Network Time Protocol Setup

Authentication for the Controller and NTP/SNTP Server

We highly recommend that controllers synchronize their time with an external NTP/SNTP server. We also recommend that you authenticate this connection to the NTP/SNTP server, as a best practice. By default, an MD5 checksum is used in this scenario.

Each NTP/SNTP server IP address is added to the controller database. The respective controller then attempts to poll an NTP/SNTP server from this database in the index order. The controller then obtains and synchronizes the current time at each user-defined polling interval, as well as following a reboot event. By default, the NTP polling interval is 600 seconds.

Guidelines and Restrictions on NTP

- When the time difference between the NTP server and the controller exceeds 1000s, the **ntpd** process exits and adds a panic message to the system log. In this situation, set the time on the controller manually.
- As a part of the federal certification requirements, controller supports NTPv4 protocol which is a standard Open Source Code.
- Controllers support both the versions—NTPv3 and NTPv4 versions. However you can use either one of the two versions and not both at the same time.
- NTPv4 supports both IPv4 and IPv6 servers, and supports SHA1 authentication for NTP messages.

Configuring the NTP/SNTP Server to Obtain the Date and Time (GUI)

Procedure

Step 1 Choose **Controller** > **NTP** > **Server** to open the **NTP Severs** page.

Step 2 From the **NTP Version** drop-down list, choose 4.

Step 3 Click **Apply**.

Step 4 Click **New** to add a new NTP/SNTP Server.

Step 5 (Optional) In the **Server Index (Priority)** field, enter the NTP/SNTP server index.

The controller tries Index 1 first, then Index 2 through 3, in a descending order. Set this to 1 if your network is using only one NTP/SNTP server.

Step 6 Enter the server IP address.

You can enter an IPv4 or an IPv6 address or a fully qualified domain name (FQDN), which should meet the following criteria:

- Contains only a-z , A-Z, and 0-9 characters.
- Does not start with a dot (.) or a hyphen (-).
- Does not end with a dot (.).
- Does not have 2 consecutive dots (..).

Step 7 Enable or disable the NTP/SNTP Authentication.

Step 8 If you enable the NTP/SNTP Authentication, enter the Key Index.

Step 9 Click **Apply**.

Step 10 Delete an existing NTP server IP address or DNS server by hovering the cursor over the blue drop-down arrow for that server index and choose **Remove**.

Step 11 Confirm the deletion by clicking on **OK** in the dialog box.

Configuring the NTP/SNTP Server to Obtain the Date and Time (CLI)

Use these commands to configure an NTP/SNTP server to obtain the date and time:

Procedure

- To specify the NTP/SNTP server for the controller, enter this command:

  config time ntp server *index ip-address*

- (Optional) To specify the polling interval (in seconds), enter this command:

  config time ntp *interval*

- To enable or disable NTP/SNTP server authentication, enter these commands:
  - **config time ntp auth enable** *server-index key-index*—Enables NTP/SNTP authentication on a given NTP/SNTP server.
  - **config time ntp key-auth add** *key-index* **md5** {**ascii** | **hex**} *key*—Adds an authentication key. By default MD5 is used. The key format can be ASCII or hexadecimal.
  - **config time ntp key-auth delete** *key-index*—Deletes authentication keys.
  - **config time ntp auth disable** *server-index*—Disables NTP/SNTP authentication.
  - **show ntp-keys**—Displays the NTP/SNTP authentication related parameter.

- To delete an NTP server IP address or DNS server from the controller, enter this command:

  config time ntp delete *NTP_server index*

- Configure the NTP version by entering this command:

  config time ntp version *version*

Note When the NTP version changes, the configured servers are deleted.

- Configuring the NTP polling interval when using NTP version 4 by entering this command:

  config time ntp pollinterval *maxpoll minpoll server-index*

Configuring NTPv4 Keys for Authentication (GUI)

Procedure

Step 1 Choose **Controller** > **NTP** > **Keys** to open the **NTP Key** page.
Step 2 Click **New** to add a new NTP key.
Step 3 Enter the **Key Index** number in the **Key Index** field.
Step 4 From the **Checksum** drop-down list, choose **SHA1**.
Step 5 From the **Key Format** drop-down list, choose **ASCII**.
Step 6 Enter the **Key** in the **Key** field.
Step 7 Click **Apply**.