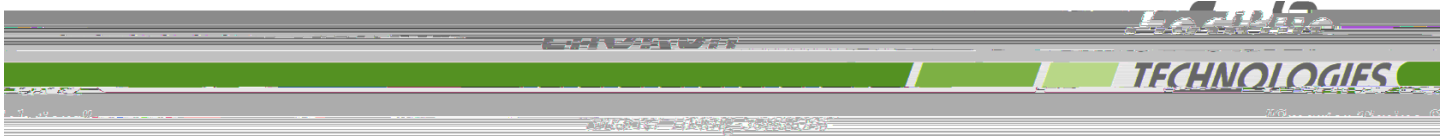


1.0 PURPOSE

This document provides instructions for setting up SHA1 NTP authentication in Endrun time servers.

2.0 OVERVIEW

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- 3.1.1.5 To exit the joe editor and save the modified ntp.keys file, type <Ctrl-k> then hit x.
- 3.1.1.6 To make changes persistent, ntp.keys must be copied to the non-volatile memory partition. Do that by typing: `cp -p /etc/ntp.keys /boot/etc`

3.1.2

3.2.2 Testing Configuration: From the client’s command line interface, run the command below.

```
ntpq -p
```

You should see a response similar to the table below. Look for the IP address of your EndRun device in the “remote” column and verify that you see the appropriate reference source in the corresponding `refid` column – in this case `.GPS.`. This indicates that the client is able to pole the NTP server. If the `refid` indicates `or` the previously modified configuration files should be checked for typos.

```
root@Sup_Lab_Mtower:/etc# ntpq -p
```

remote	refid	st	t	when	poll	reach	delay	offset	jitter
*LOCAL(0)	.LOCL.	10	l	4	64	1	0.000	0.000	0.001
192.168.1.123	.GPS.	1	u	3	64	1	0.888	374.921	0.001
192.168.1.202	.GPS.	1	u	3	64	1	1.012	571.043	0.001

Eventually after 20-30 minutes a fresh run of the command below:

```
ntpq -p
```

should yield results similar to those shown in the table below. A “*” character to the left of the NTP server’s IP address in the “remote” column indicates the source from which the client is synchronized. A “+” character in the same position indicates a candidate synchronization source.

remote	refid	st	t	when	poll	reach	delay	offset	jitter
LOCAL(0)	.LOCL.	10	l	4	64	1	0.000	0.000	0.001
*192.168.1.123	.GPS.	1	u	377	64	1	0.176	0.030	0.069
+192.168.1.202	.GPS.	1	u	377	64	1	0.180	0.049	0.079

3.3 Configure Windows Client

If section 3.1 is successfully completed, a Windows OS client can be configured for SHA1 *provided* the client NTP software supports authentication. NTP Client configurations can be very challenging on most Windows OS when using utilities that are included with the OS package. In many cases, third party software such as Greyware’s Time Domain II makes the task of configuring authentication much less difficult. For more information go to: <https://www.greyscale.com/software/domaintime/> .

4.0 SUPPORT

If assistance is needed f