250 Linux Scenario Based Interview Questions and Answers

Q1: How would you find all files larger than 100MB in a directory and its subdirectories?

Answer: Use the find command:

find /path/to/directory -type f -size +100M

* **-type f: Finds only files.**
* **-size +100M: Specifies files larger than 100MB. Q2: What does the command chmod 755 file do?**
* **Answer:**
  + **Changes the file's permissions to 755.**
  + **7: Full permission for the owner (read, write, execute).**
  + **5: Read and execute for group and others.**

Syntax breakdown:

r = 4, w = 2, x = 1 → rwx (7), r-x (5)

Q3: How do you recursively delete all .log files in a directory? Answer:

find /path/to/directory -name "\*.log" -type f -delete

* + **-name "\*.log": Matches files with .log extension.**
  + **-type f: Targets only files.**
  + **-delete: Deletes the files found.**

Q4: How do you create a tarball of /var/log and compress it with gzip? Answer:

tar -czvf logs.tar.gz /var/log

* + **-c: Creates a tarball.**
  + **-z: Compresses using gzip.**
  + **-v: Verbose output.**
  + **-f logs.tar.gz: Specifies the tarball file name.**

Q5: How do you troubleshoot a network issue where a server is unreachable?

* **Answer:**

Check network connectivity: ping <server\_ip> Verify DNS resolution:

nslookup <server\_name>

Check routes:

ip route

Verify firewall settings:

sudo iptables -L

Test specific port availability:

nc -zv <server\_ip> <port>

Q6: How do you permanently assign an IP address in Linux?

* **Answer: Edit the network configuration file: For RHEL/CentOS:**

vi /etc/sysconfig/network-scripts/ifcfg-eth0

Add or update:

IPADDR=192.168.1.100 NETMASK=255.255.255.0 GATEWAY=192.168.1.1

Restart the network service:

sudo systemctl restart network

Q7: How do you identify a process consuming high CPU?

Answer:

* **Sort by CPU usage by pressing Shift + P.**

Alternatively, use:

ps -eo pid,ppid,cmd,%mem,%cpu --sort=-%cpu | head

Q8: How do you monitor disk I/O in real-time? Answer:

iostat -x 2

* **-x: Shows extended statistics.**
* **2: Refreshes every 2 seconds.**

Q9: How do you kill a process by its name? Answer:

pkill <process\_name>

To verify:

pgrep <process\_name>

Q10: How do you list all services and their statuses? Answer:

systemctl list-units --type=service

Q11: How do you set up a basic firewall rule to allow SSH traffic? Answer:

sudo ufw allow ssh

Check the status:

sudo ufw status

Q12: How do you check for unauthorized access attempts on your server? Answer:

sudo cat /var/log/auth.log | grep "Failed password"

Q13: Write a script to check if a file exists and display its permissions. Answer:

#!/bin/ FILE=$1

if [ -e "$FILE" ]; then echo "File exists."

ls -l "$FILE" | awk '{print $1}' else

echo "File does not exist."

fi

* **Usage: ./script.sh filename**

Q14: How would you write a script to archive logs older than 7 days? Answer:

#!/bin/

find /var/log -type f -mtime +7 -exec tar -rvf old\_logs.tar

{} \; -exec rm {} \;

* **-mtime +7: Finds files older than 7 days.**
* **-exec: Executes tar to archive and rm to delete.**

Q15: How do you add a new user with a specific home directory? Answer:

sudo useradd -m -d /custom/home/username username

* **-m: Creates the home directory.**
* **-d: Specifies the custom directory.**

Q16: How do you change the default shell for a user? Answer:

sudo usermod -s /bin/ username

Verify with:

cat /etc/passwd | grep username

Q17: What steps would you take to troubleshoot a slow server?

* **Answer: Check CPU usage:**

Top

Analyze disk usage:

df -h

Inspect running processes:

ps aux --sort=-%cpu | head

Check I/O operations:

iostat -x 2

Verify memory usage:

free -m

Q18: How do you resolve a "permission denied" error for a script?

* **Answer:**

Check file permissions:

ls -l script.sh

Add execute permission:

chmod +x script.sh

Q19: How do you extend a mounted LVM partition?

* **Answer:**

Increase the logical volume:

sudo lvextend -L +10G /dev/mapper/vol\_group-lv\_name

Resize the filesystem:

sudo resize2fs /dev/mapper/vol\_group-lv\_name

Q20: How do you find the top 10 largest files in a directory? Answer:

find /path/to/dir -type f -exec du -h {} + | sort -rh | head

-n 10

Backup and Restore

Q21: How do you back up a directory using rsync? Answer:

rsync -av /source/directory /destination/directory

* + **-a: Archive mode.**
  + **-v: Verbose output.**

Q22: How do you restore files from a tar backup? Answer:

tar -xvf backup.tar -C /restore/path

Q23: How do you rotate logs manually?

* **Answer: Use logrotate:**

sudo logrotate /etc/logrotate.conf --force

Q24: How do you view the last 50 lines of a log file?

Answer:

tail -n 50 /var/log/syslog

Q25: How do you check which kernel modules are currently loaded? Answer:

lsmod

Q26: How do you load a kernel module manually? Answer:

sudo modprobe <module\_name>

Q27: How do you lock a user account? Answer:

sudo passwd -l username

Q28: How do you check the groups a user belongs to? Answer:

groups username

Q29: How do you check the installed Linux distribution? Answer:

lsb\_release -a

Or:

cat /etc/os-release

Q30: How do you list installed packages in RHEL/CentOS?

Answer:

yum list installed

Q31: How do you list all running virtual machines in KVM? Answer:

virsh list

Q32: How do you create a virtual machine in VirtualBox from the command line? Answer:

VBoxManage createvm --name VMName --register

Q33: How do you check running Docker containers? Answer:

docker ps

Q34: How do you restart a Kubernetes pod? Answer:

kubectl rollout restart deployment <deployment\_name>

Q35: How do you troubleshoot if a Linux system fails to boot?

* **Answer:**

1. **Boot into recovery mode or single-user mode.**
2. **Check logs in /var/log/boot.log or /var/log/messages.**

Verify the GRUB configuration:

cat /boot/grub2/grub.cfg

Check disk integrity:

fsck /dev/sdX

Reinstall GRUB if required:

grub2-install /dev/sdX

Q36: What is the role of the init system in Linux?

* **Answer:**
  + **The init system is the first process started by the kernel after booting.**
  + **It initializes the system by starting necessary services and managing runlevels (or targets in systemd).**

Q37: How do you check the open ports on a Linux server?

Answer:

sudo netstat -tuln

Or using ss:

ss -tuln

Q38: How do you add a persistent static route in Linux?

* **Answer:**
  + **Edit the network configuration file:**

RHEL/CentOS:

vi /etc/sysconfig/network-scripts/route-eth0

Add:

192.168.2.0/24 via 192.168.1.1 dev eth0

Restart the network service:

sudo systemctl restart network

Q39: How do you list all installed packages on an Ubuntu system?

Answer:

dpkg --get-selections

Q40: How do you remove a package along with its configuration files in Debian/Ubuntu?

Answer:

sudo apt-get purge <package\_name>

Q41: How do you check for disk usage by each directory in the current path? Answer:

du -sh \*

Q42: How do you create and mount an ext4 filesystem?

* **Answer: Create the filesystem:**

mkfs.ext4 /dev/sdX

Mount the filesystem:

mount /dev/sdX /mnt

Q43: How do you find out which process is using the most memory? Answer:

ps aux --sort=-%mem | head

Q44: How do you monitor live network traffic on an interface? Answer:

sudo tcpdump -i eth0

Q45: How do you change the priority of a running process?

* **Answer:**

Use the renice command:

sudo renice -n 10 -p <PID>

* + **10: New priority value.**

Q46: How do you restart a failed systemd service? Answer:

sudo systemctl restart <service\_name>

Q47: How do you generate an SSH key pair? Answer:

ssh-keygen -t rsa -b 4096 -C "[your\_email@example.com](mailto:your_email@example.com)"

* + **-t rsa: Specifies the key type.**
  + **-b 4096: Sets the key length.**

Q48: How do you prevent a user from logging in via SSH?

* **Answer:**

Add the user to /etc/ssh/sshd\_config: DenyUsers username

Restart the SSH service:

sudo systemctl restart sshd

Q49: How do you find specific error messages in a log file?

Answer:

grep "ERROR" /var/log/syslog

Q50: How do you monitor a log file in real-time? Answer:

tail -f /var/log/syslog

Q51: How do you check the current Linux kernel version? Answer:

uname -r

Q52: How do you remove a kernel module? Answer:

sudo rmmod <module\_name>

Q53: How do you create a group and add a user to it?

* **Answer: Create the group:**

sudo groupadd groupname

Add the user:

sudo usermod -aG groupname username

Q54: How do you delete a user and their home directory? Answer:

sudo userdel -r username

Q55: Write a script to print the number of files in a directory.

Answer:

#!/bin/ DIR=$1

if [ -d "$DIR" ]; then

echo "Number of files in $DIR: $(ls -1 $DIR | wc -l)" else

echo "$DIR is not a directory."

fi

Q56: How do you test if a specific port on a remote server is open? Answer:

nc -zv <server\_ip> <port>

* + **-z: Scans without sending data.**
  + **-v: Enables verbose output.**

Q57: How do you flush the DNS cache in Linux?

* **Answer:**

For systemd-resolved:

sudo systemd-resolve --flush-caches

Verify:

sudo systemd-resolve --statistics

Q58: How do you check which services are enabled to start at boot? Answer:

systemctl list-unit-files --type=service | grep enabled

Q59: How do you stop a service and ensure it doesn’t start at boot?

Answer:

sudo systemctl stop <service\_name> sudo systemctl disable <service\_name>

Q60: How do you check memory usage in Linux?

Answer:

free -m

* + **Or using top or htop for a real-time view.**

Q61: How do you identify zombie processes? Answer:

ps aux | grep 'Z'

* + **A zombie process will have a status of Z.**

Q62: Write a script to monitor disk usage and send an email alert if usage exceeds 80%.

Answer:

#!/bin/ THRESHOLD=80

USAGE=$(df -h / | grep -v Filesystem | awk '{print $5}' | sed 's/%//')

if [ "$USAGE" -gt "$THRESHOLD" ]; then

echo "Disk usage is at ${USAGE}% on $(hostname)" | mail

-s "Disk Usage Alert" [user@example.com](mailto:user@example.com) fi

Q63: Write a script to check if a service is running and restart it if it’s not.

Answer:

#!/bin/ SERVICE=nginx

if ! systemctl is-active --quiet $SERVICE; then systemctl restart $SERVICE

echo "$SERVICE was down and has been restarted." else

echo "$SERVICE is running."

fi

Q64: How do you unmount a busy filesystem?

* **Answer:**

Identify processes using the filesystem:

lsof | grep /path/to/mount

Kill those processes:

kill -9 <PID>

Unmount the filesystem:

sudo umount /path/to/mount

Q65: How do you create a swap file?

* **Answer: Create the file:**

sudo dd if=/dev/zero of=/swapfile bs=1G count=2

Set permissions:

sudo chmod 600 /swapfile

Set up the swap space:

sudo mkswap /swapfile sudo swapon /swapfile

Make it persistent:

echo '/swapfile none swap sw 0 0' | sudo tee -a /etc/fstab

Q66: How do you check for failed login attempts? Answer:

sudo grep "Failed password" /var/log/auth.log

Q67: How do you restrict a user to their home directory using SSH?

* **Answer:**

Edit /etc/ssh/sshd\_config:

Match User username ChrootDirectory /home/username AllowTCPForwarding no X11Forwarding no

Restart the SSH service:

sudo systemctl restart sshd

Q68: How do you take a snapshot of an LVM volume?

* **Answer: Create a snapshot:**

sudo lvcreate --size 1G --snapshot --name snap\_name

/dev/vol\_group/lv\_name

Mount the snapshot (optional):

sudo mount /dev/vol\_group/snap\_name /mnt

Q69: How do you schedule a daily backup with cron?

* **Answer: Edit the cron jobs:**

crontab -e

Add the job:

0 2 \* \* \* tar -czf /backup/$(date +\%F).tar.gz /data

Q70: How do you compress log files older than 30 days? Answer:

find /var/log -type f -mtime +30 -exec gzip {} \;

Q71: How do you rotate logs for a custom application?

* **Answer:**

Create a logrotate configuration file:

sudo vi /etc/logrotate.d/custom\_app

Add the configuration:

/var/log/custom\_app/\*.log { daily

rotate 7 compress missingok notifempty

**}**

Test the configuration:

sudo logrotate -d /etc/logrotate.d/custom\_app

Q72: How do you list all available kernel versions? Answer:

dpkg --list | grep linux-image

Q73: How do you update the Linux kernel?

* **Answer:**

For Debian/Ubuntu:

sudo apt-get update

sudo apt-get upgrade linux-image-$(uname -r)

Q74: How do you update all installed packages on a CentOS system?

Answer:

sudo yum update

Q75: How do you check dependencies for a package in Ubuntu? Answer:

apt-cache depends <package\_name>

Q76: How do you configure a static IP address on a Linux server?

* **Answer:**
  + **For RHEL/CentOS:**

Edit the network configuration file:

sudo vi /etc/sysconfig/network-scripts/ifcfg-eth0

Add or update:

makefile

BOOTPROTO=static IPADDR=192.168.1.100 NETMASK=255.255.255.0 GATEWAY=192.168.1.1 DNS1=8.8.8.8

Restart the network:

sudo systemctl restart network

Q77: How do you check the default gateway on a Linux system? Answer:

ip route | grep default

Q78: How do you find the parent process of a given process? Answer:

ps -o ppid= -p <PID>

Q79: How do you kill all processes owned by a specific user? Answer:

sudo pkill -u <username>

Q80: How do you generate a CPU usage report over time? Answer:

sar -u 1 10

* + **-u: CPU usage.**
  + **1 10: Sample every 1 second for 10 intervals.**

Q81: How do you monitor real-time I/O usage per process? Answer:

iotop

Q82: Write a script to display the top 5 largest files in a directory. Answer:

#!/bin/

du -ah $1 | sort -rh | head -n 5

Q83: Write a script to automate user creation and password assignment.

Answer:

#!/bin/ USER=$1 PASS=$2

sudo useradd -m $USER

echo "$USER:$PASS" | sudo chpasswd

echo "User $USER created with the given password."

Q84: How do you repair a corrupted filesystem?

* **Answer: Unmount the filesystem:**

sudo umount /dev/sdX

Run fsck:

sudo fsck -y /dev/sdX

Q85: How do you check the inode usage on a filesystem? Answer:

df -i

Q86: How do you disable root login over SSH?

* **Answer:**

Edit the SSH configuration file:

sudo vi /etc/ssh/sshd\_config

Update or add:

perl PermitRootLogin no Restart the SSH service:

sudo systemctl restart sshd

Q87: How do you configure a Linux firewall to allow only HTTP and SSH traffic? Answer:

sudo ufw allow ssh sudo ufw allow http sudo ufw enable

Q88: How do you schedule a weekly backup of the /home directory?

* **Answer:**

Create a backup script:

vi /usr/local/bin/backup.sh

Add:

#!/bin/

tar -czf /backup/home\_$(date +%F).tar.gz /home

Make the script executable:

chmod +x /usr/local/bin/backup.sh

Add to cron:

**crontab -e**

Add:

0 3 \* \* 0 /usr/local/bin/backup.sh

Q89: How do you restore files from a compressed tar archive? Answer:

tar -xvzf backup.tar.gz -C /restore/path

Q90: How do you clear logs without deleting the file? Answer:

sudo truncate -s 0 /var/log/syslog Q91: How do you archive logs older than 60 days? Answer:

find /var/log -type f -mtime +60 -exec tar -rvf old\_logs.tar

{} \; -exec rm {} \;

Q92: How do you rebuild the initramfs image? Answer:

sudo dracut -f

Q93: How do you blacklist a kernel module?

* **Answer:**

Add the module name to /etc/modprobe.d/blacklist.conf:

echo "blacklist <module\_name>" | sudo tee -a

/etc/modprobe.d/blacklist.conf

Regenerate the initramfs:

sudo dracut -f

Q94: How do you check which package owns a specific file?

* **Answer:**

For Debian/Ubuntu:

dpkg -S /path/to/file

For RHEL/CentOS:

rpm -qf /path/to/file

Q95: How do you clean up cached package files in CentOS? Answer:

sudo yum clean all

Q96: How do you list available virtual machines in KVM? Answer:

virsh list --all

Q97: How do you take a snapshot of a running VM in KVM? Answer:

**virsh snapshot-create-as <vm\_name> <snapshot\_name>**

Q98: How do you restart all Docker containers? Answer:

docker restart $(docker ps -q)

Q99: How do you check the status of Kubernetes pods? Answer:

kubectl get pods

Q100: How do you determine the Linux distribution and version? Answer:

lsb\_release -a

Or:

cat /etc/os-release

Q101: How do you test network connectivity using ping and set a timeout? Answer:

ping -c 4 -W 2 <host>

* + **-c 4: Sends 4 packets.**
  + **-W 2: Sets a timeout of 2 seconds.**

Q102: How do you check active network connections on a system?

Answer:

netstat -an

Or:

ss -tunap

Q103: How do you schedule a process to run at a specific time using at?

* **Answer:**

Install at if not already available:

sudo apt install at

Use the at command:

echo "service apache2 restart" | at 02:00 Q104: How do you view the priority of a running process? Answer:

ps -eo pid,ni,comm | grep <process\_name>

* + **ni: Displays the process's nice value.**

Q105: How do you monitor memory usage for a specific process? Answer:

pmap <PID> | grep total

* + **pmap: Displays memory map of a process.**

Q106: How do you find the top 5 CPU-consuming processes? Answer:

ps -eo pid,ppid,cmd,%mem,%cpu --sort=-%cpu | head -n 5

Q107: Write a script to check if a directory exists and create it if not. Answer:

#!/bin/ DIR=$1

if [ ! -d "$DIR" ]; then mkdir -p "$DIR"

echo "Directory $DIR created." else

echo "Directory $DIR already exists."

fi

Q108: Write a script to calculate the factorial of a given number. Answer:

#!/bin/ factorial=1

for (( i=1; i<=$1; i++ )) do

factorial=$((factorial \* i)) done

echo "Factorial of $1 is $factorial"

Q109: How do you display disk usage for a specific directory in a human-readable format?

Answer:

du -sh /path/to/directory

Q110: How do you check for filesystem errors on a specific partition? Answer:

sudo fsck /dev/sdX

Q111: How do you enforce password expiration for a user? Answer:

sudo chage -M 30 username

* + **-M 30: Sets the maximum number of days before password expiration.**

Q112: How do you set up a firewall rule to block all incoming traffic except SSH? Answer:

sudo ufw default deny incoming sudo ufw allow ssh

sudo ufw enable

Q113: How do you compress and back up a MySQL database? Answer:

mysqldump -u root -p database\_name | gzip > database\_backup.sql.gz

Q114: How do you restore a database from a compressed backup? Answer:

gunzip < database\_backup.sql.gz | mysql -u root -p database\_name

Q115: How do you view only the last 10 lines of multiple log files? Answer:

tail -n 10 /var/log/\*.log

Q116: How do you delete log files older than 90 days? Answer:

find /var/log -type f -mtime +90 -exec rm -f {} \;

Q117: How do you enable or disable a kernel module at runtime?

* **Answer: Enable:**

sudo modprobe <module\_name>

Disable:

sudo rmmod <module\_name>

Q118: How do you check the kernel boot parameters?

Answer:

cat /proc/cmdline

Q119: How do you list all available updates for an Ubuntu system? Answer:

sudo apt list --upgradable

Q120: How do you install a package from a .rpm file in CentOS? Answer:

sudo rpm -ivh package.rpm

Q121: How do you shut down a running VM in KVM? Answer:

virsh shutdown <vm\_name>

Q122: How do you configure a network bridge for a VM in KVM?

* **Answer:**

Edit the network configuration file:

sudo vi /etc/sysconfig/network-scripts/ifcfg-br0

Add bridge configuration: makefile

DEVICE=br0

TYPE=Bridge BOOTPROTO=dhcp ONBOOT=yes

Q123: How do you check the logs of a specific Docker container? Answer:

docker logs <container\_id>

Q124: How do you delete all stopped Docker containers? Answer:

docker container prune

Q125: How do you display the currently logged-in users? Answer:

who

Q126: How do you set an environment variable permanently for a user?

* **Answer:**

Add the variable to the user’s .rc file:

echo "export VAR\_NAME=value" >> ~/.rc

Reload the shell:

source ~/.rc

Q127: How do you troubleshoot if a specific port is not accessible on a server?

* **Answer:**

Check if the service is running:

sudo systemctl status <service\_name>

Verify if the port is open:

sudo netstat -tuln | grep <port>

Check firewall rules:

sudo ufw status

Test connectivity using telnet or nc: telnet <server\_ip> <port>

1. Inspect logs for errors in /var/log.

Q128: How do you configure DNS resolution in Linux?

* **Answer:**

Edit the /etc/resolv.conf file:

nameserver 8.8.8.8

nameserver 8.8.4.4

Save and test using:

nslookup google.com

Q129: How do you restart a service automatically if it crashes?

* **Answer:**

Create a systemd service file or edit an existing one:

sudo vi /etc/systemd/system/<service\_name>.service

Add the following lines under [Service]:

makefile

Restart=always RestartSec=5

Reload systemd and enable the service:

sudo systemctl daemon-reload

sudo systemctl enable <service\_name>

Q130: How do you check all processes owned by a specific user? Answer:

ps -u <username>

Q131: How do you monitor network bandwidth usage in real-time? Answer:

iftop -i <interface>

Or:

nload <interface>

Q132: How do you generate a CPU usage report for the past hour? Answer:

sar -u -s HH:MM -e HH:MM

* + **Replace HH:MM with the time range.**

Q133: Write a script to check if a website is reachable. Answer:

#!/bin/ WEBSITE=$1

if curl -Is $WEBSITE | grep "200 OK"; then echo "$WEBSITE is reachable."

else

echo "$WEBSITE is not reachable."

fi

Q134: Write a script to back up a directory and log the output. Answer:

#!/bin/ DIR=$1

BACKUP\_DIR="/backup/$(date +%F)"

mkdir -p $BACKUP\_DIR

tar -czf $BACKUP\_DIR/backup.tar.gz $DIR >

/var/log/backup.log 2>&1

echo "Backup completed. Log available at

/var/log/backup.log."

Q135: How do you add a new disk to an existing Linux system without rebooting?

* **Answer: Scan for new disks:**

sudo partprobe

Create a partition:

sudo fdisk /dev/sdX

Create a filesystem:

sudo mkfs.ext4 /dev/sdX1

Mount the partition:

sudo mount /dev/sdX1 /mnt

Q136: How do you increase the size of an existing filesystem?

* **Answer:**

Extend the logical volume:

sudo lvextend -L +10G /dev/vol\_group/lv\_name

Resize the filesystem:

sudo resize2fs /dev/vol\_group/lv\_name

Q137: How do you enable auditing on a file?

* **Answer:**

Install auditd if not already available:

sudo apt install auditd

Add a rule:

sudo auditctl -w /path/to/file -p rwxa -k file\_audit

Check logs:

sudo ausearch -k file\_audit

Q138: How do you disable password-based SSH authentication?

* **Answer:**

Edit /etc/ssh/sshd\_config: PasswordAuthentication no Restart the SSH service:

sudo systemctl restart sshd

Q139: How do you take an incremental backup with rsync? Answer:

rsync -av --delete /source /destination Q140: How do you restore a specific file from a tar archive? Answer:

tar -xvzf backup.tar.gz path/to/file

Q141: How do you find the most frequent error in a log file? Answer:

grep "ERROR" /var/log/syslog | awk '{print $NF}' | sort | uniq -c | sort -nr | head -n 1

Q142: How do you configure centralized log management using rsyslog?

* **Answer:**

On the client, edit /etc/rsyslog.conf:

\*.\* @logserver\_ip:514

Restart the rsyslog service:

sudo systemctl restart rsyslog

Q143: How do you verify kernel parameters in Linux? Answer:

**sysctl -a**

Q144: How do you temporarily modify a kernel parameter? Answer:

sudo sysctl -w net.ipv4.ip\_forward=1 Q145: How do you search for a package using yum? Answer:

sudo yum search <package\_name>

Q146: How do you install a package from a .deb file? Answer:

sudo dpkg -i package.deb sudo apt-get install -f

Q147: How do you clone a virtual machine in KVM? Answer:

virt-clone --original <vm\_name> --name <new\_vm\_name> --file

/var/lib/libvirt/images/new\_vm.img

Q148: How do you check the virtualized environment of a Linux system? Answer:

sudo dmidecode -s system-product-name

Answer:

docker image prune

Q150: How do you deploy a Kubernetes pod using a YAML file? Answer:

kubectl apply -f pod.yaml

Q151: How do you find the IP address of your Linux machine? Answer:

ip addr show

Or for a specific interface:

ip addr show eth0

Q152: How do you capture network packets on a specific interface? Answer:

sudo tcpdump -i eth0

Q153: How do you list all active and inactive services? Answer:

systemctl list-units --type=service

Answer:

sudo systemctl list-unit-files --type=service

Q155: How do you analyze disk I/O performance? Answer:

iostat -d -x 2

* + **-d: Displays device utilization.**
  + **-x: Displays extended statistics.**

Q156: How do you display a summary of system performance? Answer:

vmstat 1 5

* + **1 5: Collects data every second for 5 iterations.**

Q157: Write a script to count the number of users currently logged in. Answer:

#!/bin/

echo "Number of logged-in users: $(who | wc -l)"

Q158: Write a script to check disk usage and send an email alert if it exceeds 90%. Answer:

#!/bin/ THRESHOLD=90

USAGE=$(df -h / | grep / | awk '{print $5}' | sed 's/%//') if [ "$USAGE" -gt "$THRESHOLD" ]; then

echo "Disk usage is at ${USAGE}% on $(hostname)" | mail

-s "Disk Usage Alert" [admin@example.com](mailto:admin@example.com) fi

Q159: How do you remove a mount point that is in use?

* **Answer:**

Identify processes using the mount point:

lsof | grep /mount/point

Kill the processes:

kill -9 <PID>

Unmount:

sudo umount /mount/point

Q160: How do you find disk partitions and their usage? Answer:

lsblk

Q161: How do you add a user to the sudo group? Answer:

**sudo usermod -aG sudo username**

Q162: How do you check for open ports on your system? Answer:

sudo netstat -tuln

Or:

sudo ss -tuln

Q163: How do you set up an automatic daily backup using cron?

* **Answer: Create a script:**

vi /usr/local/bin/daily\_backup.sh

Add:

#!/bin/

tar -czf /backup/$(date +%F).tar.gz /data

Make it executable:

chmod +x /usr/local/bin/daily\_backup.sh

Add to cron:

crontab -e

Add:

**0 3 \* \* \* /usr/local/bin/daily\_backup.sh**

Q164: How do you restore files from an incremental backup?

* **Answer:**

Extract the full backup first:

tar -xvzf full\_backup.tar.gz -C /restore\_path

Extract the incremental backups in order:

tar -xvzf incremental\_backup.tar.gz -C /restore\_path

Q165: How do you monitor log files in real-time for multiple files? Answer:

multitail /var/log/file1 /var/log/file2

Q166: How do you rotate logs for a specific application?

* **Answer:**

Create a logrotate config:

sudo vi /etc/logrotate.d/app\_name

Add:

/var/log/app\_name/\*.log { daily

rotate 5

**}**

Test:

compress missingok notifempty

sudo logrotate -d /etc/logrotate.d/app\_name

Q167: How do you enable IP forwarding temporarily? Answer:

sudo sysctl -w net.ipv4.ip\_forward=1

Q168: How do you list loaded kernel modules with descriptions? Answer:

lsmod | column -t

Q169: How do you remove a package and its dependencies in Ubuntu? Answer:

sudo apt-get autoremove --purge <package\_name>

Q170: How do you upgrade a specific package in CentOS? Answer:

sudo yum update <package\_name>

Q171: How do you create a snapshot of a virtual machine in KVM? Answer:

virsh snapshot-create-as <vm\_name> <snapshot\_name>

Q172: How do you configure networking for a VM to use NAT in KVM?

* **Answer:**

Edit the virsh network configuration:

virsh net-edit default

1. Ensure the <forward mode='nat'/> tag is present.

Q173: How do you restart a Kubernetes deployment? Answer:

kubectl rollout restart deployment <deployment\_name>

Q174: How do you inspect the Docker network? Answer:

docker network inspect <network\_name> Q175: How do you set a default editor for the terminal? Answer:

export EDITOR=vim

To make it persistent:

echo "export EDITOR=vim" >> ~/.rc source ~/.rc

Q176: How do you schedule a one-time job using at? Answer:

echo "shutdown -h now" | at 23:00

Q177: How do you add a static route in Linux?

* **Answer:**

Add a temporary route:

sudo ip route add 192.168.2.0/24 via 192.168.1.1 dev eth0

1. Add a persistent route:

For RHEL/CentOS, edit /etc/sysconfig/network-scripts/route-eth0 and add:

192.168.2.0/24 via 192.168.1.1

Q178: How do you troubleshoot high network latency?

* **Answer:**

Check connectivity with ping:

ping <destination>

Trace the network path with traceroute: traceroute <destination>

Inspect network traffic:

sudo tcpdump -i eth0

Monitor interface statistics:

ifconfig eth0

Q179: How do you set CPU affinity for a process? Answer:

taskset -c 0,1 <PID>

* + **This assigns the process to CPUs 0 and 1.**

Q180: How do you view the system logs of a specific service? Answer:

journalctl -u <service\_name>

Q181: How do you check the uptime of a system? Answer:

Uptime

Q182: How do you monitor disk throughput in real-time?

Answer:

iotop

Q183: Write a script to monitor a directory and log changes. Answer:

#!/bin/

inotifywait -m /path/to/directory -e create -e delete -e modify |

while read path action file; do

echo "[$(date)] $file was $action in $path" >>

/var/log/dir\_changes.log done

Q184: Write a script to send an email alert if a service is down. Answer:

#!/bin/ SERVICE=nginx

if ! systemctl is-active --quiet $SERVICE; then echo "$SERVICE is down on $(hostname)" | mail -s

"Service Alert" [admin@example.com](mailto:admin@example.com) fi

Q185: How do you mount a filesystem at boot?

* **Answer:**

Add an entry in /etc/fstab:

/dev/sdX1 /mnt/data ext4 defaults 0 2

Test the entry:

sudo mount -a

Q186: How do you increase the size of a swap file?

* **Answer:**

Turn off the current swap file:

sudo swapoff /swapfile

Resize the swap file:

sudo dd if=/dev/zero of=/swapfile bs=1G count=4

Set it up again:

sudo mkswap /swapfile sudo swapon /swapfile

Q187: How do you configure SSH key-based authentication?

* **Answer: Generate a key pair:**

ssh-keygen -t rsa

Copy the public key to the remote server:

ssh-copy-id user@remote\_server

Verify login:

ssh user@remote\_server

Q188: How do you block an IP address using iptables? Answer:

sudo iptables -A INPUT -s <IP\_ADDRESS> -j DROP

Q189: How do you create a snapshot of an LVM volume?

* **Answer: Create the snapshot:**

sudo lvcreate --size 1G --snapshot --name snap\_name

/dev/vol\_group/lv\_name

Mount the snapshot:

sudo mount /dev/vol\_group/snap\_name /mnt

Q190: How do you restore a system from a tar backup? Answer:

tar -xvzf backup.tar.gz -C /

Q191: How do you configure remote logging using rsyslog?

* **Answer:**

On the client machine, edit /etc/rsyslog.conf:

\*.\* @<log\_server\_ip>:514

Restart the rsyslog service:

sudo systemctl restart rsyslog

Q192: How do you analyze logs for the most common HTTP errors? Answer:

cat /var/log/httpd/access.log | awk '{print $9}' | sort | uniq -c | sort -nr

Q193: How do you persist kernel parameter changes?

* **Answer:**

Add the parameter to /etc/sysctl.conf: net.ipv4.ip\_forward=1

Apply the changes:

sudo sysctl -p

Q194: How do you display CPU information?

Answer:

cat /proc/cpuinfo

Q195: How do you verify the integrity of a package in CentOS? Answer:

rpm -V <package\_name>

Q196: How do you list dependencies for a package in Ubuntu? Answer:

apt-cache depends <package\_name>

Q197: How do you migrate a VM to another host in KVM? Answer:

virsh migrate --live <vm\_name> qemu+ssh://<destination\_host>/system

Q198: How do you resize a virtual disk in KVM?

* **Answer: Resize the disk:**

qemu-img resize /path/to/disk.img +10G

1. Extend the filesystem inside the VM.

Q199: How do you update an image in a Kubernetes deployment? Answer:

kubectl set image deployment/<deployment\_name>

<container\_name>=<new\_image>

Q200: How do you clean up unused volumes in Docker? Answer:

docker volume prune

Q201: How do you configure a bonded network interface in Linux?

* **Answer:**

Install the bonding module:

sudo modprobe bonding

1. Configure the bond in /etc/network/interfaces (Debian/Ubuntu) or /etc/sysconfig/network-scripts/ifcfg-bond0 (RHEL/CentOS).

Q202: How do you troubleshoot DNS resolution issues?

* **Answer:**

1. Check /etc/resolv.conf for DNS server entries.

Test resolution:

nslookup google.com

Use dig for detailed DNS queries:

dig google.com

Q203: How do you debug a hung process in Linux?

* **Answer:**

Check the state of the process:

ps -o stat= -p <PID>

Use strace to trace system calls:

strace -p <PID>

Q204: How do you enable a service to start on boot? Answer:

sudo systemctl enable <service\_name>

Q205: How do you analyze system load averages? Answer: Use the uptime or top command:

uptime

* + **Load averages represent the number of processes waiting for CPU over 1, 5, and 15 minutes.**

Q206: How do you find disk latency using iostat?

Answer:

iostat -x

* + **Check await and svctm columns for latency.**

Q207: Write a script to find the largest file in a directory. Answer:

#!/bin/

find $1 -type f -exec du -h {} + | sort -rh | head -n 1

Q208: Write a script to list all installed packages and save them to a file. Answer:

#!/bin/

dpkg --get-selections > installed\_packages.txt

Q209: How do you check the health of a hard drive? Answer:

sudo smartctl -H /dev/sdX

Q210: How do you enable quotas on a filesystem?

* **Answer:**

Mount the filesystem with quota options:

sudo mount -o remount,usrquota,grpquota /dev/sdX /mnt

Create quota files:

sudo touch /mnt/aquota.user /mnt/aquota.group sudo chmod 600 /mnt/aquota.\*

sudo quotacheck -cug /mnt

Enable quotas:

sudo quotaon /mnt

Q211: How do you monitor failed login attempts? Answer:

sudo grep "Failed password" /var/log/auth.log

Q212: How do you lock a user account? Answer:

sudo passwd -l <username>

Q213: How do you verify the integrity of a backup file?

* **Answer: Generate a checksum:**

md5sum backup.tar.gz

1. Compare it with the original checksum.

Q214: How do you back up a MySQL database with compression? Answer:

mysqldump -u root -p database\_name | gzip > backup.sql.gz

Q215: How do you set up log rotation for custom application logs?

* **Answer:**

Create a custom configuration file:

sudo vi /etc/logrotate.d/custom\_app

Add:

/var/log/custom\_app/\*.log { daily

rotate 7 compress missingok notifempty

**}**

Q216: How do you clear logs securely? Answer:

sudo shred -u /var/log/<logfile>

Q217: How do you view active IRQs in Linux?

Answer:

cat /proc/interrupts

Q218: How do you list the system’s block devices? Answer:

lsblk

Q219: How do you downgrade a package in Ubuntu? Answer:

sudo apt-get install <package\_name>=<version> Q220: How do you check the changelog of an installed package? Answer:

apt changelog <package\_name> Q221: How do you start a VM using virsh? Answer:

virsh start <vm\_name>

Q222: How do you display the console output of a VM? Answer:

virsh console <vm\_name>

Q223: How do you view resource usage of a Kubernetes pod?

Answer:

kubectl top pod <pod\_name>

Q224: How do you build a Docker image from a Dockerfile? Answer:

docker build -t <image\_name>:<tag> .

Q225: How do you display system architecture? Answer:

uname -m

Q226: How do you display the last reboot time of the system? Answer:

who -b

Q227: How do you configure a VLAN in Linux? Answer:

sudo ip link add link eth0 name eth0.100 type vlan id 100 sudo ip addr add 192.168.1.2/24 dev eth0.100

sudo ip link set dev eth0.100 up Q228: How do you test the MTU size of a network? Answer:

**ping -M do -s 1472 <destination>**

Q229: Write a script to monitor a process and restart it if it stops. Answer:

#!/bin/ PROCESS="nginx"

if ! pgrep $PROCESS > /dev/null; then

echo "$PROCESS is not running. Restarting..." sudo systemctl restart $PROCESS

fi

Q230: How do you migrate data from one disk to another? Answer:

rsync -av /source/ /destination/ Q231: How do you prioritize a process using nice? Answer:

nice -n 10 <command>

Q232: How do you set up incremental backups with rsync? Answer:

rsync -av --link-dest=/previous/backup /source/ /new/backup/

Q233: How do you configure a Linux server as a router?

* **Answer:**

Enable IP forwarding:

sudo sysctl -w net.ipv4.ip\_forward=1

Make it persistent:

echo "net.ipv4.ip\_forward=1" | sudo tee -a /etc/sysctl.conf

Add routing rules using iptables:

sudo iptables -t nat -A POSTROUTING -o eth0 -j MASQUERADE

Q234: How do you capture only HTTP traffic using tcpdump? Answer:

sudo tcpdump -i eth0 port 80

Q235: How do you set a process to run at a specific nice level permanently?

* **Answer:**

Use nice while starting the process:

nice -n 10 <command>

Use renice for running processes:

renice 10 -p <PID>

Q236: How do you restart all failed services?

Answer:

sudo systemctl list-units --failed | awk '{print $1}' | xargs sudo systemctl restart

Q237: How do you monitor real-time system statistics? Answer: Use the dstat command:

dstat

* **It provides real-time statistics for CPU, memory, disk I/O, and more.**

Q238: How do you monitor user activity on a Linux system? Answer: Use the w command:

w

* **It shows logged-in users and their activity.**

Q239: Write a script to list all files modified in the last 7 days. Answer:

#!/bin/

find $1 -type f -mtime -7

Q240: Write a script to backup logs and delete the originals after backup. Answer:

#!/bin/ LOG\_DIR="/var/log"

BACKUP\_DIR="/backup" mkdir -p $BACKUP\_DIR

tar -czf $BACKUP\_DIR/logs\_$(date +%F).tar.gz $LOG\_DIR/\*.log rm $LOG\_DIR/\*.log

Q241: How do you move a partition to a new disk?

* **Answer: Copy data using dd:**

sudo dd if=/dev/sdX1 of=/dev/sdY1 bs=64K conv=noerror,sync

1. Update /etc/fstab to reflect the new disk.

Q242: How do you defragment a filesystem?

* **Answer:**

For ext4 filesystems:

sudo e4defrag /path/to/filesystem

Q243: How do you list all open files by a specific process? Answer:

lsof -p <PID>

Q244: How do you block specific IP ranges using iptables? Answer:

sudo iptables -A INPUT -m iprange --src-range 192.168.1.0-192.168.1.255 -j DROP

Q245: How do you create a differential backup using rsync?

Answer:

rsync -av --compare-dest=/path/to/previous/backup /source/

/path/to/current/backup/

Q246: How do you restore permissions from a backup?

* **Answer: Use getfacl and setfacl: Backup permissions:**

getfacl -R /path/to/directory > permissions.acl

Restore permissions:

setfacl --restore=permissions.acl Q247: How do you filter logs for a specific date range? Answer:

awk '/2025-01-20/,/2025-01-21/' /var/log/syslog

Q248: How do you monitor changes to a log file? Answer: Use tail with -f:

tail -f /var/log/syslog

Q249: How do you list all currently loaded kernel modules with their sizes? Answer:

lsmod

Q250: How do you remove a kernel module that’s in use?

* **Answer:**

Identify dependent processes:

lsmod | grep <module\_name>

Stop dependent processes or unload dependencies first:

sudo modprobe -r <module\_name>