

ROHITH P

Section 1: Core Command Operations

```
rohithp@CertifiedLinuxBoy: ~/SysOpsLab/Archives
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

rohithp@CertifiedLinuxBoy:~$ mkdir -p ~/SysOpsLab/Exercises/SessionA
rohithp@CertifiedLinuxBoy:~$ mkdir -p ~/SysOpsLab/Archives
rohithp@CertifiedLinuxBoy:~$ cd ~/SysOpsLab/Exercises/SessionA
rohithp@CertifiedLinuxBoy:~/SysOpsLab/Exercises/SessionA$ touch alpha.txt
rohithp@CertifiedLinuxBoy:~/SysOpsLab/Exercises/SessionA$ touch beta.txt
rohithp@CertifiedLinuxBoy:~/SysOpsLab/Exercises/SessionA$ touch gamma.txt
rohithp@CertifiedLinuxBoy:~/SysOpsLab/Exercises/SessionA$ mv alpha.txt ~/SysOpsLab/Archives/
rohithp@CertifiedLinuxBoy:~/SysOpsLab/Exercises/SessionA$ cp beta.txt ~/SysOpsLab/
rohithp@CertifiedLinuxBoy:~/SysOpsLab/Exercises/SessionA$ mv gamma.txt delta.txt
rohithp@CertifiedLinuxBoy:~/SysOpsLab/Exercises/SessionA$ cd ~/SysOpsLab/Archives
rohithp@CertifiedLinuxBoy:~/SysOpsLab/Archives$ ln ~/SysOpsLab/Exercises/SessionA/beta.txt betahardlink
rohithp@CertifiedLinuxBoy:~/SysOpsLab/Archives$ ln -s ~/SysOpsLab/Exercises/SessionA/beta.txt betasoftlink
rohithp@CertifiedLinuxBoy:~/SysOpsLab/Archives$ ls -li
total 0
1968454 -rw-rw-r-- 1 rohithp rohithp 0 Nov 27 18:09 alpha.txt
1968455 -rw-rw-r-- 2 rohithp rohithp 0 Nov 27 18:09 betahardlink
1968536 lrwxrwxrwx 1 rohithp rohithp 51 Nov 27 18:12 betasoftlink -> /home/rohithp/SysOpsLab/Exercises/SessionA/beta.txt
rohithp@CertifiedLinuxBoy:~/SysOpsLab/Archives$
```

SECTION 2: User, Group & Permission Management

```
rohithp@CertifiedLinuxBoy:~$ touch private_log.txt
rohithp@CertifiedLinuxBoy:~$ chmod 600 private_log.txt
rohithp@CertifiedLinuxBoy:~$ sudo useradd newuser1
rohithp@CertifiedLinuxBoy:~$ sudo passwd newuser1
New password:
Retype new password:
passwd: password updated successfully
rohithp@CertifiedLinuxBoy:~$ sudo chown newuser1:newuser1 private_log.txt
rohithp@CertifiedLinuxBoy:~$ sudo apt install acl
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
acl is already the newest version (2.3.2-1build1.1).
acl set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
rohithp@CertifiedLinuxBoy:~$ sudo setfacl -m u:newuser1:r private_log.txt
rohithp@CertifiedLinuxBoy:~$ getfacl private_log.txt
# file: private_log.txt
# owner: newuser1
# group: newuser1
user::rw-
user:newuser1:r--
group::---
mask::r--
other::---
```

```

rohithp@CertifiedLinuxBoy:~$ pwd
/home/rohithp
rohithp@CertifiedLinuxBoy:~$ uptime
18:25:36 up 27 min, 1 user, load average: 0.54, 0.60, 0.63
rohithp@CertifiedLinuxBoy:~$ who
rohithp  seat0          2025-11-27 23:31 (login screen)
rohithp  tty2           2025-11-27 23:31 (tty2)
rohithp@CertifiedLinuxBoy:~$ free -h
               total        used        free      shared  buff/cache   available
Mem:            13Gi         2.9Gi         8.0Gi         84Mi         2.4Gi         10Gi
Swap:           4.0Gi          0B         4.0Gi
rohithp@CertifiedLinuxBoy:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
tmpfs            1.4G  2.2M  1.4G   1% /run
/dev/nvme0n1p5  53G   9.7G   41G  20% /
tmpfs            6.8G   0  6.8G   0% /dev/shm
tmpfs            5.0M  12K   5.0M   1% /run/lock
efivarfs        148K  131K   13K  92% /sys/firmware/efi/efivars
/dev/nvme0n1p1  96M   53M   44M  56% /boot/efi
tmpfs            1.4G  136K   1.4G   1% /run/user/1000
rohithp@CertifiedLinuxBoy:~$ top -b -n1 | head -5
top - 18:26:19 up 28 min, 1 user, load average: 0.58, 0.61, 0.63
Tasks: 368 total, 1 running, 367 sleeping, 0 stopped, 0 zombie
%Cpu(s):  0.6 us,  0.6 sy,  0.0 ni, 98.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem : 13825.1 total, 8243.6 free, 2933.5 used, 2452.8 buff/cache
MiB Swap: 4096.0 total, 4096.0 free,  0.0 used. 10891.6 avail Mem
rohithp@CertifiedLinuxBoy:~$ top -b -n1 | head -10
top - 18:26:39 up 28 min, 1 user, load average: 0.48, 0.59, 0.63
Tasks: 368 total, 1 running, 367 sleeping, 0 stopped, 0 zombie
%Cpu(s):  0.6 us,  0.6 sy,  0.0 ni, 98.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem : 13825.1 total, 8242.7 free, 2934.4 used, 2452.8 buff/cache
MiB Swap: 4096.0 total, 4096.0 free,  0.0 used. 10890.7 avail Mem

   PID USER      PR  NI   VIRT   RES    SHR S  %CPU  %MEM    TIME+  COMMAND
  7779 rohithp   20   0  23168   5260   3212 R   8.3   0.0   0:00.02 top
    1 root      20   0  23424  13660   9180 S   0.0   0.1   0:03.17 systemd
    2 root      20   0     0     0     0 S   0.0   0.0   0:00.00 kthreadd
rohithp@CertifiedLinuxBoy:~$ uname -r
6.14.0-27-generic
rohithp@CertifiedLinuxBoy:~$

```

```

rohithp@CertifiedLinuxBoy:~$ {
  echo "Report of system information - $(date)"
  echo "PWD: $(pwd)"
  who
  uptime
  free -h
  df -h
  uname -r
} > sysinfo_report.txt
rohithp@CertifiedLinuxBoy:~$

```

```

rohithp@CertifiedLinuxBoy:~$ sudo useradd analyst1
rohithp@CertifiedLinuxBoy:~$ sudo groupadd datateam
rohithp@CertifiedLinuxBoy:~$ sudo usermod -aG datateam analyst1
rohithp@CertifiedLinuxBoy:~$ sudo mkdir /datahub
rohithp@CertifiedLinuxBoy:~$ sudo chgrp datateam /datahub
rohithp@CertifiedLinuxBoy:~$ sudo chmod 2770 /datahub
rohithp@CertifiedLinuxBoy:~$ id analyst1
uid=1003(analyst1) gid=1003(analyst1) groups=1003(analyst1),1004(datateam)
rohithp@CertifiedLinuxBoy:~$ groups analyst1
analyst1 : analyst1 datateam
rohithp@CertifiedLinuxBoy:~$ ls -ld /datahub
drwxrws--- 2 root datateam 4096 Nov 27 18:30 /datahub
rohithp@CertifiedLinuxBoy:~$

```


SECTION 3: Networking and Connectivity

```
rohithp@CertifiedLinuxBoy:~$ ping -c 4 google.com > netcheck.txt
rohithp@CertifiedLinuxBoy:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: enp4s0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc fq_codel state DOWN group default qlen 1000
    link/ether 5a:43:93:19:19:b8 brd ff:ff:ff:ff:ff:ff
3: wlp5s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default qlen 1000
    link/ether 74:97:79:b5:7f:0f brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.101/24 brd 192.168.0.255 scope global dynamic noprefixroute wlp5s0
        valid_lft 4677sec preferred_lft 4677sec
    inet6 fe80::f530:b3b0:30fa:6f34/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
rohithp@CertifiedLinuxBoy:~$ ip route
default via 192.168.0.1 dev wlp5s0 proto dhcp src 192.168.0.101 metric 600
192.168.0.0/24 dev wlp5s0 proto kernel scope link src 192.168.0.101 metric 600
rohithp@CertifiedLinuxBoy:~$ cat /etc/resolv.conf
# This is /run/systemd/resolve/stub-resolv.conf managed by man:systemd-resolved(8).
# Do not edit.
#
# This file might be symlinked as /etc/resolv.conf. If you're looking at
# /etc/resolv.conf and seeing this text, you have followed the symlink.
#
# This is a dynamic resolv.conf file for connecting local clients to the
# internal DNS stub resolver of systemd-resolved. This file lists all
# configured search domains.
#
# Run "resolvectl status" to see details about the uplink DNS servers
# currently in use.
#
# Third party programs should typically not access this file directly, but only
# through the symlink at /etc/resolv.conf. To manage man:resolv.conf(5) in a
# different way, replace this symlink by a static file or a different symlink.
#
# See man:systemd-resolved.service(8) for details about the supported modes of
# operation for /etc/resolv.conf.

nameserver 127.0.0.53
options edns0 trust-ad
search .
```

```
rohithp@CertifiedLinuxBoy:~$ ss -tuln
```

Netid	State	Recv-Q	Send-Q	Local Address:Port	Peer Address:Port	Process
udp	UNCONN	0	0	127.0.0.54:53	0.0.0.0:*	
udp	UNCONN	0	0	127.0.0.53%lo:53	0.0.0.0:*	
udp	UNCONN	0	0	0.0.0.0:34680	0.0.0.0:*	
udp	UNCONN	0	0	0.0.0.0:5353	0.0.0.0:*	
udp	UNCONN	0	0	0.0.0.0:54536	0.0.0.0:*	
udp	UNCONN	0	0	:::49235	:::*	
udp	UNCONN	0	0	:::5353	:::*	
tcp	LISTEN	0	4096	127.0.0.1:631	0.0.0.0:*	
tcp	LISTEN	0	4096	127.0.0.53%lo:53	0.0.0.0:*	
tcp	LISTEN	0	4096	127.0.0.54:53	0.0.0.0:*	
tcp	LISTEN	0	4096	:::1:631	:::*	

```
rohithp@CertifiedLinuxBoy:~$ ss -tuln | awk '/LISTEN/ {print $5}' > open_ports.txt
rohithp@CertifiedLinuxBoy:~$
```

SECTION 4: Shell Scripting and Automation

```
rohithp@CertifiedLinuxBoy:~$  
rohithp@CertifiedLinuxBoy:~$ nano file_inspector.sh  
rohithp@CertifiedLinuxBoy:~$ chmod +x file_inspector.sh  
rohithp@CertifiedLinuxBoy:~$ ./file_inspector.sh  
Enter the name of the file: anewfile.txt  
File created.  
rohithp@CertifiedLinuxBoy:~$
```

```
GNU nano 7.2 file_inspector.sh *  
echo -n "Enter the name of the file: "  
read fname  
if [ -f "$fname" ]; then  
    echo "File found."  
else  
    echo "File created."  
    touch "$fname"  
fi  
echo "$(date) - Checked: $fname" >> inspector_log.txt
```

```
^G Help      ^O Write Out  ^W Where Is   ^K Cut        ^T Execute    ^C Location   M-U Undo      M-A Set Mark  M-T To Bracket M-Q Pre  
^X Exit      ^R Read File  ^_ Replace    ^U Paste      ^J Justify    ^_/ Go To Line M-E Redo      M-G Copy      ^Q Where Was  M-W Nex
```

```
rohithp@CertifiedLinuxBoy:~$ nano resource_tracker.sh  
rohithp@CertifiedLinuxBoy:~$ chmod +x resource_tracker.sh  
rohithp@CertifiedLinuxBoy:~$ pwd  
/home/rohithp  
rohithp@CertifiedLinuxBoy:~$ crontab -e  
crontab: installing new crontab
```



```

done
Processing triggers for libc-bin (2.39-0ubuntu8.6) ...
rohithp@CertifiedLinuxBoy:~$ sudo apt install curl
[sudo] password for rohithp:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  libllvm19
Use 'sudo apt autoremove' to remove it.
The following NEW packages will be installed:
  curl
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 226 kB of archives.
After this operation, 534 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 curl amd64 8.5.0-2ubuntu10.6 [226 kB]
Fetched 226 kB in 1s (159 kB/s)
Selecting previously unselected package curl.
(Reading database ... 189792 files and directories currently installed.)
Preparing to unpack .../curl_8.5.0-2ubuntu10.6_amd64.deb ...
Unpacking curl (8.5.0-2ubuntu10.6) ...
Setting up curl (8.5.0-2ubuntu10.6) ...
Processing triggers for man-db (2.12.0-4build2) ...
rohithp@CertifiedLinuxBoy:~$ dpkg -l > pkg_list.txt
rohithp@CertifiedLinuxBoy:~$ dpkg-query -Wf '${Installed-Size}\t${Package}\n' | sort -n | tail -5 > large_packages.txt
rohithp@CertifiedLinuxBoy:~$

```

```

rohithp@CertifiedLinuxBoy:~$ ps aux
USER          PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root           1  0.1  0.1 23348 14564 ?        Ss   17:58   0:12 /usr/lib/systemd/systemd --system --deserialize=80 splash
root           2  0.0  0.0      0     0 ?        S    17:58   0:00 [kthreadd]
root           3  0.0  0.0      0     0 ?        S    17:58   0:00 [pool_workqueue_release]
root           4  0.0  0.0      0     0 ?        I<   17:58   0:00 [kworker/R-rcu_gp]
root           5  0.0  0.0      0     0 ?        I<   17:58   0:00 [kworker/R-sync_wq]
root           6  0.0  0.0      0     0 ?        I<   17:58   0:00 [kworker/R-kvfree_rcu_reclaim]
root           7  0.0  0.0      0     0 ?        I<   17:58   0:00 [kworker/R-slub_flushwq]
root           8  0.0  0.0      0     0 ?        I<   17:58   0:00 [kworker/R-netns]
root          10  0.0  0.0      0     0 ?        I    17:58   0:00 [kworker/0:1-events]
root          11  0.0  0.0      0     0 ?        I<   17:58   0:00 [kworker/0:0H-events_highpri]
root          13  0.0  0.0      0     0 ?        I<   17:58   0:00 [kworker/R-mm_percpu_wq]
root          14  0.0  0.0      0     0 ?        I    17:58   0:00 [rcu_tasks_kthread]
root          15  0.0  0.0      0     0 ?        I    17:58   0:00 [rcu_tasks_rude_kthread]
root          16  0.0  0.0      0     0 ?        I    17:58   0:00 [rcu_tasks_trace_kthread]
root          17  0.0  0.0      0     0 ?        S    17:58   0:00 [ksoftirqd/0]
root          18  0.1  0.0      0     0 ?        I    17:58   0:07 [rcu_preempt]
root          19  0.0  0.0      0     0 ?        S    17:58   0:00 [rcu_exp_par_gp_kthread_worker/0]
root          20  0.0  0.0      0     0 ?        S    17:58   0:00 [rcu_exp_gp_kthread_worker]
root          21  0.0  0.0      0     0 ?        S    17:58   0:01 [migration/0]
root          22  0.0  0.0      0     0 ?        S    17:58   0:00 [idle_inject/0]
root          23  0.0  0.0      0     0 ?        S    17:58   0:00 [cpuhp/0]
root          24  0.0  0.0      0     0 ?        S    17:58   0:00 [cpuhp/2]
root          25  0.0  0.0      0     0 ?        S    17:58   0:00 [idle_inject/2]
root          26  0.0  0.0      0     0 ?        S    17:58   0:01 [migration/2]
root          27  0.0  0.0      0     0 ?        S    17:58   0:00 [ksoftirqd/2]
root          29  0.0  0.0      0     0 ?        I<   17:58   0:00 [kworker/2:0H-events_highpri]
root          30  0.0  0.0      0     0 ?        S    17:58   0:00 [cpuhp/4]
root          31  0.0  0.0      0     0 ?        S    17:58   0:00 [idle_inject/4]
root          32  0.0  0.0      0     0 ?        S    17:58   0:00 [migration/4]
root          33  0.0  0.0      0     0 ?        S    17:58   0:00 [ksoftirqd/4]
root          35  0.0  0.0      0     0 ?        I<   17:58   0:00 [kworker/4:0H-events_highpri]
root          36  0.0  0.0      0     0 ?        S    17:58   0:00 [cpuhp/6]
root          37  0.0  0.0      0     0 ?        S    17:58   0:00 [idle_inject/6]
root          38  0.0  0.0      0     0 ?        S    17:58   0:01 [migration/6]
root          39  0.0  0.0      0     0 ?        S    17:58   0:00 [ksoftirqd/6]
root          41  0.0  0.0      0     0 ?        I<   17:58   0:00 [kworker/6:0H-events_highpri]
root          42  0.0  0.0      0     0 ?        S    17:58   0:00 [cpuhp/8]
root          43  0.0  0.0      0     0 ?        S    17:58   0:00 [idle_inject/8]
root          44  0.0  0.0      0     0 ?        S    17:58   0:01 [migration/8]

```



```

rohithp@CertifiedLinuxBoy:~$
rohithp@CertifiedLinuxBoy:~$ top -b -n1 | head
top - 19:52:20 up 1:54, 1 user, load average: 0.76, 0.90, 0.81
Tasks: 399 total, 1 running, 398 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.0 us, 0.6 sy, 0.0 ni, 99.4 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 13825.1 total, 3451.9 free, 3976.1 used, 6051.5 buff/cache
MiB Swap: 4096.0 total, 4096.0 free, 0.0 used. 9849.0 avail Mem

   PID USER      PR  NI   VIRT   RES   SHR S  %CPU  %MEM    TIME+  COMMAND
  33150 rohithp   20   0  14500   5480  3432 R   9.1   0.0   0:00.01 top
      1 root      20   0  23348  14564  9700 S   0.0   0.1   0:12.58 systemd
      2 root      20   0     0     0     0 S   0.0   0.0   0:00.01 kthreadd
rohithp@CertifiedLinuxBoy:~$ kill -STOP 32694
bash: kill: (32694) - Operation not permitted
rohithp@CertifiedLinuxBoy:~$ kill -CONT 32694
bash: kill: (32694) - Operation not permitted
rohithp@CertifiedLinuxBoy:~$ █

```

```

rohithp@CertifiedLinuxBoy:~$ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
   Loaded: loaded (/usr/lib/systemd/system/ssh.service; enabled; preset: enabled)
   Active: active (running) since Thu 2025-11-27 19:54:55 IST; 13s ago
 TriggeredBy: ● ssh.socket
    Docs: man:sshd(8)
          man:sshd_config(5)
   Process: 34234 ExecStartPre=/usr/sbin/sshd -t (code=exited, status=0/SUCCESS)
   Main PID: 34236 (sshd)
     Tasks: 1 (limit: 16348)
    Memory: 1.2M (peak: 2.1M)
       CPU: 16ms
    CGroup: /system.slice/ssh.service
            └─34236 "sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups"

Nov 27 19:54:55 CertifiedLinuxBoy systemd[1]: Starting ssh.service - OpenBSD Secure Shell server...
Nov 27 19:54:55 CertifiedLinuxBoy sshd[34236]: Server listening on 0.0.0.0 port 22.
Nov 27 19:54:55 CertifiedLinuxBoy sshd[34236]: Server listening on :: port 22.
Nov 27 19:54:55 CertifiedLinuxBoy systemd[1]: Started ssh.service - OpenBSD Secure Shell server.
rohithp@CertifiedLinuxBoy:~$ sudo systemctl restart ssh
rohithp@CertifiedLinuxBoy:~$ nano autorestart.sh
rohithp@CertifiedLinuxBoy:~$ █

```

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GNU nano 7.2
SV=ssh
if ! systemctl is-active --quiet $SV; then
    systemctl restart $SV
fi
█

```


SECTION 6: Web Hosting and Security

```
rohithp@CertifiedLinuxBoy:~$ sudo apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  libllvm19
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64
0 upgraded, 8 newly installed, 0 to remove and 0 not upgraded.
Need to get 1,902 kB of archives.
After this operation, 7,451 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libapr1t64 amd64 1.7.2-3.1ubuntu0.1 [108 kB]
Get:2 http://archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1t64 amd64 1.6.3-1.1ubuntu7 [91.9 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.3-1.1ubuntu7 [11.2 kB]
Get:4 http://archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-ldap amd64 1.6.3-1.1ubuntu7 [9,116 B]
Get:5 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2-bin amd64 2.4.58-1ubuntu8.8 [1,331 kB]
Get:6 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2-data amd64 2.4.58-1ubuntu8.8 [51.6 kB]
Get:7 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2-utils amd64 2.4.58-1ubuntu8.8 [112 kB]
Get:8 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2 amd64 2.4.58-1ubuntu8.8 [112 kB]
Fetched 2,746 kB in 1s (2,746 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Enabling module authn_core.
Enabling module auth_basic.
Enabling module access_compat.
Enabling module authn_file.
Enabling module authz_user.
Enabling module alias.
Enabling module dir.
Enabling module autoindex.
Enabling module env.
Enabling module mime.
Enabling module negotiation.
Enabling module setenvif.
Enabling module filter.
Enabling module deflate.
Enabling module status.
Enabling module reqtimeout.
Enabling conf charset.
Enabling conf localized-error-pages.
Enabling conf other-vhosts-access-log.
Enabling conf security.
Enabling conf serve-cgi-bin.
Enabling site 000-default.
Created symlink /etc/systemd/system/multi-user.target.wants/apache2.service → /usr/lib/systemd/system/apache2.service.
Created symlink /etc/systemd/system/multi-user.target.wants/apache-htcacheclean.service → /usr/lib/systemd/system/apache-htcacheclean.service.
Processing triggers for ufw (0.36.2-6) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for libc-bin (2.39-0ubuntu8.6) ...
rohithp@CertifiedLinuxBoy:~$ sudo systemctl enable --now apache2
Synchronizing state of apache2.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable apache2
rohithp@CertifiedLinuxBoy:~$ echo "<h1>This is a messgae </h1>" | sudo tee /var/www/html/index.html
[sudo] password for rohithp:
<h1>This is a messgae </h1>
rohithp@CertifiedLinuxBoy:~$ sudo ufw allow 80/tcp
Rules updated
Rules updated (v6)
rohithp@CertifiedLinuxBoy:~$ sudo ufw allow 22/tcp
Rules updated
Rules updated (v6)
rohithp@CertifiedLinuxBoy:~$ sudo ufw enable
Firewall is active and enabled on system startup
rohithp@CertifiedLinuxBoy:~$
```

SECTION 7: Backup and Recovery

```
rohithp@CertifiedLinuxBoy:~$ mkdir -p ~/Backups
rohithp@CertifiedLinuxBoy:~$ nano daily_backup.sh
rohithp@CertifiedLinuxBoy:~$ chmod +x daily_backup.sh
rohithp@CertifiedLinuxBoy:~$ ./daily_backup.sh
tar: Removing leading '/' from member names
tar: Removing leading '/' from hard link targets
rohithp@CertifiedLinuxBoy:~$ find ~/Backups/ -mtime +10 -type f -delete
rohithp@CertifiedLinuxBoy:~$
rohithp@CertifiedLinuxBoy:~$
rohithp@CertifiedLinuxBoy:~$
rohithp@CertifiedLinuxBoy:~$
rohithp@CertifiedLinuxBoy:~$
rohithp@CertifiedLinuxBoy:~$
rohithp@CertifiedLinuxBoy:~$
```

```
GNU nano 7.2
NOW=$(date +"%Y%m%d_%H%M")
FILE="backup_${NOW}.tar.gz"

tar -czf ~/Backups/$FILE ~/SysOpsLab/
```

SECTION 8: Text Processing & File Manipulation

```
rohithp@CertifiedLinuxBoy:~$ touch textfile.txt
rohithp@CertifiedLinuxBoy:~$ nano textfile.txt
rohithp@CertifiedLinuxBoy:~$ sudo grep "hello" *.txt
textfile.txt:hello
textfile.txt:hello
textfile.txt:hello
textfile.txt:hello
rohithp@CertifiedLinuxBoy:~$ sed -i 's/hello/neword/g' textfile.txt
```


The text file before:

```
GNU nano 7.2                                     textfile.txt
hello
hi
how are you
hello
hello
hi
hello
hi
```

The text file after:

```
GNU nano 7.2                                     textfile.txt *
neword
hi
how are you
neword
neword
hi
neword
hi

```

```
rohithp@CertifiedLinuxBoy:~$ awk '{print $2}' textfile.txt
are

rohithp@CertifiedLinuxBoy:~$ tr ' ' '\n' < textfile.txt | sort | uniq -c
1
1 are
3 hi
1 how
4 neword
1 you
rohithp@CertifiedLinuxBoy:~$
```