Linux

# Open Source Software

List your favorite open source software. If you're not sure if the software you use is open source, search the internet for "best open source software," see what is available, and list examples that you might want to try.

# The Rise Of Linux

In your own words, describe the difference between "free" as in no cost, and "free" as in freedom. (~25 words)

# Linux Distributions

Would you rather have your daily computer be stable and boring or cutting-edge with more crashes? Why? (~25 words)

# Linux Command Line Interface

Include screenshots of the following:

Using **ls**



Using **pwd**



Using **cd** with an absolute reference.



Using **cd** with a relative reference.



How can using **pwd** help you avoid errors when working with files? (~25 words)

# The Linux Manual

Include a screenshot of the manual for the **ls** command.



In the age of Google and ChatGPT, is RTFM (read the freaking manual) still relevant? Why? (~25 words)

# Linux Folders

Include a screenshot of the contents of the following directories:

/



/var/www



/var/log



/home/kali



# Root

Include a screenshot of you in the terminal working as the **kali** user and the **root** user. You can include more than one screenshot if needed.



Explain the difference between the **root user**, the **directory root** (**/**), and "**/root**". (~25 words)

# Create, Move and Delete Files and Directories

Include a screenshot that shows the following actions (in any directory):

- Listing files

- Creating a file with your **first name** in the filename

- Listing files again to show the new file

- Deleting the file

- Listing files to show it was deleted



What is the most confusing part about creating and deleting files in Linux? (~25 words)

# Editing Files with Nano

Include a screenshot of you editing a file in **nano**. Include your name in the text.



# Editing Files with Vim

Include a screenshot of you editing a file in **vim**. Include your name in the text file.



Include a screenshot that shows the command you enter the moment before you press [**enter]** to quit vim.



How much time do you anticipate spending working with text files? Is it worth investing hours to master a text editor? (~25 words)

# Searching For Files

Include a screenshot of finding files on Linux using the **locate** command.



Include a screenshot of searching for text with **grep**.



How is searching with **locate** different than searching for files on Windows? (~25 words)

How is **grep** different than searching for contents on google.com? (~25 words)

# Working with Archives

Write the commands to download and extract Moodle from <https://download.moodle.org/releases/latest/>. Run these commands in Kali to make sure that they work. Note that the download link will redirect you to the actual download link. If tar is unable to extract the archive, use the file command to check that you downloaded an archive.

# Permissions

Include a screenshot that adds the following permissions to a file named **lastname.txt** (substituting your last name):

- Owner: read, write, and execute

- Group: read and execute

- Other: read

Include the **chmod** command and the **ls -l** verification.



# Network Mapping

Include a screenshot of the **nmap** scanning results.



Running a basic **nmap** scan is easy. Interpreting the output is more challenging. What does it take to be truly efficient at using **nmap**? (~50 words)

# Packet Inspection

Include a screenshot of following the TCP stream in Wireshark.



Why would encryption make packet inspection difficult? (~25 words)

# Curl

Include a screenshot using **curl** to display the contents of a web page in the terminal.



Which program do you prefer to display content: **less** or **more**? Why?

Should websites lie about the software they use in their banners to protect themselves from banner grabbing? (~25 words)

# Dig

Include a screenshot showing the use of **dig** to perform a **forward lookup** for twitter.com.



Ping google.com. Use **dig** to perform a **reverse lookup** for the IP address that you pinged. Include a screenshot of the reverse lookup.



How might hackers use DNS information to help them attack an organization? (~25 words)

# Linux Accounts

Include a screenshot of your /etc/passwd file.



Include a screenshot of your /etc/shadow file.



Briefly, what are service accounts used for? (~25 words)

# Processes and Daemons

Include a screenshot showing the output of **pstree**. You do not have to have the entire tree in the screenshot.



Include a screenshot of starting and stopping the Apache web server.



Find 3 processes that you are unfamiliar with. Write their name and a 1-2 sentence description of what they do.

1. Process/daemon:
2. Process/daemon:
3. Process/daemon:

# Linux Logging

Include a screenshot using **journalctl** to show failed **sudo** commands.



Why would it be important to log failed **sudo su** attempts? (~25 words)

Why do administrators send copies of logs to central servers for processing? (~25 words)

# Linux Command Cheat Sheet

Which 5 commands do you find most useful? Briefly describe why you find them useful.

Which 5 commands do you wish you knew better? Briefly describe what you could do with them if you knew them better.