# CompTIA

## Exam Questions XK0-005

CompTIA Linux+ Certification Exam

**NEW QUESTION 1**
A systems administrator wants to back up the directory /data and all its contents to /backup/data on a remote server named remote. Which of the following commands will achieve the desired effect?

A. scp -p /data remote:/backup/data
B. ssh -i /remote:/backup/ /data
C. rsync -a /data remote:/backup/
D. cp -r /data /remote/backup/

**Answer:** C

**Explanation:**
The command that will back up the directory /data and all its contents to /backup/data on a remote server named remote is rsync -a /data remote:/backup/. This command uses the rsync tool, which is a remote and local file synchronization tool. It uses an algorithm to minimize the amount of data copied by only moving the portions of files that have changed. The -a option stands for archive mode, which preserves the permissions, ownership, timestamps, and symbolic links of the files. The /data argument specifies the source directory to be backed up, and the remote:/backup/ argument specifies the destination directory on the remote server. The rsync tool will create a subdirectory named data under /backup/ on the remote server, and copy all the files and subdirectories from /data on the local server.
The other options are not correct commands for backing up a directory to a remote server. The scp -p /data remote:/backup/data command will copy the /data directory as a file named data under /backup/ on the remote server, not as a subdirectory with its contents. The -p option preserves the permissions and timestamps of the file, but not the ownership or symbolic links. The ssh -i /remote:/backup/ /data command will try to use /remote:/backup/ as an identity file for SSH authentication, which is not valid. The cp -r
/data /remote/backup/ command will try to copy the /data directory to a local directory named /remote/backup/, not to a remote server. References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 18: Automating Tasks; rsync(1) - Linux manual page

**NEW QUESTION 2**
A Linux administrator wants to find out whether files from the wget package have been altered since they were installed. Which of the following commands will provide the correct information?

A. rpm -i wget
B. rpm -qf wget
C. rpm -F wget
D. rpm -V wget

**Answer:** D

**Explanation:**
The command that will provide the correct information about whether files from the wget package have been altered since they were installed is rpm -V wget. This command will use the rpm utility to verify an installed RPM package by comparing information about the installed files with information from the RPM database. The verification process can check various attributes of each file, such as size, mode, owner, group, checksum, capabilities, and so on. If any discrepancies are found, rpm will report them using a single letter code for each attribute.
The other options are not correct commands for verifying an installed RPM package. The rpm -i wget command is invalid because -i is used to install a package from a file, not to verify an installed package. The rpm -qf wget command will query which package owns wget as a file name or path name, but it will not verify its attributes. The rpm -F wget command will freshen (upgrade) an already installed package with wget as a file name or path name, but it will not verify its attributes. References: rpm(8) - Linux manual
page; Using RPM to Verify Installed Packages

**NEW QUESTION 3**
A Linux administrator was asked to run a container with the httpd server inside. This container should be exposed at port 443 of a Linux host machine while it internally listens on port 8443. Which of the following commands will accomplish this task?

A. podman run -d -p 443:8443 httpd
B. podman run -d -p 8443:443 httpd
C. podman run –d -e 443:8443 httpd
D. podman exec -p 8443:443 httpd

**Answer:** A

**Explanation:**
The command that will accomplish the task of running a container with the httpd server inside and exposing it at port 443 of the Linux host machine while it internally listens on port 8443 is podman run -d -p 443:8443 httpd. This command uses the podman tool, which is a daemonless container engine that can run and manage containers on Linux systems. The -d option runs the container in detached mode, meaning that it runs in the background without blocking the terminal. The -p option maps a port on the host machine to a port inside the container, using the format host_port:container_port. In this case, port 443 on the host machine is mapped to port 8443 inside the container, allowing external access to the httpd server. The httpd argument specifies the name of the image to run as a container, which in this case is an image that contains the Apache HTTP Server software. The other options are not correct commands for accomplishing the task. Podman run -d -p 8443:443 httpd maps port 8443 on the host machine to port 443 inside the container, which does not match the requirement. Podman run –d -e 443:8443 httpd uses the -e option instead of the -p option, which sets an environment variable inside the container instead of mapping a port. Podman exec -p 8443:443 httpd uses the podman exec command instead of the podman run command, which executes a command inside an existing container instead of creating a new one. References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 18: Automating Tasks

**NEW QUESTION 4**
A cloud engineer is installing packages during VM provisioning. Which of the following should the engineer use to accomplish this task?

A. Cloud-init
B. Bash
C. Docker
D. Sidecar

**Answer:** A

**Explanation:**
The cloud engineer should use cloud-init to install packages during VM provisioning. Cloud-init is a tool that allows the customization of cloud instances at boot time. Cloud-init can perform various tasks, such as setting the hostname, creating users, installing packages, configuring network, and running scripts. Cloud-init can work with different cloud platforms and Linux distributions. This is the correct tool to accomplish the task. The other options are incorrect because they are either not suitable for cloud provisioning (Bash or Docker) or not a tool but a design pattern (Sidecar). References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 19: Managing Cloud and Virtualization Technologies, page 563.

**NEW QUESTION 5**
An administrator needs to make an application change via a script that must be run only in console mode. Which of the following best represents the sequence the administrator should execute to accomplish this task?

A. systemct1 isolate multi-user.target sh script.shsystemct1 isolate graphical.target
B. systemct1 isolate graphical.target sh script.shsystemct1 isolate multi-user.target
C. sh script.shsystemct1 isolate multi-user.target systemct1 isolate graphical.target
D. systemct1 isolate multi-user.target systemct1 isolate graphical.targetsh script.sh

**Answer:** A

**Explanation:**
The correct answer is A. systemctl isolate multi-user.target sh script.sh systemctl isolate graphical.target
This sequence will allow the administrator to switch from the graphical mode to the console mode, run the script, and then switch back to the graphical mode.
The systemctl command is used to control the systemd system and service manager, which manages the boot targets and services on Linux systems. The isolate subcommand starts the unit specified on the command line and its dependencies and stops all others. The multi-user.target is a boot target that provides a text-based console login, while the graphical.target is a boot target that provides a graphical user interface. By using systemctl isolate, the administrator can change the boot target on the fly without rebooting the system.
The sh command is used to run a shell script, which is a file that contains a series of commands that can be executed by the shell. The script.sh is the name of the script that contains the application change that the administrator needs to make. By running sh script.sh, the administrator can execute the script in the console mode.
The other options are incorrect because:
* B. systemctl isolate graphical.target sh script.sh systemctl isolate multi-user.target
This sequence will switch from the console mode to the graphical mode, run the script, and then switch back to the console mode. This is not what the administrator wants to do, as the script must be run only in console mode.
* C. sh script.sh systemctl isolate multi-user.target systemctl isolate graphical.target
This sequence will run the script in the current mode, which may or may not be console mode, and then switch to console mode and back to graphical mode. This is not what the administrator wants to do, as the script must be run only in console mode.
* D. systemctl isolate multi-user.target systemctl isolate graphical.target sh script.sh
This sequence will switch from graphical mode to console mode and then back to graphical mode, without running the script at all. This is not what the administrator wants to do, as the script must be run only in console mode.
References:
? systemctl(1) - Linux manual page
? How to switch between the CLI and GUI on a Linux server
? How to PROPERLY boot into single user mode in RHEL/CentOS 7/8
? Changing Systemd Boot Target in Linux
? Exit Desktop to Terminal in Ubuntu 19.10

**NEW QUESTION 6**
A systems administrator frequently connects to a remote host via SSH and a non-standard port. The systems administrator would like to avoid passing the port parameter on the command line every time. Which of the following files can be used to set a different port
value for that host?

A. /etc/ssh/sshd_config
B. /etc/ssh/moduli
C. ~/.ssh/config
D. ~/.ssh/authorized_keys

**Answer:** C

**Explanation:**
The ~/.ssh/config file can be used to set various options for SSH connections, including the port number, for specific hosts or groups of hosts. This file is located in the user’s home directory and affects only the current user. The /etc/ssh/sshd_config file is used to configure the SSH server daemon, not the client. The /etc/ssh/moduli file contains parameters for Diffie-Hellman key exchange, not port settings.
The ~/.ssh/authorized_keys file contains public keys for authentication, not port settings. References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 12: Secure Shell (SSH), page 414.

**NEW QUESTION 7**
A user generated a pair of private-public keys on a workstation. Which of the following commands will allow the user to upload the public key to a remote server and enable passwordless login?

A. scp ~/.ssh/id_rsa user@server:~/
B. rsync ~ /.ssh/ user@server:~/
C. ssh-add user server
D. ssh-copy-id user@server

**Answer:** D

**Explanation:**
The command ssh-copy-id user@server will allow the user to upload the public key to a remote server and enable passwordless login. The ssh-copy-id command is a tool for copying the public key to a remote server and appending it to the authorized_keys file, which is used for public key authentication. The command will

also set the appropriate permissions on the remote server to ensure the security of the key. The command ssh-copy-id user@server will copy the public key of the user to the server and allow the user to log in without a password. This is the correct command to use for this task. The other options are incorrect because they either do not copy the public key (scp, rsync, or ssh-add) or do not use the correct syntax (scp ~/.ssh/id_rsa user@server:~/ instead of scp ~/.ssh/id_rsa.pub user@server:~/ or rsync ~ /.ssh/ user@server:~/ instead of rsync ~/.ssh/id_rsa.pub user@server:~/). References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 13: Managing Network Services, page 410.

**NEW QUESTION 8**
A systems administrator wants to be sure the sudo rules just added to /etc/sudoers are valid. Which of the following commands can be used for this task?

A. visudo -c
B. test -f /etc/sudoers
C. sudo vi check
D. cat /etc/sudoers | tee test

**Answer:** A

**Explanation:**
The command visudo -c can be used to check the validity of the sudo rules in the /etc/sudoers file. The visudo command is a tool for editing and validating the /etc/sudoers file, which defines the rules for the sudo command. The -c option checks the syntax and logic of the file and reports any errors or warnings. The command visudo - c will verify the sudo rules and help the administrator avoid any mistakes. This is the correct command to use for this task. The other options are incorrect because they either do not check the validity of the file (test, sudo, or cat) or do not exist (sudo vi check). References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 18: Securing Linux Systems, page 546.

**NEW QUESTION 9**
A cloud engineer needs to change the secure remote login port from 22 to 49000. Which of the following files should the engineer modify to change the port number to the desired value?

A. /etc/host.conf
B. /etc/hostname
C. /etc/services
D. /etc/ssh/sshd_config

**Answer:** D

**Explanation:**
The file /etc/ssh/sshd_config contains the configuration settings for the SSH daemon, which handles the secure remote login. To change the port number, the engineer should edit this file and modify the line that says Port 22 to Port 49000. The other files are not related to the SSH service. References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 13: Managing Network Services, page 411.

**NEW QUESTION 10**
A DevOps engineer needs to download a Git repository from https://git.company.com/admin/project.git. Which of the following commands will achieve this goal?

A. git clone https://git.company.com/admin/project.git
B. git checkout https://git.company.com/admin/project.git
C. git pull https://git.company.com/admin/project.git
D. git branch https://git.company.com/admin/project.git

**Answer:** A

**Explanation:**
The command git clone https://git.company.com/admin/project.git will achieve the goal of downloading a Git repository from the given URL. The git command is a tool for managing version control systems. The clone option creates a copy of an existing repository. The URL specifies the location of the repository to clone, in this case https://git.company.com/admin/project.git. The command git clone https://git.company.com/admin/project.git will download the repository and create a directory named project in the current working directory. This is the correct command to use to accomplish the goal. The other options are incorrect because they either do not download the repository (git checkout, git pull, or git branch) or do not use the correct syntax (git checkout https://git.company.com/admin/project.git instead of git checkout -b project https://git.company.com/admin/project.git or git branch https://git.company.com/admin/project.git instead of git branch project https://git.company.com/admin/project.git). References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 19: Managing Cloud and Virtualization Technologies, page 571.

**NEW QUESTION 11**
A Linux systems administrator is configuring a new filesystem that needs the capability to be mounted persistently across reboots. Which of the following commands will accomplish this task? (Choose two.)

A. df -h /data
B. mkfs.ext4 /dev/sdc1
C. fsck /dev/sdc1
D. fdisk -l /dev/sdc1
E. echo "/data /dev/sdc1 ext4 defaults 0 0" >> /etc/fstab
F. echo "/dev/sdc1 /data ext4 defaults 0 0" >> /etc/fstab

**Answer:** BF

**Explanation:**
"modify the /etc/fstab text file to automatically mount the new partition by opening it in an editor and adding the following line:
/dev/ xxx 1 /data ext4 defaults 1 2
where xxx is the device name of the storage device"
https://learning.oreilly.com/library/view/mastering-linux-system/9781119794455/b01.xhtml To configure a new filesystem that needs the capability to be mounted persistently across reboots, two commands are needed: mkfs.ext4 /dev/sdc1 and echo “/dev/sdc1 /data ext4 defaults 0 0” >> /etc/fstab. The first command creates an ext4 filesystem on the device /dev/sdc1, which is the partition that will be used for the new filesystem. The second command appends a line to the

/etc/fstab file, which is the configuration file that controls persistent mount points of filesystems. The line specifies the device name, the mount point (/data), the filesystem type (ext4), the mount options (defaults), and the dump and pass values (0 0). The other commands are incorrect because they either do not create or configure a filesystem, or they have wrong syntax or arguments. References: CompTIA Linux+ Study Guide, Fourth Edition, page 409-410, 414-415.

**NEW QUESTION 12**
A Linux administrator wants to set the SUID of a file named dev_team.text with 744 access rights. Which of the following commands will achieve this goal?

A. chmod 4744 dev_team.txt
B. chmod 744 --setuid dev_team.txt
C. chmod -c 744 dev_team.txt
D. chmod -v 4744 --suid dev_team.txt

**Answer:** A

**Explanation:**
The command that will set the SUID of a file named dev_team.txt with 744 access rights is chmod 4744 dev_team.txt. This command will use the chmod utility to change the file mode bits of dev_team.txt. The first digit (4) represents the SUID bit, which means that when someone executes dev_team.txt, it will run with the permissions of the file owner. The next three digits (744) represent the read, write, and execute permissions for the owner (7), group (4), and others (4). This means that the owner can read, write, and execute dev_team.txt, while the group and others can only read it.
The other options are not correct commands for setting the SUID of a file with 744 access rights. The chmod 744 --setuid dev_team.txt command is invalid because there is no -- setuid option in chmod. The chmod -c 744 dev_team.txt command will change the file mode bits to 744, but it will not set the SUID bit. The -c option only means that chmod will report when a change is made. The chmod -v 4744 --suid dev_team.txt command is also invalid because there is no --suid option in chmod. The -v option only means that chmod will output a diagnostic for every file processed. References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 8: Managing Users and Groups; chmod(1) - Linux manual page

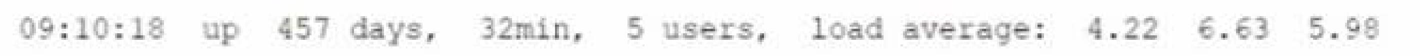
**NEW QUESTION 13**
A Linux administrator is adding a new configuration file to a Git repository. Which of the following describes the correct order of Git commands to accomplish the task successfully?

A. pull -> push -> add -> checkout
B. pull -> add -> commit -> push
C. checkout -> push -> add -> pull
D. pull -> add -> push -> commit

**Answer:** B

**Explanation:**
The correct order of Git commands to add a new configuration file to a Git repository is pull -> add -> commit -> push. The pull command will fetch and merge the changes from the remote repository to the local repository, ensuring that the local repository is up to date. The add command will stage the new configuration file for the next commit, marking it as a new file to be tracked by Git. The commit command will create a new snapshot of the project state with the new configuration file and a descriptive message. The push command will publish the commit to the remote repository, updating the remote branch with the new configuration file. The pull -> push -> add -> checkout order is incorrect, as it will not create a commit for the new configuration file, and it will switch to a different branch without pushing the changes. The checkout -> push -> add -> pull order is incorrect, as it will switch to a different branch before adding the new configuration file, and it will overwrite the local changes with the remote changes without creating a commit. The pull -> add -> push -> commit order is incorrect, as it will not create a commit before pushing the changes, and it will create a commit that is not synchronized with the remote branch. References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 20: Writing and Executing Bash Shell Scripts, page 579.

**NEW QUESTION 14**
A systems administrator is encountering performance issues. The administrator runs 3 commands with the following output



```
 09:10:18  up  457 days,  32min,  5 users,  load average:  4.22  6.63  5.98
```

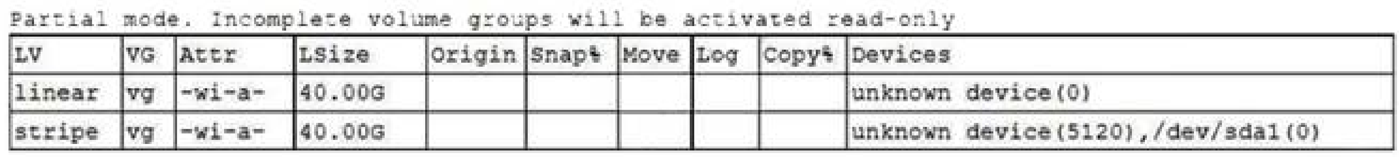
The Linux server has the following system properties CPU: 4 vCPU
Memory: 50GB
Which of the following accurately describes this situation?

A. The system is under CPU pressure and will require additional vCPUs
B. The system has been running for over a year and requires a reboot.
C. Too many users are currently logged in to the system
D. The system requires more memory

**Answer:** A

**Explanation:**
Based on the output of the image sent by the user, the system is under CPU pressure and will require additional vCPUs. The output shows that there are four processes running upload.sh scripts that are consuming a high percentage of CPU time (99.7%, 99.6%, 99.5%, and 99.4%). The output also shows that the system has only 4 vCPUs, which means that each process is using almost one entire vCPU. This indicates that the system is struggling to handle the CPU load and may experience performance issues or slowdowns. Adding more vCPUs to the system would help to alleviate the CPU pressure and improve the system performance. The system has not been running for over a year, as the uptime command shows that it has been up for only 1 day, 2 hours, and 13 minutes. The number of users logged in to the system is not relevant to the performance issue, as they are not consuming significant CPU resources. The system does not require more memory, as the free command shows that it has plenty of available memory (49 GB total, 48 GB free). References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 15: Managing Memory and Process Execution, pages 468-469.

**NEW QUESTION 15**
One leg of an LVM-mirrored volume failed due to the underlying physical volume, and a systems administrator is troubleshooting the issue. The following output has been provided:



Partial mode. Incomplete volume groups will be activated read-only

| LV | VG | Attr | LSize | Origin | Snap% | Move | Log | Copy% | Devices |
|---|---|---|---|---|---|---|---|---|---|
| linear | vg | -wi-a- | 40.00G | | | | | | unknown device(0) |
| stripe | vg | -wi-a- | 40.00G | | | | | | unknown device(5120),/dev/sda1(0) |

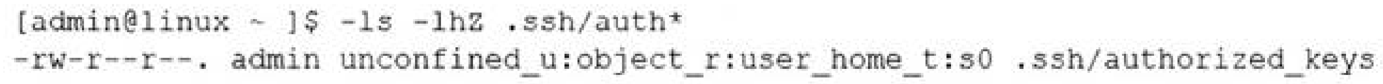
Given this scenario, which of the following should the administrator do to recover this volume?

A. Reboot the serve
B. The volume will automatically go back to linear mode.
C. Replace the failed drive and reconfigure the mirror.
D. Reboot the serve
E. The volume will revert to stripe mode.
F. Recreate the logical volume.

**Answer:** B

**Explanation:**
The administrator should replace the failed drive and reconfigure the mirror to recover the volume. The LVM (Logical Volume Manager) is a tool for managing disk space on Linux systems. The LVM allows the administrator to create logical volumes that span across multiple physical volumes, such as hard disks or partitions. The LVM also supports different types of logical volumes, such as linear, striped, or mirrored. A mirrored logical volume is a type of logical volume that creates a copy of the data on another physical volume, providing redundancy and fault tolerance. The output shows that the logical volume is mirrored and that one leg of the mirror has failed due to the underlying physical volume. This means that one of the physical volumes that contains the data of the logical volume is damaged or missing. This can cause data loss and performance degradation. The administrator should replace the failed drive and reconfigure the mirror to recover the volume. The administrator should identify the failed physical volume by using commands such as pvdisplay, vgdisplay, or lvdisplay. The administrator should then remove the failed physical volume from the volume group by using the vgreduce command.
The administrator should then install a new drive and create a new physical volume by using the pvcreate command. The administrator should then add the new physical volume to the volume group by using the vgextend command. The administrator should then reconfigure the mirror by using the lvconvert command. The administrator should replace the failed drive and reconfigure the mirror to recover the volume. This is the correct answer to the question. The other options are incorrect because they either do not recover the volume (reboot the server. The volume will automatically go back to linear mode or reboot the server. The volume will revert to stripe mode) or do not preserve the data of the volume (recreate the logical volume). References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 10: Managing Storage, pages 333-334.

**NEW QUESTION 16**
An administrator transferred a key for SSH authentication to a home directory on a remote server. The key file was moved to .ssh/authorized_keys location in order to establish SSH connection without a password. However, the SSH command still asked for the password. Given the following output:



```
[admin@linux ~ ]$ -ls -lhZ .ssh/auth*
-rw-r--r--. admin unconfined_u:object_r:user_home_t:s0 .ssh/authorized_keys
```

Which of the following commands would resolve the issue?

A. restorecon .ssh/authorized_keys
B. ssh_keygen -t rsa -o .ssh/authorized_keys
C. chown root:root .ssh/authorized_keys
D. chmod 600 .ssh/authorized_keys

**Answer:** D

**Explanation:**
The command that would resolve the issue is chmod 600 .ssh/authorized_keys. This command will change the permissions of the .ssh/authorized_keys file to 600, which means that only the owner of the file can read and write it. This is necessary for SSH key authentication to work properly, as SSH will refuse to use a key file that is accessible by other users or groups for security reasons. The output of ls -l shows that currently the .ssh/authorized_keys file has permissions of 664, which means that both the owner and group can read and write it, and others can read it.
The other options are not correct commands for resolving the issue. The restorecon .ssh/authorized_keys command will restore the default SELinux security context for the .ssh/authorized_keys file, but this will not change its permissions or ownership. The ssh_keygen -t rsa -o .ssh/authorized_keys command is invalid because ssh_keygen is not a valid command (the correct command is ssh-keygen), and the -o option is used to specify a new output format for the key file, not the output file name. The chown root:root
.ssh/authorized_keys command will change the owner and group of the .ssh/authorized_keys file to root, but this will not change its permissions or make it accessible by the user who wants to log in with SSH key authentication. References: How to Use Public Key Authentication with SSH; chmod(1) - Linux manual page

**NEW QUESTION 17**
A junior systems administrator has just generated public and private authentication keys for passwordless login. Which of the following files will be moved to the remote servers?

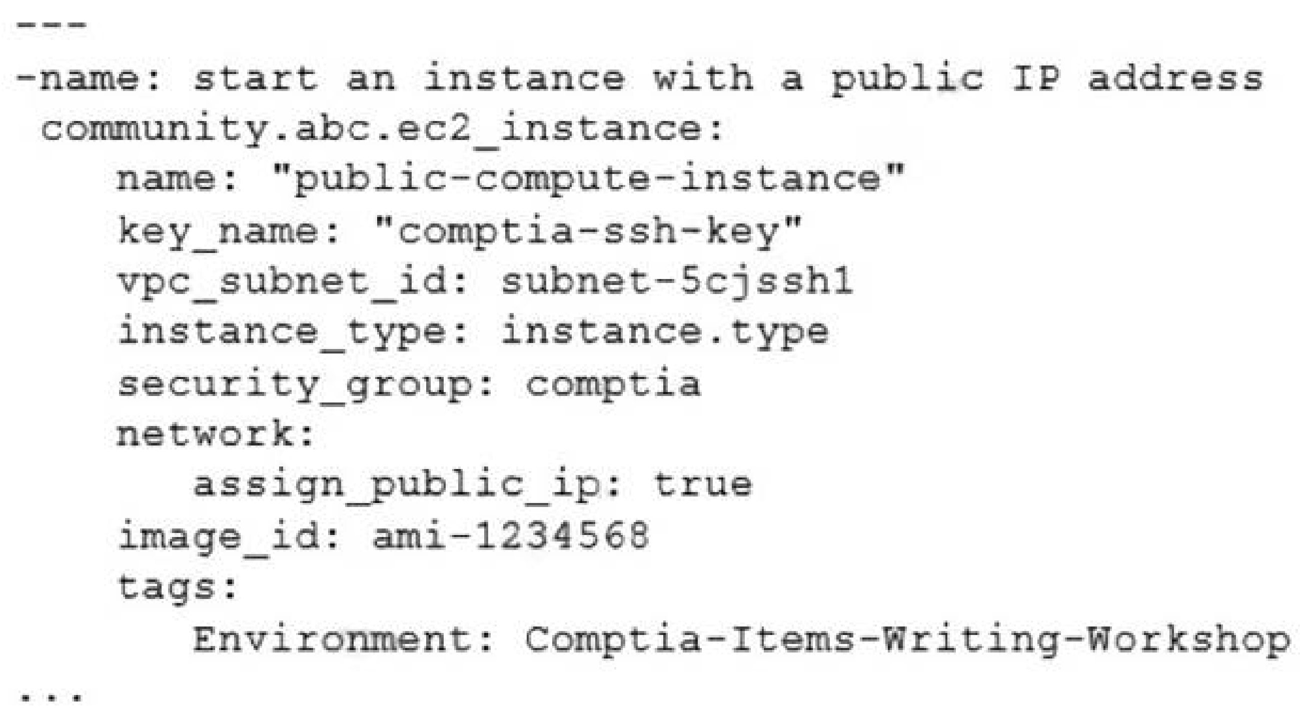
A. id_dsa.pem
B. id_rsa
C. id_ecdsa
D. id_rsa.pub

**Answer:** D

**Explanation:**
The file id_rsa.pub will be moved to the remote servers for passwordless login. The id_rsa.pub file is the public authentication key that is generated by the ssh-keygen command. The public key can be copied to the remote servers by using the ssh- copy-id command or manually. The remote servers will use the public key to authenticate the user who has the corresponding private key (id_rsa). This will allow the user to log in without entering a password. The other options are incorrect because they are either private keys (id_rsa, id_dsa.pem, or id_ecdsa) or non-existent files (id_dsa.pem or id_ecdsa). References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 13: Managing Network Services, page 410.

**NEW QUESTION 18**

A systems administrator is tasked with creating a cloud-based server with a public IP address.



```
---
-name: start an instance with a public IP address
 community.abc.ec2_instance:
    name: "public-compute-instance"
    key_name: "comptia-ssh-key"
    vpc_subnet_id: subnet-5cjssh1
    instance_type: instance.type
    security_group: comptia
    network:
       assign_public_ip: true
    image_id: ami-1234568
    tags:
       Environment: Comptia-Items-Writing-Workshop
...
```

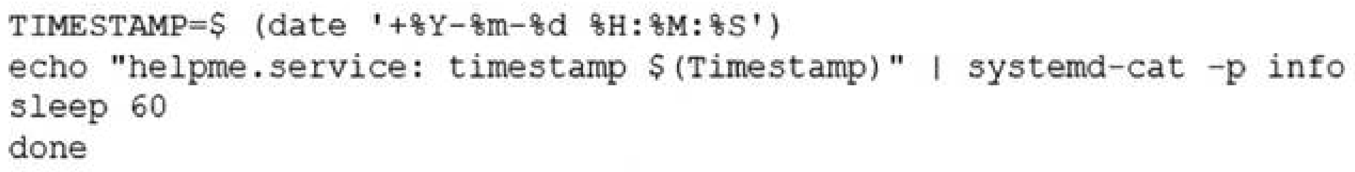
Which of the following technologies did the systems administrator use to complete this task?

A. Puppet
B. Git
C. Ansible
D. Terraform

**Answer:** D

**Explanation:**
The systems administrator used Terraform to create a cloud-based server with a public IP address. Terraform is a tool for building, changing, and versioning infrastructure as code. Terraform can create and manage resources on different cloud platforms, such as AWS, Azure, or Google Cloud. Terraform uses a declarative syntax to describe the desired state of the infrastructure and applies the changes accordingly. Terraform can also assign a public IP address to a cloud server by using the appropriate resource attributes. This is the correct technology that the systems administrator used to complete the task. The other options are incorrect because they are either not designed for creating cloud servers (Puppet or Git) or not capable of assigning public IP addresses (Ansible). References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 19: Managing Cloud and Virtualization Technologies, page 559.

**NEW QUESTION 19**
A systems administrator is implementing a new service task with systems at startup and needs to execute a script entitled test.sh with the following content:



```
TIMESTAMP=$ (date '+%Y-%m-%d %H:%M:%S')
echo "helpme.service: timestamp $(Timestamp)" | systemd-cat -p info
sleep 60
done
```

The administrator tries to run the script after making it executable with chmod +x; however, the script will not run. Which of the following should the administrator do to address this issue? (Choose two.)

A. Add #!/bin/bash to the bottom of the script.
B. Create a unit file for the new service in /etc/systemd/system/ with the name helpme.service in the location.
C. Add #!//bin/bash to the top of the script.
D. Restart the computer to enable the new service.
E. Create a unit file for the new service in /etc/init.d with the name helpme.service in the location.
F. Shut down the computer to enable the new service.

**Answer:** BC

**Explanation:**
The administrator should do the following two things to address the issue:
? Add #!/bin/bash to the top of the script. This is called a shebang line and it tells the system which interpreter to use to execute the script. Without this line, the script will not run properly. The shebang line should be the first line of the script and should start with #! followed by the path to the interpreter. In this case, the interpreter is bash and the path is /bin/bash. The other option (A) is incorrect because the shebang line should be at the top, not the bottom of the script.
? Create a unit file for the new service in /etc/systemd/system/ with the name helpme.service in the location. This is necessary to register the script as a systemd service and enable it to run at startup. A unit file is a configuration file that defines the properties and behavior of a service, such as the description, dependencies, start and stop commands, and environment variables. The unit file should have the extension .service and should be placed in the /etc/systemd/system/ directory. The other option (E) is incorrect because /etc/init.d is the directory for init scripts, not systemd services.
References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 14: Managing Processes and Scheduling Tasks, pages 429-430.

**NEW QUESTION 20**
An administrator started a long-running process in the foreground that needs to continue without interruption. Which of the following keystrokes should the administrator use to continue running the process in the background?

A. <Ctrl+z> bg
B. <Ctrl+d> bg
C. <Ctrl+b> jobs -1
D. <Ctrl+h> bg &

**Answer:** A

**Explanation:**
A long-running process is a program that takes a long time to complete or runs indefinitely on a Linux system. A foreground process is a process that runs in the current terminal and receives input from the keyboard and output to the screen. A background process is a process that runs in the background and does not interact with the terminal. A background process can continue running even if the terminal is closed or disconnected.
To start a long-running process in the background, the user can append an ampersand (&)
to the command, such as someapp &. This will run someapp in the background and return control to the terminal immediately.
To move a long-running process from the foreground to the background, the user can use two keystrokes: Ctrl+Z and bg. The Ctrl+Z keystroke will suspend (pause) the foreground process and return control to the terminal. The bg keystroke will resume (continue) the suspended process in the background and detach it from the terminal. The statement B is correct.
The statements A, C, and D are incorrect because they do not perform the desired task. The bg keystroke alone will not work unless there is a suspended process to resume. The Ctrl+B keystroke will not suspend the foreground process, but rather move one character backward in some applications. The jobs keystroke will list all processes associated with the current terminal. The bg & keystroke will cause an error because bg does not take any arguments. References: [How to Run Linux Processes in Background]

**NEW QUESTION 21**
A systems administrator is checking the system logs. The administrator wants to look at the last 20 lines of a log. Which of the following will execute the command?

A. tail -v 20
B. tail -n 20
C. tail -c 20
D. tail -l 20

**Answer:** B

**Explanation:**
The command tail -n 20 will display the last 20 lines of a file. The -n option specifies the number of lines to show. This is the correct command to execute the task. The other options are incorrect because they either use the wrong options (-v, -c, or -l) or have the wrong arguments (20 instead of 20 filename). References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 11: Managing Files and Directories, page 352.

**NEW QUESTION 22**
A Linux administrator needs to correct the permissions of a log file on the server. Which of the following commands should be used to set filename.log permissions to -rwxr—r--. ?

A. chmod 755 filename.log
B. chmod 640 filename.log
C. chmod 740 filename.log
D. chmod 744 filename.log

**Answer:** A

**Explanation:**
The command chmod 755 filename.log should be used to set filename.log permissions to -rwxr--r--. The chmod command is a tool for changing file permissions on Linux file systems. The permissions can be specified in octal notation, where each digit represents the permissions for the owner, group, and others respectively. The permissions are encoded as follows:
? 0: no permission
? 1: execute permission
? 2: write permission
? 4: read permission
? 5: read and execute permissions (4 + 1)
? 6: read and write permissions (4 + 2)
? 7: read, write, and execute permissions (4 + 2 + 1)
The command chmod 755 filename.log will set the permissions to -rwxr--r--, which means that the owner has read, write, and execute permissions (7), the group has read and execute permissions (5), and others have read and execute permissions (5). This is the correct command to use to accomplish the task. The other options are incorrect because they either set the wrong permissions (chmod 640, chmod 740, or chmod 744) or do not exist (chmod -G). References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 11: Managing Files and Directories, page 345.

**NEW QUESTION 23**
A systems administrator is working on a security report from the Linux servers. Which of the following commands can the administrator use to display all the firewall rules applied to the Linux servers? (Select two).

A. ufw limit
B. iptables —F
C. systemct1 status firewalld
D. firewall—cmd ——1ist—a11
E. ufw status
F. iptables —A

**Answer:** DE

**Explanation:**
These commands can display all the firewall rules applied to the Linux servers, depending on which firewall service is being used.
? The firewall-cmd command is a utility for managing firewalld, which is a dynamic firewall service that supports zones and services. The --list-all option will show all the settings and rules for the default zone, or for a specific zone if specified. For example, firewall-cmd --list-all --zone=public will show the rules for the public zone1.
? The ufw command is a frontend for iptables, which is a low-level tool for manipulating netfilter, the Linux kernel’s packet filtering framework. The status option will show the status of ufw and the active rules, or the numbered rules if verbose is specified. For example, ufw status verbose will show the numbered rules and other information2.

The other options are incorrect because:
* A. ufw limit
This command will limit the connection attempts to a service or port using iptables' recent module. It does not display any firewall rules2.
* B. iptables -F
This command will flush (delete) all the rules in the selected chain, or all chains if none is given. It does not display any firewall rules3.
* C. systemctl status firewalld
This command will show the status of the firewalld service, including whether it is active or not, but it does not show the firewall rules4.
* F. iptables -A
This command will append one or more rules to the end of the selected chain. It does not display any firewall rules3.

**NEW QUESTION 24**
After installing a new version of a package, a systems administrator notices a new version of the corresponding, service file was Installed In order to use the new version of the, service file, which of the following commands must be Issued FIRST?

A. systemct1 status
B. systemct1 stop
C. systemct1 reinstall
D. systemct1 daemon-reload

**Answer:** D

**Explanation:**
After installing a new version of a package that includes a new version of the corresponding service file, the systemct1 daemon-reload command must be issued first in order to use the new version of the service file. This command will reload the systemd manager configuration and read all unit files that have changed on disk. This will ensure that systemd recognizes the new service file and applies its settings correctly. The systemct1 status command will display information about a service unit, but it will not reload the configuration. The systemct1 stop command will stop a service unit, but it will not reload the configuration. The systemct1 reinstall command does not exist. References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 17: System Maintenance and Operation, page 518.

**NEW QUESTION 25**
A Linux administrator needs to analyze a failing application that is running inside a container. Which of the following commands allows the Linux administrator to enter the running container and analyze the logs that are stored inside?

A. docker run -ti app /bin/sh
B. podman exec -ti app /bin/sh
C. podman run -d app /bin/bash
D. docker exec -d app /bin/bash

**Answer:** B

**Explanation:**
Podman exec -ti app /bin/sh allows the Linux administrator to enter the running container and analyze the logs that are stored inside. This command uses the podman tool, which is a daemonless container engine that can run and manage containers on Linux systems. The exec option executes a command inside an existing container, in this case app, which is the name of the container that runs the failing application. The -ti option allocates a pseudo-TTY and keeps STDIN open, allowing for interactive shell access to the container. The /bin/sh argument specifies the shell command to run inside the container, which can be used to view and manipulate the log files.
The other options are not correct commands for entering a running container and analyzing the logs. Docker run -ti app /bin/sh creates a new container from the app image and runs the /bin/sh command inside it, but does not enter the existing container that runs the failing application. Podman run -d app /bin/bash also creates a new container from the app image and runs the /bin/bash command inside it, but does so in detached mode, meaning that it runs in the background without interactive shell access. Docker exec -d app /bin/bash executes the /bin/bash command inside the existing app container, but also does so in detached mode, without interactive shell access.
References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 18: Automating Tasks; View container logs | Docker Docs; How to see the logs of a docker container - Stack Overflow

**NEW QUESTION 26**
A Linux administrator was tasked with deleting all files and directories with names that are contained in the sobelete.txt file. Which of the following commands will accomplish this task?

A. xargs -f cat toDelete.txt -rm
B. rm -d -r -f toDelete.txt
C. cat toDelete.txt | rm -frd
D. cat toDelete.txt | xargs rm -rf

**Answer:** D

**Explanation:**
The command cat toDelete.txt | xargs rm -rf will delete all files and directories with names that are contained in the toDelete.txt file. The cat command reads the file and outputs its contents to the standard output. The | operator pipes the output to the next command. The xargs command converts the output into arguments for the next command. The rm -rf command removes the files and directories recursively and forcefully. This is the correct way to accomplish the task. The other options are incorrect because they either use the wrong options (-f instead of -a for xargs), the wrong arguments (toDelete.txt instead of toDelete.txt filename for rm), or the wrong commands (rm instead of xargs). References: CompTIA Linux+ (XK0-005) Certification Study Guide, Chapter 11: Managing Files and Directories, pages 349-350.

**NEW QUESTION 27**
The group named support is unable to make changes to the config file. An administrator is reviewing the permissions and sees the following:
S Is -1 config
-rw-rw----. 1 root app 4682 02-15 11:25 config
Which of the following should the administrator execute in order to give the support group access to modify the file while preserving the current ownership?

A. chown :support config

B. setfacl -m g:support:rw- config
C. chmod 664 config
D. chmod g+s config

**Answer:** C

**Explanation:**
To give the support group access to modify the config file while preserving the current ownership, the administrator can execute the command chmod 664 config ©. This will change the permissions of the config file to read and write for the owner and group, and read only for others. The owner and group of the file will remain as root and app respectively. The other commands will not achieve this task, but either change the group ownership, set an access control list, or set a setgid bit. References:
? [CompTIA Linux+ Study Guide], Chapter 3: Working with Files, Section: Changing
File Permissions
? [How to Use chmod Command in Linux]

**NEW QUESTION 28**
An administrator accidentally installed the httpd RPM package along with several dependencies. Which of the following options is the best way for the administrator to revert the package
installation?

A. dnf clean all
B. rpm -e httpd
C. apt-get clean
D. yum history undo last

**Answer:** D

**Explanation:**

The yum history undo last command will undo the last transaction, which in this case is the installation of the httpd RPM package and its dependencies. This will remove the packages that were installed and restore the previous state of the system. See How to undo or redo yum transactions and yum history.References1: https://www.redhat.com/sysadmin/undo- redo-yum-transactions2: https://man7.org/linux/man-pages/man8/yum.8.html#HISTORY

**NEW QUESTION 29**
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