

**** NTP Server & NTP Client ****

[Network Time Protocol]

- NTP Server is mainly use for time synchronization.
- NTP is an old, widely known and cross-platform protocol designed to synchronize the clocks of computers over a network.
- It commonly synchronizes a computer to Internet time servers or other sources, such as a radio or satellite receiver or telephone modem service.
- It can also be used as a time source/server for client systems.
- In RHEL Linux 8, the ntp package is no longer supported and it is implemented by the chronyd (a daemon that runs in user-space) which is provided in the chrony package.
- Chrony works both as an NTP server and as an NTP client, which is used to synchronize the system clock with NTP servers, and can be used to synchronize the system clock.

We have two choices to provider NTP Settings on any machine:-

Types of NTP Server?

- 1- Global NTP Server OR Public NTP Server using the internet provided by any vendor
- 2- Local NTP server with in the infra.

Choosing between Chrony and NTP?

- In RHEL 7 ntpd is replaced by chronyd as the default network time protocol daemon.
- Chronyd is more accurate and smart time sync mechanism.
- Basic configuration for synchronize time and date is stored in the file:

`/etc/chrony.conf` ==> configuration file of Chrony server

`/etc/ntp.conf` ===> configuration file of NTP server

- ntpd is still included in yum repository for customers who need to run an NTP service.
- Chrony is a different implementation of the network time protocol (NTP) than the network time protocol daemon (ntpd) that is able to synchronize the system clock faster and with better accuracy than ntpd.

Benefits of Chrony include:

1. **Faster synchronization** requiring only minutes instead of hours to minimize the time and frequency error, which is useful on desktops or systems not running 24 hours a day.
2. **Better response** to rapid changes in the clock frequency, which is useful for virtual machines that have unstable clocks or for power-saving technologies that don't keep the clock frequency constant.
3. **After the initial synchronization** it never steps the clock so as not to affect applications needing system time to be monotonic.
4. **Better stability** when dealing with temporary asymmetric delays, for example when the link is saturated by a large download.
5. **Periodic polling of servers** is not required, so systems with intermittent network connections can still quickly synchronize clocks.

When to use chrony?

Chrony would be considered a best match for the systems which are frequently suspended or otherwise intermittently disconnected from a network (mobile and virtual servers etc).

When to use NTP?

- The NTP daemon (ntpd) should be considered for systems which are normally kept permanently on. Systems which are required to use broadcast or multicast IP, or to perform authentication of packets with the Auto key protocol, should consider using ntpd.
- For current cloud and container based environment where applications are stateless chronyd play an important role to sync the time on each system.

NTP - Service Profile? If we are configuring ntp using ntp package

Package: ntp

Daemon: ntpd

Port number: 123

File: /etc/ntp.conf

Log: /var/log/messages

NTP - Service Profile? If we are configuring ntp using chrony package

Package: chrony

Daemon: chronyd

Port number: 123

File: /etc/chrony.conf

Log: /var/log/messages
