Linux Assignment

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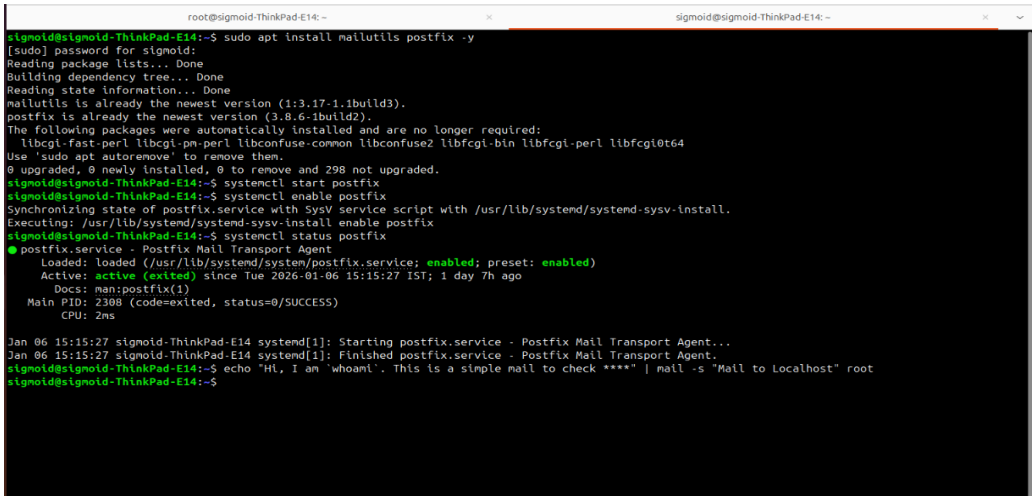
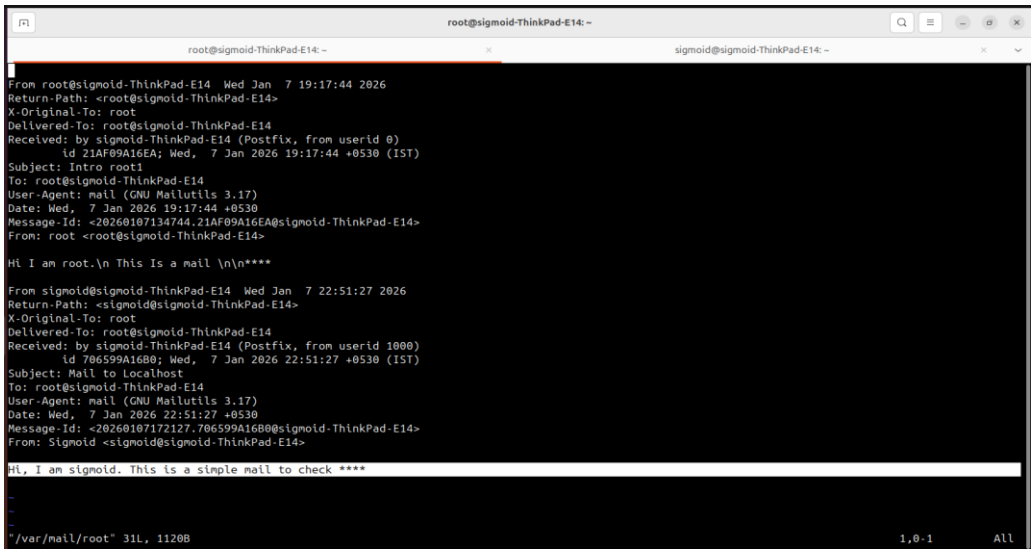
1) Configure smtp in localhost.

- Installed Postfix and mail utilities to set up SMTP functionality on the local system
- Started and enabled the Postfix service to ensure the mail server is active and persistent
- Verified the Postfix service status to confirm it is running correctly
- Sent a test email from a normal user to the root user using the mail command
- Logged in as root and verified successful mail delivery from the local mailbox

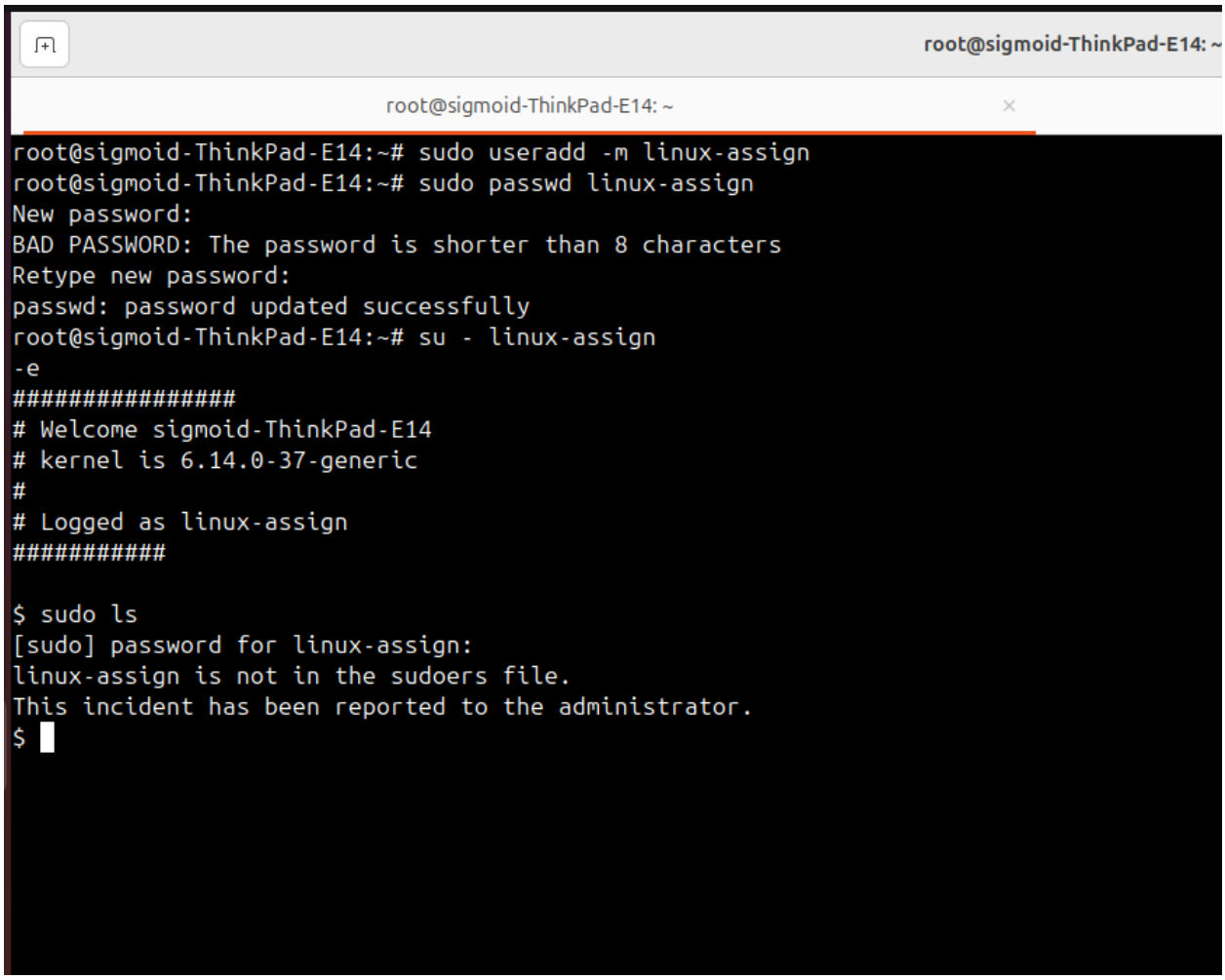




2) Create a user in your localhost, which should not be able to execute the sudo command.

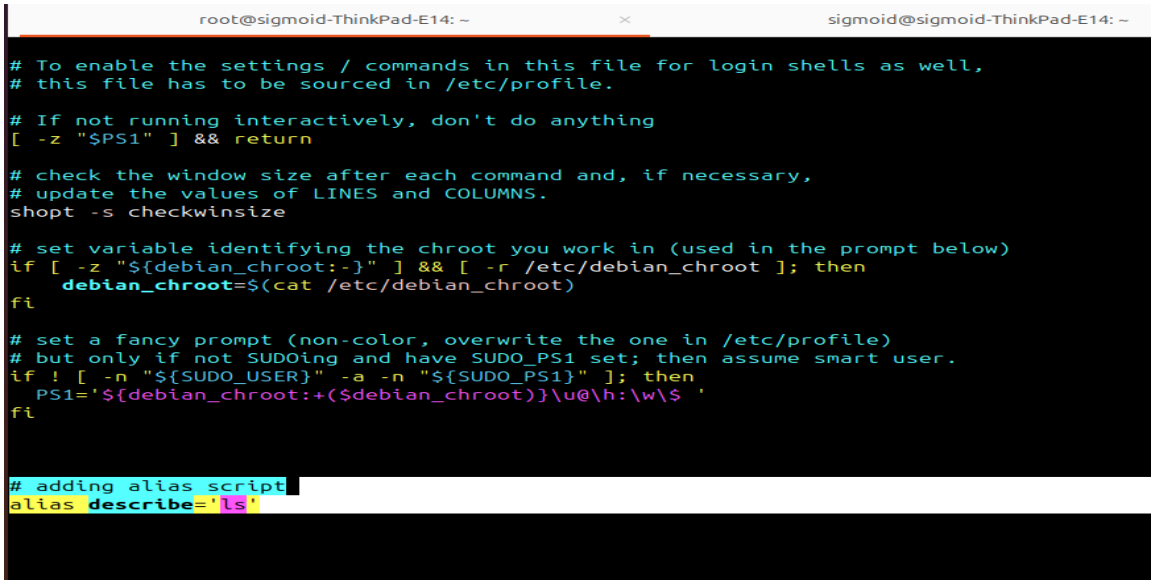
- Created a new local user account using the useradd command

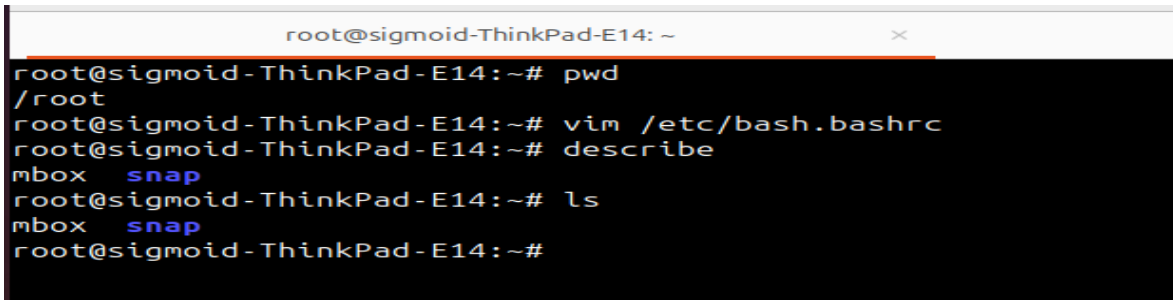
- Set a password for the newly created user
- Switched to the new user account to verify login access
- Attempted to run a command using sudo from the new user account
- Confirmed that the user is not part of the sudoers file and cannot execute sudo commands

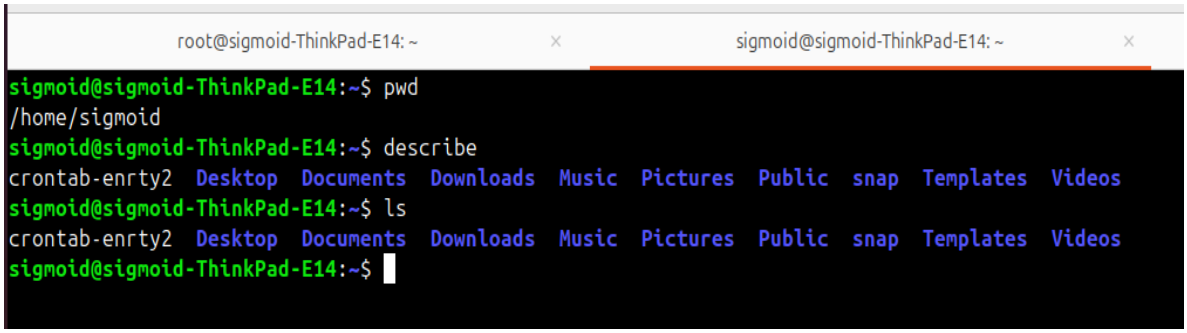


3) **Configure your system in such a way that when a user type and executes a describe** command from anywhere of the system it must list all the files and folders of the user's current directory.

- Created a custom alias named describe to map it to the ls command
- Added the alias definition in the user's shell configuration file (.bashrc)
- Reloaded the shell configuration to apply the alias immediately
- Executed the describe command from the home directory
- Verified that describe lists all files and directories of the current location, same as ls

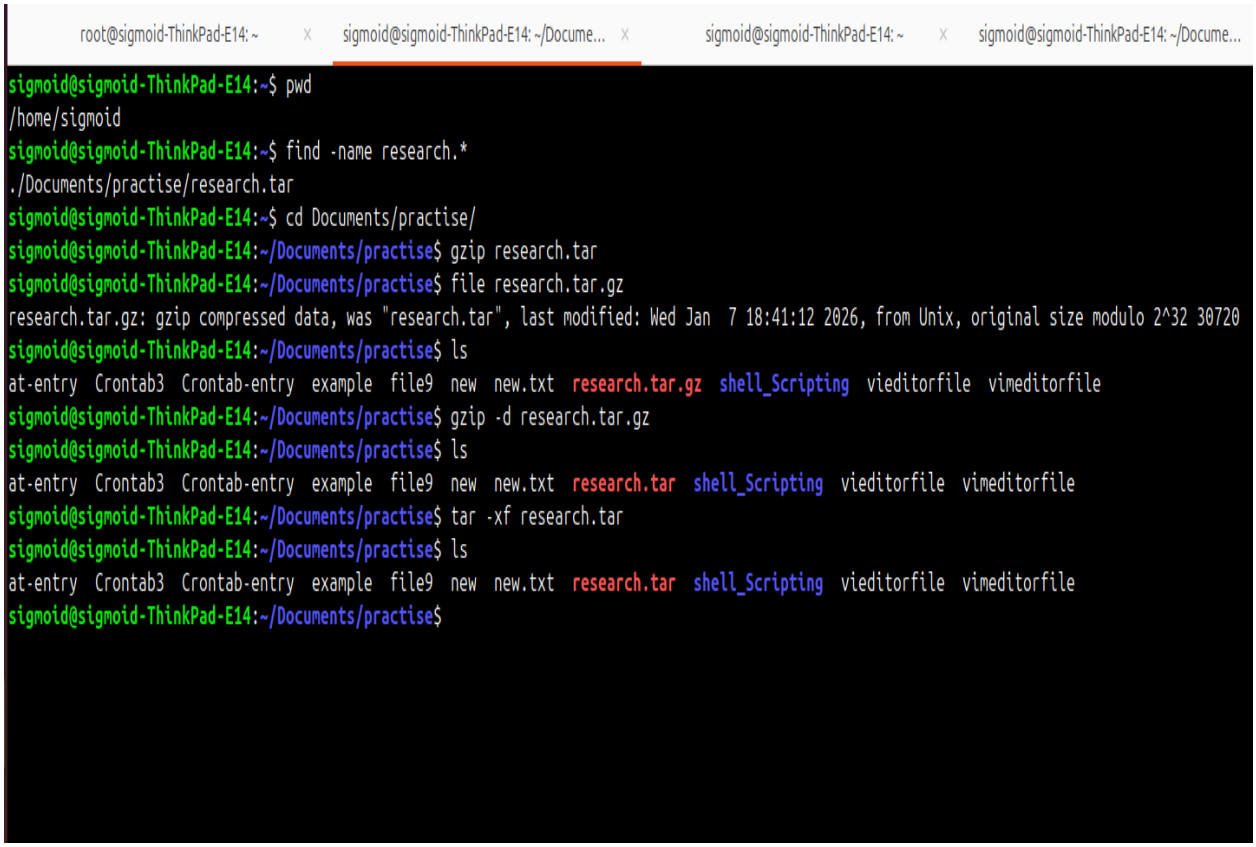






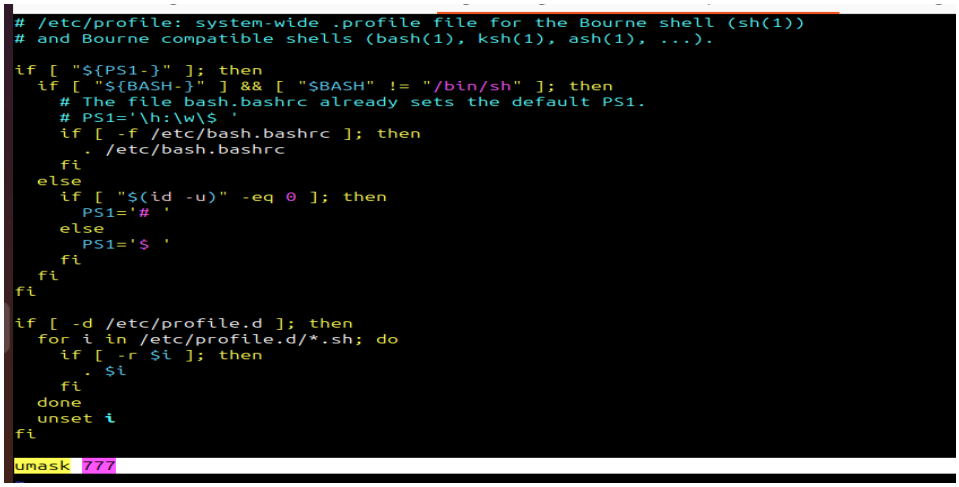
4) **Users can put a compressed file at any path of the linux file system. The name of the file will be "research" and the extension will be of compression type, for example gzip type extension will be .gz. You have to find the file and check the compression type and uncompress it.**

- Located the compressed file named research anywhere in the filesystem using the find command
- Identified the compression type of the file using the file command
- Verified that the file was compressed using gzip format
- Uncompressed the file using the gzip -d command
- Extracted the archive contents successfully and verified the output files



5) **Configure your system in such a way that any user of your system creates a file then there should not be permission to do any activity in that file.**

- Configured the system umask value to control default file permissions for all users
- Set the umask in the global profile so it applies system-wide
- Created a test file to verify default permissions
- Confirmed that the newly created file has no read, write, or execute permissions
- Validated that no user can perform any operation on the file without changing permissions

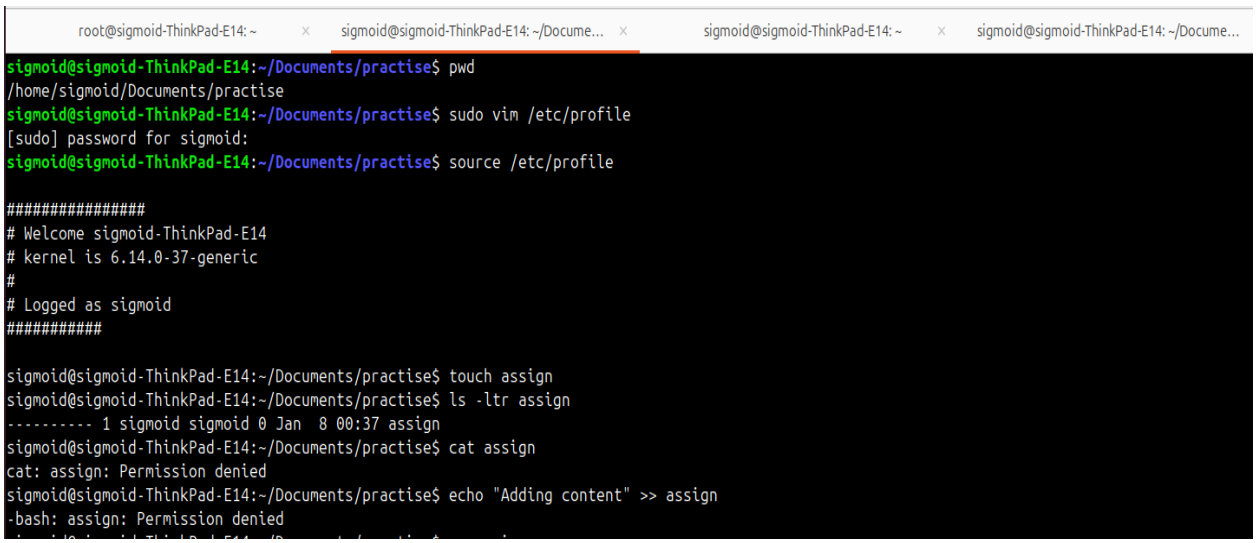


```
# /etc/profile: system-wide .profile file for the Bourne shell (sh(1))
# and Bourne compatible shells (bash(1), ksh(1), ash(1), ...).

if [ "${PS1-}" ]; then
  if [ "${BASH-}" ] && [ "$BASH" != "/bin/sh" ]; then
    # The file bash.bashrc already sets the default PS1.
    # PS1='\h:\w\$ '
    if [ -f /etc/bash.bashrc ]; then
      . /etc/bash.bashrc
    fi
  else
    if [ "$(id -u)" -eq 0 ]; then
      PS1='# '
    else
      PS1='$ '
    fi
  fi
fi

if [ -d /etc/profile.d ]; then
  for i in /etc/profile.d/*.sh; do
    if [ -r $i ]; then
      . $i
    fi
  done
  unset i
fi

umask 777
```



```
root@sigmoid-ThinkPad-E14: ~   sigmoid@sigmoid-ThinkPad-E14: ~/Docume...   sigmoid@sigmoid-ThinkPad-E14: ~   sigmoid@sigmoid-ThinkPad-E14: ~/Docume...

sigmoid@sigmoid-ThinkPad-E14:~/Documents/practise$ pwd
/home/sigmoid/Documents/practise
sigmoid@sigmoid-ThinkPad-E14:~/Documents/practise$ sudo vim /etc/profile
[sudo] password for sigmoid:
sigmoid@sigmoid-ThinkPad-E14:~/Documents/practise$ source /etc/profile

###############
# Welcome sigmoid-ThinkPad-E14
# kernel is 6.14.0-37-generic
#
# Logged as sigmoid
###########

sigmoid@sigmoid-ThinkPad-E14:~/Documents/practise$ touch assign
sigmoid@sigmoid-ThinkPad-E14:~/Documents/practise$ ls -ltr assign
---------- 1 sigmoid sigmoid 0 Jan  8 00:37 assign
sigmoid@sigmoid-ThinkPad-E14:~/Documents/practise$ cat assign
cat: assign: Permission denied
sigmoid@sigmoid-ThinkPad-E14:~/Documents/practise$ echo "Adding content" >> assign
-bash: assign: Permission denied
```

6) **Create a service with the name showtime , after starting the service, every minute it should print the current time in a file in the user home directory.**
   Ex:-
   sudo service showtime start -> It should start writing in file.
   sudo service showtime stop -> It should stop writing in file.
   sudo service showtime status -> It should show status.

- Created a custom shell script to write the current system time into a file located in the user's home directory every minute
- Made the script executable so it can be run by the system service manager
- Created a custom systemd service file named showtime to manage the script execution
- Started the showtime service to begin writing time entries and verified its running status
- Stopped the service and confirmed that the time logging process terminated successfully

root@sigmoid-ThinkPad-E14: ~ × sigmoid@sigmoid-ThinkPad-E14: ~

```
#!/bin/bash


while true
do
        date >> /home/sigmoid/showtime.log
        sleep 60
done
```

root@sigmoid-ThinkPad-E14: ~ × sigmoid@sigmoid-ThinkPad-E14: ~ × sigmoid@sigmoid-ThinkPad-E14: ~ × sigmoid@sigmoid-ThinkPad-E14: ~/Docume...

```
sigmoid@sigmoid-ThinkPad-E14:~$ pwd
/home/sigmoid
sigmoid@sigmoid-ThinkPad-E14:~$ sudo vim /usr/local/bin/showtime.sh
sigmoid@sigmoid-ThinkPad-E14:~$ sudo chmod +x /usr/local/bin/showtime.sh
sigmoid@sigmoid-ThinkPad-E14:~$ sudo vim /etc/systemd/system/showtime.service
sigmoid@sigmoid-ThinkPad-E14:~$ sudo systemctl daemon-reload
sigmoid@sigmoid-ThinkPad-E14:~$ sudo service showtime start
sigmoid@sigmoid-ThinkPad-E14:~$ sudo service showtime status
● showtime.service - Show Time Service
     Loaded: loaded (/etc/systemd/system/showtime.service; disabled; preset: enabled)
     Active: active (running) since Thu 2026-01-08 01:07:17 IST; 24s ago
   Main PID: 24593 (showtime.sh)
      Tasks: 2 (limit: 8943)
     Memory: 604.0K (peak: 1.1M)
        CPU: 3ms
     CGroup: /system.slice/showtime.service
             ├─24593 /bin/bash /usr/local/bin/showtime.sh
             └─24595 sleep 60

Jan 08 01:07:17 sigmoid-ThinkPad-E14 systemd[1]: Started showtime.service - Show Time Service.
sigmoid@sigmoid-ThinkPad-E14:~$ sudo service showtime stop
sigmoid@sigmoid-ThinkPad-E14:~$ cat showtime.log
Thu Jan  8 01:07:17 AM IST 2026
Thu Jan  8 01:08:17 AM IST 2026
Thu Jan  8 01:09:17 AM IST 2026
Thu Jan  8 01:10:17 AM IST 2026
sigmoid@sigmoid-ThinkPad-E14:~$
```