GETTING STARTED
WITH
TIME SYNCHRONIZATION

➢ TME SYNCHRONIZATION:

- Accurate timekeeping in an IT environment is important. A consistent time across all network devices improves the traceability of log files and certain protocols rely on synchronized clocks.
- In Linux systems, the NTP protocol is implemented by a daemon running in user space. The user space daemon updates the system clock running in the kernel.
- The system clock can keep time by using various clock sources. Usually, the **Time Stamp Counter (TSC)** is used. The TSC is a CPU register which counts the number of cycles since it was last reset.
- RHEL, the NTP protocol is implemented by the **chronyd** daemon package.
- chrony is an implementation of the **Network Time Protocol (NTP).**
- **You can use chrony:**
  - To synchronize the system clock with NTP servers
  - To synchronize the system clock with a reference clock, for example a GPS receiver
  - To synchronize the system clock with a manual time input
  - As an NTPv4(RFC 5905) server or peer to provide a time service to other computers in the network

SETTING DATE & TIME ZONE:

→ **Display the Current Date and Time:**

#timedatectl status

→ **To list Time Zones:**

#timedatectl list-timezones

→ **Changing the Time Zone:**

#timedatectl set-timezone Africa/Dakar

#timedatactl status

timedatectl set-timezone Asia/Kolkata

timedatactl status

→ **Changing the Current Time:**

#timedatectl set-time **HH:MM:SS**

#timedatectl set-time 18:28:00

NOTE: By default, the system is configured to use UTC. You can force it to use the local time by running:

#timedatectl set-local-rtc true

→ **Changing the Current Date:**

#timedatectl set-time **"yyyy-MM-dd hh:mm:ss"**

#timedatectl set-time "2020-07-15 11:08:00"

#timedatectl status

MANAGING CHRONY:

PRE-REQUISITES:

- **Package Name** : chrony
- **Main Configuration File** : /etc/chrony.conf
- **Log File Location** : /var/log/chrony/
- **Service / Daemon Name** : chronyd
- **Port Number** : NTP-123

→ **The chrony suite is installed by default on Red Hat Enterprise Linux. To ensure that it is, run the following:**

#dnf install chrony -y

→ **To check the status of chronyd:**

#systemctl status chronyd

→ **To start and enable chronyd service:**

#systemctl start chronyd

#systemctl enable chronyd

SETTING UP CHRONY FOR A SYSTEM IN AN ISOLATED NETWORK:

→ **edit /etc/chrony.conf as follows:**

keyfile /etc/chrony.keys

logdir /var/log/chrony

allow 192.168.10.0/24 #Allow client systems

→ **Restart chronyd service:**

#systemctl restart chronyd

→ **To check chrony tracking:**

#chronyc tracking

→ **The sources command displays information about the current time sources that chronyd is accessing. To check chrony sources:**

#chronyc sources

→ **To check chrony source statistics:**

#chronyc sourcestats

❖ CONFIGURE CHRONY AS AN NTP CLIENT:

- The chrony suite is installed by default on Red Hat Enterprise Linux.

→ **To check the status of chronyd:**

#systemctl status chronyd

→ **edit /etc/chrony.conf as follows:**

peer 192.168.10.254 # Server IP-Adress

→ **To restart chronyd service:**

#systemctl restart chronyd

→ **Check NTP server is synchronize:**
#chronyc sources