

Linux Scenario Based Questions



Please practice yourself first and validate your commands with: <https://gemini.google.com/app>

Unit: Systemctl and Service Management

1. **Scenario:** You need to check whether the **nginx** service is running and restart it if it's stopped. Which commands will you use?
2. **Scenario:** A service called **myapp** fails to start after a reboot. What systemctl command will you use to enable it to start automatically?

Unit: Linux Commands

1. **Scenario:** You want to know the current disk usage of all directories in the /var folder. What command should you use?
2. **Scenario:** A file called error.log is growing large, and you need to clear its contents without deleting the file. How will you do it?

Unit: Access Control Lists (ACL)

1. **Scenario:** You need to give the user john read and write permissions on a file report.txt without changing the group or owner permissions. Which command will you use?
2. **Scenario:** How will you verify all ACL permissions applied to the file data.csv?

Unit: File Searching

1. **Scenario:** You need to find all files larger than 100 MB in the /home directory. Which command should you use?
2. **Scenario:** How will you find all .log files in /var/log modified within the last 7 days?
3. **Scenario:** Your organization is preparing for a security audit, and you need to identify all files in the /var/www directory that:
 - a. Are owned by the user **ramesh**.
 - b. Have write permissions for others (o+w).
 - c. List these files along with their full paths in a report file called audit_report.txt.

Question: What single command can you use to find and document such files?

Unit: Text Searching with Grep

1. **Scenario:** You want to find all occurrences of the word "ERROR" (case insensitive) in the server.log file. What command should you use?
2. **Scenario:** How will you recursively search for the string "password" in all files under /etc?

Unit: Text Processing with AWK

1. **Scenario:** You have a file users.txt with columns: username, group, home directory. How will you print only the first column (username)?
2. **Scenario:** A CSV file data.csv has fields separated by commas. How will you print the second column of this file?

Unit: Stream Editing with SED

1. **Scenario:** In a file config.txt, you need to replace all occurrences of localhost with 127.0.0.1. What command will you use?
2. **Scenario:** How can you delete lines containing the word "debug" from a file log.txt?

Unit: Copying Files (scp, rsync)

1. **Scenario:** You want to copy a file report.pdf from your local system to a remote server at user@192.168.1.10:/home/user/docs. What command will you use?
2. **Scenario:** How will you sync the /backup directory from your local system to the remote server user@192.168.1.10:/data while preserving file permissions?

Unit: SSH (Secure Shell)

1. **Scenario:** You need to connect to a remote server at 192.168.1.20 using a private key file id_rsa. What command should you use?
2. **Scenario:** How can you copy your public SSH key to a remote server for password-less authentication?
Answer: ssh-copy-id user@remote-server

Unit: File Permissions

1. **Scenario:** You want to make a script deploy.sh executable only by the file owner. What command will you use?
2. **Scenario:** A directory project should allow group members to create, modify, and delete files, but other users should only have read access. What commands will you use?

Unit: Advanced Topics

System Monitoring and Debugging

Scenario: A critical service webapp is running on your server. It suddenly becomes unresponsive. You suspect high CPU usage is the cause.

Question: Outline the sequence of commands you will use to:

1. Check the overall CPU usage of the server.
2. Identify the process consuming the most CPU.
3. Restart the webapp service if necessary.

Log Management and Analysis

Scenario: You are tasked with analyzing a large log file, access.log, to find the number of failed login attempts (denoted by the string "FAILED LOGIN") from a specific IP address 192.168.1.15.

Question: What commands will you use to extract and count these entries?

Automating Backups

Scenario: You are required to back up the /var/www directory to a remote server (backup@10.0.0.5) every day at midnight while excluding the cache folder.

Question: What steps and commands will you use to automate this task?

Complex File Permissions

Scenario: You manage a shared directory /data/team where multiple users collaborate. You need to ensure:

1. All files and directories created inside /data/team are automatically owned by the team group.
2. Only members of the team group can read, write, and execute files, while others have no access.

Question: What steps will you take to configure this setup?

Finding and Replacing Text in Multiple Files

Scenario: You are migrating a web application, and all instances of the domain `example.com` in configuration files under `/etc/app/` need to be replaced with `newdomain.com`. There are hundreds of files in the directory.

Question: How will you efficiently replace the domain name in all configuration files while creating a backup of each modified file?