

**XK0-004**

Number: XK0-004  
Passing Score: 800  
Time Limit: 120 min  
File Version: 1

XK0-004



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## Exam A

### QUESTION 1

A technical support engineer receives a ticket from a user who is trying to create a 1KB file in the `/tmp` directory and is getting the following error: `No space left on device`. The support engineer checks the `/tmp` directory, and it has 20GB of free space.



<https://vceplus.com/>

Which of the following BEST describes a possible cause for this error?

- A. The `/tmp` directory is not mounted.
- B. The filesystem is formatted with a 4MB block size.
- C. the filesystem ran out of inodes.
- D. The `/tmp` directory has been set with an immutable attribute.



**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: <https://www.maketecheasier.com/fix-linux-no-space-left-on-device-error/>

### QUESTION 2

Which of the following is the BEST reason for not storing database files in the `/var` directory?

- A. The `/var` filesystem is not fast enough for database files.
- B. The number of files in `/var` is limited by the available inodes.
- C. Files in `/var` do not have strict file permissions.
- D. If log files fill up `/var`, it might corrupt the database.

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 3

Which of the following can be used to boot a DVD from a remote device to initialize a Linux system setup on bare metal hardware as if it is a local DVD?

- A. UEFI
- B. PXE
- C. NFS
- D. GRUB

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: [https://access.redhat.com/documentation/en-us/red\\_hat\\_enterprise\\_linux/6/html/installation\\_guide/ch-boot-x86](https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/6/html/installation_guide/ch-boot-x86)



### QUESTION 4

After starting a long-running script, a systems administrator needs to verify the frequency of what is filling up the /var partition and kill it because it is consuming too much space.

Which of the following is the correct sequence given only a terminal is available?

- A. 1. CTRL-C
- 2. bg
- 3. watch df /var
- 4. CTRL-C5. fg
- 6. CTRL-Z
- B. 1. CTRL-C
- 2. fg
- 3. watch df /var

- 4. CTRL-Z5. bg
  - 6. CTRL-Z
- C. 1. CTRL-Z
- 2. bg
  - 3. watch df /var
  - 4. CTRL-C
  - 5. fg
  - 6. CTRL-C
- D. 1. CTRL-Z
- 2. bg
  - 3. watch df /var
  - 4. CTRL-Z5. fg
  - 6. CTRL-C

**Correct Answer: D**

**Section: (none)**

**Explanation**

**Explanation/Reference:**



### QUESTION 5

A Linux administrator must identify a user with high disk usage. The administrator runs the # du -s /home/\* command and gets the following output:

```
43    /home/User1
2701  /home/User2
133089 /home/User3
3611  /home/User4
```

Based on the output, User3 has the largest amount of disk space used. To clean up the file space, the administrator needs to find out more information about the specific files that are using the most disk space.

Which of the following commands will accomplish this task?

- A. df -k /home/User3/files.txt
- B. du -a /home/User3/\*
- C. du -sh /home/User/

D. `find . -name /home/User3 -print`

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://unix.stackexchange.com/questions/37221/finding-files-that-use-the-most-disk-space>

#### QUESTION 6

A systems administrator needs to append output of `ls -lha /opt` command to the contents of a `test.txt` file. Which of the following commands will accomplish this?

A. `ls -lha /opt > test.txt`

B. `ls -lha /opt < test.txt`

C. `ls -lha /opt >> test.txt`

D. `ls -lha /opt << test.txt`

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://www.cyberciti.biz/faq/linux-append-text-to-end-of-file/>

#### QUESTION 7

A Linux administrator needs to remotely update the contents of the `www.comptia.org/contacts` URL.

Which of the following commands would allow the administrator to download the current contents of the URL before updating?

A. `curl www.comptia.org/contacts`

B. `dig www.comptia.org/contacts`

C. `apt-get www.comptia.org/contacts`

D. `yum list www.comptia.org/contacts`

**Correct Answer:** A



**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: <https://www.thegeekstuff.com/2012/04/curl-examples/>

**QUESTION 8**

Which of the following BEST describes containers running on a Linux system?

- A. Containers only need the namespaces functionality to run on a Linux system available since kernel 2.6.
- B. Containers need a hypervisor to run on a Linux system. Cgroups namespaces are functionalities used for the kernel but not for running containers.
- C. Containers only need the cgroups functionality for running on a Linux system. Namespaces is not a Linux kernel functionality needed for creating and managing containers.
- D. Containers use the cgroups and namespaces functionalities to isolate processes and assign hardware resources to each of those isolated processes.

**Correct Answer: D**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: <https://www.linuxjournal.com/content/everything-you-need-know-about-linux-containers-part-ii-working-linux-containers-lxc>

**QUESTION 9**

A networked has been crashing intermittently. A Linux administrator would like to write a shell script that will attempt to ping the server and email an alert if the server fails to respond. The script will later be scheduled via cron job.



Which of the following scripts would BEST accomplish this task?

```
SERVER='192.168.1.50'  
RESULT='ping -C 2 $SERVER'  
if [ ! $RESULT ]; then  
    echo "Server is down" | mail -s "Server down" admin@email_address.com  
fi  
  
SERVER="192.168.1.50"  
ping -c 2 $SERVER >/dev/null 2>/dev/null  
if [ $? -ge 1 ]; then  
    echo "Server is down" | mail -s "Server down" admin@email_address.com  
fi  
  
SERVER="192.168.1.50"  
RESULT='ping -c 2 $SERVER >/dev/null 2>/dev/null'  
while [ $RESULT != 1 ];  
do  
    echo "Server is down" | mail -s "Server down" admin@email_address.com  
done
```

A.

B.

C.

C.

```
SERVER="192.168.1.50"  
ping -c 2 $SERVER >/dev/null 2>/tmp/fail.log  
if [ -f /tmp/fail/log ]; then  
    echo "Server is down" | mail -s "Server down" admin@email_address.com  
fi
```

D.

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 10

A Linux administrator is testing connectivity to a remote host on a shared terminal. The administrator wants to allow other users to access the terminal while the command is executing.

Which of the following commands should the administrator use?

- A. `bg ping remotehost`
- B. `fg ping remotehost`
- C. `ping remotehost < results`
- D. `ping remotehost &`

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 11

A Linux administrator needs to switch from text mode to GUI. Which of the following runlevels will start the GUI by default?

- A. Runlevel 3

- B. Runlevel 4
- C. Runlevel 5
- D. Runlevel 6

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: [http://www.linfo.org/runlevel\\_def.html](http://www.linfo.org/runlevel_def.html)

#### QUESTION 12

An administrator needs to change the IP address on a server remotely. After updating the configuration files, a network restart is needed. However, the administrator fears that when the network connection drops, the network restart script will be killed before the new IP address has been set.

Which of the following commands would prevent the script from being killed?

- A. `nohup service network restart`
- B. `service network restart &`
- C. `echo "service network restart" | at now`
- D. `bg service network restart`



**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 13

An administrator is analyzing a Linux server which was recently hacked.

Which of the following will the administrator use to find all unsuccessful login attempts?

- A. `nsswitch`
- B. `faillock`

- C. pam\_tally2
- D. passwd

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

#### **QUESTION 14**

A junior administrator needs to unload an older video kernel module.

Which of the following commands would BEST accomplish this task?

- A. modprobe
- B. insmod
- C. rmmod
- D. chmod
- E. depmod



**Correct Answer: A**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: [https://access.redhat.com/documentation/en-US/Red\\_Hat\\_Enterprise\\_Linux/7/html/Kernel\\_Administration\\_Guide/sec-Unloading\\_a\\_Module.html](https://access.redhat.com/documentation/en-US/Red_Hat_Enterprise_Linux/7/html/Kernel_Administration_Guide/sec-Unloading_a_Module.html)

#### **QUESTION 15**

An administrator is attempting to block SSH connections to 192.168.10.24 using the Linux firewall. After implementing a rule, a connection refused error is displayed when attempting to SSH to 192.168.10.24.

Which of the following rules was MOST likely implemented?

- A. iptables -A -p tcp -d 192.168.10.24 --dport 22 -j REJECT
- B. iptables -A -p tcp -d 192.168.10.24 --dport 22 -j DROP
- C. iptables -A -p tcp -d 192.168.10.24 --dport 22 -j FORWARD

D. `iptables -A -p tcp -d 192.168.10.24 --dport 22 -j REFUSE`

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://www.golinuxhub.com/2014/03/how-to-allowblock-ssh-connection-from.html>

### QUESTION 16

A junior Linux administrator is updating local name resolution to support IPv6. The administrator issues the command `cat /etc/hosts` and receives the following output:

```
127.0.0.1      localhost
```

Which of the following actions should the administrator perform to accomplish this task?

- A. Modify the `/etc/hosts` file, and add the `ipv6 localhost` entry to the file.
- B. Modify the `/etc/hosts` file, and add the `:::1 localhost` entry to the file.
- C. Modify the `/etc/hosts` file, and add the `ipv4 localhost` entry to the file.
- D. Modify the `/etc/hosts` file, and add the `0.0.0.0 localhost` entry to the file.

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 17

A Linux systems administrator needs to copy the contents of a directory named “working” on the local working system to a folder `/var/www/html` on a server named “corporate-web”.

Which of the following commands will allow the administrator to copy all the contents to the web server?

- A. `scp -r working/* webuser@corporate-web:/var/www/html`
- B. `tar working/* webuser@corporate-web:/var/www/html`
- C. `cp -r working/* webuser@corporate-web:/var/www/html`

D. mv working webuser@corporate-web:/var/www/html

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://unix.stackexchange.com/questions/232946/how-to-copy-all-files-from-a-directory-to-a-remote-directory-using-scp>

#### QUESTION 18

A systems administrator has received reports of intermittent network connectivity to a particular website. Which of the following is the BEST command to use to characterize the location and type of failure over the course of several minutes?

A. mtr www.comptia.org

B. tracert www.comptia.org C. ping www.comptia.org

D. netstat www.comptia.org

**Correct Answer:** A

**Section:** (none)

**Explanation**



**Explanation/Reference:**

#### QUESTION 19

A Linux administrator has configured a Linux system to be used as a router. The administrator confirms that two network adapters are properly installed and functioning correctly. In addition, the output of the iptables -L command appears to contain a complete firewall configuration.

Which of the following commands does the administrator need to issue for the router to be fully functional?

A. echo "1" > /proc/sys/net/ipv4/ip\_forward

B. echo "0" > /proc/sys/net/ipv4/tcp\_abort\_on\_overflow

C. echo "0" > /proc/sys/net/ipv4/max\_connections

D. echo "1" > /proc/sys/net/ipv4/ip\_default\_ttl

**Correct Answer:** A

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 20**

A systems administrator wants to deploy several applications to the same server quickly. Each application should be abstracted from the host with its own dependencies and libraries and utilize a minimal footprint.

Which of the following would be BEST in this scenario?

- A. Virtual machines
- B. Type 2 hypervisor
- C. Chroot jails
- D. Containers

**Correct Answer: D**

**Section: (none)**

**Explanation**



**Explanation/Reference:**

**QUESTION 21**

An operator finds a user is having issues with opening certain files.

Which of the following commands would allow the security administrator to list and check the SELinux context?

- A. `ls -D`
- B. `ls -a`
- C. `ls -Z`
- D. `ls -l`

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: [https://access.redhat.com/documentation/en-us/red\\_hat\\_enterprise\\_linux/6/html/security-enhanced\\_linux/sect-security-enhanced\\_linuxworking\\_with\\_selinux-selinux\\_contexts\\_labeling\\_files](https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/6/html/security-enhanced_linux/sect-security-enhanced_linuxworking_with_selinux-selinux_contexts_labeling_files)

**QUESTION 22**

A new corporate policy states that Bluetooth should be disabled on all company laptops. Which of the following commands would disable the use of Bluetooth?

- A. echo "blacklist bluetooth" > /etc/modprobe.d/blacklist-bluetooth
- B. echo "kill bluetooth" > /etc/modprobe.d/kill-bluetooth
- C. echo "modprobe bluetooth" > /etc/modprobe.d/modporbe-bluetooth
- D. echo "rmmod bluetooth" > /etc/modprobe.d/rmmod-bluetooth

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 23**

A junior Linux administrator is installing a new application with CPU architecture requirements that have the following specifications:

- x64 bit
- 3.0GHz speed
- Minimum quad core

The administrator wants to leverage existing equipment but is unsure whether the requirements of these systems are adequate. The administrator issues the following command `cat /proc/cpuinfo`. The output of the command is as follows:

```
processor:      0
vendor_id:     GenuineIntel
cpu_family:    x64
model:         58
model name:    Intel (R) Core(TM) i7-3687U @2.10 GHz
stepping:      9
microcode:     0x1c
cpu MHz:       2593.8%
cache size:    4096KB
siblings:      1
core id:       0
cpu cores:     4
```

Which of the following is the recommended course of action the administrator should take based on this output?

- A. Install the application, as the system meets the application requirements
- B. Procure new equipment that matches the recommended specifications
- C. Recompile the Linux kernel to support the installation.
- D. Reconfigure `lib` modules to support the new application.



**Correct Answer: A**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

#### **QUESTION 24**

A Linux systems administrator wants the ability to access systems remotely over SSH using RSA authentication. To which of the following files should the RSA token be added to allow this access?

- A. `authorized_keys`
- B. `~/.ssh/ssh_config`
- C. `id_rsa.pub`
- D. `known_hosts`

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: <https://www.digitalocean.com/community/tutorials/how-to-configure-ssh-key-based-authentication-on-a-linux-server>

**QUESTION 25**

A Linux administrator wants to fetch a Git repository from a remote Git server.

Which of the following is the BEST command to perform this task?

- A. `git checkout`
- B. `git clone`
- C. `git merge`
- D. `git config`

**Correct Answer: B**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: <https://git-scm.com/book/en/v2/Git-Basics-Working-with-Remotes>

**QUESTION 26**

An administrator needs to create a shared directory in which all users are able to read, write, and execute its content but none of the regular users are able to delete any content.

Which of the following permissions should be applied to this shared directory?

- A. `rwxrwxrwt`
- B. `rwxrwxrws`
- C. `rwxrwxrwx`
- D. `rwxrwxrw*`

**Correct Answer: A**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 27**

A systems administrator has finished building a new feature for the monitoring software in a separate Git branch.

Which of the following is the BEST method for adding the new feature to the software's master branch?

- A. Merge the changes from the feature branch to the master branch.
- B. Save the changes to the master branch automatically with each Git commit.
- C. Clone the feature branch into the master branch.
- D. Pull the changes from the feature branch into the master branch.

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://git-scm.com/book/en/v2/Git-Branching-Basic-Branching-and-Merging>

**QUESTION 28**

Which of the following will provide a list of all flash, external, internal, and SSD drives?

- A. lspci
- B. lsmod
- C. lsblk
- D. lsusb

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://www.linux.com/learn/intro-to-linux/2017/3/how-format-storage-devices-linux>

**QUESTION 29**

Which of the following configuration management tools is considered agentless?

- A. Puppet
- B. Salt

- C. Ansible
- D. Chef

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://www.intigua.com/blog/puppet-vs.-chef-vs.-ansible-vs.-saltstack>

### QUESTION 30

Which of the following is a difference between YAML and JSON?

- A. Users can comment in YAML but not in JSON
- B. JSON only uses curly brackets, while YAML only uses square brackets
- C. JSON is used in web development, while YAML is used solely in back-end systems.
- D. YAML has been deprecated for JSON.

**Correct Answer:** A

**Section:** (none)

**Explanation**



**Explanation/Reference:**

Reference: <https://www.json2yaml.com/yaml-vs-json>

### QUESTION 31

A junior administrator of a physical server receives log messages indicating the out-of-memory killer has been active. All memory slots are in use on the motherboard, but additional disk space is available. Space has been allocated for a swap file.

Which of the following should the administrator use to reduce the output of memory messages?

- A. `free : swapoff / swapfile ; swapon -a`
- B. `mkswap /swapfile; swapon -a`
- C. `fallocate -l 2G /swapfile && swapon -a`
- D. `echo "1" > /proc/meminfo ; swapon / swapfile`

**Correct Answer:** B

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 32**

A junior Linux administrator is optimizing a system in which an application needs to take priority 0 when running the process. The administrator runs the `ps` command and receives the following output:

```
PID  PPID  TTY      Time    CMD
8481  2      pts/17  16:40:00  app
9854  0      pts/17  16:40:00  ps
```

Given this scenario, which of the following steps will address this issue?

- A. Issue the command `renice -n 0 -p 8481`
- B. Issue the command `renice -p 8481`
- C. Issue the command `renice -p 0 -n 8481`
- D. Issue the command `renice -n 8481`



**Correct Answer: A**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 33**

An administrator needs to mount the shared NFS file system `testhost:/testvolume` to mount point `/mnt/testvol` and make the mount persistent after reboot.

Which of the following BEST demonstrates the commands necessary to accomplish this task?

```
# mkdir -p /mnt/testvol
# echo "testhost:/testvolume /mnt/testvol nfs defaults 0 0" >> /etc/fstab
# mount -a

# mkdir /mnt/testvol
# mount testhost:/testvolume /mnt/testvol

# mkdir testhost:/testvolume at /mnt/testvol
# mount -a

# mkdir /mnt/testvol
# echo "testhost:/testvolume /mnt/testvol" >> /mnt/mnttab
# mount -a
```

A.

B.

C.

D.

**Correct Answer:** A  
**Section:** (none)  
**Explanation**

**Explanation/Reference:**

#### QUESTION 34

A systems administrator has deployed a Linux server based on an Anaconda process with all packages and custom configurations necessary to install a web server role.

Which of the following could be used to install more Linux servers with the same characteristics?

- A. `/etc/sysconfig/anaconda.cfg`
- B. `/root/anaconda.auto`
- C. `/root/anaconda-ks.cfg`
- D. `/etc/sysconfig/installation.cfg`

**Correct Answer:** C  
**Section:** (none)  
**Explanation**



**Explanation/Reference:**

Reference: [https://access.redhat.com/documentation/en-us/red\\_hat\\_enterprise\\_linux/6/html/installation\\_guide/sn-automating-installation](https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/6/html/installation_guide/sn-automating-installation)

#### QUESTION 35

A systems administrator wants to know the current status of a series of `dd` jobs that were started in the background three hours ago.

Which of the following commands will achieve this task?

- A. `sudo killall -HUP dd`
- B. `sudo killall dd`
- C. `sudo killall -TERM dd`
- D. `sudo killall -USR1 dd`

**Correct Answer:** D

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: <https://askubuntu.com/questions/215505/how-do-you-monitor-the-progress-of-dd>

**QUESTION 36**

A Linux administrator needs the “tech” account to have the option to run elevated commands as root.

Which of the following commands would BEST meet this goal?

- A. `$ su - tech -c "/bin/bash"`
- B. `# usermod -aG wheel tech`
- C. `# sudo -i tech`
- D. `# groupadd -u tech -g root`

**Correct Answer: B**

**Section: (none)**

**Explanation**

**Explanation/Reference:**



**QUESTION 37**

Ann, a junior systems administrator, is required to add a line to the `/etc/yum.conf` file. However, she receives the following error message when she tries to add the line:

```
root@comptia:~# echo "line" > /etc/yum.conf
-su: /etc/yum.conf: Operation not permitted
```

Ann performs some diagnostics to attempt to find the root cause:

```
root@comptia:~# ls -l /etc/yum.conf
-rw-r--r-- 1 root root 970 Jan 30 2018 /etc/yum.conf
```

```
root@comptia:~# lsattr /etc/yum.conf
----i-----e-- /etc/yum.conf
```

```
root@comptia:~# df -i /etc/yum/conf
Filesystem  Inodes  IUsed  IFree  IUse%  Mounted on
/dev/sda1   524288  192861  331427  37%    /
```

Which of the following commands should Ann execute to write content to /etc/yum?

- A. `chmod 755 /etc/yum.conf`
- B. `setfacl -m m:rw /etc/yum.conf`
- C. `chattr -i /etc/yum.conf`
- D. `setenforce 0`



**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 38

Given the output below:

```
drwxr-xr-x. 4096 user1 user1 Documents
drwxr-xr-x. 4096 user1 user1 Music
lrwxrwxrwx. 1 root root MyPhoto.jpg ->/Pictures/photo.jpg
drwxr-xr-x. 4096 user1 user1 Pictures
-rw-r--r--. 256 user1 user1 text.txt
-rw-r--r--. 35 user1 user1 tmp.tmp
```

Which of the following commands can be used to remove `MyPhoto.jpg` from the current directory?

- A. `unlink ./MyPhoto.jpg`
- B. `del Pictures/photo.jpg`
- C. `rm -rf ./Pictures`
- D. `rm -f MyPhoto.jpg`
- E. `ln -rm ./Pictures/photo.jpg`

**Correct Answer: E**

**Section: (none)**

**Explanation**



**Explanation/Reference:**

### QUESTION 39

Which of the following commands would show the default printer on a Linux system?

- A. `lpr`
- B. `lpq`
- C. `lpstat`
- D. `lspci`

**Correct Answer: B**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: <https://superuser.com/questions/123576/show-default-linux-printer>

**QUESTION 40**

In order to comply with new security policies, an administrator needs to prevent the SSH server from using insecure algorithms.

Which of the following files should be edited to accomplish this?

- A. /etc/ssh/sshd\_config
- B. /etc/ssh/ssh\_config
- C. ~/.ssh/ssh\_config
- D. /etc/ssh/known\_hosts

**Correct Answer: A****Section: (none)****Explanation****Explanation/Reference:****QUESTION 41**

Which of the following configuration files should be modified to disable Ctrl+Alt+Del in Linux?

- A. /etc/inittab
- B. ~/.bash\_profile
- C. /etc/securetty
- D. /etc/security/limits.conf

**Correct Answer: A****Section: (none)****Explanation****Explanation/Reference:**

Reference: <https://www.linuxtechi.com/disable-reboot-using-ctrl-alt-del-keys/>

**QUESTION 42**

A Linux administrator is using a public cloud provider to host servers for a company's website. Using the provider's tools, the administrator wrote a JSON file to define how to deploy the servers. Which of the following techniques did the administrator use?

- A. Infrastructure as code
- B. Build automation
- C. Platform as a service
- D. Automated configuration

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://cloud.google.com/cloud-build/docs/build-config>

#### QUESTION 43

A systems administrator configured a new kernel module, but it stopped working after reboot. Which of the following will allow the systems administrator to check for module problems during server startup?

- A. lsmod
- B. modprobe
- C. modinfo
- D. dmesg

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: [https://access.redhat.com/documentation/en-us/red\\_hat\\_enterprise\\_linux/6/html/deployment\\_guide/sec-displaying\\_information\\_about\\_a\\_module](https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/6/html/deployment_guide/sec-displaying_information_about_a_module)

#### QUESTION 44

Two specific users need access to a directory owned by root where backups are located. Which of the following commands would BEST ensure the specified users can access the backup files?

- A. umask

- B. `chcon`
- C. `chmod`
- D. `setfacl`

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 45

Which of the following is the template for the `grub.cfg` file?

- A. `/etc/default/grub`
- B. `/etc/grub2.cfg`
- C. `/etc/sysctl.conf`
- D. `/boot/efi`

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://geek-university.com/linux/grub-version-2/>

#### QUESTION 46

A Linux administrator implemented a new HTTP server using the default configuration. None of the users on the network can access the server. If there is no problem on the network or with the users' workstations, which of the following steps will BEST analyze and resolve the issue?

- A. Run `netstat` to ensure the port is correctly bound, and configure the firewall to allow access on ports 80 and 443
- B. Run `route` to ensure the port is correctly bound, and configure the firewall to allow access on ports 80 and 443
- C. Run `netcat` to ensure the port is correctly bound, and configure a static route to the web to allow access on ports 80 and 443
- D. Run `route` to ensure the port is correctly bound, and configure SELinux to allow access on ports 80 and 443

**Correct Answer:** C



**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: <https://www.varonis.com/blog/netcat-commands/>

**QUESTION 47**

A Linux storage administrator wants to create a logical volume group. Which of the following commands is required to start the process?

- A. pvcreate
- B. vgcreate
- C. lvcreate
- D. mkfs.xfs

**Correct Answer: B**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: <https://www.thegeekstuff.com/2010/08/how-to-create-lvm/>

**QUESTION 48**

A Linux administrator built a GitLab server. Later that day, a software engineer tried to access the server to upload the repository during the final step of installation. The software engineer could not access the website. Which of the following firewall rules would allow access to this site?

- A. `iptables -A INPUT -p tcp -m multiport --dports 80,443 -m conntrack -cstate NEW, ESTABLISHED -j ACCEPT`
- B. `iptables -A INPUT -p tcp -m multiport --dports 80,443 -m conntrack -cstate ESTABLISHED -j ACCEPT`
- C. `iptables -A INPUT -p tcp -m multiport --dports 80,443 -m conntrack -cstate RELATED, ESTABLISHED -j ACCEPT`
- D. `iptables -A INPUT -p tcp -m multiport --dports 80,443 -m conntrack -cstate NEW, ESTABLISHED -j REJECT`

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: <https://serverfault.com/questions/578730/when-using-iptables-firewall-rules-why-assert-new-state-on-all-allowed-ports>

#### QUESTION 49

While creating a file on a volume, the Linux administrator receives the following message: No space left on device. Running the `df -m` command, the administrator notes there is still 50% of usage left. Which of the following is the NEXT step the administrator should take to analyze the issue without losing data?

- A. Run the `df -i` command and notice the inode exhaustion
- B. Run the `df -h` command and notice the space exhaustion
- C. Run the `df -B` command and notice the block size
- D. Run the `df -k` command and notice the storage exhaustion

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://www.tecmint.com/how-to-check-disk-space-in-linux/>

#### QUESTION 50

A user attempts to use the `mount -a` command but gets the following error:

```
mount: mount point /mnt/test does not exist
```

Which of the following commands best describes the action the Linux administrator should take NEXT?

- A. `mount -a /mnt/test`
- B. `mkdir -p /mnt/test`
- C. `mdadm -p /mnt/test`
- D. `mkfs /mnt/test`
- E. `touch /mnt/test`

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://serverfault.com/questions/751113/mount-point-does-not-exist-despite-creating-it>

#### QUESTION 51

A company wants to ensure that all newly created files can be modified only by their owners and that all new directory content can be changed only by the creator of the directory. Which of the following commands will help achieve this task?

- A. `umask 0022`
- B. `umask 0012`
- C. `chmod -R 0644 /`
- D. `chmod -R 0755 /`

**Correct Answer:** A  
**Section:** (none)  
**Explanation**

**Explanation/Reference:**

Reference: <https://www.computerhope.com/unix/uumask.htm>

#### QUESTION 52

A Linux administrator needs to back up the folder `/usr/domain`, and the output must be a gzip compressed tar. Which of the following commands should be used?

- A. `tar -cv domain.tar.gz /usr/domain`
- B. `tar -cvf /usr/domain domain.tar.gz`
- C. `tar -czvf domain.tar.gz /usr/domain`
- D. `tar -cxzv /usr/domain domain.tar.gz`

**Correct Answer:** C  
**Section:** (none)  
**Explanation**

**Explanation/Reference:**

Reference: <https://help.ubuntu.com/community/BackupYourSystem/TAR>

#### QUESTION 53

Ann, a junior Linux administrator, needs to copy software from her local machine to assist in developing a software application on a remote machine with the IP address 192.168.3.22. The file needs to be placed on the `/tmp` directory. After downloading the RPM to the local machine, which of the following commands would be BEST to use to copy the software?

- A. `scp ~/software.rpm USER@192.168.3.22:/tmp`
- B. `scp ~/software.rpm USER@192.168.3.22: /tmp`
- C. `wget USER@192.168.3.22:/tmp -f ~/software.rpm`
- D. `scp USER@192.168.3.22 ~/software.rpm :/tmp`

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 54

A systems administrator observes high latency values when reaching a remote web server. Which of the following commands will help determine and isolate issues on the network side?

- A. `mtr`
- B. `dig`
- C. `netstat`
- D. `route`



**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://www.keycdn.com/support/what-is-latency>

#### QUESTION 55

A systems administrator is enabling quotas on the `/home` directory of a Linux server. The administrator makes the appropriate edits to the `/etc/fstab` file and attempts to issue the commands to enable quotas on the desired directory. However, the administrator receives an error message stating the filesystem does not support quotas. Which of the following commands should the administrator perform to proceed?

- A. `mount -o remount /home`
- B. `quotacheck -cg`

C. edquota /home

D. quotaon /home

**Correct Answer: D**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: <https://www.tecmint.com/set-file-system-disk-quotas-on-ubuntu/>

### QUESTION 56

A new HTTPS web service is being deployed on a server. Which of the following commands should the Linux administrator use to ensure traffic is able to flow through the system firewall to the new service?

A. iptables -I OUTPUT -p tcp --sport 443 -j ACCEPT

B. iptables -A INPUT -p tcp --dport 443 -j ACCEPT

C. iptables -I INPUT --dport 443 -j ACCEPT

D. iptables -A OUTPUT -p tcp --dport 443 -j ACCEPT



**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: <https://www.linode.com/docs/security/firewalls/control-network-traffic-with-iptables/>

### QUESTION 57

An administrator has modified the configuration file for a service. The service is still running but is not using the new configured values. Which of the following will BEST remediate this issue?

A. kill -HUP

B. init 0

C. service start

D. renice -10

**Correct Answer: A**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 58**

A Linux administrator is setting up a testing environment and needs to connect to a separate testing server using the production server name. The administrator needs to override the hostname that the DNS is returning in order to use the test environment. Which of the following commands should be run on each of the testing systems to BEST meet this goal?

- A. # hostnamectl set-hostname "192.168.1.100 production.company.com"
- B. # grep -i IP "\${ip addr show} production.company.com" > /etc/resolv.conf
- C. # ip addr add 192.168.1.100/24 dev eth0 && rndc reload production.company.com
- D. # echo "192.168.1.100 production.company.com" >> /etc/hosts

**Correct Answer: A**

**Section: (none)**

**Explanation**



**Explanation/Reference:**

Reference: [https://access.redhat.com/documentation/en-us/red\\_hat\\_enterprise\\_linux/7/html/networking\\_guide/sec\\_configuring\\_host\\_names\\_using\\_hostnamectl](https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/7/html/networking_guide/sec_configuring_host_names_using_hostnamectl)

**QUESTION 59**

A systems administrator is configuring options on a newly installed Linux VM that will be deployed to the Pacific time zone. Which of the following sets of commands should the administrator execute to accurately configure the correct time settings?

- A. cd /etc ln -s /usr/share/zoneinfo/US/Pacific localtime
- B. cd /usr/local ln -s /usr/share/zoneinfo/US/Pacific zoneinfo
- C. cd /etc/local ln -s /usr/share/zoneinfo/US/Pacific localtime
- D. cd /usr/share/local ln -s /usr/share/zoneinfo/US/Pacific localectl

**Correct Answer: A**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 60**

A user has connected a Bluetooth mouse to a computer, but it is not working properly. Which of the following commands should the systems administrator use to fix the issue?

- A. `lsmod -i bluetooth`
- B. `insmod bluetooth`
- C. `modprobe -r bluetooth`
- D. `depmod -i bluetooth`

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 61**

An administrator needs to deploy 100 identical CentOS workstations via PXE boot. Which of the following should the administrator use to minimize the amount of interaction with the consoles needed?

- A. Kickstart script
- B. Ghost image on a distribution server
- C. Hard disk duplicator
- D. Hard disk duplicator
- E. Ubiquity script

**Correct Answer: A**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 62**

A user, jsmith, needs access to database files located on a server. Which of the following will add jsmith to the “dba” group and preserve existing group memberships?

- A. `usermod -a -G dba jsmith`
- B. `usermod -g dba jsmith`
- C. `useradd -g dba jsmith`
- D. `groupmod dba -u jsmith`

**Correct Answer:** AC

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Explanation:

According to the reference given below. Both AC is correct.

Reference:

<https://www.cyberciti.biz/faq/howto-linux-add-user-to-group/>

#### QUESTION 63

An engineer is working on a production application deployment that requires changing a web application property file called `server.property` that is managed by the Git version control system. A cloned copy of the remote repository in which the `server.property` file exists is on the local desktop computer. The engineer makes appropriate changes to the files, saves it as `server.property`, and executes `git commit -m "changed the property file" server.property`. Which of the following commands did the engineer fail to perform?

- A. `git init server.property`
- B. `git merge server.property`
- C. `git add server.property`
- D. `git push server.property`

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://www.earthdatascience.org/workshops/intro-version-control-git/basic-git-commands/>

#### QUESTION 64

A systems administrator is unable to reach other devices on the network and the Internet. The server is configured with the IP address 192.169.1.50/24 on eth0. The server's router is 192.168.1.1. The administrator reviews the output of `route -n`:

```
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
0.0.0.0 192.168.2.1 0.0.0.0 UG 1024 0 0 eth0
192.168.1.0 0.0.0.0 255.255.255.0 U 0 0 0 eth0
```

Which of the following commands should the administrator run to correct the issue?

- A. `route del default gw 192.168.2.1 eth0; route add default gw 192.168.1.1 eth0`
- B. `route add -net 192.168.10.0 netmask 255.255.255.0 gw 192.168.2.1 eth0`
- C. `route add 192.168.1.1 default 192.168.1.50 eth0`
- D. `route host gw 192.168.1.1 eth0`

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**



#### QUESTION 65

An administrator needs to see the type of CPU that a server is running. Which of the following files contains this information?

- A. `/proc/cpuinfo`
- B. `/etc/devices/info.conf`
- C. `/dev/proc/cpu`
- D. `/sys/dev/cpuinfo`

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://www.binarytides.com/linux-cpu-information/>

**QUESTION 66**

A Linux systems administrator is setting up SSH access with PKI for several users using their newly created RSA keys. Which of the following MOST securely achieves this task?

- A. Use `curl` to copy each user's public key file to the respective system
- B. Use `cp` to copy each user's public key file to the respective system
- C. Use `ssh-copy-id` to copy each user's public key file to the respective system
- D. Use `ssh-copy-id` to copy each user's private key file to the respective system

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://www.linode.com/docs/security/authentication/use-public-key-authentication-with-ssh/>

**QUESTION 67**

The development team has automated their software build process so each time a change is submitted to the source code repository, a new software build is compiled. They are requesting that the Linux operations team look into automating the deployment of the software build into the test environment. Which of the following is the benefit to the development team for implementing deployment automation?

- A. To ensure the build commits are also deployed to the test environment
- B. To enable notifications when builds are deployed to the test environment
- C. To ensure software builds in test are not accidentally deployed to production
- D. To streamline the deployment process for deploying builds into test environments

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 68**

A Linux administrator needs to schedule a cron job to run at 1:15 p.m. every Friday to report the amount of free disk space on the system and to send the output to a file named "freespace". Which of the following would meet this requirement?

- A. `13 15 * * 5 df > /freespace`
- B. `15 13 * * 5 df > /freespace`
- C. `15 1 * * 6 df > /freespace`

D. 15 13 6 \* \* df > /freespace

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 69

A technician wants to secure a sensitive workstation by ensuring network traffic is kept within the local subnet. To accomplish this task, the technician executes the following command: `echo 0 > /proc/sys/net/ipv4/ip_default_ttl`

Which of the following commands can the technician use to confirm the expected results? (Choose two.)

- A. `tcpdump`
- B. `traceroute`
- C. `route`
- D. `iperf`
- E. `ip`
- F. `arp`



**Correct Answer:** BC

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 70

A junior Linux administrator needs to ensure a service will start on system boot. Which of the following commands should be used to accomplish this task?

- A. `chkconfig <service> on`
- B. `systemctl <service> bootup`
- C. `service <service> enable`

D. `crontab install <service>`

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://geekflare.com/how-to-auto-start-services-on-boot-in-linux/>

#### QUESTION 71

A Linux administrator has installed a web application firewall in front of a web server running on HTTP port 8080 and successfully started the HTTP server. However, after opening the application URL in an Internet browser, the administrator discovered that the application does not work. The administrator performed the following diagnostic steps:

Output of `sysctl -a` command:

```
kernel.sched_child_runs_first = 0
kernel.panic = 0
kernel.ftrace_enabled = 1
kernel.sysrq = 1
net.ipv4.icmp_echo_ignore_all = 0
```



Output of `iptables -L` command:

```
Chain INPUT (policy ACCEPT)
```

```
target prot opt source destination
ACCEPT tcp -- anywhere anywhere tcp dpt:webcache
```

```
Chain FORWARD (policy ACCEPT)
```

```
target prot opt source destination
ACCEPT tcp -- anywhere anywhere dpt:webcache
```

```
Chain OUTPUT (policy ACCEPT)
```

```
target prot opt source destination
```

Output of `netstat -nltop | grep "8080"`:

```
tcp 0.0.0.0:8080 0.0.0.0* Listen 12801/httpd
```

Which of the following is the NEXT step the administrator should perform to permanently fix the issue at the kernel level?

- A. `sysctl -w net.ipv4.ip_forward=1` then run `sysctl -w /etc/sysctl.conf` to enable the change
- B. Edit `/etc/sysctl.conf` file and add `net.ipv4.ip_forward = 1` then run `sysctl -p /etc/sysctl.conf` to enable the change
- C. Add iptables rule `iptables -A INPUT -m state --state NEW -p tcp --dport 8080 -j` then restart httpd daemon
- D. Add iptables rule `iptables -A FORWARD -m state --state NEW -p tcp --dport 8080 -j ACCEPT` then restart httpd daemon

**Correct Answer: D**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

## QUESTION 72

A member of the production group issues the following command:

```
echo "Monday through Friday" > /production_docs/days
```

The command fails to execute, so the user obtains the following output:

```
drwxr--r-- root production 0 Jun 16 2018 production
-rw-r--r-- production production 4096 Jun 14 2018 days
```

Which of the following commands should the user execute to BEST fix the issue?

- A. `chmod g+w production` to change the permissions on the `days` file
- B. `chgrp root production_docs/days` to change the group ownership of the `production_docs/days` file
- C. `chmod g+S production` to set the GUID on the `production_docs` directory
- D. `chown production` to change the ownership of the `production_docs` directory

**Correct Answer: D**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

### QUESTION 73

A junior systems administrator created a new filesystem `/dev/sda1` with mountpoint `/data` and added it to the `/etc/fstab` for auto-mounting.

When the systems administrator tries to mount the file system, the system refuses. Given the output below:

```
/dev/mapper/VolGroup00-Log-Vol100 / xfs defaults 0 0
/dev/sda1 /data xfs noauto,dev,sync,ro,nosuid 0 0
/dev/mapper/VolGroup00-Log-Vol101 swap swap defaults0 0
/dev/sda2 /mine ext4 auto,suid,sync,rw,dev 0 0
```

Which of the following steps is necessary?

- A. Change the filesystem from `/dev/sda1` to `/dev/sda2` and reboot.
- B. Change the options to `auto,dev,sync,rw,nosuid` and run the `mount -a` command.
- C. Change the mount point to `data` and reboot.
- D. Change the dump column to 1 and run the `mount -a` command.

**Correct Answer: B**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 74**

An analyst is trying to determine which public IP addresses are managed by Company A, but the script is not working correctly.

```
for ip in $(cat ip-list.txt)
do whois $ip | grep "Company A" > /dev/null
    if [ $? -ne 0 ]
        then echo "$ip"
    fi
done
```

Which of the following explains what is wrong with the script?

- A. `$(cat ip-list.txt)` should be changed to ``cat ip-list.txt`` in the `for` statement.
- B. The `for` should be changed to `while` in the loop.
- C. The `>` should be changed to `2>` in the `do` statement.
- D. The `-ne` flag should be changed to `-eq` in the `if` statement.

**Correct Answer: A**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 75**

All users are reporting that they cannot connect to the SFTP server. The administrator runs a scan:

```
starting nmap 4.11 at 2018-06-16 EST
not shown: 1456 closed ports
```

```
PORT      STATE  SERVICE
53/tcp    open   dns
80/tcp    open   http
957/tcp   open   unknown
```

```
MAC Address 08:00:00:00:00:00 ( computer systems )
nmap finished = 1 ip address ( 1 host up ) scanned in 1.497 seconds
You have mail in /var/spool/mail/root
```

Which of the following would allow the administrator to fix the problem?

- A. Allow SFTP connections on port 22 using `/etc/sysconfig/iptables`.
- B. Allow SFTP connections on port 20 and 21 using `/etc/sysconfig/iptables`.
- C. Allow SFTP connections on port 25 using `/etc/sysconfig/iptables`.
- D. Allow SFTP connections on port 1456 using `/etc/sysconfig/iptables`.

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 76

A Linux systems administrator installed a new web server, which failed while attempting to start. The administrator suspects that SELinux is causing an issue and wants to temporarily put the system into permissive mode. Which of the following would allow the administrator to accomplish this?

- A. `echo SELINUX=PERMISSIVE >> /etc/sysconfig/selinux`
- B. `setenforce 0`
- C. `sestatus 0`
- D. `chcon httpd_sys_content_t /var/`

**Correct Answer:** B

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 77**

A configuration management tool running every minute is enforcing the service HTTPd to be started. To perform maintenance, which of the following series of commands can be used to prevent the service from being started?

- A. `systemctl stop httpd && systemctl mask httpd`
- B. `systemctl disable httpd && systemctl mask httpd`
- C. `systemctl stop httpd && systemctl hide httpd`
- D. `systemctl disable httpd && systemctl hide httpd`

**Correct Answer: A**

**Section: (none)**

**Explanation**

**Explanation/Reference:**



**QUESTION 78**

An administrator has written the following Bash script:

```
/home/user/test.sh

#!/usr/bin/sh
for i in `cat /home/user/iplist.txt`
do
    nslookup $i
done
echo
```

All necessary files exist in the correct locations. However, when the administrator executes `/home/user/test.sh` the following error is received:

No such file or directory

Which of the following is the MOST likely cause of the error?

- A. The shebang points to the wrong path.
- B. The script is not executable.
- C. The formatting of the file is incorrect.
- D. Nslookup is not installed.

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 79

An administrator is troubleshooting an application that has failed to start after the server was rebooted. Noticing the data volume is not mounted, the administrator attempts to mount it and receives this error:

```
[root@localhost comptia]# mount /dev/datavg/datalv /data
mount: special device /dev/datavg/datalv does not exist
```

Upon checking the logical volume status, the administrator receives this information:

```
[root@localhost comptia]# lvs
LV VG Attr LSize Pool Origin Data% Meta% Move Log Cpy%Sync Convert
root centos -wi-ao---- <6.20g
swap centos -wi-ao---- 820.00m
datalv datavg -wi----- 500.00m
[root@localhost comptia]#
```

Which of the following can be said about the data logical volume, and how can this problem be resolved?

- A. The logical volume is not active. The administrator should make it active with `lvchange -ay /dev/datavg/datalv` and then mount it.
- B. The logical volume file system has become corrupted. The administrator should repair it with `xfstools /dev/datavg/datalv` and then mount it.
- C. The logical volume is OK but the `/dev` special files are missing. The administrator should recreate them by running `/dev/MAKEDEV`.
- D. The file system is read-only. The administrator should remount it as read-write with the command `mount -o remount,rw /data`.

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 80**

A four-drive Linux NAS has been improperly configured. Each drive has a capacity of 6TB, for a total storage capacity of 24TB. To reconfigure this unit to be not pluggable for drive replacement and provide total storage of 11TB to 12TB, which of the following would be the correct RAID configuration?

- A. RAID 01
- B. RAID 03
- C. RAID 10
- D. RAID 50

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**



#### **QUESTION 81**

A systems administrator suspects a process with a PID of 2864 is consuming resources at an alarming rate. The administrator uses the command `renice -n -5 -p2864`, but it does not solve the issue. Which of the following commands should the administrator execute to correct the issue?

- A. `nice -n 5 -p 2864`
- B. `nice -n -5 -p 2864`
- C. `renice -n 10 -p 2864`
- D. `renice -n -10 -p 2864`

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 82**

A systems administrator wants to download a package from a remote server. Which of the following are the BEST commands to use for this task? (Choose two.)

A. curl



- B. wget
- C. make
- D. tar
- E. zip
- F. nc

**Correct Answer:** BF  
**Section:** (none)  
**Explanation**

**Explanation/Reference:**

Reference: <https://www.linuxtechi.com/nc-ncat-command-examples-linux-systems/> <https://www.unifiedremote.com/tutorials/how-to-install-unified-remote-server-deb-via-terminal>

**QUESTION 83**

An administrator is logged into a server remotely and wants to determine if the system is a VM. Which of the following commands would assist with this?

- A. dmesg
- B. ps
- C. top
- D. vmstat

**Correct Answer:** D  
**Section:** (none)  
**Explanation**

**Explanation/Reference:**

Reference: <https://ostechnix.com/check-linux-system-physical-virtual-machine/>

**QUESTION 84**

Ann, a Linux administrator, wants to edit a configuration management file. When she opens the file to edit, her text editor reports that the file has been opened in read-only mode. She then tries to edit the file as root by elevating via sudo and is still unable to save any changes. The error message in her text editor says that the read-only option is set on the file. Ann checks the permissions on the file and sees the following:

```
-rw-rw-r-- 1 root wheel 30 Jun 13 15:38 infrastructure.yml
```

C.  
Which of the following commands is the BEST option to allow her to successfully modify the file?

- A. `chmod 600 infrastructure.yml`
- B. `chown root: infrastructure.yml`  
`chattr -i infrastructure.yml`
- D. `chmod o+w infrastructure.yml`

**Correct Answer:** D  
**Section:** (none)  
**Explanation**

**Explanation/Reference:**  
Reference: <https://cets.seas.upenn.edu/answers/chmod.html>

#### QUESTION 85

Joe, a member of the accounting group on a Linux system, is unable to write a file called “taxes” in the accounting shared directory. The ownership and permissions on the directory and file are as follows:

```
accounting drwxrw-r-- user = ann, group = accounting
taxes -rw-r--r-- , user = ann, group = accounting
```

Which of the following commands would allow Joe to write to the file? (Choose two.)

- A. `chmod g+x accounting`
- B. `chmod 777 taxes`
- C. `chgrp taxes accounting`
- D. `chgrp accounting taxes`
- E. `chmod 774 accounting`
- F. `chmod u+x accounting`

**Correct Answer:** AF  
**Section:** (none)  
**Explanation**

**Explanation/Reference:**

D.

Reference: <https://www.pluralsight.com/blog/it-ops/linux-file-permissions>

#### QUESTION 86

A systems administrator wants to mount an ISO to access its content. Using `/mnt` as a mount point, which of the following is the correct syntax?

- A. `mount -o iso9660 /dev/sr0 /mnt`
- B. `mount -o loop -t iso /mnt`
- C. `mount -o loop /tmp/image.iso /mnt`  
`mount -o loop /dev/kvm /mnt`

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://www.cyberciti.biz/tips/how-to-mount-iso-image-under-linux.html>

#### QUESTION 87

An administrator is uncomfortable allowing users to log in as root. Which of the following ensures that root logins are disallowed?

- A. `usermod -L root`
- B. `usermod -G root`
- C. `usermod -B root`
- D. `usermod -U root`

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://web.mit.edu/rhel-doc/4/RH-DOCS/rhel-sg-en-4/s1-wstation-privileges.html>

#### QUESTION 88

E.

Joe, a user, reports that he is no longer able to write files to his home directory. Upon inspection, the Linux administrator discovers that attempting to create a new file gives the following error: `No space left on device`. However, the disk and partition are not full. Which of the following commands would be BEST for the administrator to use to continue troubleshooting this problem?

- A. `rm -Rf ~/.*`
- B. `fsck -y /dev/sda1`
- C. `df -i`
- D. `fdisk /dev/sda`

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: <https://www.linuxtechi.com/11-df-command-examples-in-linux/>



**QUESTION 89**

A company wants to provide internal identity verification services for networked devices. Which of the following servers should be installed?

- A. SSH
- B. VPN
- C. CA
- D. DHCP
- E. DNS

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 90**

A Linux administrator wants to configure log messages of critical or higher severity levels from the cron utility to be logged to the console. Which of the following will accomplish this objective?

- A. Edit the `/etc/logrotate.d/cron` file to include the line `cron.emerg.* /dev/console`
- B. Edit the `/etc/rsyslog.conf` file to include the line `cron.emerg.* /dev/console`
- C. Edit the `/etc/logrotate.conf` file to include the line `cron.emerg.* /dev/console`
- D. Edit the `/etc/rsyslog.d/conf` file to include the line `cron.emerg.* /dev/console`

**Correct Answer: B**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 91**

A file server is sharing a directory called `/share` between team members inside a company. The fileshare needs to be moved from `serverA` to `/newshare` located on `serverB` with all permissions and attributes preserved. Which of the following commands would BEST achieve this task?

- A. `rsync -aHAX /share/* serverB:/newshare`

- B. `dd if=/share/* of=serverB:/newshare`
- C. `tar -cvf /share/* serverB:/newshare`
- D. `mirrorlv /share/* serverB:/newshare`

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 92

Which of the following is true about Type 2 hypervisors?

- A. Type 2 hypervisors run on top of another general purpose OS.
- B. Type 2 hypervisors are often called bare-metal or native hypervisors.
- C. Type 2 hypervisors offer a performance increase to the guests in comparison to a Type 1 hypervisor.
- D. Only Type 2 hypervisors allow direct access to CPU virtualization features.

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://www.sciencedirect.com/topics/computer-science/hypervisors>

### QUESTION 93

A security administrator wants to display a warning banner before a user logs in. Which of the following files must be edited to make this happen?

- A. `/etc/services`
- B. `/etc/issue`
- C. `/etc/hosts`
- D. `/etc/motd`

**Correct Answer:** D  
**Section:** (none)  
**Explanation**

**Explanation/Reference:**

Reference: <https://kerneltalks.com/tips-tricks/how-to-configure-login-banners-in-linux/>

#### QUESTION 94

Using which of the following control mode commands is the correct way to substitute all occurrences of `/dev/sdc` with `/dev/sdd` while editing a file in vi?

- A. `:s//dev/sdc//dev/sdd`
- B. `:s/\/dev\/sdc/\/dev\/sdd/g`
- C. `:s/\/dev\/sdc/\/dev\/sdd`
- D. `:%s/\/dev\/sdc/\/dev\/sdd`

**Correct Answer:** A  
**Section:** (none)  
**Explanation**

**Explanation/Reference:**



#### QUESTION 95

A user needs to modify the IP address of a laptop. Which of the following files can be used to configure the network interface named `eth0`?

- A. `/etc/sysconfig/network/interfaces.cnf`
- B. `/system/config/interfaces`
- C. `/etc/sysconfig/network-scripts/ifcfg-eth0`
- D. `/system/networking/ifconfig`
- E. `/etc/interfaces/eth0.conf`

**Correct Answer:** C  
**Section:** (none)  
**Explanation**

**Explanation/Reference:**

Reference: <https://opensource.com/life/16/6/how-configure-networking-linux>

#### QUESTION 96

A systems administrator notices a large number of autoloaded device modules are no longer needed and decides to do a cleanup of them. Which of the following commands will accomplish this task?

- A. `rmmmod -c`
- B. `depmod -r`
- C. `insmod -c`
- D. `modprobe -r`

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <http://ccrma.stanford.edu/planetccrma/man/man8/modprobe.8.html>

#### QUESTION 97

A technician wants to secure a sensitive workstation by ensuring network traffic is kept within the local subnet. To accomplish this task, the technician executes the following command: `echo 0 > /proc/sys/net/ipv4/ip_default_ttl`

Which of the following commands can the technician use to confirm the expected results? (Choose two.)

- A. `tcpdump`
- B. `tracert`
- C. `route`
- D. `iperf`
- E. `ip`
- F. `arp`

**Correct Answer:** CF

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 98**

An administrator needs to create a file named `hello` in the home directory that contains the following text:

```
it's me!
```

Which of the following commands would accomplish this goal?

A. `mkdir ~/hello touch  
~/ "it's me!"`

B. `touch ~/hello echo  
"it's me!" > ~/hello`

C. `mv ~/hello cp "it's  
me!" > ~/hello` D. `type  
~/hello print "it's  
me!"`

**Correct Answer: A**

**Section: (none)**

**Explanation**



**Explanation/Reference:**

**QUESTION 99**

A junior Linux administrator is performing version control on a Git repository. The administrator is given a list of tasks to complete:

- List the currently installed Git release.
- Show the status reporting of the clone.

Which of the following commands would allow the administrator to complete these tasks? (Choose two.)

A. `git clone --progress`

B. `git clone --recursive`

C. `git --help`

D. `git clone --dissociate`

- E. `git --version`
- F. `git clone --shared`

**Correct Answer:** AC

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 100

A systems administrator needs to allow the Linux server to receive HTTP connections from Internet hosts. By default, the port for HTTP connections is blocked. Which of the following rules should be added in the firewall to allow this type of connection?

- A. `firewall-cmd --zone=public --add-port=443/tcp --permanent`
- B. `firewall-cmd --zone=internal --add-port=80/tcp --permanent`
- C. `firewall-cmd --zone=public --add-port=80/tcp --permanent`
- D. `firewall-cmd --zone=internal --add-port=443/tcp --permanent`

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 101

A Linux administrator attempts to install the package `newprogram.x86_64.rpm` using a package manager. The administrator receives a warning indicating the command that was run was using a deprecated package manager. Which of the following commands should the administrator use to avoid the warning and install the `newprogram.x86_64.rpm` program?

- A. `# dnf install newprogram.x86_64.rpm`
- B. `# rpm -e newprogram.x86_64.rpm`
- C. `# dpkg -i newprogram.x86_64.rpm`
- D. `# apt-get install newprogram.x86_64.rpm`

**Correct Answer:** B  
**Section:** (none)  
**Explanation**

**Explanation/Reference:**

**QUESTION 102**

Which of the following would allow remote users to access a corporate server? (Choose two.)

- A. VPN server
- B. SMTP server
- C. NTP server
- D. SSH server
- E. DHCP server
- F. File server

**Correct Answer:** AD  
**Section:** (none)  
**Explanation**



**Explanation/Reference:**

**QUESTION 103**

A junior administrator is configuring local name lookups for fully qualified domain names in an isolated environment. The administrator is given a checklist and must accomplish the following tasks:

- Add localhost with loopback address.
- Add 192.168.192.12/24 to resolve to `database01.comptia.org`

Given this scenario, which of the following steps should the administrator perform to accomplish these tasks?

A. Open the `/etc/nsswitch.conf` file with a file editor and add the following lines:

```
127.0.0.1 localhost
192.168.192.12 database01.comptia.org
```

B. Open the `/etc/dhcpd.conf` file with a file editor and add the following lines:

```
127.0.0.1 localhost
192.168.192.12 database01.comptia.org
```

C. Open the `/etc/hosts` file with a file editor and add the following lines:

```
127.0.0.1 localhost
192.168.192.12 database01.comptia.org
```

D. Open the `/etc/network` file with a file editor and add the following lines:

```
127.0.0.1 localhost
192.168.192.12 database01.comptia.org
```

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

#### QUESTION 104

A site reliability engineer updated the latest configuration management scripts and committed them to a workstream called either `test` or `patch`. A Linux administrator wants to ensure these latest workstreams are able to be retrieved to the server. Which of the following is the BEST Git attribute to use?

- A. `branch`
- B. `fetch`
- C. `log`
- D. `pull`

**Correct Answer: D**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

#### QUESTION 105

A junior systems administrator has generated a PKI certificate for SSH sessions. The administrator would like to configure authentication without passwords to remote systems. Which of the following should the administrator perform?

- A. Add the content of `id_rsa.pub` file to the remote system `~/.ssh/authorized_keys` location.
- B. Add the content of `id_rsa` file to the remote system `~/.ssh/authorized_keys` location.
- C. Add the content of `id_rsa` file to the remote system `~/.ssh/known_hosts` location.
- D. Add the content of `id_rsa.pub` file to the remote system `~/.ssh/known_hosts` location.

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://kb.iu.edu/d/aews>

#### QUESTION 106

A corporate server security policy states, “Ensure password hashes are not readable by non-administrative users.” The administrator should check the permissions on which of the following files to ensure the server satisfies this policy?

- A. `/etc/shadow`
- B. `/etc/passwd`
- C. `/etc/group`
- D. `/etc/security/limits.conf`



**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 107

A Linux systems administrator is implementing Source Code Management for the web application server configuration files located in `/etc/httpd/`. Which of the following steps should the administrator perform FIRST?

- A. Clone the remote repository using `'git clone'`
- B. Create a new repository using `'git init'`
- C. Retrieve the remote changes using `'git commit'`
- D. Configure the directory for git using `'git config'`

**Correct Answer:** D

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 108**

A junior systems administrator is tasked with providing the `network_administrators` group the ability to perform `sudo` without prompting for a password. Which of the following steps should the administrator perform to accomplish this task? (Choose two.)

- A. Use `visudo` to edit the `/etc/sudoers` file and add `network_administrators` to the “wheel” group
- B. Use `vi` to edit the `/etc/sudo` file and add `network_administrators` to the “wheel” group
- C. Provide all `network_administrators` with the “root” account password
- D. Add the `network_administrators ALL=(ALL) NOPASSWD: ALL` directive to the `/etc/sudoers` file
- E. Add the `network_administrators =(ALL) NOEXEC: ALL` directive to the `/etc/sudoers` file

**Correct Answer: CD**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 109**

A systems administrator has scheduled a system update for a server. The update includes a resynchronization of the package database and updates to the current packages and the system distribution packages. Which of the following commands contains the proper order of this update?

- A. `apt-get upgrade, apt-get dist-upgrade, apt-get update`
- B. `apt-get update, apt-get upgrade, apt-get dist-upgrade`
- C. `apt-get dist-upgrade, apt-get upgrade, apt-get update`
- D. `apt-get update, apt-get dist-upgrade, apt-get upgrade`

**Correct Answer: B**

**Section: (none)**

**Explanation**

**Explanation/Reference:**



**QUESTION 110**

A junior administrator is installing kernel modules. The administrator is given a checklist that outlines the following tasks to be completed: ▪ Display currently installed module version. ▪ Display which modules loaded at startup.

Which of the following commands would be used to accomplish these tasks? (Choose two.)

- A. `cat /etc/issue`
- B. `insmod`
- C. `lsmod`
- D. `rmmmod`
- E. `depmod`
- F. `dmesg`

**Correct Answer:** CD

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://linuxize.com/post/lsmod-command-in-linux/>

**QUESTION 111**

A Linux administrator is helping the security team troubleshoot an SELinux policy violation incident. Which of the following would be the BEST utility command to display SELinux violation and AVC denial messages?

- A. `journalctl | grep sealert`
- B. `sealert -a /var/log/audit/audit.log`
- C. `aureport | grep AVC`
- D. `cat /var/log/messages | grep selinux`

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 112

Users in the payroll department are not configured to use DNS due to security concerns. The users ask the junior Linux administrator to configure their workstations to access the payroll server at 192.168.204.11 by the name "Payroll". Which of the following commands should the administrator issue to meet this request?

- A. echo "nameserver 192.168.204.11 #Payroll" >> /etc/resolv.conf
- B. echo "net.ipv4.ip\_dynaddr=192.168.204.11 Payroll" >> /etc/sysctl.conf
- C. echo "192.168.204.11 Payroll" >> /etc/hosts
- D. echo 'IPADDR="192.168.204.11" #Payroll' >> /etc/network/interface

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

### QUESTION 113

Users are unable to connect to a server using HTTPS. The administrator runs the following command on the remote system:

```
$ netstat
tcp 0 0 0.0.0.0:80 0.0.0.0:* LISTEN
tcp 0 0 0.0.0.0:443 0.0.0.0:* LISTEN
tcp 0 0 0.0.0.0:22 0.0.0.0:* LISTEN
```

Then, the administrator runs the following command from a local workstation:

```
$ nmap
PORT STATE
80 open
443 closed
22 open
```

Which of the following steps should the administrator take to address the issue?

- A. Start the application to run on port 443
- B. Configure the application to run on an active port
- C. Allow port 443 through the firewall
- D. Update the self-signed certificate

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 114

A systems administrator wants to install a new application that requires the newmod kernel module. Which of the following commands should the systems administrator use?

- A. `ls of newmod`
- B. `modinfo newmod`
- C. `lsmod newmod`
- D. `modprobe newmod`



**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 115

A server, which is used to collect data about the network and datacenter environment via SNMP, is running out of space. Which of the following should the server administrator implement to reduce disk utilization?

- A. `journald`
- B. Snapshots
- C. `logrotate`

D. `tar -cvf`

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 116

A Linux user wants to give read-only permissions to a directory and its contents. Which of the following commands will allow the user to accomplish this task?

A. `chmod -R 400 /new_directory/`

B. `chmod -R 600 /new_directory/`

C. `chmod 400 /new_directory/`

D. `chmod 600 /new_directory/`

**Correct Answer:** D

**Section:** (none)

**Explanation**



**Explanation/Reference:**

Reference: <https://www.linode.com/docs/guides/modify-file-permissions-with-chmod/>

#### QUESTION 117

A Linux systems administrator is troubleshooting an issue with the `/home` directory running out of space. The administrator needs to determine which `/home` directories are using the most space. Which of the following commands should be used?

A. `du`

B. `lvs`

C. `df`

D. `fsck`

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://www.cs.washington.edu/lab/faq/home-directory-size>

**QUESTION 118**

A junior Linux administrator needs to create 16 empty files quickly that will contain sales information for each quarter for the past four years. Which of the following commands will meet this requirement?

- A. `touch {2015,2016,2017,2018} . {q1,q2,q3,q4}`
- B. `touch [2015,2016,2017,2018] . [q1,q2,q3,q4]`
- C. `touch `2015,2016,2017,2018` . `q1,q2,q3,q4``
- D. `touch {2015.2016.2017.2018} . {q1.q2.q3.q4}`

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 119**

An administrator needs to change the DNS domain search order of a single Linux host to localize it better. Which of the following files should the administrator edit?

- A. `/etc/resolv.conf`
- B. `/etc/hosts`
- C. `/etc/nsswitch.conf`
- D. `/etc/dhcpd.conf`

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://www.cyberciti.biz/faq/howto-change-dns-search-order-in-linux/>

**QUESTION 120**

A user issues the following command:

```
ls -l /var/log | egrep -e '^d[rwx]{3}.*[rw-]{3}.*'
```

The list of files in the system is shown below:

```
ls -l /var/log/
total 1156
-rw-r--r-- 1 root root 2877 Apr 24 14:14 alternatives.log
drwxr-xr-x 2 root root 4096 Apr 24 08:36 apt
-rw-r----- 1 syslog adm 37910 Jun 12 15:22 auth.log
-rw----- 1 root utmp 0 Apr 24 08:19 btmp
-rw-r--r-- 1 syslog adm 246139 Jun 12 15:21 cloud-init.log
-rw-r--r-- 1 root root 8872 Jun 12 15:21 cloud-init-output.log
drwxr-xr-x 2 root root 4096 Apr 9 14:25 dist-upgrade
-rw-r--r-- 1 root root 21326 Apr 24 14:14 dpkg.log
drwxr-xr-x 2 root root 4096 Apr 24 08:16 fsck
-rw-r----- 1 syslog adm 152618 Jun 12 15:21 kern.log
-rw-rw-r-- 1 root utmp 292876 Jun 12 15:21 lastlog
drwxr-xr-x 2 root root 4096 Dec 7 2017 lxd
-rw-r----- 1 syslog adm 388374 Jun 12 15:24 syslog
drwxr-x--- 2 root adm 4096 Apr 25 14:41 unattended-upgrades
drwxr-x--- 2 root adm 4096 Apr 25 15:41 attended-upgrades
-rw-r--r-- 1 root root 1 Apr 24 14:15 vboxadd-install.log
-rw-r--r-- 1 root root 255511 Apr 24 14:15 vboxadd-setup.log
-rw-rw-r-- 1 root utmp 10368 Jun 12 15:21 wtmp
```

Which of the following results matches the command issued?

- A. drwxr-x--- 2 root adm 4096 Apr 25 14:41 unattended-upgrades  
drwxr-x--- 2 root adm 4096 Apr 25 15:41 attended-upgrades B.  
drwxr-xr-x 2 root root 4096 Apr 24 08:36 apt drwxr-xr-x 2  
root root 4096 Apr 9 14:25 dist-upgrade drwxr-x--- 2 root adm  
4096 Apr 25 14:41 unattended-upgrades
- C. drwxr-xr-x 2 root root 4096 Apr 24 08:36 apt drwxr-xr-x 2 root root 4096 Apr 9 14:25  
dist-upgrade drwxr-x--- 2 root adm 4096 Apr 25 15:41 attended-upgrades
- D. -rw-r--r-- 1 root root 2877 Apr 24 14:14 alternatives.log  
-rw-r--r-- 1 syslog adm 246139 Jun 12 15:21 cloud-init.log  
-rw-r--r-- 1 root root 8872 Jun 12 15:21 cloud-init-output.log

**Correct Answer: D**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 121**

Which of the following BEST describes build automation?

- A. Automating the creation of software and related processes
- B. Automatically categorizing servers in the infrastructure
- C. Managing and provisioning servers via automatic templates
- D. Bringing systems in line with the desired automated configuration

**Correct Answer: A**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: [https://en.wikipedia.org/wiki/Build\\_automation](https://en.wikipedia.org/wiki/Build_automation)

**QUESTION 122**

A Linux administrator needs to configure a new firewall without an existing ACL to allow incoming web traffic. The firewall must log the allowed network traffic. Which of the following command sequences would accomplish this task when they are executed in order?

- A. 

```
iptables -A INPUT -p tcp --dport 80 -J LOG iptables -A INPUT -p tcp --dport 443 -J LOG iptables -I INPUT -p tcp --dport 80 -J ACCEPT iptables -I INPUT -p tcp --dport 443 -J ACCEPT
```
- B. 

```
iptables -I INPUT -m multiport -p tcp --dports 80,443 -J LOG iptables -I INPUT -m multiport -p tcp --dports 80,443 -J ACCEPT
```
- C. 

```
iptables -A INPUT -m multiport -p tcp --dports 80,443 -J LOG iptables -A INPUT -m multiport -p tcp --dports 80,443 -J ACCEPT
```
- D. 

```
iptables -A INPUT -p tcp --dport 80 -J ACCEPT iptables -A INPUT -p tcp --dport 443 -J ACCEPT iptables -A INPUT -p tcp --dport 80 -J LOG iptables -A INPUT -p tcp --dport 443 -J LOG
```

**Correct Answer: A**

**Section: (none)**  
**Explanation**

**Explanation/Reference:**

Reference: <https://www.linode.com/docs/guides/control-network-traffic-with-iptables/>

**QUESTION 123**

An organization wants to consolidate its entire user information in centralized storage using an X.500-based protocol. Which of the following protocols should be used for this implementation?

- A. RADIUS
- B. LDAP
- C. DNS
- D. DHCP

**Correct Answer: B**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: [https://en.wikipedia.org/wiki/Directory\\_service](https://en.wikipedia.org/wiki/Directory_service)



**QUESTION 124**

An administrator needs to kill the oldest Bash shell running in the system. Which of the following commands should be issued to accomplish this task?

- A. `ps axjf | grep bash to obtain PID kill -9 PID`
- B. `ps -eo pid,etime,cmd | grep bash (to obtain PID)`  
`kill -9 PID`
- C. `ps -eo pid,etime| grep bash (to obtain PID)`  
`killall -9 PID`
- D. `killall -15 -o bash`

**Correct Answer: D**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: <https://phoenixnap.com/kb/how-to-kill-a-process-in-linux>

**QUESTION 125**

Due to security policies, a restriction was implemented that forbids direct access to the database server. The junior administrator needs to connect using SSH tunneling. Which of the following commands allows the junior administrator to connect from a desktop?

- A. `ssh -L dbserver.local:5432:localhost:95432 postgres@dbserver.local`
- B. `ssh -L 5432:localhost dbserver.local:5432 postgres` C. `ssh -L 95432:localhost postgres@dbserver.local`
- D. `ssh -L 9432:localhost:5432 postgres@dbserver.local`

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 126**

A user requested a USB serial device to be added to a desktop computer. The device has built-in kernel driver support. The administrator tested the device installation and access, but the user cannot access the serial port. Each time the user attempts to access the device, an error log is created that shows the user does not have permission to use the serial port. Which of the following will add a user to the group that has serial port capabilities?

- A. `usermod -a -G serialport $USER`
- B. `usermod -a -G modem $USER`
- C. `usermod -a -G dialout $USER`
- D. `usermod -a -G root $USER`

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://websistent.com/fix-serial-port-permission-denied-errors-linux/>

**QUESTION 127**

A Linux administrator suspects unauthorized users are attempting to log in to the Linux server remotely. Which of the following should the administrator check FIRST?

- A. /var/log/messages
- B. /var/log/secure
- C. /var/log/dmesg
- D. /var/log/kern.log

**Correct Answer: B**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

#### **QUESTION 128**

A user receives an `access_denied` error when trying to modify a file, even though the file permissions are set to 777. Which of the following commands should be used to view additional file permissions?

- A. `getsebool`
- B. `getenforce`
- C. `ls -z`
- D. `ps -z`



**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

#### **QUESTION 129**

A Linux administrator receives a call from the network operations team that one of the database applications is down on a Linux server. The Linux server is configured with RAID 1 for redundancy, and the array `/dev/md0` consists of two devices called `/dev/sda1` and `/dev/sdb1`. After looking at the status of the RAID 1 array in the `/proc/mdstat` file, the administrator discovers the RAID 1 array is degraded and the disk `/dev/sdb1` on which the database application was installed appears to have failed.

```
cat /proc/mdstat
```

```
Personalities : [linear] [multipath] [raid1]
md0 : active raid1 sda1[0] sdb1[2]
      233456177 blocks [2/1] [U ]
```

Which of the following steps should the administrator take to remove the device `/dev/sdb1` from the RAID array `md0`? (Choose two.)

- A. `mdadm /dev/md0 --remove /dev/sdb1`
- B. `mdadm /dev/sdb1 --fail /dev/md0`
- C. `mdadm /dev/md0 --fail /dev/sdb1`
- D. `mdadm /dev/sdb1 --remove /dev/md0`
- E. `racadm --remove /dev/sdb1`
- F. `racadm --fail /dev/sdb1`

**Correct Answer:** AC

**Section:** (none)

**Explanation**

**Explanation/Reference:**



### QUESTION 130

An administrator receives an alarm because the disk of one of the servers is running out of space. Which of the following commands can be used to see the space that each partition is using?

- A. `df -h`
- B. `du -scg /`
- C. `fdisk -l`
- D. `fsck /`

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 131**

A junior systems administrator needs to make a packet capture file that will only capture HTTP protocol data to a file called `test.pcap`.

Which of the following commands would allow the administrator to accomplish this task?

- A. `netcat -p 80 -w test.pcap`
- B. `tshark -r test.pcap -o http`
- C. `tcpdump -i eth0 port 80 -r test.pcap`
- D. `tcpdump -i eth0 port 80 -w test.pcap`

**Correct Answer: B**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 132**

A Linux administrator needs to add some files in a directory to the Git repository but must exclude some local `.tmp` files that are occasionally created by the scripts.

Which of the following is the BEST way to accomplish this task?

- A. `git rm .tmp`
- B. `git add -x .tmp *`
- C. `echo .tmp >> .gitignore`
- D. `rm -rf .tmp`

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: <https://stackoverflow.com/questions/46383506/add-files-to-gitignore-directly-from-git-shell>

**QUESTION 133**

A systems administrator is receiving errors while trying to install a popular virtualization software. The software specifications state the processor needs to support virtualization with Intel instructions. Additional requirements state the processor must accelerate encryption/decryption and use hyperthreading. Given the following output about the processor:

```
fpu ume depse tsu msr pae mce cx8 apic sep mtrr pae mca cmov pat pse36 cflusm mmx fxsr sse sse2 ht syscall nx rdtscp lm  
constant_tsc rep_good nopl xtopology nonstop_tsc pni pclmulqdq ssse3 cx16 pcid sse4_1 sse4_2 x2apic popcnt aes xsave avx  
rdrand hypervisor lahf_lm fsgsbase
```

Which of the following is the MOST likely reason for the errors?

- A. The processor supports AMD instructions rather than Intel.
- B. The processor cannot accelerate decryption.
- C. The processor does not support hyperthreading.
- D. The processor is running inside a virtual machine.

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**



#### QUESTION 134

A systems administrator needs to conduct maintenance on a server.

Which of the following commands will place the administrator in the appropriate runlevel?

- A. `init 0`
- B. `telinit 1`
- C. `init 3`
- D. `telinit 6`

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 135**

Which of the following are classified as Linux GUI servers? (Choose two.)

- A. VNC
- B. KDE
- C. Gnome
- D. Wayland
- E. MATE
- F. X11

**Correct Answer:** DF

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 136**

A Linux administrator tried to copy files to a remote server but received an error message indicating a lack of free space on the disk. The administrator issued a `df` command and verified adequate free space and inodes on the filesystem.

Which of the following commands is the BEST way to diagnose the issue?

- A. `cat /proc/meminfo`
- B. `lsof -nP | grep deleted`
- C. `find / -type f -size +50M`
- D. `du -a / | sort -n -r | head -n 30`

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 137**

The Apache web server was recently installed on a Debian/Ubuntu server. The web server fails and a review of log messages on another partition reveals the installation was not completed properly due to lack of disk space. After clearing the files, the systems administrator has requested the installation to be performed again.

Which of the following command lines will perform this task? (Choose two.)

- A. `apt-get install apache2`
- B. `apt-get --purge remove apache2`
- C. `apt-get --reinstall install apache2`
- D. `apt-get --reinstall apache2`

**Correct Answer:** AB

**Section:** (none)

**Explanation**

**Explanation/Reference:**

Reference: <https://askubuntu.com/questions/111770/how-reinstall-apache2>

#### QUESTION 138

Given the output below:

```
[root@appserver ~]# rm config.txt rm:
remove regular file 'config.txt'? yes
rm: cannot remove 'config.txt': Operation not permitted
```

Which of the following might be the cause?

- A. The file `config.txt` does not have the user write bit set.
- B. The file `config.txt` does not exist.
- C. The file `config.txt` has the immutable attribute set.
- D. The file `config.txt` has an ACL that does not permit deletion by others.

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 139**

Users in the sales department are unable to create new files in the shared directory `/Sales`. A junior Linux administrator determines the permissions on the `/Sales` directory are set to `rwxr-----`, and `sales` is the group owner of the directory.

Which of the following is the BEST command for the junior administrator to issue to allow the users to create new files?

- A. `umask 002`
- B. `chmod 770 /Sales`
- C. `chmod g+s /Sales`
- D. `chmod 777 /Sales`

**Correct Answer: B**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 140**

A user is reporting unusual slowness when trying to transfer a large file to an NFS server from a workstation. The administrator runs `tracert` and gets the following output:

```
1?: [LOCALHOST]          pmtu 9000
1:  192.168.5.15          9.238ms
2:  192.168.10.1          10.233ms
3:  192.168.3.1           8.882ms      pmtu 1500
4:  storage.localhost     10.234ms
```

Which of the following BEST describes the issue and a possible solution?

- A. The path MTU is lower than the source MTU. Reduce the source MTU setting.
- B. There is latency at the storage device. Work with the storage team to correct the issue.
- C. There is latency on an intermediate router. Increase the path MTU to compensate.
- D. There are dropped packets at an intermediate router. Work with the network team to correct the issue.

**Correct Answer: A**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 141**

A Linux administrator needs to back up files from a user's home directory to a remote server. The administrator copied the files last week but must ensure any files created or modified since then are added.

Which of the following is the BEST command for the administrator to use?

- A. `scp -r /home/user99/* admin@backup.myip.xio:/backups/user99/`
- B. `rsync -r /home/user99 admin@backup.myip.xio:/backups`
- C. `cp -rf /home/user99/* /mnt/backups/user99/`
- D. `sftp -b /home/user99/* admin@backup.myip.xio:/backups`

**Correct Answer: B**

**Section: (none)**

**Explanation**



**Explanation/Reference:**

**QUESTION 142**

Which of the following is used in unattended server installation via PXE?

- A. Kickstart
- B. YAML
- C. Cloud-init
- D. Container image

**Correct Answer: A**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 143**

A new video card was added to a customer workstation. To get the new video card to work correctly, a systems administrator needs to remove support for the nouveau video driver on the Linux workstation.

Which of the following will accomplish this task?

- A. Use `rmmod -f nouveau`.
- B. Use `modprobe -R nouveau`.
- C. Add `blacklist nouveau` to `/etc/modprobe.d/blacklist.conf`.
- D. Add `blacklist nouveau` to `/etc/modprobe.conf`.

**Correct Answer: A**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 144**

A technician suspects a company's border firewall is down, thus blocking Internet access. The technician executes the following commands:

```
#ping -c 1 firewall.company.com
64 bytes from firewall.company.com (192.168.1.1): icmp_seq=1 ttl=64 time=0.061ms #ping
-c 16 www.comptia.com
16 packets transmitted, 0 received, 100% packet loss, time 14999ms
```

Which of the following commands should the technician use to BEST determine the source of this outage?

- A. `tcpdump`
- B. `nmap`
- C. `dig`
- D. `traceroute`

**Correct Answer: D**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 145**

A Linux user needs to connect to a remote email server named `mail.foo.com` through the SMTP port.

Which of the following commands will accomplish this task?

- A. `traceroute mail.foo.com 25`
- B. `netcat mail.foo.com 25`
- C. `traceroute mail.foo.com 110`
- D. `netcat mail.foo.com 110`

**Correct Answer: B**

**Section: (none)**

**Explanation**

**Explanation/Reference:**



**QUESTION 146**

A company requires all servers to be configured with the BIOS on Coordinated Universal Time and the OS on Central Standard Time.

Which of the following can be used to change the time according to these requirements? (Choose two.)

- A. `localectl`
- B. `LC_ALL`
- C. `date`
- D. `time`
- E. `hwclock`
- F. `crontab`

**Correct Answer: CE**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 147**

Which of the following servers provides encrypted tunnel SOCKS services?

- A. SNMP
- B. VPN
- C. CA
- D. SSH

**Correct Answer: D**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 148**

The following represents a partial listing of a user's .bashrc file:

```
HISTSIZE=800
HISTFILESIZE=1000 umask
2002
HISTCONTROL=ignoreboth
```



When the user opens a terminal, an error message appears:

```
Octal number out of range
```

Which of the following lines in the partial .bashrc should be modified to prevent the error from occurring?

- A. HISTSIZE=800
- B. HISTFILESIZE=1000
- C. umask 2002
- D. HISTCONTROL=ignoreboth

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 149**

Which of the following can be used to check the status of wireless devices that are connected to the system?

- A. lsusb
- B. iwconfig
- C. netstat
- D. ifconfig

**Correct Answer: B**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 150**

Joe, a user, creates a short shell script, `shortscript.sh`, and saves it in his home directory with default permissions and paths. He then attempts to run the script by typing `./shortscript.sh`, but the command fails to execute.

Which of the following commands would have allowed the script to run?

- A. `chmod u+x shortscript.sh`
- B. `source ./shortscript.sh`
- C. `chmod 155 ~/shortscript.sh`
- D. `chgrp shortscript.sh Joe`

**Correct Answer: A**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 151**

An administrator notices a website hosted on an `httpd` web server is not loading. Upon further inspection, the administrator learns there are no `httpd` processes running. When starting the service, the site operates correctly for a few minutes before the process disappears again.

Which of the following should the administrator consider as the MOST likely possibility before troubleshooting the issue?

- A. The CPU has too much load, causing it to overheat, and the kernel is automatically killing the processes to keep the CPU cool.
- B. An external database to which the web server connects is offline, causing `httpd` to die due to execution errors.
- C. Shared libraries, which were recently updated, are causing compatibility issues and `httpd` to die due to version mismatch.
- D. The out-of-memory killer was activated due to low available memory, causing the kernel to kill the processes automatically.
- E. The server is intermittently losing access to the network, causing socket errors that trigger `httpd` to die.

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 152**

Which of the following Linux server roles should be installed to monitor and log local web traffic?

- A. Proxy server
- B. AAA server
- C. SSH server
- D. HTTP server
- E. Name server

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 153**

An administrator is installing a new kernel but is getting an error indicating the filesystem is out of space. A disk usage check shows / has plenty of space.

Which of the following BEST represents where the administrator should check next?

- A. /var
- B. /proc
- C. /boot
- D. /etc

**Correct Answer: B**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

#### **QUESTION 154**

A Linux administrator needs to disable the Sendmail service on a Linux server and prevent it from being started manually and during boot.

Which of the following is the BEST command to do this?

- A. `systemctl reset-failed sendmail`
- B. `systemctl mask sendmail`
- C. `systemctl stop sendmail`
- D. `systemctl disable sendmail`



**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

#### **QUESTION 155**

A systems administrator is using a Linux laptop to troubleshoot network devices. The administrator runs the following command:

```
# screen /dev/USB0
```

Which of the following does this command MOST likely accomplish?

- A. It copies the network traffic from the device connected to USB0 and screens out rejected traffic.
- B. It logs all troubleshooting output from the monitor to external USB0 storage.
- C. It monitors USB0 waiting for a network device to be connected to it as an Ethernet device.
- D. It allows the administrator to interact with the character device connected to USB0.

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 156

Joe, a user, reports there is data missing after a reboot of the system he is using. The data he was working on was located in `/opt/data/user1`. A Linux administrator runs the following commands and receives the resulting output.

```
$ df
/dev/sda1      20G  15G  5G  25  /
/dev/sda2      10G   8G  2G   2  /home
/dev/sdb2       5G   1G  4G  80  /opt/data/user2
$ mount
/dev/sda1 on / type ext4 (rw)
/dev/sda2 on /home type ext4 (rw)
/dev/sdb2 on /opt/data/user2 type ext4 (rw)
$ cat /etc/fstab
/dev/sda1 / ext4 defaults 0 0
/dev/sda2 /home ext4 defaults 0 0
#/dev/sdb1 /opt/data/user1 ext4 defaults 0 0
/dev/sda3 swap swap defaults 0 0
/dev/sdb2 /opt/data/user2 ext4 defaults 0 0
#/dev/sdb1 /opt/data/user1 xfs defaults 0 0
$ ls /opt/data
user1 user2
```

Which of the following should the administrator perform to resolve the issue?

- A. The administrator can conclude Joe no longer has permissions to his data and needs to change the data ownership to Joe.
- B. The administrator can conclude the data is gone from the system and needs to be restored from a backup.
- C. The administrator can conclude Joe has been using the wrong folder and should be using `/opt/data/user2`.

D. The administrator can conclude the drive is not mounted properly and should be remounted.

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 157

A systems administrator manually added a new library to the server. The administrator wants to rebuild the library cache for immediate use.

Which of the following commands should the systems administrator run to achieve this goal?

A. `make install`

B. `ldconfig`

C. `make`

D. `ldd`

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**



### QUESTION 158

An administrator is troubleshooting to determine why backups are failing on a particular server. The administrator runs the `ps` command and analyzes the following output.

```
USER  PID  %CPU  %MEM  VSZ   RSS  TTY   STAT  START    TIME  COMMAND
bkup  13443  0.0   0.0   7628  918  pts/2  S+    14:30    0:00  grep --color
bkup  10112  0.0   0.0    0  0  ?? Z   09:22    0:00  backuputil
```

The administrator runs `kill -9 10112` yet the process remains.

Which of the following BEST describes the issue and how to fix it?

A. The backup process is still running and needs to be killed with `kill -9 --force 10112`.

- B. The backup process is a zombie process, and the system needs to be rebooted.
- C. The backup process is out of memory, and more memory needs to be added to the system.
- D. The backup process is using 100% of system resources and needs to be rescheduled with `renice`.

**Correct Answer: B**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

### QUESTION 159

A junior systems administrator needs to schedule a backup script named `/scripts/backup.sh` and make the correct changes to the crontab.

Which of the following crontab entries would run the script every Monday at 2:05 a.m.?

- A. `1 * * 5 2 /scripts/backup.sh`
- B. `2 5 * * 1 /scripts/backup.sh`
- C. `5 2 * * 1 /scripts/backup.sh`
- D. `1 * * 2 5 /scripts/backup.sh`
- E. `5 2 * * 0 /scripts/backup.sh`



**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference:

<https://tecadmin.net/crontab-in-linux-with-20-examples-of-cron-schedule/>

### QUESTION 160

A user is unable to write data to an NFS datastore at `/mnt/storage`. A `df` command indicates 50% free inodes.

Which of the following commands should the user attempt NEXT to diagnose the situation?

- A. `df -h /mnt/storage`
- B. `du -sh /mnt`

C. `fdisk -l /mnt/storage`

D. `df -i /mnt/storage`

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

### QUESTION 161

A systems administrator clones copies of a Linux VM every time a new Linux server is needed. The administrator notices the command prompt always states `localhost.localdomain`.

Which of the following should the administrator run to have the command prompt consistently labeled as `Server1` rather than `localhost.localdomain`?

A. `host Server1`

B. `echo "127.0.0.1 Server1 Server1.localdomain" >> /etc/hosts`

C. `hostnamectl set-hostname "Server1" --pretty`

D. `hostnamectl set-hostname Server1 --transient`

E. `hostnamectl set-hostname Server1.localdomain --static`

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

Reference: <https://www.tutorialspoint.com/how-to-setup-hostname-in-centos-7-x-or-rhel-7-x-linux-versions>



<https://vceplus.com/>

