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Topic 1 - Single Topic

Question #1

Topic 1

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*

*Community vote distribution*

B (100%)

Question #2

Topic 1

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.)

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

**Correct Answer:** *CD*

Question #3

Topic 1

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

**Correct Answer:** *wall*

## Question #4

Topic 1

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 -xvzf lpifiles.tar.gz --deep "~\*lpi\*
- D. tar -xvzf lpifiles.tar.gz --subdirs "~\*lpi\*
- E. tar xvzf lpifiles.tar.gz --globbing "~\*lpi\*

**Correct Answer:** A

## Question #5

Topic 1

A regular user 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.)

- 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:** BD

## Question #6

Topic 1

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

## Question #7

Topic 1

FILL BLANK -

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.)

**Correct Answer:** fstrim

Question #8

Topic 1

Which single command simulates a failed device within a RAID 5 array?

A. mdadm --remove /dev/md0 /dev/sdd1

B. mdadm --zero-superblock /dev/sdf3

C. mdadm --force-fault /dev/md2 /dev/sde2

D. mdadm --fail /dev/md0 /dev/sdc1

E. mdadm /dev/md0 --offline /dev/sdc1

Correct Answer: D

Question #9

Topic 1

What is the minimum number of disks required in a fully redundant RAID5 array?

A. 1

B. 2

C. 3

D. 4

E. 5

Correct Answer: C

Community vote distribution

C (100%)

Question #10

Topic 1

A system has one hard disk and one CD writer which are both connected to SATA controllers. Which device represents the CD writer?

A. /dev/hdb

B. /dev/sdd

C. /dev/scd1

D. /dev/sr0

E. /dev/sr1

Correct Answer: D

## Question #11

Topic 1

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***Community vote distribution*B (100%)

## Question #12

Topic 1

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: AC***Community vote distribution*AC (100%)

## Question #13

Topic 1

FILL BLANK -

What command will remove a physical volume from a volume group? (Specify ONLY the command without any path or parameters.)

**Correct Answer: vgreduce**

## Question #14

Topic 1

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*

## Question #15

Topic 1

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*

## Question #16

Topic 1

FILL BLANK -

What keyword is missing in the following line from /etc/fstab in order to grant the user fred write access to the files in the vfat file system on /dev/sdb1:

/dev/sdb1 /mnt/usbflash vfat defaults, \_\_\_\_\_=fred, umask=022, 0 0

(Specify ONLY the option name without any path or parameters.)

**Correct Answer:** *uid*

Question #17

Topic 1

Due to extreme system use, a Linux system requires some additional swap space. To initialize 5 GB of additional swap space, which combination of commands should be used?

A. dd if=/dev/zero of=/tmp/swapfile bs=1024 count=5120000; mkswap /tmp/swapfile; mount /tmp/swapfile

B. dd if=/dev/zero of=/tmp/swapfile bs=1024 count=5120000; swapon /tmp/swapfile

C. dd if=/dev/zero of=/tmp/swapfile bs=1024 count=5120000; mkswap /tmp/swapfile; swapon /tmp/swapfile

D. touch -5G /tmp/swapfile; swapon /tmp/swapfile

E. mkswap /tmp/swapfile 512000; swapon /tmp/swapfile

Correct Answer: C

Question #18

Topic 1

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

Question #19

Topic 1

FILL 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.)

Correct Answer: sync

Question #20

Topic 1

What component of a system does smartd monitor?

A. CPU

B. RAM

C. Hard drives

D. Ethernet traffic

Correct Answer: C

Community vote distribution

C (100%)

Question #21

Topic 1

How can the label root be added to the ext4 filesystem on /dev/sda1?

A. relabel /dev/sda1 root

B. tune2fs ""L root /dev/sda1

C. echo "~root' > /proc/fs/sda1/label

D. labelfs --device /dev/sda1 root

Correct Answer: B

Question #22

Topic 1

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

Community vote distribution

A (100%)

Question #23

Topic 1

Which of the following is a CD-ROM filesystem standard?

A. OSI 9660

B. ISO 9660

C. SR0FS

D. ISO 8859

E. ROM-EO

Correct Answer: B

## Question #24

Topic 1

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**

## Question #25

Topic 1

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**

## Question #26

Topic 1

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**

## Question #27

Topic 1

If the file containing the Linux kernel is deleted, what happens when the system boots?

- 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 system cannot boot and, depending on the bootloader, an error is displayed

**Correct Answer: D**



Question #28

Topic 1

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

Correct Answer: `/lib/systemd/system`

Question #29

Topic 1

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: *AB*

Community vote distribution

BE (100%)

Question #30

Topic 1

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

Correct Answer: `/etc/inittab`

Question #31

Topic 1

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*

## Question #32

Topic 1

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**

## Question #33

Topic 1

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**

## Question #34

Topic 1

What is the purpose of the command udevadm monitor?

- A. It listens to kernel events produced by a udev rule and prints 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**

## Question #35

Topic 1

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 for the same version

**Correct Answer: A**

Question #36

Topic 1

After the downloading patch-4.6.4.xz from http://kernel.org, what are the next steps to prepare the build of a version 4.6.4 Linux kernel? (Choose two.)

A. Uncompress the file and move the resulting directory to /usr/src/linux

B. Apply the patch file to the kernel source directory containing kernel version 4.6.0

C. Apply the patch file to the kernel source directory containing kernel version 4.6.3

D. Uncompress the file using xz to get the uncompressed patch file

E. Use patch to apply the uncompressed patch file to the source directory of any previous kernel version

Correct Answer: DE

Question #37

Topic 1

After manually compiling and installing a new kernel, what has to be done regarding the initramfs?

A. To initramfs is independent of the kernel and should not be modified unless the hardware configuration of the machine has changed

B. Since the initramfs contains kernel modules, a new initramfs must be built for the new kernel

C. During the compilation of the Linux kernel, a new initramfs is built automatically. The new initramfs only needs to be installed

D. The system should be restarted since the initramfs reconfigures itself for the new kernel during the startup of the system

Correct Answer: C

Community vote distribution

B (100%)

Question #38

Topic 1

Which of the following commands displays the physical path of the kernel module named dummy?

A. modprobe -i dummy

B. modinfo -n dummy

C. modpath -v dummy

D. depmod -n dummy

E. modshow -p dummy

Correct Answer: A

Community vote distribution

B (100%)

## Question #39

Topic 1

Which of the following parameters instructs the kernel at boot time to use only one of the available processors?

- A. maxcpus=1
- B. usecpus=1
- C. smpcpus=1
- D. vcpumx=1
- E. vmxcpus=1

**Correct Answer:** A

## Question #40

Topic 1

FILL BLANK -

After installation of a self-compiled kernel, modules that need to be loaded cannot be found. What make target was likely missed while installing the kernel?

(Specify ONLY the make target without any command or parameters.)

**Correct Answer:** *modules\_install*

## Question #41

Topic 1

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

## Question #42

Topic 1

Which of the following commands by default provides 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

## Question #43

Topic 1

In the output of `sar ""b`, what does tps stand for?

- A. Terrabyte per second
- B. Traffic per second
- C. Transfers per second
- D. Total data per second
- E. Terrabit per second

**Correct Answer:** C

## Question #44

Topic 1

In the following output of the command `uptime`, 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. 5, 20 and 25 seconds
- D. 15, 30 and 60 minutes
- E. 15, 45 and 90 seconds

**Correct Answer:** A

## Question #45

Topic 1

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:** AC

## Question #46

Topic 1

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

- A. free
- B. memshow
- C. lsof
- D. pidof
- E. vmstat

**Correct Answer:** *E*

## Question #47

Topic 1

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*

## Question #48

Topic 1

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

- A. pidstat
- B. nfsiostat
- C. sadf
- D. cifsostat
- E. fsostat

**Correct Answer:** *BD*

## Question #49

Topic 1

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:** *CE*

## Question #50

Topic 1

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/access.allow and /etc/access.deny
- E. /etc/service.allow and /etc/service.deny

**Correct Answer:** *C*

## Question #51

Topic 1

FILL BLANK -

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

**Correct Answer:** *lsof*

## Question #52

Topic 1

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. Which of the following commands can be used on the client to enable it to use the router as its default gateway? (Choose two.)

- 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
- D. echo defaultroute 192.168.0.1 >>/etc/resolv.conf
- E. route add defaultgw=192.168.0.1 if=eth0

**Correct Answer:** AC

## Question #53

Topic 1

FILL BLANK -

The users of the local network complain that name resolution is not fast enough. Which command shows the time taken to resolve a DNS query? (Specify the command without path.)

**Correct Answer:** dig

## Question #54

Topic 1

Which of the filter keywords below could be used in the following command: tcpdump ""i eth0 \_\_\_\_\_ 203.0.113.8 (Choose three.)

- A. host
- B. ip
- C. src
- D. dst
- E. ipv6

**Correct Answer:** ACD



## Question #55

Topic 1

Which of the following commands adds a static IPv6 address to the network interface eth0?

- A. ip add addr 2001:db8::1337/64 dev eth0
- B. ip -6 add addr 2001:db8::1337/64 dev eth0
- C. ip addr add 2001:db8::1337/64 dev eth0
- D. ip -6 addr add new 2001:db8::1337/64 dev eth0
- E. ip addr add -6 2001:db8::1337/64 dev eth0

**Correct Answer: D***Community vote distribution*C (100%)

## Question #56

Topic 1

On a Linux node with multiple active network interfaces, each having a default route to the Internet, which default route is preferred?

- A. The default route with the highest metric value
- B. The default route with the highest MTU value
- C. The default route with the lowest TTL value
- D. The default route with the highest TTL value
- E. The default route with the lowest metric value

**Correct Answer: E**

## Question #57

Topic 1

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**

## Question #58

Topic 1

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

- 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:** AD

## Question #59

Topic 1

Which of the following commands shows capabilities and usable frequencies for the wireless interface wlan0?

- A. `iw phy phy0 info`
- B. `iw dev wlan0 info`
- C. `iw dev wlan0 show`
- D. `iw phy wlan0 show`
- E. `iw phy0 show`

**Correct Answer:** A

## Question #60

Topic 1

Which of the following commands lists IPv4 addresses and MAC addresses of network nodes that the local system has seen on its directly connected IP networks?

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

**Correct Answer:** A

Topic 2 - More Questions.

Question #1

Topic 2

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