

## RESTARTING SERVICES

Let's now have a look at the service that is keeping the date and time of the machine accurate: NTP.

```
sudo service ntp status
```

Output:

```
gcpstaging21306_student@linux-instance:~$ service ntp status
• ntp.service - LSB: Start NTP daemon
   Loaded: loaded (/etc/init.d/ntp; bad; vendor preset: enabled)
   Active: active (running) since Fri 2018-08-17 16:04:16 UTC; 13min ago
     Docs: man:systemd-sysv-generator(8)
    Tasks: 1
   Memory: 1.9M
      CPU: 63ms
   CGroup: /system.slice/ntp.service
           └─1619 /usr/sbin/ntpd -p /var/run/ntpd.pid -g -c /var/lib/ntp/ntp.conf.dhcp -u 112:116

Aug 17 16:04:15 linux-instance ntpd[1619]: proto: precision = 0.068 usec (-24)
Aug 17 16:04:15 linux-instance ntpd[1619]: Listen and drop on 0 v6wildcard [::]:123
Aug 17 16:04:15 linux-instance ntpd[1619]: Listen and drop on 1 v4wildcard 0.0.0.0:123
Aug 17 16:04:15 linux-instance ntpd[1619]: Listen normally on 2 lo 127.0.0.1:123
Aug 17 16:04:15 linux-instance ntpd[1619]: Listen normally on 3 ens4 10.0.0.2:123
Aug 17 16:04:15 linux-instance ntpd[1619]: Listen normally on 4 lo [::1]:123
Aug 17 16:04:15 linux-instance ntpd[1619]: Listen normally on 5 ens4 [fe80::4001:aff:fe00:2%2]:123
Aug 17 16:04:15 linux-instance ntpd[1619]: Listening on routing socket on fd #22 for interface updates
Aug 17 16:04:16 linux-instance systemd[1]: Started LSB: Start NTP daemon.
Aug 17 16:09:26 linux-instance ntpd[1619]: kernel reports TIME_ERROR: 0x41: Clock Unsynchronized
gcpstaging21306_student@linux-instance:~$
```

It's running and keeping the time on our machine synchronized with time servers around the world. Now, what if we manually change the date? ntp realizes that this is not normal clock drift. It will detect the change but not interfere. Let's change the date using the date command:

```
sudo date -s '2017-01-01 00:00:00'
```

If we wait a few seconds, we can check that the date is still the same using the date command without parameters.

```
date
```

Output:

```
gcpstaging21306_student@linux-instance:~$ date
Sun Jan  1 00:00:18 UTC 2017
gcpstaging21306_student@linux-instance:~$
```

Let's look at the last lines in syslog:

```
sudo tail /var/log/syslog
```

Output:

```
gcpstaging21306_student@linux-instance:~$ tail /var/log/syslog
Aug 17 16:12:49 linux-instance systemd[1]: Started System Logging Service.
Aug 17 16:13:01 linux-instance gcpstaging21306_student: This is another test log entry
Aug 17 16:17:01 linux-instance CRON[7336]: (root) CMD ( cd / && run-parts --report /etc/cron.hourly)
Aug 17 16:17:10 linux-instance systemd[1]: Listening on CUPS Scheduler.
Aug 17 16:17:10 linux-instance systemd[1]: Started CUPS Scheduler.
Aug 17 16:19:07 linux-instance systemd[1]: Starting Cleanup of Temporary Directories...
Aug 17 16:19:07 linux-instance systemd-tmpfiles[7416]: [/usr/lib/tmpfiles.d/var.conf:14] Duplicate line for path
"/var/log", ignoring.
Aug 17 16:19:07 linux-instance systemd[1]: Started Cleanup of Temporary Directories.
Jan 1 00:00:00 linux-instance systemd[1]: Time has been changed
Jan 1 00:00:00 linux-instance systemd[7020]: Time has been changed
gcpstaging21306_student@linux-instance:~$
```

So, we see that the machine detected the time change, but our ntp service did not change it. This is because the ntp service avoids doing any drastic changes while it's running. It will, however, perform drastic changes when it starts. If we now restart ntp, the service will notice the change in time and fix it to the current time:

```
sudo service ntp restart
```

Once we have restarted it, we can check the date again.

```
date
```

**Output:**

```
gcpstaging21306_student@linux-instance:~$ date
Fri Aug 17 16:21:33 UTC 2018
gcpstaging21306_student@linux-instance:~$
```

Restarting the service command is a handy way of stopping a service and then starting it immediately back up.

**Note:** Sometimes the ntp service might take time to update the current time. If you are not getting the current time then execute the date command after few seconds.