**IT5423: System Administration**

**Lab 5**

Total points: 100

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Learning objectives:**

You will inspect and configure date and time with troubleshooting

# 1. CONFIGURING THE DATE AND TIME

Modern operating systems distinguish between the following two types of clocks:

* A *real-time clock* (RTC), commonly referred to as a *hardware clock*, (typically an integrated circuit on the system board) that is completely independent of the current state of the operating system and runs even when the computer is shut down.
* A *system clock*, also known as a *software clock*, that is maintained by the kernel and its initial value is based on the real-time clock. Once the system is booted and the system clock is initialized, the system clock is completely independent of the real-time clock.

## **Using the timedatectl Command**

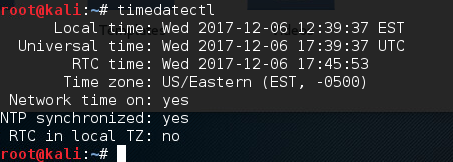
The **timedatectl** utility is distributed as part of the systemd system and service manager and allows you to review and change the configuration of the system clock. You can use this tool to change the current date and time, set the time zone, or enable automatic synchronization of the system clock with a remote server.

### Displaying the Current Date and Time

To display the current date and time along with detailed information about the configuration of the system and hardware clock, run the timedatectl command with no additional command line options:

timedatectl

This displays the local and universal time, the currently used time zone, the status of the Network Time Protocol (NTP) configuration, and additional information related to DST.



**Example. Displaying the Current Date and Time**

The following is an example output of the timedatectl command on a system that does not use NTP to synchronize the system clock with a remote server:

~]$ timedatectl

Local time: Mon 2016-09-16 19:30:24 CEST

Universal time: Mon 2016-09-16 17:30:24 UTC

Timezone: Europe/Prague (CEST, +0200)

NTP enabled: no

NTP synchronized: no

RTC in local TZ: no

DST active: yes

Last DST change: DST began at

Sun 2016-03-31 01:59:59 CET

Sun 2016-03-31 03:00:00 CEST

Next DST change: DST ends (the clock jumps one hour backwards) at

Sun 2016-10-27 02:59:59 CEST

Sun 2016-10-27 02:00:00 CET

**Important**

Changes to the status of chrony or ntpd will not be immediately noticed by timedatectl. If changes to the configuration or status of these tools is made, enter the following command:

~]# systemctl restart systemd-timedated.service

### Changing the Current Time

To change the current time, type the following at a shell prompt as root:

timedatectl set-time HH:MM:SS

Replace HH with an hour, MM with a minute, and SS with a second, all typed in two-digit form.

This command updates both the system time and the hardware clock. The result it is similar to using both the date --set and hwclock --systohc commands.

The command will fail if an NTP service is enabled.



The NTP service can be enabled and disabled using a command as follows:

timedatectl set-ntp *boolean*

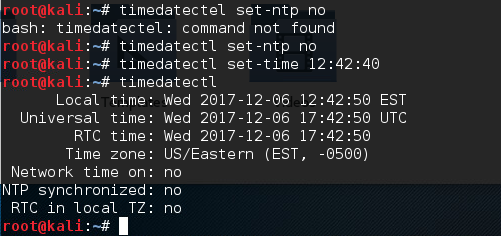
To enable your system to synchronize the system clock with a remote NTP server, replace *boolean* with yes (the default option). To disable this feature, replace *boolean* with no.

To enable automatic synchronization of the system clock with a remote server, type:

~]# timedatectl set-ntp yes

To enable automatic synchronization of the system clock with a remote server, type:

~]# timedatectl set-ntp no



## **Changing the Current Date**

To change the current date, type the following at a shell prompt as root:

timedatectl set-time YYYY-MM-DD

Replace YYYY with a four-digit year, MM with a two-digit month, and DD with a two-digit day of the month.

Note that changing the date without specifying the current time results in setting the time to 00:00:00.

**QUESTION 1.- Now, can you change the current date with a new date after one year? For example, if today is 2021-12-06, the new date should be 2022-12-06. Show the command and the result with a screenshot. [10 points]**

Hint: You should disable the automatic synchronization of the clock first.

Note: After doing this, please come back to the terminal and type this to return your machine to the current time.

~]# timedatectl set-ntp yes

~]# systemctl restart systemd-timedated.service

### **Changing the Time Zone**

To list all available time zones, type the following at a shell prompt:

timedatectl list-timezones

To change the currently used time zone, type as root:

timedatectl set-timezone time\_zone

Replace time\_zone with any of the values listed by the timedatectl list-timezonescommand.

**Example. Changing the Time Zone**

To identify which time zone is closest to your present location, use the timedatectlcommand with the list-timezones command line option. For example, to list all available time zones in Europe, type:

~]# timedatectl list-timezones | grep Europe

Europe/Amsterdam

Europe/Andorra

Europe/Athens

Europe/Belgrade

Europe/Berlin

Europe/Bratislava

*…*

To change the time zone to Europe/Prague, type as root:

~]# timedatectl set-timezone Europe/Prague

**QUESTION 2.- Now, can you change the timezone to Europe/Zurich? Show a screenshot of the command and the result? [10 points]**

Note: After doing this, please come back to the terminal and return to your normal time zone America/New York

## **Synchronizing the System Clock with a Remote Server**

As opposed to the manual adjustments described in the previous sections, the timedatectlcommand also allows you to enable automatic synchronization of your system clock with a group of remote servers using the NTP protocol. Enabling NTP enables the chronyd or ntpd service, depending on which of them is installed.

The NTP service can be enabled and disabled using a command as follows:

timedatectl set-ntp boolean

To enable your system to synchronize the system clock with a remote NTP server, replace boolean with yes (the default option). To disable this feature, replace boolean with no.

**Example. Synchronizing the System Clock with a Remote Server**

To enable automatic synchronization of the system clock with a remote server, type:

~]# timedatectl set-ntp yes

The command will fail if an NTP service is not installed.

# 2. MANAGING Accounts

Managing users is a critical aspect of server management. In Ubuntu, the root user is disabled for safety. Management tasks requiring root access can be completed by using the sudo command by a user who is in the “admin” group. When you create a user during installation, that user is added automatically to the admin group.

2.1 Adding users: To add a user, you can use the command below, where “username” is the name of the user you want to create

sudo adduser username

**QUESTION 3.- Create a user called myclass and show the screenshot. The password need to be 12345 [10 points]**

2.2 Once the user has been create, it is saved in /etc/passwd. To visualize the users of your system, type

cut -d : -f 1 /etc/passwd

**QUESTION 4.- Show an screenshot where we can see the username you just created.[10 points]**

2.2 To delete a user (will retain the home directory):  
Install the package:

sudo apt-get install unattended-upgrades

**QUESTION 5.- Provide an screenshot of the previous installation .[10 points]**

To detele the user:

sudo deluser username

**QUESTION 6.- Disable the user myclass and provide a screenshot . Also provide another screenshot of the users in the system where we cannot see myclass account [20 points]**

To see the list of logged user type:

w

**QUESTION 7.- Provide an screenshot of the logged users [10 points]**

**QUESTION 8.- Do a quick search online and explain what each one of those columns means in the output of question 7 (What is User, TTY, FROM, LOGIN@, etc.) [10 points]**



**QUESTION 9.- What is saved inside /etc/shadow. Please do a research online [10 points]**