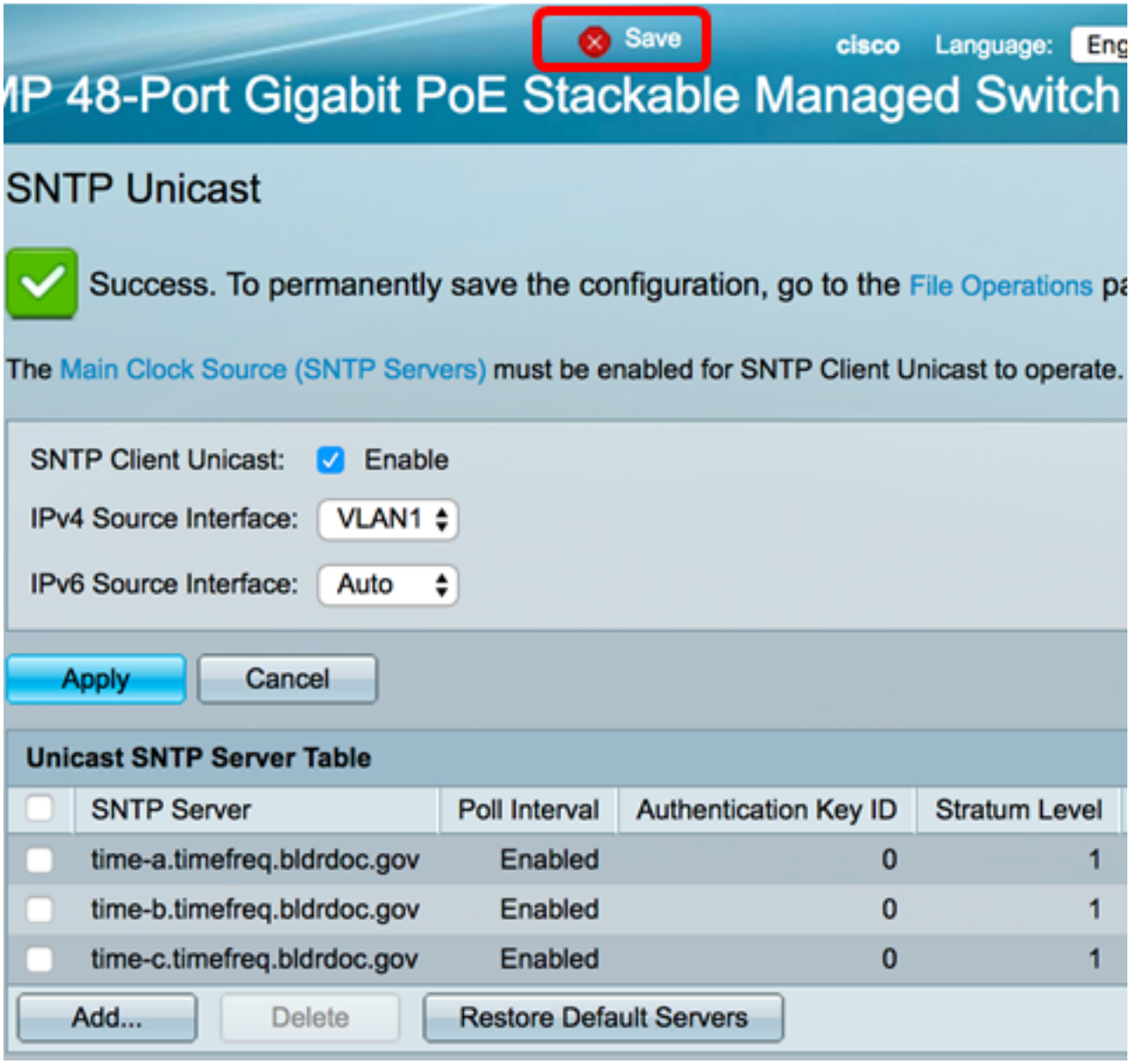


Step 3. (Optional) Click **Restore Default Servers** to restore the three default servers.

Note: This option only applies to Sx250, Sx350, SG350X, and Sx550X Series switches which have three default Unicast SNTP Servers in the Unicast SNTP Server Table.



Step 4. (Optional) Click **Save** to save settings to the startup configuration file.



You should now have successfully deleted a unicast SNTP server from the Unicast SNTP Server Table.