Lab1 (redhat2)

1. Use systemctl to view the status of all the system services

```
ghx@ghx:~$ sudo systemctl list-units -all --type=service
  UNIT                                                    LOAD      ACTIVE   S
  accounts-daemon.service                                 loaded    active   r
  alsa-restore.service                                    loaded    active   e
  alsa-state.service                                      loaded    inactive d
  anacron.service                                         loaded    inactive d
  apache2.service                                         loaded    active   r
  apparmor.service                                        loaded    active   e
  apport-autoreport.service                               loaded    inactive d
  apport.service                                          loaded    active   e
```

2. change the default target back to multi-user.target and reboot:

```
[ghada@localhost ~]$ systemctl get-default
graphical.target
[ghada@localhost ~]$ sudo systemctl set-default multi-user.target
[sudo] password for ghada:
Removed "/etc/systemd/system/default.target".
Created symlink /etc/systemd/system/default.target → /usr/lib/systemd/system/multi-use
[ghada@localhost ~]$
```

```
[ghada@localhost ~]$ sudo systemctl get-defualt
[sudo] password for ghada:
Unknown command verb get-defualt.
[ghada@localhost ~]$ systemctl get-default
multi-user.target
```

3. Use systemctl utility to stop postfix/sendmail service.

```
[ghada@localhost ~]$ systemctl list-unit-files | grep postfix
[ghada@localhost ~]$ sudo systemctl stop postfix
Failed to stop postfix.service: Unit postfix.service not loaded.
[ghada@localhost ~]$ sudo systemctl stop sendmail
Failed to stop sendmail.service: Unit sendmail.service not loaded.
```

8. Use systemctl utility to start postfix/sendmail service.clear

```
[ghada@localhost ~]$ sudo systemctl start postfix sendmail
Failed to start postfix.service: Unit postfix.service not found.
Failed to start sendmail.service: Unit sendmail.service not found.
```

9. switch to the multi-user target manually without rebooting

```
[ghada@localhost ~]$ sudo systemctl isolate multi-user.target
[sudo] password for ghada:
sudo: a password is required
```

10. set the default systemd target to graphical.target

```
[ghada@localhost ~]$ sudo systemctl set-default graphical.target
[sudo] password for ghada:
Removed "/etc/systemd/system/default.target".
Created symlink /etc/systemd/system/default.target → /usr/lib/systemd/system/gra
phical.target.
```

11. Display the status of sshd service, note the PID of the daemon.

```
[ghada@localhost ~]$ sudo systemctl status sshd
● sshd.service - OpenSSH server daemon
     Loaded: loaded (/usr/lib/systemd/system/sshd.service; enabled; preset: ena>
     Active: active (running) since Tue 2025-02-11 15:23:39 EET; 35min ago
       Docs: man:sshd(8)
             man:sshd_config(5)
   Main PID: 800 (sshd)
```

12. Restart the sshd service and view the status, The PID of the daemon has changed

```
[ghada@localhost ~]$ sudo systemctl start sshd
[ghada@localhost ~]$ sudo systemctl status sshd
● sshd.service - OpenSSH server daemon
     Loaded: loaded (/usr/lib/systemd/system/sshd.service; enabled; preset: ena>
     Active: active (running) since Tue 2025-02-11 16:01:49 EET; 20s ago
       Docs: man:sshd(8)
             man:sshd_config(5)
   Main PID: 6525 (sshd)
```

13. Reload the sshd service and view the status, The PID of the daemon has not changed and connection has not be interrupted

```
[ghada@localhost ~]$ sudo systemctl reload sshd
[ghada@localhost ~]$ sudo systemctl status sshd
● sshd.service - OpenSSH server daemon
     Loaded: loaded (/usr/lib/systemd/system/sshd.service; enabled; preset: ena>
     Active: active (running) since Tue 2025-02-11 16:01:49 EET; 2min 34s ago
       Docs: man:sshd(8)
             man:sshd_config(5)
    Process: 6555 ExecReload=/bin/kill -HUP $MAINPID (code=exited, status=0/SUC>
   Main PID: 6525 (sshd)
```

14. Verify that the chronyd service is running.

```
[ghada@localhost ~]$ sudo systemctl status chronyd
● chronyd.service - NTP client/server
     Loaded: loaded (/usr/lib/systemd/system/chronyd.service; enabled; preset: >
     Active: active (running) since Tue 2025-02-11 15:23:36 EET; 43min ago
       Docs: man:chronyd(8)
             man:chrony.conf(5)
   Main PID: 752 (chronyd)
      Tasks: 1 (limit: 7723)
     Memory: 2.5M
```

15. Stop the service and view the status.

```
[ghada@localhost ~]$ sudo systemctl stop chronyd
[ghada@localhost ~]$ sudo systemctl status chronyd
○ chronyd.service - NTP client/server
     Loaded: loaded (/usr/lib/systemd/system/chronyd.service; enabled; preset: >
     Active: inactive (dead) since Tue 2025-02-11 16:08:41 EET; 2s ago
   Duration: 45min 3.954s
       Docs: man:chronyd(8)
             man:chrony.conf(5)
   Main PID: 752 (code=exited, status=0/SUCCESS)
```

16. Determine if the chronyd service is enabled to start at the system boot

```
[ghada@localhost ~]$ sudo systemctl status chronyd | grep disabled
[ghada@localhost ~]$ sudo systemctl status chronyd | grep enabled
     Loaded: loaded (/usr/lib/systemd/system/chronyd.service; enabled; preset: enabled)
```

17. Reboot the system, then view the status of the chronyd service.

```
[ghada@localhost ~]$ sudo systemctl status chronyd
[sudo] password for ghada:
● chronyd.service - NTP client/server
     Loaded: loaded (/usr/lib/systemd/system/chronyd.service; enabled; preset: enabled)
     Active: active (running) since Tue 2025-02-11 16:13:46 EET; 1min 32s ago
       Docs: man:chronyd(8)
             man:chrony.conf(5)
    Process: 737 ExecStart=/usr/sbin/chronyd $OPTIONS (code=exited, status=0/SUCCESS)
   Main PID: 756 (chronyd)
```

18. Disable the chronyd service so that it doesn't start at system boot, then view the status of the service.

```
[ghada@localhost ~]$ sudo systemctl disable chronyd
Removed "/etc/systemd/system/multi-user.target.wants/chronyd.service".
[ghada@localhost ~]$ sudo systemctl status chronyd
● chronyd.service - NTP client/server
     Loaded: loaded (/usr/lib/systemd/system/chronyd.service; disabled; preset:>
     Active: active (running) since Tue 2025-02-11 16:17:59 EET; 2min 9s ago
```

19. Create your Customer Service

ghada@localhost:~ — sudo vi /etc/systemd/system/firstTask.service

```
[Unit]
Description=My first service script

[Service]
ExecStart=/home/ghada/second_task
Restart=always
User=ghada
Group=ghada

[Install]
WantedBy=multi-user.target
```

```
ghada@localhost:~ — sudo vi second_task
#!/usr/bin/bash

x=0

while true; do
  echo "Hello $(date) : $x" >> /home/ghada/output
  ((x++))
  sleep 10
done

~
[ghada@localhost ~]$ sudo systemctl daemon-reload
[ghada@localhost ~]$ sudo systemctl enable firstTask.service
[ghada@localhost ~]$ sudo systemctl start firstTask.service
[ghada@localhost ~]$ sudo systemctl status firstTask.service
● firstTask.service - My first service script
     Loaded: loaded (/etc/systemd/system/firstTask.service; enabled; preset: di>
     Active: active (running) since Tue 2025-02-11 17:39:11 EET; 6min ago
   Main PID: 5688 (second_task)
      Tasks: 2 (limit: 7723)
     Memory: 572.0K
        CPU: 148ms
     CGroup: /system.slice/firstTask.service
             ├─5688 /usr/bin/bash /home/ghada/second_task
             └─6101 sleep 10

Feb 11 17:39:11 localhost.localdomain systemd[1]: Started My first service scri>
lines 1-12/12 (END)
```

20. View logs since the last boot

```
[ghada@localhost ~]$ journalctl -b
Feb 11 16:17:55 localhost kernel: Linux version 5.14.0-503.23.2.el9_5.x86_64 (mockbuild@x
Feb 11 16:17:55 localhost kernel: The list of certified hardware and cloud instances for
Feb 11 16:17:55 localhost kernel: Command line: BOOT_IMAGE=(hd0,msdos1)/vmlinuz-5.14.0-50
Feb 11 16:17:55 localhost kernel: BIOS-provided physical RAM map:
Feb 11 16:17:55 localhost kernel: BIOS-e820: [mem 0x0000000000000000-0x000000000009fbff] u
Feb 11 16:17:55 localhost kernel: BIOS-e820: [mem 0x000000000009fc00-0x000000000009ffff]
Feb 11 16:17:55 localhost kernel: BIOS-e820: [mem 0x00000000000f0000-0x00000000000fffff]
Feb 11 16:17:55 localhost kernel: BIOS-e820: [mem 0x0000000000100000-0x000000005ffdbfff] u
Feb 11 16:17:55 localhost kernel: BIOS-e820: [mem 0x000000005ffdc000-0x000000005fffffff]
Feb 11 16:17:55 localhost kernel: BIOS-e820: [mem 0x00000000b0000000-0x00000000bfffffff]
Feb 11 16:17:55 localhost kernel: BIOS-e820: [mem 0x00000000fed1c000-0x00000000fed1ffff]
Feb 11 16:17:55 localhost kernel: BIOS-e820: [mem 0x00000000feffc000-0x00000000feffffff]
```

21. View logs for a specific systemd unit (e.g., sshd)

```
[ghada@localhost ~]$ journalctl -u sshd
Feb 11 16:18:01 localhost.localdomain systemd[1]: Starting OpenSSH server daemon...
Feb 11 16:18:01 localhost.localdomain sshd[882]: Server listening on 0.0.0.0 port 22.
Feb 11 16:18:01 localhost.localdomain sshd[882]: Server listening on :: port 22.
Feb 11 16:18:01 localhost.localdomain systemd[1]: Started OpenSSH server daemon.
```

22. View logs for the last 10 minutes

```
[ghada@localhost ~]$ sudo journalctl --since "10 minutes ago"
[sudo] password for ghada:
Feb 11 17:47:30 localhost.localdomain sudo[6110]: pam_unix(sudo:session): session closed for user root
Feb 11 17:47:30 localhost.localdomain pipewire[2028]: spa.audioconvert: 0x5564f9277820: (0 suppressed)
Feb 11 17:47:37 localhost.localdomain sudo[6149]:    ghada : TTY=pts/0 ; PWD=/home/ghada ; USER=root ;
Feb 11 17:47:37 localhost.localdomain sudo[6149]: pam_unix(sudo:session): session opened for user root(
Feb 11 17:47:55 localhost.localdomain sudo[6149]: pam_unix(sudo:session): session closed for user root
Feb 11 17:47:55 localhost.localdomain pipewire[2028]: spa.audioconvert: 0x5564f9277820: (0 suppressed)
Feb 11 17:48:07 localhost.localdomain sudo[6165]:    ghada : TTY=pts/0 ; PWD=/home/ghada ; USER=root ;
Feb 11 17:48:07 localhost.localdomain sudo[6165]: pam_unix(sudo:session): session opened for user root(
Feb 11 17:48:07 localhost.localdomain sudo[6165]: pam_unix(sudo:session): session closed for user root
Feb 11 17:48:27 localhost.localdomain sudo[6177]:    ghada : TTY=pts/0 ; PWD=/home/ghada ; USER=root ;
Feb 11 17:48:27 localhost.localdomain sudo[6177]: pam_unix(sudo:session): session opened for user root(
Feb 11 17:50:40 localhost.localdomain sudo[6177]: pam_unix(sudo:session): session closed for user root
Feb 11 17:50:40 localhost.localdomain pipewire[2028]: spa.audioconvert: 0x5564f9277820: (0 suppressed)
Feb 11 17:50:47 localhost.localdomain pipewire[2028]: spa.audioconvert: 0x5564f9277820: (0 suppressed)
Feb 11 17:51:58 localhost.localdomain pipewire[2028]: spa.audioconvert: 0x5564f9277820: (0 suppressed)
Feb 11 17:55:38 localhost.localdomain systemd[1]: Starting Fingerprint Authentication Daemon...
Feb 11 17:55:38 localhost.localdomain systemd[1]: Started Fingerprint Authentication Daemon.
```

23. Schedule a Task to Run in 10 Minutes

```
[ghada@localhost ~]$ echo "ghada emad" >> log | at now+1min
warning: commands will be executed using /bin/sh
job 6 at Tue Feb 11 18:06:00 2025
```

24. list all scheduled at job

```
[ghada@localhost ~]$ atq
5       Tue Feb 11 18:15:00 2025 a ghada
[ghada@localhost ~]$ ls
Desktop     Downloads   log     output    Public       Templates
Documents   first_task  Music   Pictures  second_task  Videos
[ghada@localhost ~]$ cat lot
cat: lot: No such file or directory
[ghada@localhost ~]$ cat log
ghada emad
```

25. Remove a Scheduled Job

```
[ghada@localhost ~]$ atrm 5
[ghada@localhost ~]$ ls
Desktop     Downloads   log     output    Public       Templates
Documents   first_task  Music   Pictures  second_task  Videos
[ghada@localhost ~]$ atq
```

26. add a new cron job to run this script every minute