Exercise 17: Administering the System - Part 3

I. Prepare the environment

1. Login to the CentOS system with user student. And install the following package:

   - Ntp
   - Chrony

II. Manage system time

1. Display the the hardware clock time.
2. Display the system time in UTC standard.
3. Set the hardware clock time to the time of system clock.
4. Use the timedatectl to set date time of system clock to **Jan 1st 2020, 10:00:00**
5. Configure the ntpd to synchronize the system time with the default time server configured in /etc/ntp.conf.
6. Display the information of ntp sources
7. Stop the ntpd service and disable it.
8. Configure the chronyd to synchronize the system time with the default time server configured in /etc/chrony.conf
9. Display the statistic of sources

III. Working with mail

10. Create another user named student1 (if your system already had this account you can ignore this step and move to the next one).
11. Send student1 an email as the following:
    Subject: Hi friend
    Hi Peter,
    How are you.
    I am fine
    See you
12. Switch user to student1 and read the email sent by student
13. Delete the email from student and exit.
14. Configure an email alias named students with the members are student and student1
15. Send students an email and check if that email come to student and student1
16. Configure email forwarding for student so that all email send to student will be forwarđe to student1.
17. Switch user to student1, send an email to student and check if it come to student1 mailbox.
18. Send an email to a phony address. Use the troubleshooting tools to know what happened with the email.

Exercise Instructions

IV. Prepare the environment

1. Login to the CentOS system with user student. And install the following package:

   - Ntp
   - Chrony

   Log in to the CentOS system with the user name and password provided: **student/lpic1@123**

   $ sudo yum install ntp
   $ sudo yum install chrony

   Stop the ntpd and chronyd for this lab
   $ sudo systemctl stop ntpd
   $ sudo systemctl stop chronyd

V. Manage system time

1. Display the the hardware clock time.
   $ hwclock -r

2. Display the system time in UTC standard.
   $ date -u

3. Set the hardware clock time to the time of system clock.
   $ hwclock -w
   Or
   $ hwclock –systohc

4. Use the timedatectl to set date time of system clock to **Jan 1st 2020, 10:00:00**
   $ timedatectl set-time "2020-01-01 10:00:00"

5. Configure the ntpd to synchronize the system time with the default time server configured in /etc/ntp.conf.
   $ grep ^server /etc/ntp.conf

```
$ grep ^server /etc/ntp.conf
server 0.centos.pool.ntp.org iburst
server 1.centos.pool.ntp.org iburst
server 2.centos.pool.ntp.org iburst
server 3.centos.pool.ntp.org iburst
```

   $ sudo ntpdate 0.centos.pool.ntp.org

```
[student@centos7 ~]$ sudo !!
sudo ntpdate 0.centos.pool.ntp.org
[sudo] password for student:
18 Jun 06:05:00 ntpdate[26933]: step time server 125.234.20.170 offset 426671.799218 se
c
```

   $ sudo systemctl start ntpd

6. Display the information of ntp sources
   $ ntpstat

   $ ntpq -p

```
[student@centos7 ~]$ ntpq -p
     remote           refid      st t when poll reach   delay   offset  jitter
==============================================================================
 time.cloudflare 10.177.8.4       3 u    1   64    1    6.971  -11.212   0.516
 ntp1.chroot.ro  193.67.79.202    2 u    2   64    1  313.757  -57.741  30.510
```

7. Stop the ntpd service and disable it.
   $ sudo systemctl stop ntpd
   $ sudo systemctl disable ntpd

8. Configure the chronyd to synchronize the system time with the default time server configured in /etc/chrony.conf
   $ systemctl start chronyd

9. Display the statistic of sources
   $ chronyc sources -v

```
$ chronyc sources -v
210 Number of sources = 8

  .-- Source mode  '^' = server, '=' = peer, '#' = local clock.
 / .- Source state '*' = current synced, '+' = combined , '-' = not combined,
| /   '?' = unreachable, 'x' = time may be in error, '~' = time too variable.
||                                               .- xxxx [ yyyy ] +/- zzzz
||      Reachability register (octal) -.         |  xxxx = adjusted offset,
||      Log2(Polling interval) --.      |        |  yyyy = measured offset,
||                                \     |        |  zzzz = estimated error.
||                                 |    |         \
MS Name/IP address         Stratum Poll Reach LastRx Last sample
===============================================================================
^+ alphyn.canonical.com          2  10   377   413   -461us[ -418us] +/-  101ms
^+ golem.canonical.com           2  10   337   142    +30us[  +30us] +/-   95ms
^+ chilipepper.canonical.com     2  10   377   918   -797us[ -760us] +/-   81ms
^+ pugot.canonical.com           2  10   377    21  -2184us[-2184us] +/-   87ms
^* 4.53.160.75                   2  10   377   229   -327us[ -281us] +/-   50ms
^+ vps3.cobryce.com              2  10   377   416  +4806us[+4850us] +/-   70ms
^+ B1-66ER.matrix.gs             2  10   377   21m   -315us[ -363us] +/-   60ms
^+ 2.time.dbsinet.com            2   9   175   601  -3138us[-3097us] +/-   93ms
```

   $ chrony sourcestats

```
$ chronyc sourcestats
210 Number of sources = 8
Name/IP Address            NP  NR  Span  Frequency  Freq Skew  Offset  Std Dev
==============================================================================
alphyn.canonical.com       31  15   87m     +0.322      0.287   -180us   677us
golem.canonical.com        31  18   91m     -0.006      0.137   -470us   275us
chilipepper.canonical.com  31  14   96m     -0.044      0.163   -661us   383us
pugot.canonical.com        28  16   87m     -0.029      0.350   -637us   575us
4.53.160.75                31  20   90m     +0.003      0.166   -553us   370us
vps3.cobryce.com           30  14   87m     -0.195      0.531  +4453us   936us
B1-66ER.matrix.gs          30  13   72m     -0.095      0.351   +523us   635us
2.time.dbsinet.com         27  16   71m     +0.073      0.327  -2801us   431us
```

VI. Working with mail

10. Create another user named student1 (if your system already had this account you can ignore this step and move to the next one).

Do the steps to create user on the Exercise 16 (if needed)

11. Send student1 an email as the following:
    Subject: Hi friend
    Hi Peter,
    How are you.
    I am fine
    See you

    $ mail student1
    Subject: <in put the subject above>
    <input the content above>
    Ctrl+d

12. Switch user to student1 and read the email sent by student
    $ su – student1
    <input student1 password>
    $ mail
    <input the number of the email to view the content>

13. Delete the email from student and exit.
    Inside the mail application interface
    & d <email number>
    & q

14. Configure an email alias named students with the members are student and student1
    $ sudo vi /etc/aliases
    Add the following line
    students: student,student1
    :wq!

    $ newaliases

15. Send students an email and check if that email come to student and student1
    $ mail students
    Subject: <input anything you want>
    <input anything>
    Ctrl+d

    On the student session
    $ mail
    You should see the email above in your mailbox

    On the student1 session
    $ mail
    You should also se the above email.

16. Configure email forwarding for student so that all email send to student will be forwarded to student1.
    $ cd
    $ vi .forward
    student1
    :wq!
    $ chmod 644 .forward

17. Switch user to student1, send an email to student and check if it come to student1 mailbox.
    $ su – student1
    $ mail student
    Subject: <input anything>
    <input anything>
    Ctrl+d
    $ mail
    You should see the mail

18. Send an email to a phony address. Use the troubleshooting tools to know what happened with the email.
    $ mail abc@abc.com
    Subject: <input anything>
    <input anything>
    Ctrl+d

    $ mailq
    You might see the email in queue

    $ tail /var/log/maillog
    You might see some error about that email