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Exam Name: LPIC-2 Exam 201



Exam A

QUESTION 1

Which commands below are useful to collect data about remote filesystem connections? (Choose TWO correct answers.)

- A. pidstat
- B. nfsiostat
- C. sadf
- D. cfsiostat

Correct Answer: B, D

Section:

QUESTION 2

What is the functionality that PXE provides?

- A. The ability to boot a computer using its network interface.
- B. The ability to launch an remote X11 desktop on a computer.
- C. The ability to verify a system's configuration after completing the boot process.
- D. The ability to verify a system's configuration before completing the boot process.

Correct Answer: A

Section:



QUESTION 3

What happens if the Linux kernel can't mount the root filesystem when booting?

- A. An error message is shown and the administrator is asked by the kernel to specify a valid root filesystem to continue the boot process.
- B. An error message is shown and the system reboots after a keypress.
- C. An error message is shown and the system boots in maintenance mode.
- D. An error message is shown showing which device couldn't be mounted or informing that init couldn't be found.
- E. An error message is shown stating that the corresponding kernel module couldn't be loaded.

Correct Answer: D

Section:

QUESTION 4

Please enter the complete path to the main SysV init process configuration file.

- A. /etc/inittab

Correct Answer: A

Section:

QUESTION 5

What is the full path to the directory which contains the scripts (or links to the original scripts) to run while the system boots to SysV-init runlevel 2?

- A. /etc/rc2.d,
/etc/rc2.d/,
/etc/init.d/rc2.d,
/etc/init.d/rc2.d/

Correct Answer: A

Section:

QUESTION 6

In the following output, the load averages represent the system load averages for what time frames?

12:10:05 up 18 days, 19:00, 2 users, load average: 0.47, 24.71, 35.31

- A. 1, 5 and 15 minutes
- B. 1, 15 and 30 minutes
- C. 1, 15, and 30 seconds
- D. 15, 30 and 60 minutes
- E. 15, 30 and 60 seconds

Correct Answer: A

Section:

QUESTION 7

When planning a web server which of the following choices will impact system sizing? (Choose THREE correct answers.)

- A. How many concurrent users are expected.
- B. Which hardware vendor has better Linux support.
- C. What type of content will be served.
- D. What scripting languages will the web server support.
- E. Will the OS install be CD, DVD or network based.

Correct Answer: A, C, D

Section:

QUESTION 8

What mechanism does collectd use to gather monitoring information on systems?

- A. It uses a library of plugins.
- B. A master server connects to a collectd service on each machine to retrieve the information.
- C. It collects its own information on each server and sends that to a master server.
- D. It makes SNMP queries to the clients being monitored.

Correct Answer: A

Section:



QUESTION 9

Which of the following tools are used to measure memory usage? (Choose THREE correct answers.)

- A. mpstat
- B. pstree
- C. sar
- D. top
- E. vmstat

Correct Answer: C, D, E

Section:

QUESTION 10

Which of the following is a side effect of extensive usage of swap space?

- A. The root filesystem may become full because swap space is always located on the system root partition.
- B. The overall system performance may degrade because of heavy hard disk use and memory reorganization.
- C. Since processes always exist completely in either RAM or swap, regular RAM may become unused if the kernel does not move processes back from the swap space to memory.
- D. The memory may become fragmented and slow down the access to memory pages. However, this can be kept to a minimum by the regular use of memfrag -d.
- E. Applications need to restart because their virtual memory addresses change to reflect memory relocation to the swap address area.

Correct Answer: B

Section:



QUESTION 11

In this example output, which descriptions match the purpose of the free, buff and cache columns?

(Choose THREE correct answers.)

```
# vmstat 1 100
```

```
procs -----memory----- ---swap-- -----io----- --system-- -----cpu-----
r b swpd free buff cache si so bi bo in cs us sy id wa
0 0 0 282120 134108 5797012 0 0 0 2 0 0 0 0 100 0
0 0 0 282120 134108 5797012 0 0 0 0 1007 359 0 0 100 0
0 0 0 282120 134108 5797012 0 0 0 0 1117 577 0 0 100 0
0 0 0 282120 134108 5797012 0 0 0 0 1007 366 0 0 100 0
```

- A. Used swap space
- B. RAM available for filesystem buffers
- C. Available free RAM
- D. RAM used for buffers
- E. RAM used for filesystem cache

Correct Answer: C, D, E

Section:

QUESTION 12

In the following output, what is the 5 minute load average for the system?

```
# uptime
```

12:10:05 up 18 days, 19:00, 2 users, load average: 0.47, 24.71, 35.31

- A. 0.47
- B. 24.71
- C. 35.31
- D. There is no 5 minute interval. It is some value between 0.47 and 24.71.
- E. There is no 5 minute interval. It is some value between 24.71 and 35.31.

Correct Answer: B

Section:

QUESTION 13

Which of the following commands will provide the PIDs of the processes sorted by which are using the most CPU cycles on the Linux system?

- A. top
- B. uptime
- C. ps aux
- D. vmstat
- E. freemem

Correct Answer: A

Section:

QUESTION 14

Which command will report information on memory usage, paging and block input/output?

- A. free
- B. memshow
- C. ps
- D. top
- E. vmstat

Correct Answer: E

Section:

QUESTION 15

When is historical data of resource usage important? (Select THREE correct answers.)

- A. Predicting when resources will need to be increased.
- B. Selecting a computer vendor.
- C. Identifying processes killed during out of memory occurrences.
- D. Diagnosing capacity problems.
- E. Troubleshooting a software problem.

Correct Answer: A, D, E

Section:



QUESTION 16

What option in the collectd configuration file is required in order to define what to start monitoring?

- A. LoadModule
- B. Module
- C. Plugin
- D. LoadPlugin

Correct Answer: D

Section:

QUESTION 17

Which of the following terms are used to describe 3.x kernel releases? (Choose TWO correct answers.)

- A. beta
- B. final
- C. longterm
- D. prerelease
- E. stable

Correct Answer: C, E

Section:

QUESTION 18

According to the Filesystem Hierarchy Standard (FHS), what is the path to the Linux kernel source and may be a symbolic link to the real Linux source code? (Please specify the full path with no version information.)

- A. /usr/src/linux,
/usr/src/linux/

Correct Answer: A

Section:

QUESTION 19

After installing a compiled kernel, it can not find any modules that are needed to be loaded. What make target was likely missed while installing the kernel?

- A. make modules_install, modules_install

Correct Answer: A

Section:

QUESTION 20

A new kernel version needs to be compiled to use a new feature. If the old kernel configuration file is available, which make target creates a configuration file for the new kernel based on the configuration of the old kernel?

- A. oldconfig, make oldconfig

Correct Answer: A

Section:

QUESTION 21

After configuring a new kernel, what file under `/usr/src/linux/` contains the configuration?

- A. `/usr/src/linux/.config,`
`.config`

Correct Answer: A

Section:

QUESTION 22

How can the kernel parameter for the maximum size of the shared memory segment (`shmmax`) be changed to 2GB (2147483648 Bytes) on a running system? (Choose TWO correct answers.)

- A. Edit `/etc/shmmax` and set the parameter to 2147483648.
- B. `sysctl shmmax=2147483648`
- C. `sysctl kernel.shmmax=2147483648`
- D. `echo 2147483648 > /proc/sys/kernel/shmmax`
- E. `export kernel.shmmax=2147483648`

Correct Answer: C, D

Section:

QUESTION 23

What is the correct parameter to pass to the kernel at boot time to force it to use only one of the available processors?

- A. `maxcpus=1`
- B. `usecpus=1`
- C. `smppcpus=1`
- D. `vcpumx=1`

Correct Answer: A

Section:

QUESTION 24

Which commands are used to load modules into the Linux kernel? (Choose TWO correct answers.)

- A. `insmod`
- B. `loadmod`
- C. `kernload`
- D. `modprobe`
- E. `probemod`

Correct Answer: A, D

Section:

QUESTION 25

Which directory contains the system-specific udev rule files? (Specify the absolute path including the directory name)

- A. /etc/udev/rules.d,
/etc/udev/rules.d/

Correct Answer: A

Section:

QUESTION 26

What is a key difference between a zImage and bzImage kernel image?

- A. zImage is compressed using gzip, bzImage is compressed using bzip2.
- B. zImage is for 2.6 series kernels, bzImage is for 3.x series kernels.
- C. zImage is limited to 64k, bzImage has no such restriction.
- D. zImage gets loaded completely into low memory. bzImage will load into high memory once low memory is full.

Correct Answer: D

Section:

QUESTION 27

Which of the following command sequences can be used to extract files contained in a initramfs file (/boot/initramfs) which is used by the kernel at boot time?

- A. cp /boot/initramfs /tmp/initramfs.gz; gzip -c /tmp/initramfs.gz; mkdir /tmp/initramfs.dir ; cd /tmp/initramfs.dir ; cpio -i < /tmp/initramfs
- B. cp /boot/initramfs /tmp/initramfs.gz; gunzip /tmp/initramfs.gz; mkdir /tmp/initramfs.dir ; cd /tmp/initramfs.dir ; cpio -i < /tmp/initramfs
- C. cp /boot/initramfs /tmp/initramfs.gz; gunzip /tmp/initramfs.gz; mount /tmp/initramfs /mnt/ -o loop -t initramfs
- D. cp /boot/initramfs /tmp/initramfs.gz; gunzip /tmp/initramfs.gz; mkdir /tmp/initramfs.dir ; cd /tmp/initramfs.dir ; cpio -e /tmp/initramfs
- E. cp /boot/initramfs /tmp/initramfs.gz; gunzip /tmp/initramfs.gz; mount /tmp/initramfs /mnt/ -o loop -t initrd

Correct Answer: B

Section:

QUESTION 28

On a server running the 3.4.50-11 Linux kernel, which file in the /boot directory contains the kernel configuration parameters?

- A. config-linux-3.4.50-11
- B. config-3.4.50-11
- C. system-3.4.50-11
- D. vmlinuz-3.4.50-11
- E. rc.config-3.4.50-11

Correct Answer: B

Section:

QUESTION 29

Which archive format is used to create an initramfs image?

- A. gzip
- B. tar
- C. RAR
- D. cpio
- E. bzip2

Correct Answer: D

Section:

QUESTION 30

A database application requires a maximum shared memory segment (shmmax) of 2GB (2147483648 Bytes). Which configuration file should be modified to set this kernel parameter permanently? (Specify the full name of the file, including path.)

- A. /etc/sysctl.conf

Correct Answer: A

Section:

QUESTION 31

Under which of the following circumstances would the command ping output the string (DUP!)?

- A. When the ICMP packets are sent to a broadcast address and multiple hosts respond.
- B. When the host being sent ICMP packets is on a different network.
- C. When the router responds to the ICMP packet in addition to the host receiving the ICMP packets.
- D. When the host sending the ICMP packet is the same host as the one receiving the ICMP packets.

Correct Answer: A

Section:

QUESTION 32

What does the -p3 option to the patch command do?

- A. It will strip off path information from each file mentioned in the patch file up to and including the third / character.
- B. patch continues execution as long as there are three or fewer errors.
- C. It instructs patch to look up to three lines of context before or after the declared line in the original file for a match.
- D. patch will keep three previous versions of each file in the output to prevent loss of change history.
- E. It instructs patch to conform more strictly to the POSIX standard.

Correct Answer: A

Section:

QUESTION 33

When a makefile is included in a source code package, what are commonly defined targets in the file?

- A. CFLAGS, CPPFLAGS, LIBS, LDFLAGS
- B. clean, install, uninstall

- C. PATHS, DESTDIR, LIBS, LDFLAGS
- D. prefix, exec_prefix, bindir, mandir

Correct Answer: B

Section:

QUESTION 34

Which of the following commands will securely copy the directory ./fyf/ to /var/tmp/ on the remote host deltaur using the remote user account kevin?

- A. rsync -a -e ssh kevin@deltaur:/var/tmp/ fyf/
- B. rsync -a -u kevin -e ssh fyf/ deltaur:/var/tmp/
- C. rsync -a -u kevin -e ssh deltaur:/var/tmp/ fyf/
- D. rsync -a -e ssh fyf/ kevin@deltaur:/var/tmp/

Correct Answer: D

Section:

QUESTION 35

Which of the following are common backup systems used in Linux? (Choose TWO correct answers.)

- A. Amanda
- B. Bacula
- C. DrBackup
- D. BREWBackup
- E. SARcheck

Correct Answer: A, B

Section:

QUESTION 36

What information does the file modules.dep provide?

- A. A list of all modules, compiled or not, that are available to the kernel.
- B. A list of modules trusted by the installed kernel.
- C. A list of devices and their module name.
- D. A list of all compiled modules and their dependencies.
- E. A list of modules the kernel needs to run.

Correct Answer: D

Section:

QUESTION 37

Which command is used to unload a single module currently loaded by the kernel without unloading any modules that it depends upon? (Specify the command with or without path information)

- A. rmmod,
/sbin/rmmod



Correct Answer: A

Section:

QUESTION 38

What is the purpose of the command udevadm monitor?

- A. It listens to kernel events produced by a udev rule and print information to the console.
- B. It monitors the /dev directory for new devices.
- C. It monitors the udev process and prints performance statistics to the console.
- D. It communicates with D-Bus to setup new devices.

Correct Answer: A

Section:

QUESTION 39

How is the source code for the main Linux kernel modules distributed?

- A. It is included with the Linux kernel source code.
- B. The kernel modules are downloaded on demand as they are used during compilation.
- C. The kernel modules have their own release cycle and can be maintained separately from the Linux kernel source.
- D. It is provided as a separate download alongside the Linux kernel source code of the same version.

Correct Answer: A

Section:

QUESTION 40

Fill in the blank:

Which keyword is used in the /etc/inittab file to define the SysV-init default system runlevel?

- A. initdefault

Correct Answer: A

Section:

QUESTION 41

Which option to the update-rc.d command will cause the removal of all symlinks to /etc/rcX.d/*test2 even when the script /etc/init.d/test2 still exists?

- A. -d
- B. -f
- C. -n
- D. -r

Correct Answer: B

Section:

QUESTION 42

If all of the following files and/or symlinks exist in a SysV-init runlevel directory, which of the following will be executed first when booting the system directly into the runlevel?



- A. S99lpi
- B. K99lpi
- C. PRE-S99lpi
- D. S98lpi
- E. S99a-lpi

Correct Answer: D

Section:

QUESTION 43

After changing the default runlevel in the SysV-init configuration file, the system boots in a different than intended runlevel. Where else could this different runlevel be defined?

- A. In the /etc/sysctl.conf
- B. In the boot loader configuration file
- C. In the /etc/runlevel file
- D. In the /boot/initramfs file
- E. In the /etc/rc.d/rc.local file

Correct Answer: B

Section:

QUESTION 44

Why is the root file system mounted read-only during boot and remounted with write permission later on?

- A. Because if problems with the root file system are detected during the boot, fsck can be run, without risk of damage.
- B. Because this way crackers cannot collect information about root with boot sniffers.
- C. To avoid writing to the disk, unless the root password is known.
- D. To avoid other operating systems overwriting the Linux root partition.
- E. Because the disk has its own write protection that cannot be changed by the operating system.

Correct Answer: A

Section:

QUESTION 45

In case the file containing the Linux kernel is lost, what happens when the system is booting?

- A. The system starts normally since the bootloader copies the kernel to the master boot record of the hard disk.
- B. Instead of the kernel, the initramfs is loaded and instructed to mount the root filesystem and reinstall the kernel from the original package or from source.
- C. The bootloader mounts the root filesystem read-only and launches /bin/sh directly in order to allow the administrator to reinstall the kernel.
- D. Without a kernel a system cannot boot and, depending on the bootloader, an error is displayed.

Correct Answer: D

Section:

QUESTION 46

Which file tells GRUB the paths of the filesystem partitions in both Linux format and in the GRUB syntax? (Specify the file name only with no path information)

A. device.map

Correct Answer: A

Section:

QUESTION 47

Where is the LILO boot loader code typically installed on a system with only a single Linux installation and no other operating systems?

- A. In the master boot record.
- B. In the boot sector.
- C. In the /boot directory.
- D. At the start of the kernel.

Correct Answer: A

Section:

QUESTION 48

A system with SysV-init has a service installed called apache2. Which file controls the start and stop of this service and is referenced by the various runlevel directories?

- A. /etc/init.d/apache2
- B. /etc/rc2.d/70apache2
- C. /etc/rc2.d/apache2
- D. /etc/rc2.d/apache2.start

Correct Answer: A

Section:

QUESTION 49

During booting, when the Linux kernel loads an initramfs file, which command from the initramfs will be executed first, if present?

- A. /init
- B. /initrd
- C. /linuxrc
- D. /rc.local
- E. /sbin/init

Correct Answer: A

Section:

QUESTION 50

A Linux server is running in single user mode for regular maintenance. Which commands are used to restore the server to its usual runlevel? (Choose TWO correct answers.)

- A. telinit 0
- B. shutdown -r now
- C. sync
- D. shutdown -h now



E. reboot

Correct Answer: B, E

Section:

QUESTION 51

A server requires a GRUB2 boot option which will always boot to runlevel 1. Which line of a GRUB2 configuration file starts the beginning of the settings needed to make this new choice available?

- A. initrd
- B. linux
- C. menuentry
- D. runlevel

Correct Answer: B

Section:

QUESTION 52

Which command is used to install a new LILO boot loader?

- A. lilo
- B. lilo-config
- C. lilo-install
- D. install-lilo

Correct Answer: A

Section:

QUESTION 53

What are the main network services used by the PXE protocol? (Choose TWO correct answers.)

- A. DNS
- B. DHCP
- C. HTTP
- D. TFTP
- E. NFS

Correct Answer: B, D

Section:

QUESTION 54

Which files are updated as devices are mounted and unmounted to provide information on the currently mounted devices and the options used? (Choose TWO correct answers.)

- A. /proc/dtab
- B. /etc/mstab
- C. /etc/fstab
- D. /proc/mounts
- E. /proc/devices



Correct Answer: B, D

Section:

QUESTION 55

Consider the following /etc/fstab file:

```
/dev/hda1 swap swap defaults 0 0
```

```
/dev/hda2 / ext2 defaults 1 1
```

```
/dev/hda3 /home ext2 defaults 1 2 none /proc proc defaults 0 0
```

```
/dev/sdb1 /media/usb0 vfat user,noauto 0 0
```

What is one of the possible commands that an ordinary (non-root) user can use to mount the /dev/sdb1 partition on the /media/usb0 mount point? (Please enter the command with all parameters and/or options but without any file system type options.)

- A. mount
/dev/sdb1, mount
/media/usb0,
/bin/mount
/dev/sdb1,
/bin/mount
/media/usb0 mount /media/usb0/, /bin/mount /media/usb0/

Correct Answer: A

Section:

QUESTION 56

After a lot of write operations, the administrator want to ensure that the kernel flushes the file system buffers to disk. Which command will accomplish this? (Specify ONLY the command without any path or parameters.)

- A. sync

Correct Answer: A

Section:

QUESTION 57

What does a 0 in the last field (fsck order) of /etc/fstab indicate about the filesystem?

- A. The filesystem should be checked before filesystems with higher values.
- B. The filesystem should be checked after filesystems with higher values.
- C. The filesystem check counter is ignored.
- D. The filesystem has been disabled from being checked and mounted on the system.
- E. The filesystem does not require an fsck check when being mounted.

Correct Answer: E

Section:

QUESTION 58

Fill in the blank:

Which command turns an existing ext2 filesystem non-destructively into an ext3 filesystem? (Specify ONLY the command without any path or parameters.)

- A. /sbin/tune2fs, tune2fs

Correct Answer: A

Section:

QUESTION 59

Fill in the blank:

Which command is used to create a ISO9660 filesystem? (Specify ONLY the command without any path or parameters.)

A. mkisofs, genisoimage

Correct Answer: A

Section:

QUESTION 60

Which two LVM commands are missing from the following sequence which is used to create a logical volume and make use of it on a Linux system? pvcreate, _____, _____, mkfs, mount

A. lvcreate, mdadm

B. lvcreate, vgcreate

C. lvmcreate, vgcreate

D. vgcreate, lvcreate

E. vgcreate, mdadm

Correct Answer: D

Section:

QUESTION 61

What are the options to node.startup in the iscsid.conf file? (Choose TWO correct answers.)

A. login

B. initiate

C. manual

D. discover

E. automatic

Correct Answer: C, E

Section:

QUESTION 62

What action should be performed after increasing the size of a logical volume?

A. Run vgresize.

B. Increase the size of the filesystem used for the logical volume.

C. Run lvresize.

D. Remount the logical volume.

Correct Answer: B

Section:



QUESTION 63

Considering the following kernel IP routing table below, which of the following commands must be used to remove the route to the network 10.10.1.0/24? (Select TWO answers) Kernel IP routing table

```
Destination Gateway Genmask Flags Metric Ref Use Iface
203.0.113.162 0.0.0.0 255.255.255.255 UH 0 0 0 ppp0
172.16.87.0 0.0.0.0 255.255.255.0 U 0 0 0 eth0
192.168.246.0 0.0.0.0 255.255.255.0 U 0 0 0 eth1
10.10.1.0 192.168.246.11 255.255.255.0 UG 0 0 0 eth1
127.0.0.0 0.0.0.0 255.0.0.0 U 0 0 0 lo
```

- A. 0.0.0 203.0.113.162 0.0.0.0 UG 0 0 0 ppp0
- B. ip net delete 10.10.1.0/24
- C. route del 10.10.1.0/24
- D. route del -net 10.10.1.0/24
- E. route del 10.10.1.0/24 gw 192.168.246.11
- F. ip route delete 10.10.1.0/24

Correct Answer: C, E

Section:

QUESTION 64

Which of the following files are used to resolve hostnames to IP addresses? (Choose TWO correct answers.)

- A. /etc/systems
- B. /etc/hosts
- C. /etc/network
- D. /etc/dns.conf
- E. /etc/resolv.conf

Correct Answer: B, E

Section:

QUESTION 65

Which of the following commands will list the IPv4 neighbors of the current system? This includes IP and MAC addresses. (Choose TWO correct answers.)

- A. arp
- B. ifconfig -lv eth0
- C. netstat -al
- D. ip neigh show

Correct Answer: A, D

Section:

QUESTION 66

The following is an excerpt from the output of tcpdump -nli eth1 'udp':

```
13:03:17.277327 IP 192.168.123.5.1065 > 192.168.5.112.53: 43653+ A? lpi.org. (25)
```

```
13:03:17.598624 IP 192.168.5.112.53 > 192.168.123.5.1065: 43653 1/0/0 A 198.51.100.42 (41)
```

Which network service or protocol was used?



- A. FTP
- B. HTTP
- C. SSH
- D. DNS
- E. DHCP

Correct Answer: D
Section:

QUESTION 67

Fill in the blank:

Which program lists information about files and network connections opened by processes? (Specify ONLY the command without any path or parameters.)

- A. lsof,
/usr/bin/lsof

Correct Answer: A
Section:

QUESTION 68

Fill in the blank:

Running tcpdump -nli eth1 'tcp' shows the following output:

14:41:53.694538 IP 10.1.52.145.51738 > 24.215.7.162.143: Flags [.] , ack 33051, win 1002, options [nop,nop,TS val 36789130 ecr 1746004159], length 0

What is the source IP address of this packet? (Please specify the answer in digits and dots ONLY.)

- A. 10.1.52.145

Correct Answer: A
Section:

QUESTION 69

A correctly formatted entry has been added to /etc/hosts.deny to prevent certain clients from connecting to a service but this is having no effect. What could be the cause of this? (Choose TWO correct answers.)

- A. tcpd needs to be sent the HUP signal.
- B. The service needs to be restarted.
- C. The machine needs to be restarted.
- D. There is a conflicting entry in /etc/hosts.allow.
- E. The service does not support tcpwrapper.

Correct Answer: D, E
Section:

QUESTION 70

A network client has an ethernet interface (eth0) configured with an IP address in the subnet 192.168.0.0/24. This subnet has a router, with the IP address 192.168.0.1, that connects this subnet to the Internet. What needs to be done on the client to enable it to use the router as its default gateway? (Choose TWO correct answers.)

- A. route add default gw 192.168.0.1 eth0

- B. `ifconfig eth0 defaultroute 192.168.0.1`
- C. `ip route add default via 192.168.0.1 dev eth0`
- D. `echo defaultroute 192.168.0.1 >> /etc/resolv.conf`
- E. `route add defaultgw=192.168.0.1 if=eth0`

Correct Answer: A, C

Section:

QUESTION 71

The users of the local network complain that name resolution is not fast enough. Enter the command, without the path or any options, that shows the time taken to resolve a DNS query.

- A. `dig, time dig, time host, time nslookup`

Correct Answer: A

Section:

QUESTION 72

In which directory tree are files modified when changing kernel parameters using the command `sysctl`?

- A. `/sys/kernel/`
- B. `/proc/kernel/`
- C. `/proc/sys/`
- D. `/lib/sys/`
- E. `/sys/proc/`

Correct Answer: C

Section:

QUESTION 73

Which of the following properties should be recorded in order to monitor the quality of a network link? (Choose two.)

- A. Bandwidth in both directions
- B. Number of nodes using the link
- C. Effective Latency
- D. Number of IPv4 and IPv6 packets
- E. Number of used TCP ports

Correct Answer: A, C

Section:

QUESTION 74

In order to gather performance data with `sar` over a longer period of time, which command should be run periodically from cron?

- A. `sa1`
- B. `sarmon`
- C. `sarec`
- D. `sadf`



E. sarcron

Correct Answer: A

Section:

QUESTION 75

Which command can be used to scan a specified network looking for IP addresses that appear to be in use?

- A. nmap
- B. tcpdump
- C. ip
- D. netscan
- E. hostdiscover

Correct Answer: A

Section:

QUESTION 76

What is incorrect about these entries in /etc/hosts which could be causing host name lookup problems with host2? host1 192.168.1.12 host2 192.168.1.12

- A. Two host names are using the same IP address.
- B. The server doing the query is on a different subnet.
- C. The fields are out of order.
- D. host2 is not a fully qualified domain name.

Correct Answer: C

Section:

QUESTION 77

Which of the following wireless tools can be used to check the wireless network link quality? (Choose TWO correct answers.)

- A. iwconfig
- B. iwlink
- C. iwscan
- D. iwifi
- E. iw

Correct Answer: A, E

Section:

QUESTION 78

Which of the following commands can be used to list IPv4 addresses and MAC addresses for IP devices that the system has seen on the local network?

- A. arp
- B. ifconfig
- C. ipadm
- D. iwlist



Correct Answer: A

Section:

QUESTION 79

What is the command to add another IP address (192.168.1.2) to a network interface (eth0) that already has (at least) one IP address in the 192.168.1.0/24 subnet?

- A. ip add addr 192.168.1.2/32 dev eth0
- B. ifconfig eth0 192.168.1.2 netmask 255.255.255.255
- C. ip addr add 192.168.1.2/32 dev eth0
- D. ipconfig eth0 192.168.1.2

Correct Answer: C

Section:

QUESTION 80

Fill in the blank:

According to the tcpdump output below, what is the IP address of the client host?

```
02:12:40.511381 IP 192.168.246.11.1045 > 192.168.246.1.22: S 3838532429:3838532429(0) win 5840 <mss 1460,sackOK,timestamp 31325740,nop,wscale 2>
02:12:40.511540 IP 192.168.246.1.22 > 192.168.246.11.1045: S 1209330085:1209330085(0) ack
383853 2430 win 5792 <mss 1460,sackOK,timestamp 11553457 3132574,nop,wscale 0>
02:12:40.511755 IP 192.168.246.11.1045 > 192.168.246.1.22: . ack 1 win 1460 <nop,nop,timestamp 3 132574 11553457>
02:12:40.515122 IP 192.168.246.1.22 > 192.168.246.11.1045: P 1:26(25) ack 1 win 5792
<nop,nop,timestamp 11553460 3132574>
02:12:40.515511 IP 192.168.246.11.1045 > 192.168.246.1.22: . ack 26 win 1460 <nop,nop,timestamp 3132578 11553460>
02:12:40.515952 IP 192.168.246.11.1045 > 192.168.246.1.22: P 1:23(22) ack 26 win 1460
<nop,nop,timestamp 3132578 11553460>
```

- A. 192.168.246.11

Correct Answer: A

Section:

QUESTION 81

The following is an excerpt from the output of tcpdump -nli eth1:

```
13:03:17.277327 IP 192.168.123.5.1065 > 192.168.5.112.21: Flags [.], ack 1 (truncated)
13:03:17.598624 IP 192.168.5.112.21 > 192.168.123.5.1065: Flags [P.], seq (truncated)
```

Which network service or protocol was used?

- A. FTP
- B. HTTP
- C. SSH
- D. DNS
- E. DHCP

Correct Answer: A

Section:

QUESTION 82

Which of the following commands can be used to script interactions with various TCP or UDP services?

- A. ftp
- B. nc
- C. tcpdump
- D. strings
- E. wget

Correct Answer: B

Section:

QUESTION 83

Which /etc/hosts.allow entries will permit access to sshd for users from the 192.168.1.0/24 subnet?

(Choose TWO correct answers.)

- A. sshd : 192.168.1.
- B. sshd : 192.168.1
- C. sshd : 192.168.1.0 netmask 255.255.255.0
- D. sshd : 192.168.1.0/255.255.255.0
- E. sshd : 192.168.1.0

Correct Answer: A, D

Section:

QUESTION 84

What should be done to ensure a client machine uses the recursive nameserver running on the IP address 192.168.0.1? (Choose TWO correct answers.)

- A. Add nameserver 192.168.0.1 to /etc/resolv.conf.
- B. Run route add nameserver 192.168.0.1.
- C. Run ifconfig eth0 nameserver 192.168.0.1.
- D. Ensure that the dns service is listed in the hosts entry in the /etc/nsswitch.conf file.
- E. Run bind add nameserver 192.168.0.1.

Correct Answer: A, D

Section:

QUESTION 85

What should be done after updating the configuration file for syslogd in order to make the changes become effective? (Choose TWO correct answers.)

- A. No action is required, syslogd will notice the updated configuration file after a few minutes.
- B. Send the HUP signal to the syslogd process.
- C. Restart the syslogd service.
- D. Run the command syslogd -u.

Correct Answer: B, C

Section:



QUESTION 86

Which of the following filter keywords for tcpdump specify the transfer direction for network packets? (Choose TWO correct answers.)

- A. source
- B. src
- C. dest
- D. src or dst
- E. both

Correct Answer: B, D

Section:

QUESTION 87

Fill in the blank:

Which file contains the text message that is displayed after logging into the console? (Specify the full name of the file, including path.)

- A. /etc/motd

Correct Answer: A

Section:

QUESTION 88

The following command has just been run successfully: `cd /opt; tar xvf /dev/nst0`; What will happen if the command sequence is run again?

- A. An error saying that there is no tape present is generated because the tape has been ejected after being used.
- B. The contents of /opt will be restored again.
- C. The entire contents of /opt will be replaced with the contents of the next file on the tape.
- D. The contents of /opt will have additional content added from the next file on the tape.

Correct Answer: D

Section:

QUESTION 89

Which of the following files will be looked for and used by GNU make, if one of them exists, unless a different file is specified on the command line when trying to compile software from source code?

(Choose TWO correct answers.)

- A. configure
- B. config.h.in
- C. makefile
- D. Makefile
- E. Makefile.in

Correct Answer: C, D

Section:

QUESTION 90

A regular user, joe, has just run:

./configure && make && make install to build and install a program. However, the installation fails. What could be done to install the program? (Choose TWO correct answers.)

- A. Install the binaries manually with suinstall.
- B. Run make install with root privileges.
- C. Do not run ./configure in order to maintain the default configuration for correct installation.
- D. Rerun ./configure with a --prefix option where the user has permissions to write.
- E. Run make install_local to install into /usr/local/.

Correct Answer: B, D

Section:

QUESTION 91

Fill in the blank:

What is the device name for the first SCSI tape drive on a system when used without automatic rewinding after each write operation? (Please specify the full path to the device.)

- A. /dev/nst0

Correct Answer: A

Section:

QUESTION 92

Which of the following commands will erase the contents of the /dev/sdb3 partition?

- A. rm /dev/sdb3
- B. dd if=/dev/zero of=/dev/sdb3
- C. dd of=/dev/zero if=/dev/sdb3
- D. umount /dev/sdb3

Correct Answer: B

Section:

QUESTION 93

Fill in the blank:

Which file contains the message that is displayed above the login prompt of the system console?

(Specify the full name of the file, including path.)

- A. /etc/issue

Correct Answer: A

Section:

QUESTION 94

Which one of these directories should not be backed up?

- A. /backup
- B. /etc
- C. /opt



- D. /proc
- E. /var/log

Correct Answer: D

Section:

QUESTION 95

Which of the following commands erases the contents of the /dev/sdb3 partition?

- A. rm /dev/sdb3
- B. dd if=/dev/zero of=/dev/sdb3
- C. dd of=/dev/zero if=/dev/sdb3
- D. umount /dev/sdb3

Correct Answer: B

Section:

QUESTION 96

Fill in the blank:

What command is used to send messages to all users currently logged in? (Specify ONLY the command without any path or parameters.)

- A. wall

Correct Answer: A

Section:



QUESTION 97

Which of the following commands restores only those files containing lpi in their name from the archive lpifiles.tar.gz?

- A. tar xvzf lpifiles.tar.gz --wildcards '*lpi*'
- B. tar xvzwf lpifiles.tar.gz '*lpi*'
- C. tar -xvfz lpifiles.tar.gz --deep '*lpi*'
- D. tar -xvzf lpifiles.tar.gz --subdirs '*lpi*'
- E. tar xvzf lpifiles.tar.gz --globbing '*lpi*'

Correct Answer: A

Section:

QUESTION 98

What command discards unused blocks on a mounted file system in order to support SSD devices? (Specify ONLY the command without any path or parameters.)

- A. fstrim

Correct Answer: A

Section:

QUESTION 99

What information is found in the following excerpt from the file /proc/mdstat? (Choose two.)

```
Personalities : [raid6] [raid5] [raid4]
md0 : active raid5 sdb1[3] (S) sdc1[7] sda1[4] (S) sdd1[6] sde1[5]
      1046528 blocks super 1.2 level 5, 512k chunk, algorithm 2 [3/2] [UU_]
      [====>.....] recovery = 15.9% (83808/523264) finish=0.1min
      speed=71880K/sec
unused devices: <none>
```

- A. One of the disks in /dev/md0 has failed and a spare disk is used to recreate full redundancy
- B. The spare disk /dev/sda1 is used to restore full redundancy after the current recovery
- C. The information [UU_] means, that the raid is missing one disk and is not fully redundant
- D. The device is using version 1.2 metadata to allow LILO and GRUB Legacy to use /dev/md0 as the boot partition. This would not have been necessary with GRUB2
- E. The information [3/2] means that 3 RAID disks belong to the array and 2 disks are spare. Together they equal the number of available disks

Correct Answer: A, C

Section:

QUESTION 100

Which command is used to make an exact copy, at a single point in time, of a logical volume while still allowing the original logical volume to be updated?

- A. lvclone
- B. lvcreate
- C. lvm2
- D. lvsnap
- E. lvsnapshot



Correct Answer: B

Section:

QUESTION 101

Which of the following commands creates a Btrfs subvolume named volume in /mnt?

- A. btrfs subvolume add -n volume /mnt
- B. btrfs create subvolume /mnt volume
- C. btrfs-subvolume create /mnt/volume
- D. btrfs subvolume new volume /mnt
- E. btrfs subvolume create /mnt/volume

Correct Answer: E

Section:

QUESTION 102

What is the purpose of a system mount unit?

- A. It is used by the command systemd-mount and allows users to mount partitions to mount points of their choice

- B. It is used only to mount network file systems to local mount points. It cannot be used for local media
- C. It is created by the command systemd-fstab-generator to integrate entries from /etc/fstab into the system boot process
- D. It is used by the command mount when using system to mount and unmount file systems

Correct Answer: A

Section:

QUESTION 103

Fill in the blank:

What command ensures that the file systems are written to disk after a lot of write operations?

(Specify ONLY the command without any path or parameters.)

- A. sync

Correct Answer: A

Section:

QUESTION 104

Which sub command to cryptsetup shows information about an encrypted LUKS partition?

- A. luksDump
- B. luksInfo
- C. luksDebug
- D. luksLS
- E. luksShow

Correct Answer: A

Section:

QUESTION 105

Which of the following init systems comes along with an own UEFI boot loader?

- A. systemd
- B. SysVinit
- C. Upstart
- D. OpenRC
- E. launchd

Correct Answer: A

Section:

QUESTION 106

What effect does the -f option to the update-rc.d command have on files in the /etc/rcX.d/ and /etc/init.d/ directories?

- A. It will force the removal of the symlinks in /etc/rcX.d/ even when the links are read only
- B. It will remove both the symlinks in /etc/rcX.d/ and the init script in /etc/init.d/
- C. It will remove the init script in /etc/init.d/ and the symlinks in /etc/rcX.d/ and update the package information of installed files



D. It will force the removal of symlinks in `/etc/rcX.d/` even if the corresponding init script still exists in `/etc/init.d/`

Correct Answer: D

Section:

QUESTION 107

Which command is used to install a GRUB boot loader into the master boot record?

- A. `grub-install`
- B. `grub-mkconfig`
- C. `grub-install-mbr`
- D. `grub-glue-mbr`
- E. `grub-mbr-setup`

Correct Answer: A

Section:

QUESTION 108

Fill in the blank:

Which directory contains system-specific systemd unit files? (Specify the full path to the directory.)

- A. `/lib/systemd/system`

Correct Answer: A

Section:



QUESTION 109

A Linux server running systemd booted to `rescue.target` for maintenance. Which commands are used to restore the server to its usual target? (Choose two.)

- A. `telinit 0`
- B. `systemctl default`
- C. `sync`
- D. `systemctl emergency`
- E. `systemctl reboot`

Correct Answer: A, B

Section:

QUESTION 110

Fill in the blank:

Which is the main configuration file for the SystemV init process? (Specify the full name of the file, including path.)

- A. `/etc/inittab`

Correct Answer: A

Section:

QUESTION 111

What is the purpose of an initramfs during the Linux system start?

- A. It loads required modules and starts sub systems like LVM to make the root file system accessible to the kernel
- B. It moves the kernel from normal system memory to initram memory to speed up kernel access
- C. It copies the root file system's content to RAM to speed up the system and reduce writes to disk
- D. It creates a ram disk to store volatile data for directories like /tmp to reduce writes to disk

Correct Answer: A

Section:

QUESTION 112

Which of the following is a userspace application used to modify EFI entries on a Linux system?

- A. efeditor
- B. configefi
- C. efimanager
- D. efibootmgr
- E. efibootedit

Correct Answer: D

Section:

QUESTION 113

A web application server contains 64GB of RAM and two swap partitions on normal hard disk drives, each with a size of 64 GB. Within the last month, the average number of user sessions on this server has grown by 20 percent. At the same time, the average usage of RAM increased from 65 to 75 percent, while the swap space is almost not used at all. It is expected that the number of user sessions will continue to increase by about 15 to 20 percent each month. Which of the following reactions would be appropriate in response to these observations? (Choose two.)

- A. Delay any hardware upgrade until there is a significant consumption of swap space to ensure an efficient usage of the available hardware
- B. Create a RAID 1 device on the two swap partitions to avoid data loss in case swap space has to be used in the future
- C. Consider the installation of an additional application server to distribute the load if the expected growth continues over several months
- D. Move the web application's scripts and content a ram disk in order to ensure fast access and to avoid the need for swap space
- E. Update the hardware to increase the amount of available RAM to avoid using swap space

Correct Answer: C, E

Section:

QUESTION 114

Which of the following configuration files are used by tcpwrapper?

- A. /etc/tcpd.allow and etc/tcpd.deny
- B. /etc/tcpwrapper.allow and /etc/tcpwrapper.deny
- C. /etc/hosts.allow and /etc/hosts.deny
- D. /etc/service.allow and /etc/service.deny

Correct Answer: C

Section: