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Questions & Answers Sample PDF

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Question 1. (Multi Select)

A technician wants to temporarily use a Linux virtual machine as a router for the network segment 10.10.204.0/24. Which of the following commands should the technician issue? (Select three).

A: `echo "1" > /proc/sys/net/ipv4/ip_forward`

B: `iptables -A FORWARD -j ACCEPT`

C: `iptables -A PREROUTING -j ACCEPT`

D: `iptables -t nat -s 10.10.204.0/24 -p tcp -A PREROUTING -j MASQUERADE`

E: `echo "0" > /proc/sys/net/ipv4/ip_forward`

F: `echo "1" > /proc/net/tcp`

G: `iptables -t nat -s 10.10.204.0/24 -A POSTROUTING -j MASQUERADE`

H: `iptables -t nat -A PREROUTING -j MASQUERADE`

Answer: A, B, G

Explanation:

Comprehensive and Detailed Explanation From Exact Extract:

To temporarily configure a Linux virtual machine as a router, the technician must enable IP forwarding and set up iptables rules to allow and masquerade traffic:

A . `echo "1" > /proc/sys/net/ipv4/ip_forward`: Enables IPv4 forwarding in the Linux kernel, allowing the VM to forward packets between interfaces.

B . `iptables -A FORWARD -j ACCEPT`: Adds a rule to the iptables firewall to accept all forwarded packets (allows traffic to be routed).

G . `iptables -t nat -s 10.10.204.0/24 -A POSTROUTING -j MASQUERADE`: Sets up network address translation (NAT) for outgoing packets from the 10.10.204.0/24 subnet, masquerading them as if they are coming from the VM's external IP.

Other options:

C . and H. are not relevant for routing/NAT in this context (PREROUTING is generally used for DNAT, not for standard source NAT).

D . is syntactically incorrect and mixes PREROUTING with MASQUERADE, which is not the proper combination for SNAT.

E . disables forwarding.

F . is not related to IP forwarding.

CompTIA Linux+ Study Guide: Exam XK0-006, Sybex, Chapter 9: "Networking", Section: "Configuring

Question 2. (Single Select)

A Linux user runs the following command:

```
nohup ping comptia.com &
```

Which of the following commands should the user execute to attach the process to the current terminal?

A: renice

B: jobs

C: exec

D: fg

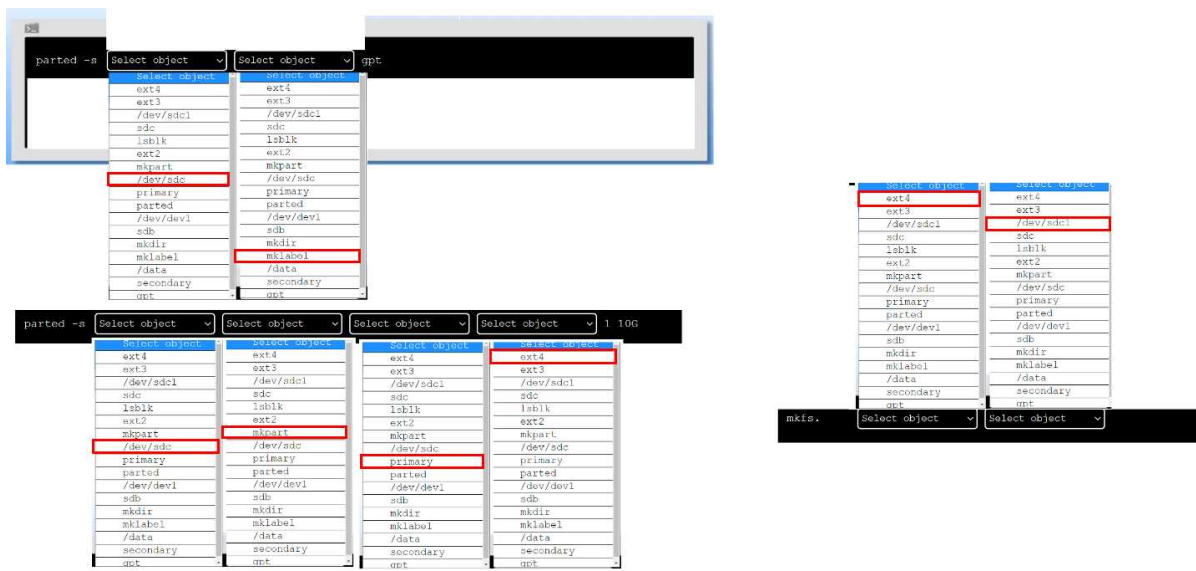
Answer: D

Explanation:

In Linux system management, controlling processes and job execution is a fundamental skill covered extensively in the CompTIA Linux+ V8 objectives. The command shown combines two important concepts: nohup and background execution using &.

The nohup command is used to run a process immune to hangup signals, meaning the process continues running even after the user logs out or the terminal session ends. By default, nohup detaches the process from the controlling terminal and redirects standard output and standard error to a file named nohup.out. When the ampersand (&) is appended, the process is immediately placed into the background, allowing the shell prompt to return without waiting for the command to finish.

Linux provides job control mechanisms that allow users to manage background and foreground processes within a shell session. The fg command is specifically designed to bring a background job into the foreground and reattach it to the current terminal. Once a job is in the foreground, it can receive input from the terminal and display output directly, and it can also be interrupted using signals such as Ctrl+C. The other answer choices do not fulfill this requirement. The renice command is used to change the scheduling priority of a running process but does not affect terminal attachment. The jobs command only lists background and stopped jobs associated with the current shell and does not modify their execution state. The exec command replaces the current shell process with a new process, which is unrelated to



Question 4. (Single Select)

A Linux user needs to download the latest Debian image from a Docker repository. Which of the following commands makes this task possible?

- A: docker image init debian
- B: docker image pull debian
- C: docker image import debian
- D: docker image save debian

Answer: B

Explanation:

Container management and image handling are part of modern Linux automation practices covered in CompTIA Linux+ V8. Docker images are stored in container registries such as Docker Hub, and administrators commonly need to download images to deploy containers.

The correct command for downloading an image from a Docker repository is `docker image pull`. This command retrieves the specified image from a configured container registry and stores it locally. When no tag is specified, Docker automatically pulls the latest available version of the image. Therefore, `docker image pull debian` downloads the most recent Debian image from Docker Hub.

The other options are incorrect. `docker image init` is not a valid Docker command and does not exist in Docker's CLI. `docker image import` is used to create a Docker image from a tarball file, not to download an image from a repository. `docker image save` exports an existing local image into a tar archive and does not

retrieve images from a remote registry.

Linux+ V8 documentation emphasizes understanding container image lifecycles, including pulling, tagging, and running images. Pulling images is a foundational step before container execution and automation workflows.

Therefore, the correct answer is B. docker image pull debian.

Question 5. (Single Select)

A systems administrator needs to enable routing of IP packets between network interfaces. Which of the following kernel parameters should the administrator change?

A: net.ipv4.ip_multicast

B: net.ipv4.ip_route

C: net.ipv4.ip_local_port_range

D: net.ipv4.ip_forward

Answer: D

Explanation:

IP packet forwarding is a key networking function in Linux system management and is explicitly referenced in the Linux+ V8 objectives. Enabling this feature allows a Linux system to act as a router by forwarding packets between network interfaces.

The kernel parameter responsible for this behavior is net.ipv4.ip_forward. When this parameter is set to 1, the Linux kernel allows IPv4 packets to be forwarded between interfaces. By default, this setting is often disabled on non-routing systems for security reasons.

The parameter can be modified temporarily using the sysctl command or permanently by editing /etc/sysctl.conf or files under /etc/sysctl.d/. Linux+ V8 documentation highlights this parameter as essential for configuring routing, NAT, and firewall-based gateway systems.

The other options are incorrect. net.ipv4.ip_multicast controls multicast behavior, not packet forwarding. net.ipv4.ip_route is not a valid kernel parameter. net.ipv4.ip_local_port_range defines the range of ephemeral ports used by outgoing connections and has no effect on routing.

Properly enabling IP forwarding is critical when configuring VPN gateways, firewalls, and network appliances. Therefore, the correct answer is D. net.ipv4.ip_forward.

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