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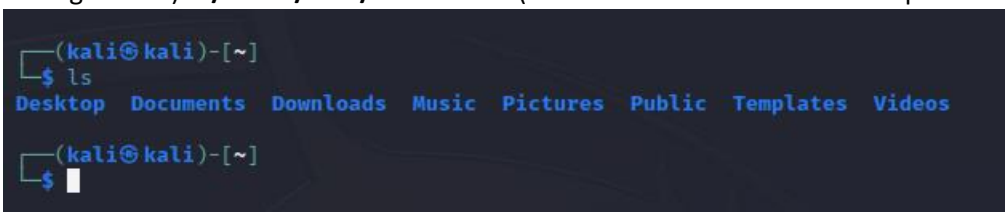
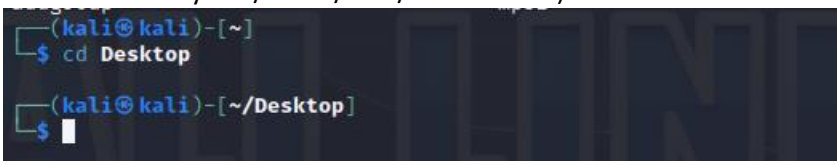
File and Directory Operations:

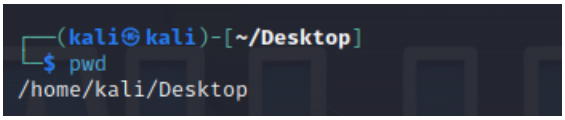
1. **ls**: List files and directories Syntax: **ls [options] [directory]** Example: **ls -l** (lists files and directories in long format) **ls /home/user/Documents** (lists files and directories in the specified directory)



2. **cd**: Change directory Syntax: **cd [directory]** Example: **cd /home/user/Documents** (changes the current directory to "/home/user/Documents")

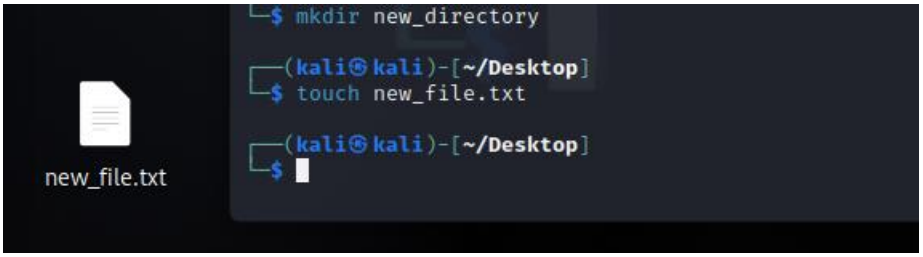


3. **pwd**: Print working directory Syntax: **pwd** Example: **pwd** (displays the current working directory)

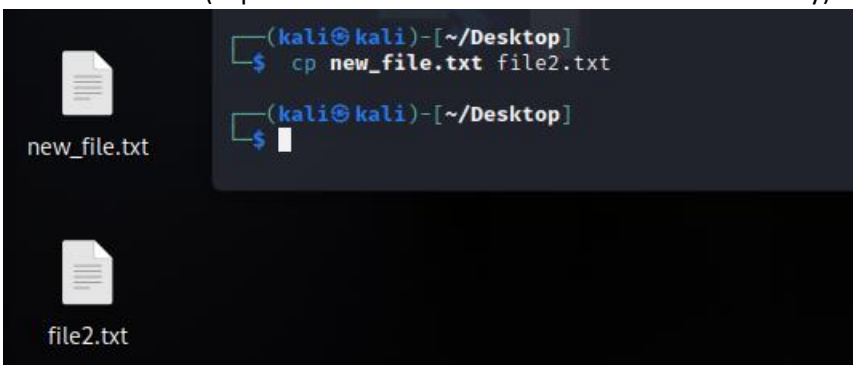


4. **mkdir**: Make directory Syntax: **mkdir [options] directory_name** Example: **mkdir new_directory** (creates a directory named "new_directory" in the current directory)

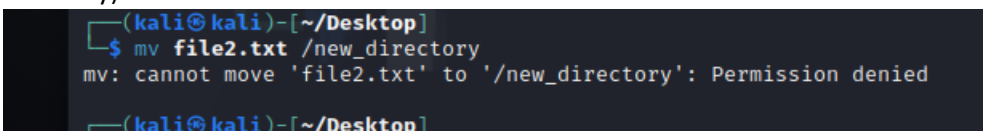
5. **touch**: Create an empty file Syntax: **touch [options] file_name** Example: **touch new_file.txt** (creates an empty file named "new_file.txt" in the current directory)



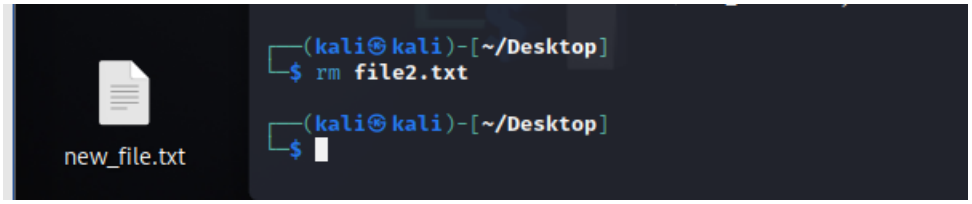
6. **cp**: Copy files and directories Syntax: **cp [options] source_file destination_file** Example: **cp file1.txt file2.txt** (copies "file1.txt" to "file2.txt" in the same directory)



7. **mv**: Move or rename files and directories Syntax: **mv [options] source_file destination** Example: **mv file1.txt /home/user/Documents/** (moves "file1.txt" to the "/home/user/Documents/" directory)



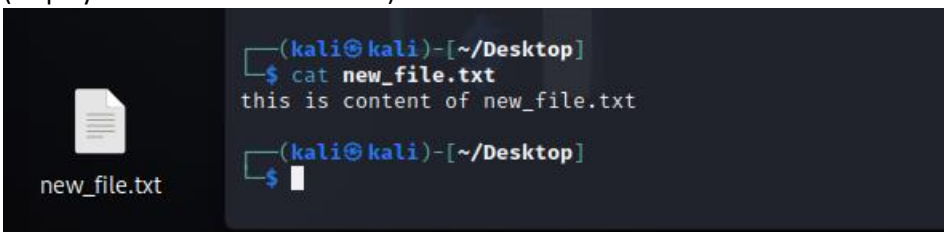
8. **rm**: Remove files and directories Syntax: **rm [options] file_name** Example: **rm file.txt** (removes the file named "file.txt" from the current directory)



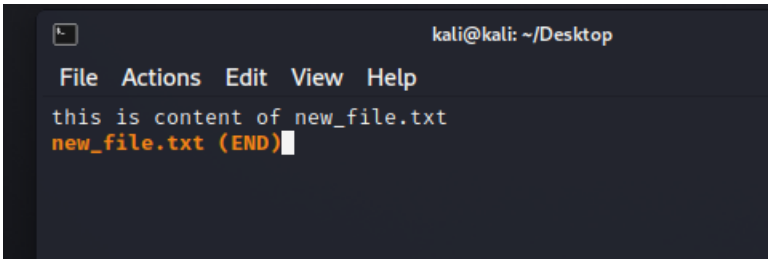
9. **find**: Search for files and directories Syntax: **find [path] [expression]** Example: **find /home/user/Documents/ -name "*.txt"** (finds all files with a .txt extension in the "/home/user/Documents/" directory)

File Viewing and Editing:

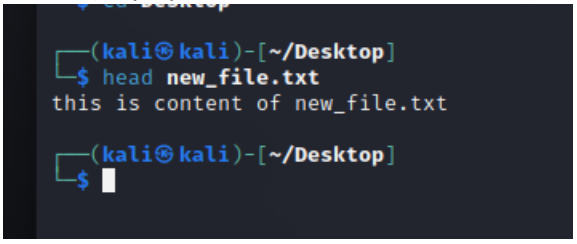
1. **cat**: Concatenate and display file content Syntax: **cat [options] file_name** Example: **cat file.txt** (displays the content of "file.txt")



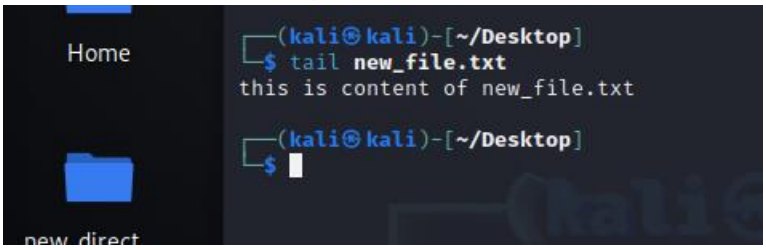
2. **less**: View file content with pagination Syntax: **less [options] file_name** Example: **less file.txt** (displays the content of "file.txt" with pagination)



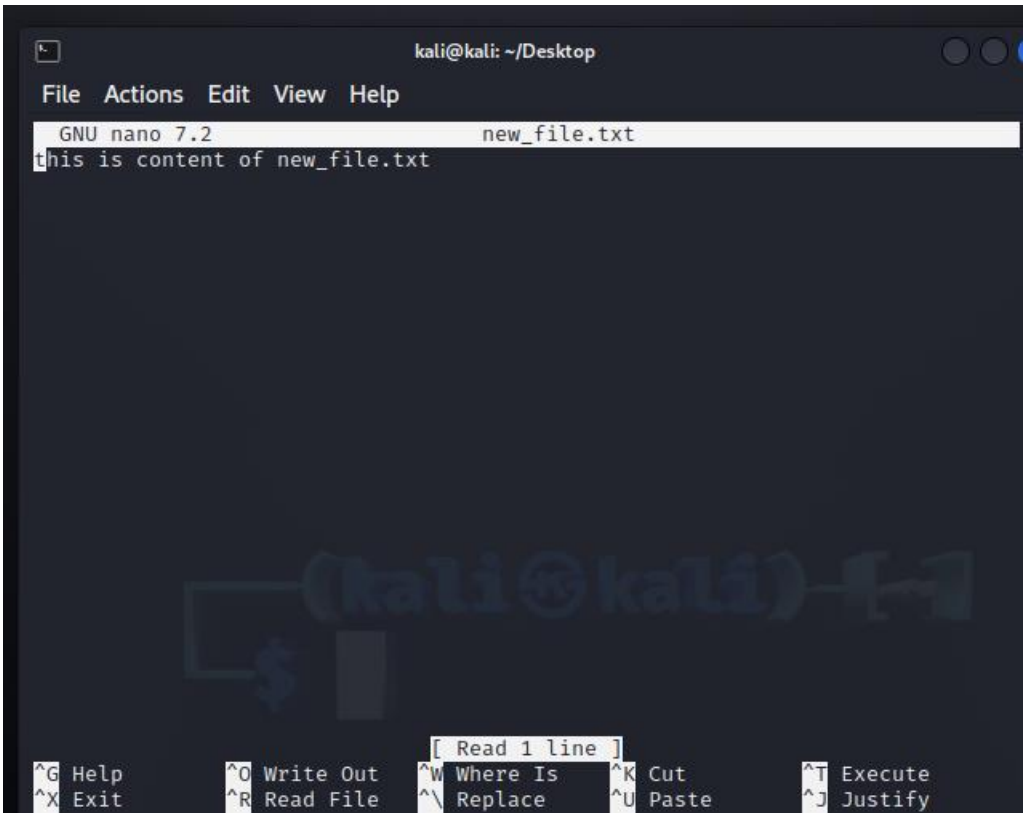
3. **head**: Display the beginning of a file Syntax: **head [options] file_name** Example: **head -n 10 file.txt** (displays the first 10 lines of "file.txt")



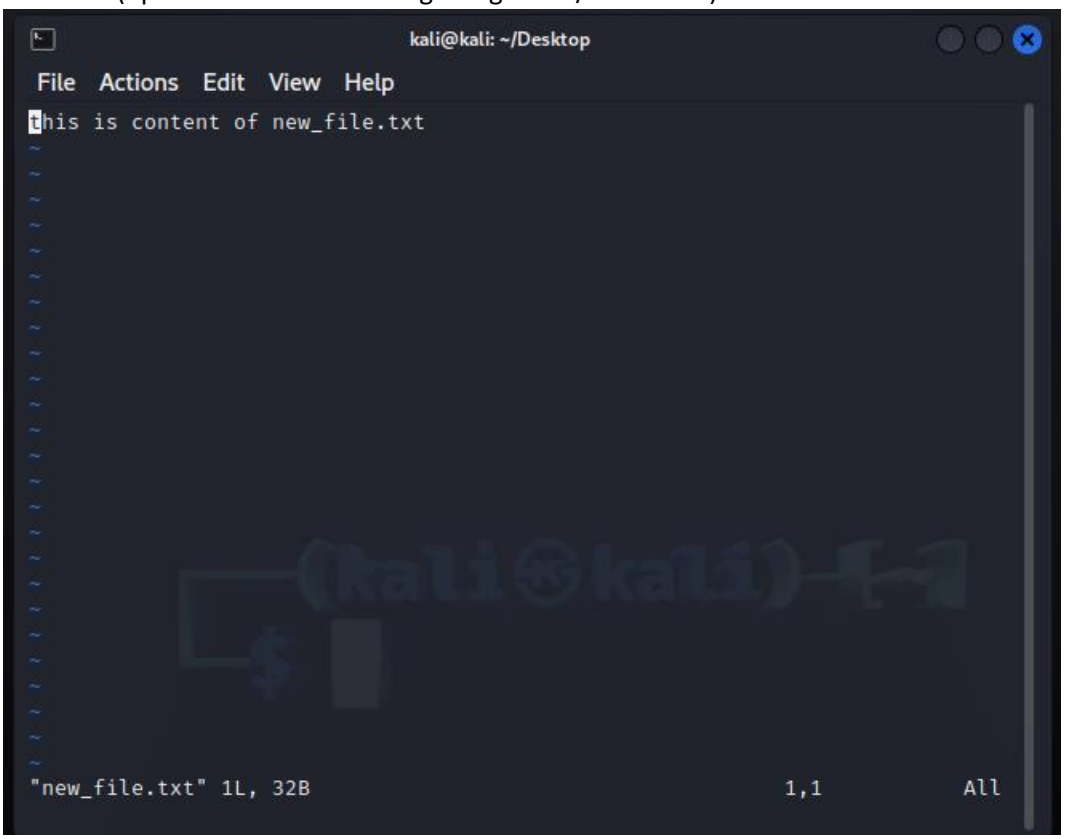
4. **tail**: Display the end of a file Syntax: **tail [options] file_name** Example: **tail -n 5 file.txt** (displays the last 5 lines of "file.txt")



5. **nano**: Text editor for creating and editing files Syntax: **nano [options] file_name** Example: **nano new_file.txt** (opens "new_file.txt" for editing using the nano editor)


kali@kali: ~/Desktop
File Actions Edit View Help
GNU nano 7.2 new_file.txt
this is content of new_file.txt
[Read 1 line]
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify

6. **vi/vim**: Powerful text editor for experienced users Syntax: **vi/vim [options] file_name** Example: **vi file.txt** (opens "file.txt" for editing using the vi/vim editor)



File Permissions:

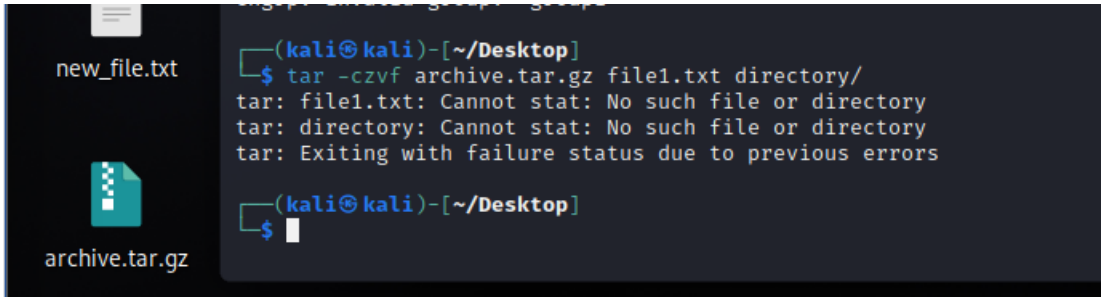
1. **chmod**: Change file permissions Syntax: **chmod [options] permissions file_name** Example: **chmod 644 file.txt** (sets the file permissions of "file.txt" to read-write for the owner and read-only for others)

2. **chown**: Change file owner Syntax: **chown [options] new_owner file_name** Example: **chown user1 file.txt** (changes the owner of "file.txt" to "user1")

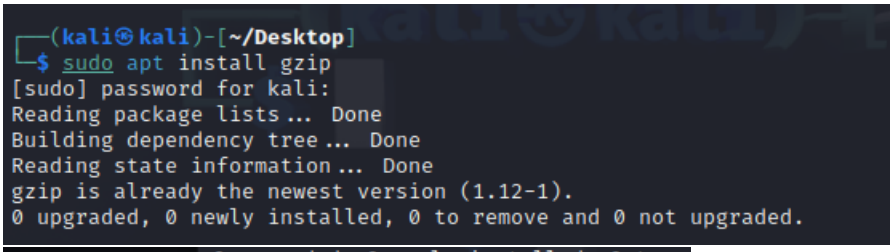
3. **chgrp**: Change file group Syntax: **chgrp [options] new_group file_name** Example: **chgrp group1 file.txt** (changes the group of "file.txt" to "group1")

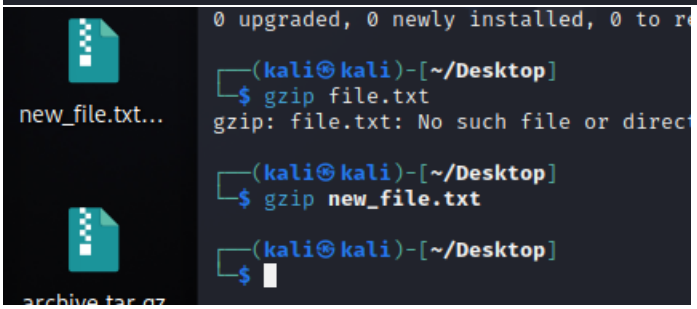
File Compression and Archiving:

1. **tar**: Archive files Syntax: **tar [options] archive_file files/directories** Example: **tar -czvf archive.tar.gz file1.txt directory/** (creates a compressed tar archive named "archive.tar.gz" containing "file1.txt" and "directory/")



2. **gzip**: Compress files Syntax: **gzip [options] file_name** Example: **gzip file.txt** (compresses "file.txt" and creates a compressed file named "file.txt.gz")

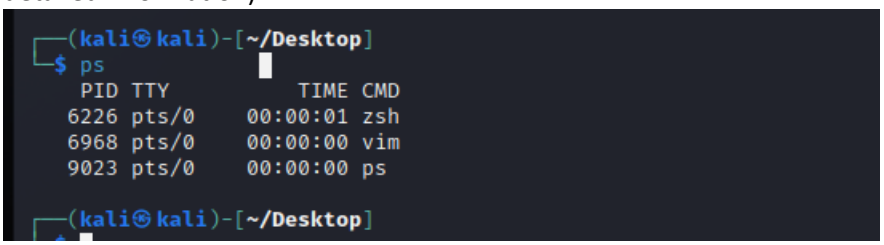




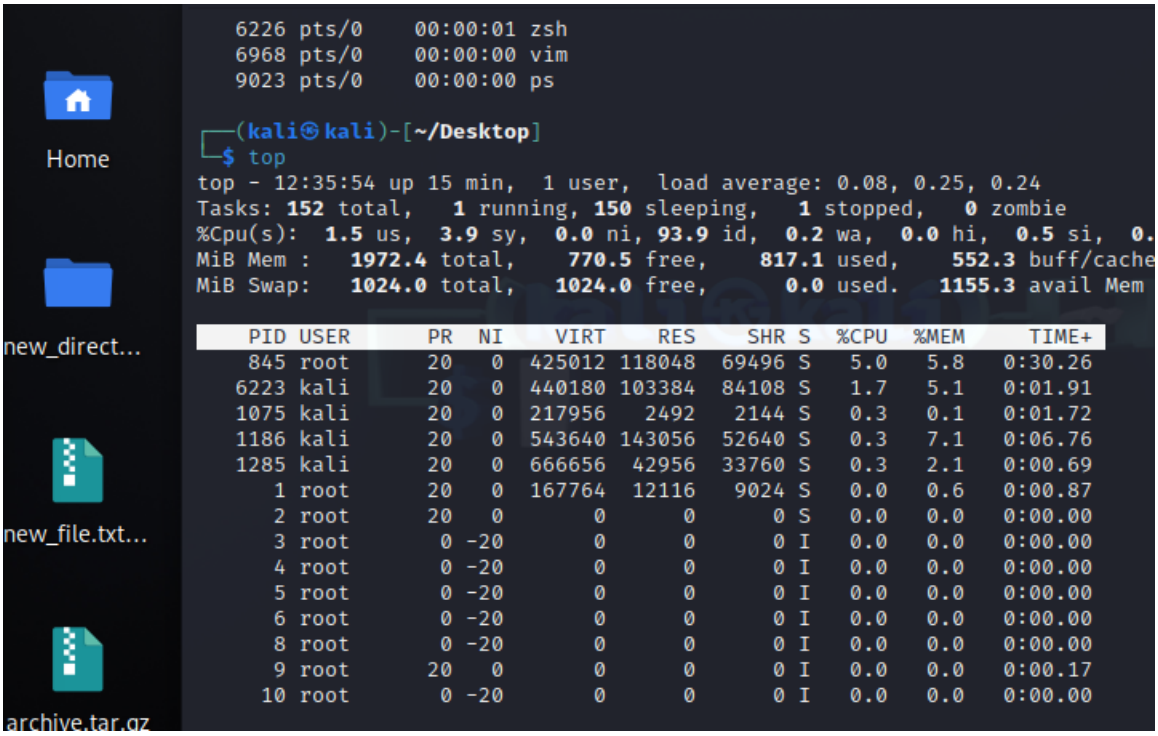
3. **unzip**: Extract files from a ZIP archive Syntax: **unzip [options] archive_file** Example: **unzip archive.zip** (extracts files from "archive.zip" into the current directory)

Process Management:

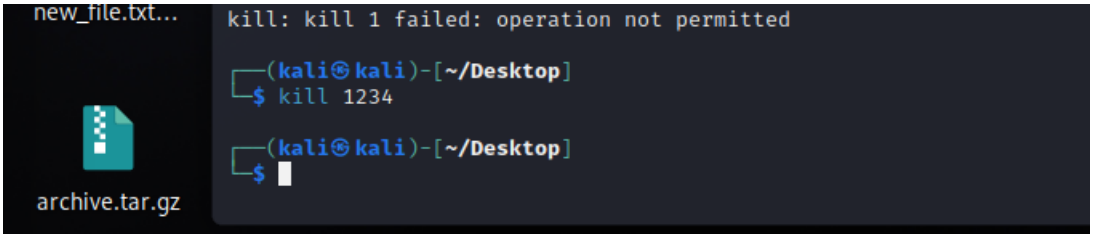
1. **ps**: List running processes Syntax: **ps [options]** Example: **ps aux** (lists all running processes with detailed information)



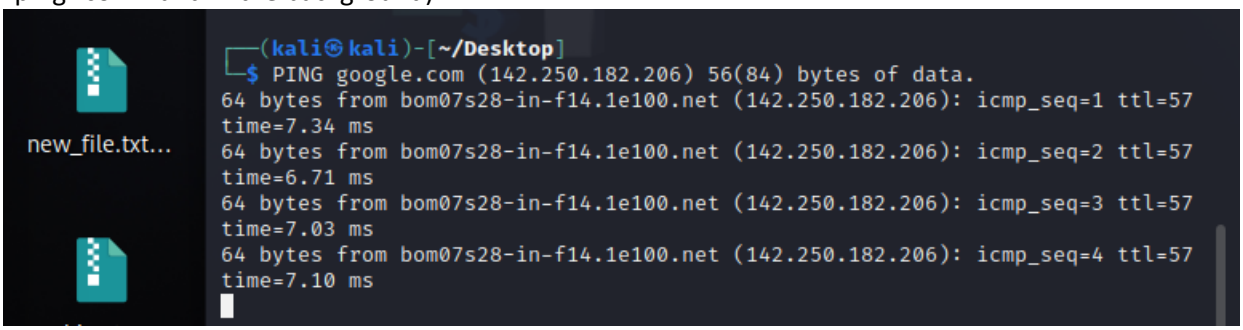
2. **top**: Display real-time system information and processes Syntax: **top** Example: **top** (displays real-time information about system processes, CPU usage, and memory usage)



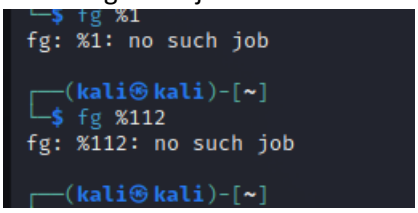
3. **kill**: Terminate processes Syntax: **kill [options] process_id** Example: **kill 1234** (sends a termination signal to the process with ID 1234)



4. **bg**: Run processes in the background Syntax: **command &** Example: **ping google.com &** (runs the "ping" command in the background)

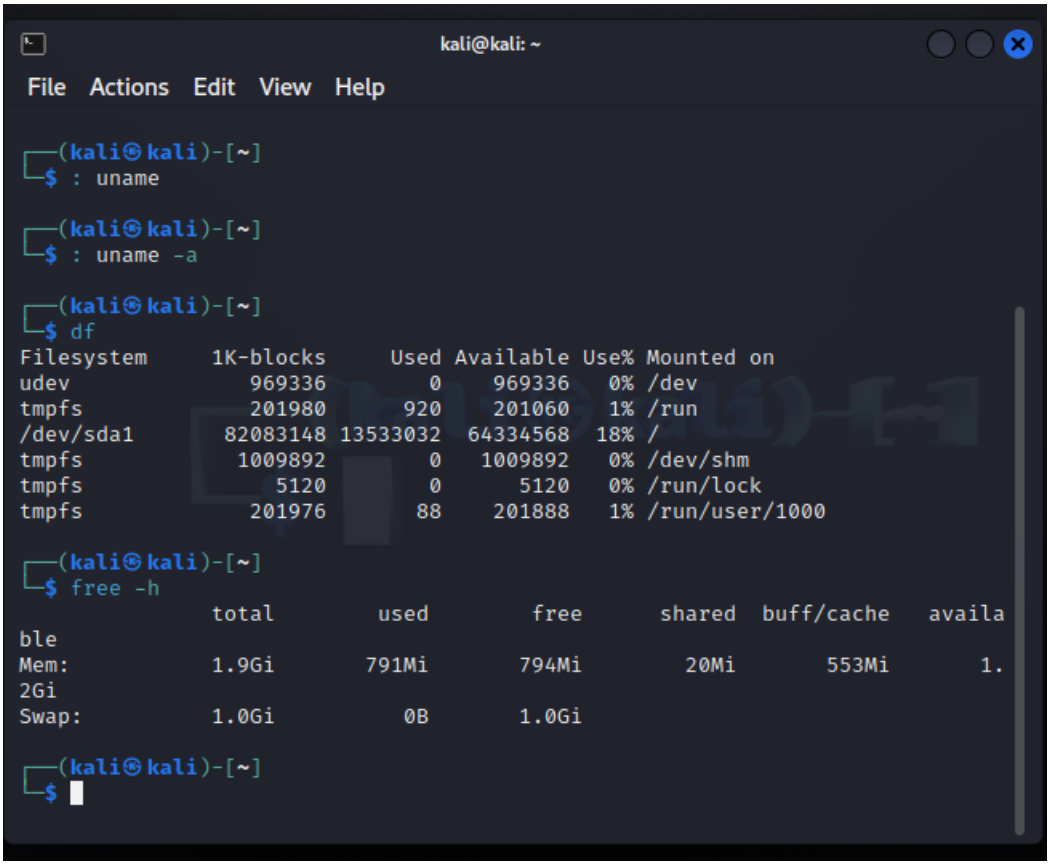


5. **fg**: Bring background processes to the foreground Syntax: **fg %[job_id]** Example: **fg %1** (brings the background job with ID 1 to the foreground)



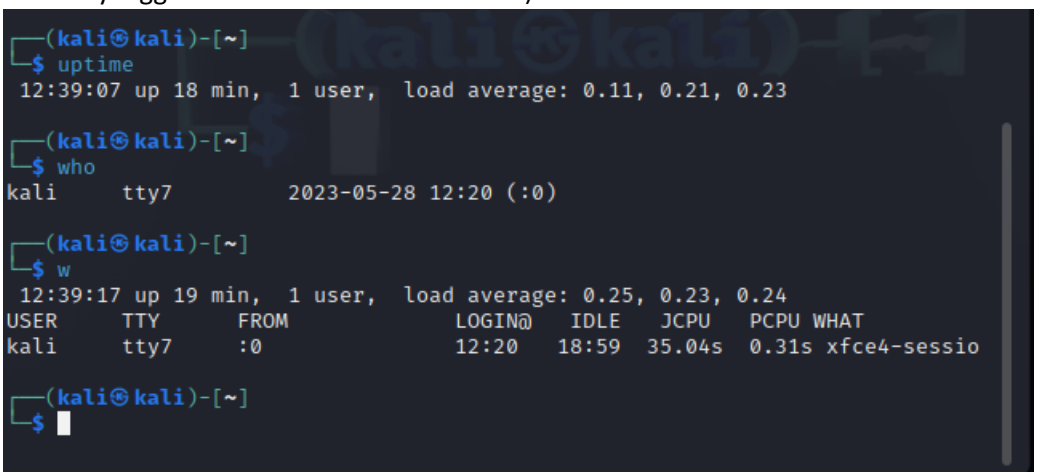
System Information:

1. **uname**: Print system information Syntax: **uname [options]** Example: **uname -a** (displays all system information)
2. **df**: Display disk space usage Syntax: **df [options] [directory]** Example: **df -h** (displays disk space usage in a human-readable format)
3. **free**: Display memory usage Syntax: **free [options]** Example: **free -h** (displays memory usage in a human-readable format)



4. **uptime**: Show system uptime Syntax: **uptime** Example: **uptime** (displays the system uptime)
5. **who**: Display logged-in users Syntax: **who [options]** Example: **who** (displays information about currently logged-in users)

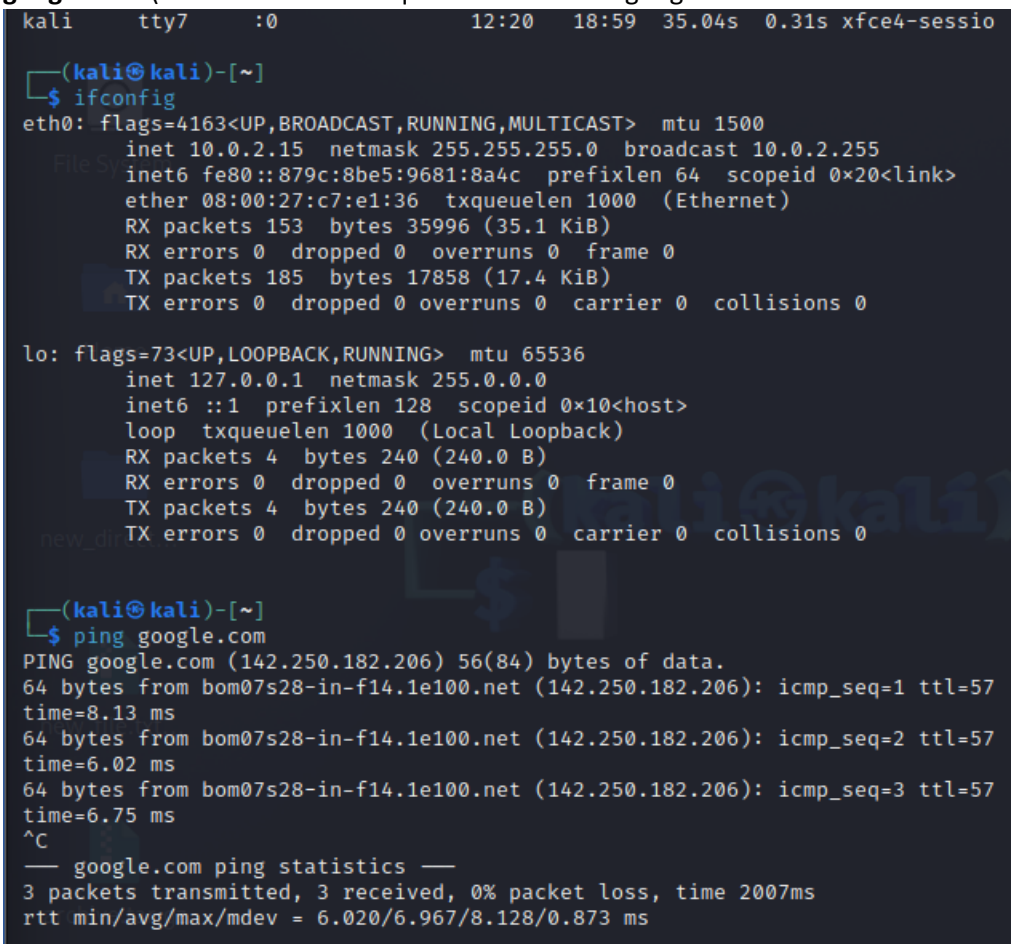
6. **w**: Display logged-in users and their activities Syntax: **w [options]** Example: **w** (displays a list of currently logged-in users and their activities)



Networking:

1. **ifconfig**: Configure network interfaces Syntax: **ifconfig [interface] [options]** Example: **ifconfig eth0** (displays the configuration of the "eth0" network interface)

2. **ping**: Send ICMP echo requests to a network host Syntax: **ping [options] host** Example: **ping google.com** (sends ICMP echo requests to the host "google.com" to check network connectivity)



3. **ssh**: Securely connect to a remote system Syntax: **ssh [options] [user@]host** Example: **ssh user1@192.168.0.1** (establishes a secure SSH connection to the remote host with the IP address 192.168.0.1 using the username "user1")
4. **scp**: Securely copy files between systems Syntax: **scp [options] source_file destination** Example: **scp file.txt user1@192.168.0.1:/home/user1/** (copies "file.txt" from the local system to the remote system at "/home/user1/" using SSH)
5. **wget**: Download files from the web Syntax: **wget [options] URL** Example: **wget https://example.com/file.txt** (downloads the file "file.txt" from the specified URL to the current directory)

System Administration:

1. **sudo**: Execute commands with superuser privileges Syntax: **sudo command** Example: **sudo apt-get install package_name** (runs the "apt-get install" command with superuser privileges to

install a package)

```
┌──(kali㉿kali)-[~]
└─$ sudo apt-get install package_name
[sudo] password for kali:
Reading package lists ... Done
Building dependency tree ... Done
Reading state information ... Done
E: Unable to locate package package_name
```

2. **apt-get**: Package management for Debian-based distributions Syntax: **apt-get [options] command package_name** Example: **apt-get update** (updates the package list on a Debian-based distribution)

```
┌──(kali㉿kali)-[~]
└─$ apt-get update
Reading package lists ... Done
E: List directory /var/lib/apt/lists/partial is missing. - Acquire (13: Permission denied)
W: Problem unlinking the file /var/cache/apt/pkgcache.bin - RemoveCaches (13: Permission denied)
W: Problem unlinking the file /var/cache/apt/srcpkgcache.bin - RemoveCaches (13: Permission denied)
```

3. **yum**: Package management for Red Hat-based distributions Syntax: **yum [options] command package_name** Example: **yum install package_name** (installs a package using the yum package manager)

4. **systemctl**: Manage system services Syntax: **systemctl [options] command service_name** Example: **systemctl start service_name** (starts a system service)

5. **crontab**: Schedule recurring tasks Syntax: **crontab [options]** Example: **crontab -e** (opens the crontab file for editing to schedule recurring tasks)

```
┌──(kali㉿kali)-[~]
└─$ crontab -e
no crontab for kali - using an empty one

Select an editor.  To change later, run 'select-editor'.
  1. /bin/nano        <---- easiest
  2. /usr/bin/vim.basic
  3. /usr/bin/vim.tiny

Choose 1-3 [1]:
```

6. **useradd**: Add a new user Syntax: **useradd [options] username** Example: **useradd user1** (creates a new user with the username "user1")

```
┌──(kali㉿kali)-[~]
└─$ useradd user1
useradd: Permission denied.
useradd: cannot lock /etc/passwd; try again later.

┌──(kali㉿kali)-[~]
└─$
```

7. **passwd**: Change user password Syntax: **passwd [options] username** Example: **passwd user1** (changes the password for the user "user1")