Exam :   117-201

Title   :   Linux Advanced Administration

Ver   :   04.17.06

QUESTION 1:

Which two utilities can you use to set up a job to run at a specified time?

A. at and crond
B. atrun and crontab
C. at and crontab
D. atd and crond

Answer: C

Explanation: The 'at' command is used to execute commands at a specified time and optional date.
A cron job is a program or script scheduled at a specified time. The 'crontab' program is used to create user cron jobs.
Reference: http://www.oreillynet.com/linux/cmd/a/at.html
http://www.oreillynet.com/linux/cmd/c/crontab.html
Incorrect Answers.
A: The Cron daemon (crond) is the program that runs the cron job at the specified time. It is not used to set up a cron job.
B: Atrun is used to run jobs scheduled by the 'at' program. It is not used to set up a job to run at a specified time.
D: Atd is the 'at' deamon. Similar to the cron daemon, it is the program that runs the jobs scheduled with the 'at' command.

QUESTION 2:

After creating a backup of the users home directories called backup.cpio you are asked to restore a file called memo.ben. What command should you type?

Answer: cpio -iF backup.cpio memo.ben

Explanation: The 'cpio' command is used to create backups or restore files from a backup. The -i option is to extract something. The F option is to specify a file. Here we are extracting memo.ben from a file named backup.cpio.
Reference: http://www.oreillynet.com/linux/cmd/c/cpio.html

QUESTION 3:

You wish to restore the file memo.ben which was backed up in the tarfile MyBackup.tar. What command should you type?

Answer: tar xf MyBackup.tar memo.ben

Explanation: Tarfiles are created using the 'tar' utility. Therefore, you should use the 'tar' utility to

extract the files. The x option is to extract and the f option is to specify a filename to extract from.
Reference: http://www.oreillynet.com/linux/cmd/t/tar.html

QUESTION 4:

When is the most important time to restore a file from your backup?

A. On a regular scheduled basis to verify that the data is available.
B. When the system crashes.
C. When a user inadvertently loses a file.
D. When your boss asks to see how restoring a file works.

Answer: A

Explanation: According to 'best practice', you should regularly restore files to verify that your backup procedures are working. It's no good backing up files regularly if you are unable to restore files when needed.
Incorrect Answers:
B: When the system crashes, you may need to restore your whole system. However, this shouldn't be the only time you restore files.
C: When a user loses a file, it will need to be restored. However, you should prepare for this eventuality by regularly testing your backup/restore process to ensure you are able to restore a file when needed.
D: When your boss asks to see how restoring a file works, you want it to work when you show him. This is why you should test your backup/restore processes.

QUESTION 5:

Which one of the following factors does not play a role in choosing the type of backup media to use?

A. How frequently a file changes.
B. How long you need to retain the backup.
C. How much data needs to be backed up.
D. How frequently the backed up data needs to be accessed.

Answer: A

Explanation: Your choice of backup media will depend on its capacity, its shelf life and the time it takes to access the data. The frequency of file changes is irrelevant.
Incorrect Answers:
B: Different backup media can be kept for varying periods of time. You should find out from the manufacturers how long a backup media can be kept without losing its data.
C: Obviously, your choice of backup media will depend on the amount of data to be backed up. For example, a CD-ROM can hold around 700MB of data while tapes can hold up to hundreds of gigabytes of data.
D: Your choice of backup media will also depend on the time it takes to retrieve data from the media. Reading data from a CD-ROM or DVD is much quicker than reading data from a tape.

QUESTION 6:

You attempt to log out but receive an error message that you cannot. When you issue the jobs command, you see a process that is running in the background. How can you fix thus so that you can logout?

A. Issue the kill command with the PID of each running command of the pipeline as an argument.
B. Issue the kill command with the job number as an argument.
C. Issue the kill command with the PID of the last command as an argument.
D. Issue the kill command without any arguments.

Answer: C

Explanation: The kill command is used to send a signal to kill one or more process IDs. You must own the process or be a privileged user, otherwise the kill command will be ignored.
Reference: http://www.oreillynet.com/linux/cmd/k/kill.html
Incorrect Answers
A: You need to end the background process. You know its process ID, therefore you should issue the process ID with the kill command to kill the appropriate process.
B: You cannot use the job number with the kill command. You should use the process ID or process name.
D: The kill command won't work if it doesn't know what process you want it to kill.

QUESTION 7:

The top utility can be used to change the priority of a running process? Another utility that can also be used to change priority is_____?

Answer: renice

QUESTION 8:

You need to search the entire directory structure to locate a specific file. How could you do this and still be able to run other commands while the find command is still searching for you file?

A. find / -name filename &
B. find / -name filename
C. bg find / -name filename
D. &find / -name filename &

Answer: A

Explanation: The find command is used to locate files. / is the root directory, so searching from / will search the entire directory tree. The -name <filename> enables you to search for a file named <filename>. The ampersand character (&) is used to return control of the shell returning you to the command prompt, without have to wait for the command to execute.
Reference: http://www.oreillynet.com/linux/cmd/f/find.html
Incorrect Answers

B: With no ampersand (&) following the command, you will not be able to run other commands until the find command has completed its search.
C: The bg command is used to run a suspended job in the background if job control is enabled. However, the program or command would have to started and then suspended for this to work.
D: The ampersand (&) must follow the command, not precede it.

QUESTION 9:

In order to display the last five commands you have entered using the history command, you would type
_____.

Answer: history 5

Explanation: The history command is used to display the previously entered commands. If you typed history with no arguments, you would likely get a long scrolling list of commands. By typing a number after 'history', you will display only the last <number> of commands.
Reference:
http://www.redhat.com/docs/manuals/linux/RHL-7.3-Manual/getting-started-guide/s1-q-and-a-history-tips.html

QUESTION 10:

You telnet into several of your servers simultaneously. During the day, you sometimes get confused as to which telnet session is connected to which server.
Which of the following commands in your .profile would make it obvious to which server you are attached?

A. PS1='\h: \w>'
B. PS1='\s: \W>'
C. PS1='\!: \t>'
D. PS1='\a: \n>'

Answer: A

Explanation: The PS1 environment variable controls the prompt on the command line, and can be used by users to tell what system they are on, the directory they are currently in, the current date and more depending on how this variable is configured. The \h option is used to specify the hostname and the \w option will give the full path of the current working directory.
Reference: http://ctdp.tripod.com/os/linux/tips/tipsps1.html
Incorrect Answers:
B: The \s option is used to display the shell name. This won't give any indication of which machine you are connected to.
C: The \ option is used to display the history number of the current command. This won't give any indication of which machine you are connected to.
D: The \a option is used to display a new line. This won't give any indication of which machine you are connected to.

QUESTION 11:

You have to type your name and title frequently throughout the day and
would like to decrease the number of key strokes you use to type this.
Which one of your configuration files would you edit to bind this
information to one of the function keys?

Answer: .inputrc

Explanation: The inputrc file is used to map keystrokes to text or commands. You can use this file to
make a function key display your name and title. Other common uses include mapping a function key to
lock your computer or run a command.
Note: Additional answer: ~/.inputrc (if asked after the full path)
Reference: http://beyond.linuxfromscratch.org/view/cvs/postlfs/inputrc.html

QUESTION 12:

When typing at the command line, the default editor is the _____ library.

Answer: readline

Explanation: The default command line editor is the Readline library. As with most text editor
programs, it allows certain keystrokes to aid in the writing/editing of a command. For example, there are
keystroke combinations that allow you to jump to the beginning or end of the line, or to jump to the start
or end of a previous word.
Reference: http://www.cs.utah.edu/dept/old/texinfo/bash/rlman.html

QUESTION 13:

What can you type at a command line to determine which shell you are using?

Answer: echo $SHELL

Explanation: The 'echo' command is used to echo a string to standard output. $shell is an environment
variable that reflects the current shell in use. Therefore, the 'echo $shell' command will display the name
and path of the shell you are using.
Reference: http://www.santafe.edu/projects/echo/how-to/node30.html

QUESTION 14:

You have recently decided to convert from using a monolithic kernel to using a modular kernel. You have made
the appropriate changes in your kernel configuration. Next you wish to compile your new kernel and modules
and copy the modules to their proper location. What would you type to do this?

A. make modules modules_install
B. make bzImage modules modules_install

C. make mrproper modules modules_install
D. make dep clean modules modules_install
E. make dep clean bzImage modules modules_install

Answer: E

Explanation: This command consists of multiple make commands on the same line:
The first part of the command, make dep, actually takes your configuration and builds the corresponding dependency tree. This process determines what gets compiled and what doesn't.
The next step, make clean, erase all previous traces of a compilation so as to avoid any mistakes in which version of a feature gets tied into the kernel.
The next step, make bzImage does the full compilation of the kernel.
The next two steps, make modules and make modules_install will compile the modules and copy them to their appropriate location.
Reference: http://www.openna.com/community/articles/security/v1.3-xml/chap7sec84.html
Incorrect Answers
A: This command will compile the modules, but not the kernel.
B: You need the make dep command to build the dependency tree.
C: Make mrproper is similar to make clean except that it doesn't delete any binaries. However, there is no kernel image specified in this command.
D: There is no kernel image specified in this command.

QUESTION 15:

To allow a user to mount a CD and read from it, which entry should be put into /etc/fstab?

A. /dev/cdrom /mnt/cdrom iso9660 noauto,user,ro 0 0
B. /dev/cdrom /mnt/cdrom iso9660 noauto,uid=user,gid=group,ro 0 0
C. /dev/cdrom /mnt/cdrom iso9660 noauto,User,ro 0 0
D. /dev/cdrom /mnt/cdrom iso9660 noauto,usermap,ro 0 0
E. /dev/cdrom /mnt/cdrom iso9660 noauto,owners,ro 0 0

Answer: A

Explanation: This entry in the fstab file allows any user to mount the CD-ROM (/dev/cdrom) in the /mnt/cdrom directory. Iso9660 is the file system for the CD-ROM. Noauto means that the CD-ROM won't be automatically mounted when the system boots. The first '0' means that the CD-ROM shouldn't be backed up and the second '0' means that the CD-ROM file system shouldn't be checked for errors when the machine boots.
Reference: Roderick W. Smith. Sybex Linux + Study Guide: Page 400/1.
Incorrect Answers:
B: The syntax of this entry is incorrect.
C: The 'user' field should be lowercase.
D: Usermap is an invalid entry for the user field.
E: Owners is an invalid entry for the user field.

QUESTION 16:

What is the usable disk space of a RAID 5 array of five 18 GB drives with one drive dedicated as a spare?

A. 18GB
B. 34GB
C. 54GB
D. 72GB
E. 90GB

Answer: C

Explanation: The question states that you have 5 18GB drives, but one is dedicated as a spare. Therefore, you have the use of 4 drives which equals 72GB. When using RAID 5, parity data is written across the disks, using the equivalent of one disk's space (18GB). Therefore, the total useable space is 72 - 18 = 54GB.
Reference: http://www.pc.ibm.com/us/infobrf/raidfin.html
Incorrect Answers
A: The total usable space is 54GB, not 18GB.
B: The total usable space is 54GB, not 34GB.
D: The equivalent of one drive is used for parity. Therefore, the total useable space is 72 - 18 = 54GB, not 72GB.
E: One drive is spare and the equivalent of one drive is used for parity. Therefore, the total useable space is 72 - 18 = 54GB, not 90GB.

QUESTION 17:

You have to mount the /data filesystem from an NFS server (srv 1) that does not support locking. Which of the following mount commands should you use?

A. mount -a -t nfs
B. mount -o locking=off srv1:/data /mnt/data
C. mount -o nolocking srv1:/data /mnt/data
D. mount -o nolock srv1:/data /mnt/data
E. mount -o nolock/data@srv1 /mnt/data

Answer: D

Explanation: If you are mounting a volume that does not support locking, you need to use the nolock option with the mount command. The nolock option tells the system to not use the NFS locking protocol.
Reference: http://docsrv.caldera.com:8457/cgi-bin/info2html?(am-utils.info.gz)opts%2520Option
Incorrect Answers
A: This answer has the wrong command options.
B: 'Locking=off' is the wrong option. It should be 'nolock'.
C: 'Nolocking' is the wrong option. It should be 'nolock'.
E: /data@srv1 is the wrong syntax. It should be <servername>:/<foldername>.

QUESTION 18:

To list the filesystem available from the NFS server 'castor', the command" _____ -e castor" can be used.

Answer: showmount

Explanation: The showmount is used to display information about NFS filesystems. The -e option is used to specify an exported filesystem.
Reference: http://www.oreillynet.com/linux/cmd/s/showmount.html

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QUESTION 19:

You want to check what shares are offered by a Windows system. Which of the following commands could you use to perform this task?

A. mmblookup
B. showshares
C. smbclient
D. smbstatus
E. listshares

Answer: C

Explanation: The smbclient command with the -L can be used to display the shares on a Windows system. The syntax is smbclient -L //<servername>.
Reference: http://www.winnetmag.com/Articles/Index.cfm?ArticleID=8897
Incorrect Answers
A: Mmblookup is the incorrect command to display shares on a Windows system.
B: Showshares is the incorrect command to display shares on a Windows system.
D: Smbstatus is the incorrect command to display shares on a Windows system.
E: Listshares is the incorrect command to display shares on a Windows system.

QUESTION 20:

What file in the /proc file system will show you the parameters passed to your kernel at boot time?

A. /proc/apm
B. /proc/stat
C. /proc/kmsg
D. /proc/sys/kernel/sysrq
E. /proc/cmdline

Answer: E

Explanation: The /proc/cmdline file contains parameters passed to the kernel at system boot time.
Reference: http://www.dobit.com/emblin/embhowto.htm
Incorrect Answers
A: The kernel parameters are in the /proc/cmdline file, not the /proc/apm file.
B: The kernel parameters are in the /proc/cmdline file, not the /proc/stat file.
C: The kernel parameters are in the /proc/cmdline file, not the /proc/kmesg file.
D: The kernel parameters are in the /proc/cmdline file, not the /proc/sys/kernel/sysrq file.

QUESTION 21:

When an ext2 partition is formatted, a fixed percentage of the blocks on the disk are reserved for use by the root user. After the filesystem has been created this percentage can be modified using which utility?

A. tune2fs
B. mke2fs
C. e2fsck
D. mount
E. hdparm

Answer: A

Explanation: The tune2fs utility can be used to modify the reserved blocks. For example, the tune2fs - u <username> command can be used to allow a user to use the reserved blocks.
Reference: http://www.oreillynet.com/linux/cmd/t/tune2fs.html
Incorrect Answers:
B: You need the tune2fs utility, not mke2fs.
C: E2fsck is used to check a disk for bad blocks. It is not used for reserved blocks.
D: The mount command is used to mount a filesystem. It is not used for reserved blocks.
E: Hdparm is used for tuning a hard disk for performance. It is not used for reserved blocks.

QUESTION 22:

You are asked to provide access through your FTP server to a network share available from an NT server running on your local network- For this purpose, you will need _____ support in the kernel and to mount the NT share using the smbmount command line utility:

Answer: smbfs

Explanation: Windows NT uses SMB (Server Message Blocks) for network communications. In order to be able to use the smbmount command to mount a Windows NT share, your kernel must have smbfs (server message block file system) support.
Reference: http://uranus.it.swin.edu.au/~jn/linux/smbfs/

QUESTION 23:

On an ext2 filesystem, a running daemon has created a large logfile that is beginning to fill the disk. After

deleting the file with an "rm-f" command as root, "df" shows that the space is still in use even though the file is not shown using "ls". To reclaim this space you must:

A. Restart the daemon.
B. Unmount and remount the filesystem.
C. Use sync.
D. Recreate the file.
E. Run fsck.

Answer: A

Explanation: If you have a daemon which writes a log file and keeps that file open for writing then removing the file will not free up the disk space. The filesystem still sees the program as having a reference to it. Therefore the filesystem will not free up that disk space. The only way to free the space is to restart the daemon
Reference: http://mail.gnu.org/pipermail/bug-fileutils/2001-February/001495.html
Incorrect Answers:
B: Unmounting and remounting the filesystem is unnecessary and may not free the space.
C: Sync is used to write the buffers to disk. It will not free the space.
D: Recreating the file will not free the space because the daemon has a reference to the old file.
E: Fsck is a file system checking tool. It won't free the space because it won't recognize it as corrupted.

QUESTION 24:

While checking the logfiles on your log server, you notice that all client machines are showing up by IP address rather than by hostname, although DNS is configured and running. How would you ensure that host entries show by name rather than by IP?

A. Restart named and then syslogd on the log server.
B. Add the central logging server to all inbound logging hosts' /etc/hosts.
C. Recompile syslogd to add remote logging support.
D. Restart syslogd on the inbound logging clients to force DNS resolution.
E. Add all inbound logging hosts to /etc/hosts on the log server, then restart syslogd.

Answer: E

Explanation: I don't know why the DNS resolution isn't working for the syslog daemon. It could be that there are lots of log entries and that the DNS requests are timing out. Therefore, adding the inbound logging hosts to /etc/hosts on the log server will enable local hostname resolution, thus negating the need to use DNS.
Incorrect Answers
A: The question states that DNS is configured and running and therefore does not need to be restarted.
B: This won't work. The clients are able to contact the logging server. Adding the central logging server to all inbound logging hosts' /etc/hosts files won't affect how the logging server records the log entries.
C: Remote logging support is already enabled because the IP addresses are being logged.
D: DNS resolution needs to be forced on the server, not the clients.

QUESTION 25:

You are trying to boot a system and change the root password, which you do not know. What do you type at he LILO prompt?

A. linux /etc/passwd
B. linux norootpass
C. linux disable passwords
D. linux init=/bin/bash
E. linux passwd=0

Answer: D

Explanation: If you forget the root password, you can boot init into the shell and change the password using the following commands:
boot: Linux init=/bin/sh
bash# mount -o remount / -rw
bash# passwd root
Reference: Michael J. Tobler. New Riders, Inside Linux: Page 466.
Incorrect Answers
A: linux /etc/passwd is not a valid boot prompt command.
B: linux norootpass is not a valid boot prompt command.
C: linux disable passwords is not a valid boot prompt command.
E: linux passwd=0 is not a valid boot prompt command.

QUESTION 26:

You need to use grep to search for specific log entries. Given the following three log entries, which grep command will match only one line? Assume that every pattern matches at least one line.
Jun 16 01:46:18 hostname pumpd[10]: PUMP: got an offer
Jun 17 21:52:28 hostname kernel: SCSI subsystem driver Revision: 1.00
Jul 20 11:09:01 hostname /USR/SBIN/CRON[1800]: (mail) CMD runq

A. grep "hostname\ [^\]*\[A-Z]*:"
B. grep "Ju[I-Z]\[0-9].*:.1"
C. grep "hostname,*[pumpd]*[10]"
D. grep "[0-9]:[1-8]*\ host.*\(.*\)"
E. grep "US*[^]]*]*:"

Answer: D.

QUESTION 27:

How can you determine who has scheduled at jobs?

A. at -l
B. at -q
C. at -d
D. atwho

Answer: A

Explanation: The at -l command is the same as the atq command. It will list the user's pending jobs, unless the user is a privileged user; in which case, everybody's jobs are listed
Reference: http://www.oreillynet.com/linux/cmd/a/at.html
Incorrect Answers
B: The -q option is used to place the job in a specified queue. It does not display who has scheduled jobs.
C: The -d option is used to delete a specified job. It does not display who has scheduled jobs.
D: This is an invalid command.

QUESTION 28:

You want to create a compressed backup of the users home directories. What utility should you use?

Answer: tar

Explanation: The tar utility is used to archive multiple files into one 'tarball'. The -z option invokes another utility called gzip and instructs it to compress the files before tar archives them.
Reference: http://www.oreillynet.com/linux/cmd/t/tar.html

QUESTION 29:

You are covering for another system administrator and one of the users asks you to restore a file for him. You locate the correct tarfile by checking the backup log but you do not know how the directory structure was stored. What command can you use to determine this?

A. tar fx tarfile dirname
B. tar tvf tarfile filename
C. tar ctf tarfile
D. tar tvf tarfile

Answer: D

Explanation: You can list the contents of a 'tarball' with the tar tvf tarfile command. The t option is used to list the files and directories. The v option runs the command in verbose mode. The f option allows you to specify the name of the tarball (a tarball is a common name for an archive created with the tar utility) with the f <filename> option.
Reference: http://www.oreillynet.com/linux/cmd/t/tar.html
Incorrect Answers
A: The syntax of this command is wrong. The x must come before the f. This also does not list the contents of the file.

B: This command would list the path to 'filename'. Although this would be required information to restore a file, the question states that you want to view the directory structure.
C: The c option is used to create a tarball which isn't required in this question.

QUESTION 30:

The easiest, most basic form of backing up a file is to _____ it to another location.

Answer: copy

Explanation: The easiest way to backup a file is to copy it to another location. Having a backup copy of a file is always recommended.

QUESTION 31:

When planning your backup strategy you need to consider how often you will perform a backup, how much time the backup takes and what media you will use.
What other factor must you consider when planning your backup strategy?

Answer: what to backup

Explanation: The first thing to consider when planning a backup strategy is what you are going to back up. Then you can think about the amount of data this will be. This will affect your other decisions such as what media to use etc.

QUESTION 32:

What key combination can you press to suspend a running job and place it in the background?

Answer: ctrl-z

Explanation: You can suspend a currently running job by using the Ctrl + z keystroke. This will stop the job, but it won't end it. The job will be available to be resumed. Note: you can only stop jobs that were started in your current shell.
Reference: http://unix.about.com/library/weekly/aa072301b.htm

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QUESTION 33:

Using command substitution, how would you display the value of the present working directory?

A. echo $(pwd)
B. echo pwd
C. $pwd
D. pwd | echo

Answer: A

Explanation: The echo command can be used to display the contents of variables. The present working directory is held in the pwd variable. Echo $(pwd) will display the contents of the pwd variable. Other commands that would work are echo $ PWD and echo "$PWD".
Reference: http://www.bolthole.com/solaris/ksh-beforeyoustart.html
Incorrect Answers:
B: Echo pwd would display the text 'pwd'.
C: $pwd doesn't do anything although $PWD would work.
D: pwd | echo doesn't do anything.

QUESTION 34:

Every time you attempt to delete a file using the rm utility, the operating system prompts you for confirmation. You know that this is not the customary behavior for the rm command. What is wrong?

A. rm has been aliased as rm -i
B. The version of rm installed on your system is incorrect.
C. This is the normal behavior of the newest version of rm.
D. There is an incorrect link on your system.

Answer: A

Explanation: The -i option with the rm command runs the command in 'interactive' mode. This will cause rm to prompt you for the deletion of a file.
Reference: http://www.oreillynet.com/linux/cmd/r/rm.html
Incorrect Answers
B: The fact that rm is prompting for a confirmation indicates that the version of rm is compatible with your system.
C: This is not the normal behaviour for rm although it will prompt you if you are attempting to delete a write protected file.
D: The rm command is running the rm program so there is not an incorrect link.

QUESTION 35:

In your present working directory, you have the files.
maryletter
memo1
MyTelephoneandAddressBook
What is the fewest number of keys you can type to open the file MyTelephoneandAddressBook with vi?

A. 6
B. 28
C. 25
D. 4

Answer: A

Explanation: Tab completion is where you can type the first few letters of a command or filename then press tab to automatically complete the command or filename. You need to type enough letters so that there is only one command or filename starting with those letters. In this question you could type v then i then space then m then y then tab. This equals six keystrokes. There is only one filename starting with 'my' so this file will be opened.
Reference: http://www.cmp.liv.ac.uk/misc/guide/linux_guide/node28.html
Incorrect Answers:
B: You need a minimum of 6 keystrokes, not 28.
C: You need a minimum of 6 keystrokes, not 25.
D: You need a minimum of 6 keystrokes, not 4.

QUESTION 36:

After typing in a new command and pressing enter, you receive an error message indicating incorrect syntax. This error message originated from?

A. The shell.
B. The operating system.
C. The command.
D. The kernel.

Answer: C

Explanation: When you run a 'command' you are actually instructing the shell to run a program. If the shell can find the program, it will run it. The shell knows how to start the program, but it doesn't know the syntax of the program/command. If you get an error saying 'incorrect syntax', the error will be coming from the program.
Incorrect Answers
A: The shell knows how to start the program, but it doesn't know the syntax of the program/command. A shell error message would be for example, '<command>: Command not found.'.
B: The operating system runs the shell. It doesn't know about specific commands.
D: The kernel is effectively the operating system. It doesn't know about specific commands.

QUESTION 37:

A single machine acts as a mail server, web server, and gateway to the Internet for the rest of your internal network. Why shouldn't you also use this machine as your central log host?

A. It may reduce web server performance.
B. The remote logging may have a negative impact on network performance.
C. If the web server crashed, log messages from other hosts would be lost.
D. Under high load, syslogd on the web server may start rejecting messages, and clients would try to log the error, creating a recursive loop between the clients and the log host.
E. If the security of your server is compromised, an attacker would have access to log information from all your hosts.

Answer: E

Explanation: You are running three services that connect directly to the Internet (mail server, web server and gateway). This in itself poses a security risk. The logs will contain a lot of information that an attacker would be able to access if the attacker gained access to your system.
Incorrect Answers
A: The logging may have a minimal effect on the web server. This is not as much a problem as the security risk in answer E.
B: It is unlikely that the remote logging will have any negative impact on the network performance.
C: If the web server crashed you may not be able to access the logs. However, this is not as much a problem as the security risk in answer E.
D: This just wouldn't happen.

QUESTION 38:

Which of the following parameters in your smb.conf file specifies the relationship between Windows/SMB usernames and Linux/UNIX usernames?

A. smb usernames = /etc/smbusers
B. username map = /etc/smbusers
C. map usernames = lowercase nospace
D. smb usernames = map to same unix name
E. usernames map = /etc/windows-usernames.map

Answer: B

Explanation: To map Windows usernames to Linux/UNIX usernames, you would specify the username map = /etc/smbusers parameter in the smb.conf file. You would then add mappings for each user account in the smb.conf file. For example, windows_username = linux_username.
Reference: http://www.mandrakeuser.org/docs/connect/csamba2.html
Incorrect Answers
A: smb usernames = /etc/smbusers is the wrong syntax for this parameter.
C: map usernames = lowercase nospace is the wrong syntax for this parameter.
D: smb usernames = map to same unix name is the wrong syntax for this parameter.
E: usernames map = /etc/windows-usernames.map is the wrong syntax for this parameter.

QUESTION 39:

Assuming modules for all supported filesystems have been loaded, which file contains a list of filesystems that can be currently mounted on the system?

A. /proc/filesystems
B. /dev/filesystems
C. /etc/filesystems
D. /var/fs/filesystems

E. /etc/config/filesystems

Answer: A

Explanation: In the file /proc/filesystems you can find which filesystems your kernel currently supports.
(If you need a currently unsupported one, you'll need to insert the corresponding module or recompile
the kernel.)
Reference: http://www.fifi.org/cgi-bin/man2html/usr/share/man/man5/fs.5.gz
Incorrect Answers
B: The list of currently supported filesystems is in the filesystems file in the /proc directory, not the /dev
directory.
C: The list of currently supported filesystems is in the filesystems file in the /proc directory, not the /etc
directory.
D: The list of currently supported filesystems is in the filesystems file in the /proc directory, not the /var/fs
directory.
E: The list of currently supported filesystems is in the filesystems file in the /proc directory, not the /etc/config
directory.

QUESTION 40:

An ext2 filesystem is used by an application that frequently reads a large number of small files. Performance
can be improved by mounting the filesystem with the _____ option.

A. atime
B. noatime
C. noexec
D. nosuid
E. sync

Answer: B

Explanation: Linux records information about when files were created and last modified as well as when
it was last accessed. There is a cost associated with recording the last access time. The ext2 file system of
Linux has an attribute that allows the super-user to mark individual files such that their last access time
is not recorded. This may lead to significant performance improvements on often accessed frequently
changing files.
Reference: http://www.tldp.org/LDP/solrhe/Securing-Optimizing-Linux-RH-Edition-v1.3/chap6sec73.html
Incorrect Answers
A: The atime option will record the last access time for each file which may degrade system performance.
C: Noexec is a mount flag to not allow any executables to be run from the filesystem. This won't work since the
files are likely to be text files.
D: Nosuid is a mount flag to disallow any setuid binaries on the filesystem. This will not improve system
performance.
E: The sync command is used to write the buffers to disk. This will not improve system performance.

QUESTION 41:

You decide to use the logical volume manager (LVM) to manage four 4GB disk drives. After creating the volume group, how would you create a 10GB logical volume called big-app?

A. vgcreate -p 10g -n /deb/vg01/big-app
B. vgcreate -l 2560 /dev/vg01/big-app
C. mklvm -v 10240 -n /dev/vg01/big-app
D. lvcreate -v 10240 /dev/vg01/big-app
E. lvcreate -l 2560 vg01 -n big-app

Answer: E

Explanation: When you create a volume group, it will have a physical extent size of 4MB by default, unless otherwise specified. When you add disks to the volume group, the disk space is divided into chunks equal to the physical extent size (4MB by default). When you create a logical volume with the lvcreate command, the -l option is used to specify the size of the logical drive in 'logical extents'. The logical extents are the same size as the physical extents. Therefore, to create a 10GB logical drive, you would specify 2560 logical extents (2560 x 4MB = 10GB). Vg01 is the name of the volume group in which to create the logical volume. The -n option allows you to enter a name for the logical volume. In this case 'big-app'.
Reference: http://devresource.hp.com/STKLI/man/11iv1.5/lvcreate_1m.html
Incorrect Answers
A: The vgcreate command is used to create the volume group.
B: The vgcreate command is used to create the volume group.
C: Mklvm is an invalid command.
D: -v is an incorrect option to create a logical volume.

QUESTION 42:

You maintain daily backups of a large file, as well as calculating an MD5 checksum with md5sum. When verifying the contents of one such backup, you notice that the new checksum is different from the previous one by only one byte. What does this tell you about the contents of the file?

A. A single character in the original file has been modified.
B. 1/32nd of the original file has been modified.
C. 1/128th of the original file has been modified.
D. It tells you that the original file has been modified.
E. The contents of the file are in reverse order from the original.

Answer: D

Explanation: The MD5 (Message Digest number 5) value for a file is a 128-bit value similar to a checksum. This value is calculated according to the contents of a file. If a file has changed, the MD5/checksum value will be different.
Reference: http://www.iay.pwp.blueyonder.co.uk/threel/tech/tools/md5.htm

Incorrect Answers
A: A different checksum means that the file has changed. However, it offers no indication of how much of the file has changed.
B: A different checksum means that the file has changed. However, it offers no indication of how much of the file has changed.
C: A different checksum means that the file has changed. However, it offers no indication of how much of the file has changed.
E: A different checksum means that the file has changed. However, it offers no indication of how much of the file has changed.

QUESTION 43:

You are creating a script with demands that the previous command execute correctly. How would you correctly test the exit status of the previous command in BASH?

A. if ["$#" -eq "0"]; then...
B. if ["$?" -eq "0"]; then...
C. if ['$#' == 0]; then...
D. if ['$?' == '0']; then...
E. if [$@ -eq 0]; then...

Answer: B

Explanation: The variable "$?" checks the exit status of the last command run. The -eq "0" statement is used to check whether a condition is true. The statement if ["$?" -eq "0"]; then... will check that the last command executed correctly and run the next part of the script.
Reference: http://www.bolthole.com/solaris/ksh-basics.html
Incorrect Answers
A: The variable is "$?" not "$#".
C: The variable is "$?" not "$#".
D: The variable is "$?" not '$?' (double quotes, not single quotes).
E: The variable is "$?" not $@.

QUESTION 44:

You are having problems with programs crashing on an SMP system, and would like to run your system in non-SMP mode for troubleshooting purposes. What is the correct parameter to pass to the kernel at boot time to force it to use a single CPU?

A. block-cpu-1
B. cpucount=1
C. disable-cpu
D. nosmp
E. enable_smp=no

Answer: D.

Explanation: The nosmp option can be used at boot time to disable SMP (symmetric multiprocessing), thus causing the system to run in uniprocessor (single processor) mode.
Incorrect Answers
A: This in an incorrect option.
B: Cpucount=1 will run one processor, but the single processor will run in SMP mode. Cpucount=0 will run no processors in SMP mode effectively disabling SMP.
C: Disable-cpu in an incorrect option.
E: enable_smp=no is an incorrect option.

QUESTION 45:

You want to export a local file system /data, and permit read-write access for all users on host
A. In addition, the
root account on hostA should be allowed root level access. All other hosts are to have read-only access. Which of the following /etc/exports lines would you use?

A. /data hostA(rw,no_root_squash) (ro)
B. /data hostA(allow_root) -ro
C. /data -ro,rw=hostA(root)
D. /data hostA=rw,root *=ro
E. /data hostA(rw,all_squash,anonid=0) @all(ro)

Answer: A

Explanation: The format of the /etc/exports lines is 'directoryname hostname(options)'. In this case you are exporting the /data directory. HostA has the (rw,no_root_squash) permissions applied and everyone else gets the (ro) permission. The rw permission allows HostA read/write permissions. The no_root_squash option gives the root account on HostA root access to the /data directory. Everyone else gets the ro permission which means read only.
Reference: http://www.comptechdoc.org/os/linux/usersguide/linux_ugnfs.html
Incorrect Answers
B: The option to allow root access is no_root_squash, not allow_root.
C: The syntax in this answer is incorrect.
D: The syntax in this answer is incorrect.
E: The syntax in this answer is incorrect.

QUESTION 46:

The _____ command can be used to change the default root device hardcoded into a kernel image.

Answer: rdev

Explanation: The rdev command is used to change the default root device hardcoded into a kernel image.
Reference: http://www.linuxcentral.com/linux/man-pages/rdev.8.html

QUESTION 47:

Several of your users have been scheduling large at jobs to run during peak load times. How can you prevent anyone from scheduling an at job?

A. Delete the file /etc/at.deny
B. Create an empty file called /etc/at.deny
C. Create two empty files: /etc/at.deny and /etc/at.allow
D. Create an empty file called /etc/at.allow

Answer: D.

Explanation: The /etc/at.allow and the /etc/at.deny files are used to control who is allowed to run the 'at' command. If the file /etc/at.allow exists, only usernames mentioned in it are allowed to use the 'at' command, and the /etc/at.deny file is ignored.
Reference: http://ccrma-www.stanford.edu/planetccrma/man/man5/at.deny.5.html
Incorrect Answers
A: The /etc/at.allow file is read before the /etc/at.deny file. If an /etc/at.allow file exists, any names in that file will
be able to use the 'at' command'. Deleting the /etc/at.deny file may work, but only if no /etc/at.allow file exists.
B: An empty file called /etc/at.deny is the default on a Linux system and allows anyone to use the 'at' command.
C: Creating two empty files: /etc/at.deny and /etc/at.allow would also work because an empty /etc/at.allow file would prevent the use of the 'at' command. However, it is unnecessary to create both files.

QUESTION 48:

You want to create a compressed backup of the users home directories so you can issue the command
gzip /home/* backup.gz but it fails. The reason it failed is that gzip will only compress one ____ at a time.

Answer: file

Explanation: The command: gzip <filename> backup.gz will compress <filename> and rename it to backup.gz. This only works with a single file. To compress multiple files into one file (archive), you should use the tar utility with the z option. Tar can archive multiple files into a single file (archive). The z option causes tar to use gzip to compress the files first.
Reference: http://www.oreillynet.com/linux/cmd/g/gzip.html

QUESTION 49:

You need to view the contents of the tarfile called MyBackup.tar. What command would you use?

Answer: tar tf MyBackup.tar

Explanation: You can list the contents of a 'tarball' with the 'tar tf tarfile' command. The t option is used
to list the files and directories. The f option allows you to specify the name of the tarball (a tarball is a

common name for an archive created with the tar utility) with the f <filename> option.
Reference: http://www.oreillynet.com/linux/cmd/t/tar.html

QUESTION 50:

When you back up only the files that have changed since the last backup, this is called a _____ backup.

A. Partial
B. Differential
C. Full
D. Copy

Answer: B

Explanation: When you run a full backup, the files are marked as having been backed up (the archive attribute is cleared). When a file is created or changed, it is marked as 'not backed up' (the archive attribute is set). A differential backup backs up any files created or changed since the last full backup (the files marked as 'not backed up'). It does not mark files as having been backed up (in other words, the archive attribute is not cleared).
Reference: http://www.raid-unix-mac-disk-datarecovery-service.com/diferential_backup.htm
Incorrect Answers
A: A partial backup is not an actual backup type. It is just a description of backing up a few selected files.
C: A full backup backs up all files and marks them as having been backed up by clearing the archive attribute.
D: A copy backup backs up all files but does not mark them as having been backed up.

QUESTION 51:

You have been given the job of administering a new server. It houses a database used by the sales people. This information is changed frequently and is not duplicated anywhere else. What should you do to ensure that this information is not lost?

A. Create a backup strategy that includes backing up this information at least daily.
B. Prepare a proposal to purchase a backup server.
C. Recommend that the server be made part of a cluster.
D. Install an additional hard drive in the server.

Answer: A

Explanation: To ensure that data isn't lost, it should be backed up. The question states that the information is changed frequently, so it should be backed up frequently.
Incorrect Answers
B: A backup server usually runs backup software. This may not be necessary and is no use without a backup strategy.
C: Clustering the server would require additional servers and would be very expensive. Furthermore, depending on the type of cluster, you may only have one set of hard disks containing the information.

D: Installing an additional hard drive would only work if the data was regularly backed up to the additional hard drive. However, if the server failed, the data would still be unavailable.

QUESTION 52:

What utility can you use to show a dynamic listing of running processes?

Answer: top

Explanation: The 'top' command is used to provide information (frequently refreshed) about the most CPU-intensive process currently running. The 'ps' command lists all running processes; however, this information isn't dynamically refreshed.
Reference: http://www.oreillynet.com/linux/cmd/t/top.html

QUESTION 53:

You previously ran the find command to locate a particular file. You want to run that command again. What would be the quickest way to do this?

A. fc -l find <enter>
n
B. history -l find <enter>
history n
C. Retype the command
D. fc -n find

Answer: A

Explanation: The -l option used with the fc command is used to list the commands saved in the 'history'.
The 'fc -l find' command will display all recent commands starting with the word 'find'. After pressing enter, the list is displayed and you can recall the command by entering the number (n) of the command.
Reference: http://www.computerhope.com/unix/uhistory.htm
Incorrect Answers
B: The syntax of the 'history' command is wrong.
C: Whether it would be quicker to retype the command or not depends on the name of file you were looking for previously. It is unlikely that this is a trick question, so the answer would be to use the fc command.
D: The 'fc -n find' command would display the recent 'find' commands, but without the command numbers. It would not run the required command.

QUESTION 54:

Which of the following environment variables determines your working directory at the completion of a successful login?

A. HOME
B. BASH_ENV

C. PWD
D. BLENDERDIR

Answer: A

Explanation: The HOME environment variable determines your working directory when you log on.
This is typically /home/<username> for a normal user account or the root directory (/) for the root user.
The HOME environment variable also determines the directory you will be taken to if you enter the 'cd'
command with no arguments.
Reference: http://www.isu.edu/departments/comcom/unix/workshop/environment.html
Incorrect Answers
B: The BASH_ENV variable is used for non-interactive shells. It does not determine your working directory
when you log on.
C: The PWD variable contains the current working directory. It does not determine your working directory
when you log on. The 'pwd' command is used to display the full path to your current directory.
D: The BLENDERDIR variable is used with a piece of software named 'Blender'. It does not determine your
working directory when you log on.

QUESTION 55:

After experimenting with vi as your command line editor, you decide that you want to have vi your default
editor every time you log in. What would be the appropriate way to do this?

A. Change the /etc/inputrc file
B. Change the /etc/profile file
C. Change the ~/.inputrc file
D. Change the ~/.profile file

Answer: C

Explanation: The .inputrc file is used to control your shell. You can set keystrokes to perform specified
functions with this file. Another setting that can be changed is the command line editor. If you want this
setting to only affect you, you edit the file in your home directory (~/ signifies your home directory).
Reference: http://ctdp.tripod.com/os/linux/howlinuxworks/linux_hlkeyprogs.html
Incorrect Answers
A: The settings in the /etc/inputrc file would affect all users. If you want this setting to only affect you, you edit
the file in your home directory.
B: The default editor is not set in this file.
D: The default editor is not set in this file.

QUESTION 56:

You want to enter a series of commands from the command line. What would be the quickest way to do this?

A. Press enter after entering each command and its arguments.
B. Put them in a script and execute the script.

C. Separate each command with a semi-colon (;) and press enter after the last command.
D. Separate each command with a / and press enter after the last command.

Answer: C

Explanation: You can enter multiple command on one line by separating them with a semi-colon (;).
Pressing enter after the last command will run the commands.
Reference: http://unix.about.com/library/tips/bltip016.htm
Incorrect Answers
A: Pressing enter after a command will run the command before you can enter another command.
B: A script listing the commands would work but this isn't the quickest way of doing it.
D: You need to use semi-colons (;) to separate the commands, not forward slashed (/).

QUESTION 57:

You have compiled and installed a new kernel on your SCSI based machine. After installing the new kernel, the
boot process stops at a point with the error "VFS PANIC: Unable to mount root FS." You can boot again off the
old kernel without any problems. Given that /etc/modules.conf is correct and that the SCSI controller is selected
as a module in the kernel, what most likely is the cause?

A. The module failed to build.
B. The new kernel can't initialize the SCSI controller.
C. There is no initrd image for the new kernel.
D. SCSI disk support isn't enabled in the kernel.
E. SCSI generic support isn't enabled in the kernel.

Answer: C

Explanation: The question states that that the machine is SCSI based and you can boot to the old kernel.
This indicates that the system is successfully booting from the SCSI drive (when using the old kernel). The
SCSI controller module needs to be loaded at boot time before the system is able to mount the root file system.
To load the SCSI controller module at boot time, you need an initrd image for the new kernel.
Reference:
http://www.linuxhelp.co.za/RedHat61/rhref/s1-sysadmin-build-kernel.htm#S2-SYSADMIN-INITRD
Incorrect Answers
A: It is unlikely that the module failed to build.
B: The new kernel can't initialize the SCSI controller. However, the reason for this is most likely to be that
there is no initrd image for the new kernel.
D: SCSI support can be loaded as a module if an initrd image exists. It does not have to be enabled (compiled)
in the kernel.
E: SCSI support can be loaded as a module if an initrd image exists. It does not have to be enabled (compiled)
in the kernel.

QUESTION 58:

The 'user' option in /etc/fstab allows a normal user to mount/unmount filesystems. When used on

removable devices, this can allow unaudited applications to be made available on your system. For security reasons, you may wish to disable:
1. The suid bit.
2. Device nodes.
3. Running of executables.
4. Writing to the mounted filesystem.
Which of the following is a valid /etc/fstab entry which implements AT LEAST one of these features?

A. /dev/fd0 /mnt ext2 ro,user,noauto,noexec,nodev 0 0
B. /dev/cdrom /mnt iso9660 rw,user,nobin,nosuid,nodev 00
C. /dev/cdrom /mnt iso9660 ro|user|!dev|!suid|!bin 0 0
D. /dev/fd0 /mnt vfat rw+user+noexec+nodev+nosuid 0 0
E. /dev/cdrom /mnt auto ro|user|!auto

Answer: A

Explanation: The 'ro' option means read only. This means that the drive can only be mounted in read only mode and therefore, cannot be written to. The noexec option prevents the running of executable files.
Reference: http://www.humbug.org.au/talks/fstab/fstab_options.html
Incorrect Answers
B: The rw option will allow the drive to be mounted in read/write mode. The question states that writing to the filesystem should be disabled.
C: The options must be separated by commas. Therefore the syntax in this answer is incorrect.
D: The options must be separated by commas. Therefore the syntax in this answer is incorrect.
E: The options must be separated by commas. Therefore the syntax in this answer is incorrect.

QUESTION 59:

You have been asked by your management to come up with a backup solution that covers not only data loss, but also situations where the entire system, or building, is destroyed. Your solution should also protect against data theft. Which of the following plans provides the most secure redundant backup and storage solution?

A. Once a week, all of your systems receive a full system backup to tape.
Those tapes are stored in a secured location in your facility.
B. Once a week, all of your systems receive an incremental system backup to tape.
Those tapes are stored in a secured location in remote facility.
C. Every night, all of your systems receive an incremental system backup to tape.
Those tapes are stored in a secured location in a remote facility.
D. Every night, all of your systems receive an incremental system backup to tape, and once a month, all systems receive a full backup to tape.
Those tapes are stored in a secured remote facility.
E. Once a week, all of your systems receive a full backup to tape.
Twice a month, all of your systems receive a full backup to CD.
The tapes are stored in a secured remote facility.
The CD's are stored locally.

Answer: D

Explanation: Your backup strategy should allow for backups to occur as often as possible. Daily backups are recommended but this isn't always possible because the amount of time a full backup would take. For this reason, daily incremental backups are recommended. An incremental backup will only backup the files that have been created or changed since the last backup, thus saving time and backup media space. You should however perform full backups on a regular basis (monthly is recommended). This will allow the easy restoration of a failed system.

The backup tapes should be stored in a secured remote facility, in case the building is destroyed.

Incorrect Answers

A: If you back up the files once a week, you could lose up to one week's data. For this reason, daily backups are recommended.

B: If you back up the files once a week, you could lose up to one week's data. For this reason, daily backups are recommended.

C: You should perform full backups on a regular basis (monthly is recommended). This will allow the easy restoration of a failed system.

E: If you back up the files once a week, you could lose up to one week's data. For this reason, daily backups are recommended.

QUESTION 60:

Which of the following daemons must be running on an NFS server?

A. portmap
B. nfsiod
C. nfsd
D. xinetd
E. mountd

Answer: A, C, E.

Explanation: If you want to provide NFS service to other hosts, you have to run the rpc.nfsd and rpc.mountd daemons on your machine. As RPC-based programs, they are not managed by inetd, but are started up at boot time and register themselves with the portmapper; therefore, you have to make sure to start them only after rpc.portmap is running.

Portmap provides port information to clients requesting RPC services on the server. Mountd determines which filesystem and devices are available to which machine and users. Nfsd is the daemon on the server that handles client filesystem requests.

Reference: http://www.linuxvalley.it/encyclopedia/ldp/guide/nag2/x-087-2-nfs.daemons.html

Incorrect Answers

B: Nfsiod runs on an NFS client machine to service asynchronous I/O requests to its server. It improves performance but is not required for correct operation.

D: Xinetd is a replacement for inetd, the internet services daemon, and offers improved functionality. However, it is not a requirement to run NFS.

QUESTION 61:

Which process had the Process ID number 1?

A. bash
B. kernel
C. init
D. it varies
E. none

Answer: C

Explanation: As with files, all processes that run on a GNU/Linux system are organized in the form of a tree. The root of this tree is init. Each process has a number (its PID, Process ID), together with the number of its parent process (PPID, Parent Process ID). The PID of init is 1, and so is its PPID: init is its own father.
Reference: http://www.mandrakeuser.org/docs/mdoc/ref/process.html
Incorrect Answers
A: Process ID number 1 represents init, not bash.
B: Process ID number 1 represents init, not the kernel.
D: Init always has a process ID of 1. It does not vary.
E: Init has a process ID of 1.

QUESTION 62:

For a change to the primary Samba configuration file smb.conf to take effect, it is necessary to:

A. Restart the smbd and nmbd processes.
B. Send a HUP signal to the smbd and nmbd processes.
C. Do nothing.
D. Reboot the system.
E. Restart the Samba subsystem.

Answer: A

Explanation: Whenever you make changes to the smb.conf file, it is necessary to restart the smbd and nmbd processes. Smbd regularly reads the smb.conf file and implements any changes. However, these changes don't affect any previously established connections. To apply the changes to any previously established connections, you must restart smbd and nmbd.
Reference: http://us2.samba.org/samba/ftp/cvs_current/packaging/SGI/relnotes.html
Incorrect Answers
B: If you have Samba configured to be started by inetd, you could send inetd a HUP signal to restart it, but you wouldn't send smbd and nmbd and HUP signal.
C: To apply the changes to any existing connections, it is necessary to restart smbd and nmbd.
D: Rebooting the system would work if you have configured samba to start automatically. However, restarting

the entire system is unnecessary.
E: You should restart nmbd as well as smbd.

QUESTION 63:

After installing a package using dpkg, you find that the package manager tools no longer function. You isolate the problem to a broken library and you have a copy of the fixed library in a Debian .deb file. How can you extract files from a .deb file without using the Debian package manager?

A. deb packages are compressed tar files with custom scripts.
Use GNU 'tar' to extract the file.
B. deb packages are redhat (rpm) packages with different fields.
Use 'rpm' to extract the file.
C. deb packages are simply gziped cpio files.
Use 'gunzip' to decompress the package and then use 'cpio' to extract the file.
D. deb packages use a proprietary format and the file cannot be extracted without specialized tools.
E. deb packages are ar archives with a special magic number.
Use 'ar' to extract the data member and then use GNU 'tar' to extract the file.

Answer: E

Explanation: Debian archive (.deb) files can be parsed and manipulated by the utility ar. The precise contents of Debian archive files changed since Debian 0.93. The new contents are understood by versions of the primary package tool, dpkg, later than 0.93.76, and is described in the "deb"(5) man page. The old format is described in "deb-old"(5).
Using the command ar-t foo_VVV-RRR.deb, you'll see that a Debian archive file contains these members:
1. debian-binary: Contains one or more lines; currently it contains only one line giving the version number (2.0) of the Debian package format.
2. control.tar.gz: A compressed (gzip'd) tar file which contains the Debian control files for this package. (Confusingly, one of these files, and the only one which is required, is itself named control.)
3. data.tar.gz: A compressed (gzip'd) tar file which contains the executables, libraries, documentation, etc., associated with this package. In other words, this component is the filesystem data part of a Debian package. You can extract files from the .tar.gz files using the 'tar' utility.
Reference: http://flits102-126.flits.rug.nl/~erik/debian/debian-faq-6.html
Incorrect Answers
A: You must first use the 'ar' utility to open the .deb file. Then you can use 'tar' to extract the required files.
B: .deb files are not rpm (redhat package manager) files, and therefore cannot be opened with the rpm utility.
C: .deb packages are not gziped cpio files, and therefore cannot be opened with gunzip and cpio.
D: deb packages can be opened with the 'ar' utility; therefore, specialist tools are not required.

QUESTION 64:

You are in charge of a domain. Your developers have asked that mirrors of certain sites be placed as actual directories off the default path. Specifically they have asked that the ftp.example-debian.org Debian tree should be mapped at /usr/local. Assume that ftp.example-debian.org does an NFS export of their site. What would be the correct entry in the /etc/auto.master file?

A. /usr/local/debian ro ftp.example-debian.org:/pub/debian
B. /usr/local/debian /etc/auto.debian with /etc/auto.debian containing
debian-ro,soft,intr:ftp.example-debian.org:/pub/debian
C. /usr/local/debian :etc/auto.debian with /etc/auto.debian containing
debian:rw,soft,intr:ftp.example-debian.::/pub/debian
D. /etc/auto.debian with /etc/auto.debian containing debian-ro,soft,intr:ftp.example-debian.org:/pub/debian
E. /etc/auto.debian with /etc/auto.debian containing debian:rw,soft,intr:ftp.example-debian.org::/pub/debian

Answer: B

Explanation: Autofs uses the automount daemon to manage your mount points by only mounting them dynamically when they are accessed. Autofs consults the master map configuration file /etc/auto.master to determine which mount points are defined. It then starts an automount process with the appropriate parameters for each mount point. Each line in the master map defines a mount point and a separate map file that defines the filesystems to be mounted under this mount point.
In this question, the /etc/auto.master file would contain the line "/usr/local/debian /etc/auto.debian". /usr/local/debian is the mount point on the local machine. /etc/auto.debian is the name of the map file that defines what should be mounted at the mount point.
The /etc/auto.debian file should contain "debian-ro,soft,intr:ftp.example-debian.org:/pub/debian". This contains the mount point (debian), followed by some mount options (ro,soft,intr) followed by the directory to be mounted in the form of hostname:directory (ftp.example-debian.org:/pub/debian).
Reference: http://www.redhat.com/docs/manuals/linux/RHL-7.3-Manual/custom-guide/s1-nfs-mount.html
Incorrect Answers
A: There is no map file defined in this line.
C: The syntax is wrong. usr/local/debian :etc/auto.debian should be /usr/local/debian /etc/auto.debian.
D: There is no mount point (usr/local/debian) defined in this answer.
E: There is no mount point (usr/local/debian) defined in this answer.

QUESTION 65:

A dumb terminal on the serial line /dev/ttyE0 is losing characters when receiving large blocks of data from the server. Suspecting a flow control problem, you wish to examine the complete list of settings for this line on the server. Please type the one command that completes this command line:
_____ -a </dev/ttyE0

Answer: stty

Explanation: The stty command works on the current terminal by default, but by using the input redirection ("<") feature of the shell, we can have stty manipulate any tty device. The -a option is used to display all configuration settings.
Reference: http://www.oreillynet.com/linux/cmd/s/stty.html
http://www.tldp.org/LDP/nag2/x-087-2-serial-configuration.html

QUESTION 66:

You have written a script called usrs to parse the passwd file and create a list of usernames. You want to have this run at 5 am tomorrow so you can see the results when you get to work. Which of the following commands will work?

A. at 5:00 wed usrs
B. at 5:00 wed -b usrs
C. at 5:00 wed -l usrs
D. at 5:00 wed -d usrs

Answer: A

Explanation: The 'at' command is used to execute commands at a specified time and optional date. It can contain an optional date, formed as a month and date, a day of the week, or a special keyword (today or tomorrow). An increment can also be specified.
Reference: http://www.oreillynet.com/linux/cmd/a/at.html
Incorrect Answers
B: No options are required to run the script at the specified time. Furthermore, the options should be specified before the time and date, not after them.
C: No options are required to run the script at the specified time. Furthermore, the options should be specified before the time and date, not after them.
D: No options are required to run the script at the specified time. Furthermore, the options should be specified before the time and date, not after them.

QUESTION 67:

You need to copy all the files and directories contained in the home directory to another location. What utility can you use for this?

A. cpio
B. cp
C. mv
D. mvdir

Answer: B.

Explanation: The 'cp' command is used to copy files or directories from one location to another. The -r option makes the command recursive which means it will copy and entire directory structure from one location to another.
Reference: http://squat.net/puscii/doc/pxii-cursus/copy-mv.html
Incorrect Answers
A: The cpio command can be used to copy all the files into a single archive file at another location. However, it would be easier to copy the contents of the /home directory with the cp command. The cpio command is often used to create tape backups of Linux systems.
C: The 'mv' command is used to move files, not copy them.
D: The 'mvdir' command is used to move directories, not copy them.

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QUESTION 68:

When you only back up one partition, this is called a _____ backup.

A. Differential
B. Full
C. Partial
D. Copy

Answer: C

Explanation: If you are backing up just one partition and not the entire system, you are backing up only 'part' of the system. This is therefore a partial backup.
Incorrect Answers
A: A differential backup backs up all files that have been changed or created since the last full or incremental backup. A differential backup does not describe what portion of a system was backed up.
B: A full backup backs up all the specified files. A full backup does not describe what portion of a system was backed up.
D: A copy backup backs up all the specified files. The difference between a full backup and a copy backup is that a full backup marks the files as having been backed up, whereas a copy backup doesn't. A copy backup does not describe what portion of a system was backed up.

QUESTION 69:

You issue the command jobs and receive the following output:
[1]- Stopped (tty output) pine
[2]+ Stopped (tty output) MyScript
How would you bring the MyScript process to the foreground?

A. fg %2
B. ctrl-c
C. fg MyScript
D. ctrl-z

Answer: A

Explanation: You can bring a background job to the foreground by executing the "fg" command. If there are several background jobs, then you must indicate which job you wish to move to the foreground by indicating its job number. The syntax would be fg %<job number>.
Reference: http://www.itworld.com/nl/lnx_tip/10052001/
Incorrect Answers
B: Ctrl-c is used to stop a running command/job. It does not bring a background job to the foreground.
C: If there are several background jobs, then you must indicate which job you wish to move to the foreground by indicating its job number.
D: Ctrl-z is used to suspend a running command/job without ending it. It does not bring a background job to the foreground.

QUESTION 70:

In order to display the last five commands you have entered using the fc command, you would type
_____.

Answer: fc -l -5

Explanation: The -l option used with the fc commands is used to list the previously entered commands.
You can specify how many commands to list with the -<number> option after the -l option, for example,
fc -l -5.
Reference:
http://sseti.udg.es/marga/books/O'Reilly-The_Linux_Web_Server-CD-
Bookshelfv1.0/linux_web/lnut/ch07_06.htm

QUESTION 71:

A variable that you can name and assign a value to is called a _____ variable.

Answer: user

Explanation: A user variable can be created and named and have a value assigned to it from the
command line or from a script.
Reference: http://ddart.net/shell/bourneshell/sh2a.html#2.1

QUESTION 72:

You are entering a long, complex command line and you reach the right side of your screen before you have
finished typing. You want to finish typing the necessary commands but have the display wrap around to the left.
Which of the following key combinations would achieve this?

A. Esc, /, Enter
B. \, Enter
C. ctrl-d, enter
D. esc, /, ctrl-d

Answer: B

Explanation: There is a way to enter a long command such that it will be broken at the end of the top line
and continued on the next. This can be accomplished by typing a backslash (\) character before pressing
enter at the breakpoint, as follows:
$ echo This is a long command so why not break it here \
> and start on the next line. <enter>
which gives as output:
This is a long command so why not break it here and start on the next line.
The > is the shell's way of letting the user know that the current line is a continuation of the previous line.

Reference: http://pneuma.phys.ualberta.ca/~gingrich/research/shells/node13.html
Incorrect Answers
A: This key combination will not wrap the text.
C: This key combination will not wrap the text.
D: This key combination will not wrap the text.

QUESTION 73:

You have elected to use the automounter and the autofs script. Your /etc/auto.master file contains the following:
/home /etc/auto.home
/project /etc/auto.project
/data yp:data.map
If you change the contents of /etc/auto.project to include a new source path what must be done to access the new path?

A. Shutdown and restart the local NFS client daemons.
B. Run fsck on the affected mount point.
C. Issue the /etc/init.d/autofs reload command.
D. Add the newly mapped path to /etc/fstab.
E. Nothing, simply access the newly mapped resource.

Answer: E

Explanation: Autofs uses the automount daemon to manage your mount points by only mounting them dynamically when they are accessed. Autofs consults the master map configuration file /etc/auto.master to determine which mount points are defined. It then starts an automount process with the appropriate parameters for each mount point. Each line in the master map defines a mount point and a separate map file that defines the filesystems to be mounted under this mount point. For example, the /etc/auto.misc file might define mount points in the /misc directory; this relationship would be defined in the /etc/auto.master file.
Each entry in auto.master has three fields. The first field is the mount point. The second field is the location of the map file, and the third field is optional. The third field can contain information such as a timeout value. If the source path changes, you can access the new path without changing anything because the mount points are mounted and unmounted dynamically when accessed or closed.
Reference: http://www.redhat.com/docs/manuals/linux/RHL-7.3-Manual/custom-guide/s1-nfs-mount.html
Incorrect Answers
A: As the mount points are mounted and unmounted dynamically, there is no need to restart the NFS daemons.
B: It is not necessary to run fsck (file system checker) on the mount point.
C: As the mount points are mounted and unmounted dynamically, there is no need to restart the autofs daemon.
D: Fstab and autofs are two separate methods for mounting filesystems.

QUESTION 74:

While attempting to boot your i386 system, the boot process fails with a message that the root filesystem could not be mounted. Which stage of the boot process is failing?

A. Kernel
B. Boot loader
C. BIOS POST
D. Fsck
E. Init

Answer: A

Explanation: When the kernel is loaded, it mounts the root filesystem. The root filesystem cannot be mounted; therefore the boot process has failed at the kernel stage.
Reference: http://barclay.its.monash.edu.au/~kim/boot/boot.html
Incorrect Answers
B: The boot loader is stored in the master boot record by default. The boot loader loads the kernel, which then mounts the root filesystem.
C: The BIOS POST (power on self check) is the first part of the boot process. It does not mount the root filesystem.
D: Fsck runs after the root filesystem is mounted.
E: Init runs after the root filesystem is mounted.

QUESTION 75:

While installing a new Ethernet card you notice ifconfig is showing an odd IRQ for the device. What command will make lspci show which IRQ the card is actually using as seen by the PCI bus instead of as seen by the kernel?

A. lspci -v -v
B. lspci -v -M
C. lspci -v -b
D. lspci -vM
E. lspci -m -v

Answer: C.

Explanation: Lspci is a utility for displaying information about all PCI buses in the system and all devices connected to them. The -v option tells lspci to be verbose and display detailed information about all devices. The -b option is for bus-centric view. Show all IRQ numbers and addresses as seen by the cards on the PCI bus instead of as seen by the kernel.
Reference: http://ccrma-www.stanford.edu/planetccrma/man/man8/lspci.8.html
Incorrect Answers
A: You can't specify the same option twice (-v -v).
B: The -M option invokes bus mapping mode which scans the bus extensively to find all devices including those behind misconfigured bridges etc.
D: The options should be separated by hyphens (-). Furthermore, M is the wrong option.
E: The -m option is used to dump PCI device data in machine readable form for easy parsing by scripts.

QUESTION 76:

You have added a new file system to /etc/exports, but users complian that they still get "Permission denied" errors when they try to mount the new file system. Which of the following is the best solution to this problem?

A. Reboot the server.
B. Add the option (no_root_squash) to the entry already added.
C. Restart NFS.
D. Run the command exportfs -a
E. Run the command export -nfs.

Answer: D

Explanation: The exportfs command makes local directories available for Network File System (NFS) clients to mount. This command is normally invoked during system startup by the /etc/rc.nfsfile and uses information in the /etc/exports file to export one or more directories, which must be specified with full path names.
The /etc/xtab file lists directories that are currently exported. To display this file, enter the exportfs command without flags or arguments. To alter the file or to alter the characteristics of one of its directories, root users can edit the /etc/exports file and run the exportfs command. The -a option exports all directories listed in the /etc/exports file. Such alterations can be done at any time. Never edit the /etc/xtab file directly.
Reference: http://www.unet.univie.ac.at/aix/cmds/aixcmds2/exportfs.htm
Incorrect Answers
A: It is not necessary to reboot the server. The exportfs command can be run at any time.
B: The no_root_squash option is used to allow root permission to an exported directory to the root user on a remote machine.
C: It is not necessary to restart NFS.
E: Export -nfs is the wrong command.

QUESTION 77:

You have downloaded the patch from 2.2.18 to 2.2.19, and applied it to /usr/src/linux, where you had previously configured and built kernel 2.2.18. How would you avoid going through the entire configuration process again, and only configure options which are new to the patched kernel?

A. make oldconfig
B. make reconfigure
C. sh scripts/reconfig
D. Edit .config by hand

Answer: A

Explanation: The 'make oldconfig' command will take the kernel config file named ".config" and only ask the configuration questions which are not already answered in that file. This will avoid having to go through the entire kernel configuration process again.
Reference: http://www.linuxchix.org/content/courses/kernel_hacking/lesson2

Incorrect Answers
B: Make reconfigure is not a valid command.
C: Sh scripts/reconfig is not a valid command.
D: Editing the .config file by hand would be a difficult and very risky way of configuring the kernel.

QUESTION 78:

On a system with separate partitions for /, /usr, /var, /tmp, which filesystem[s] can safely be mounted read-only?

A. /var, /usr
B. /var
C. /usr, /, /tmp
D. /usr
E. /tmp

Answer: D

Explanation: The /usr partition contains common executables and documents such as man pages (help files), all of which should not be changed by users. Therefore, this partition should be mounted as read only.
Reference: http://www.redhat.com/docs/manuals/linux/RHL-6.0-Manual/install-guide/manual/doc084.html
Incorrect Answers
A: The /var (variable) partition is used for data that frequently changes such as log files and therefore cannot be read only.
B: The /var (variable) partition is used for data that frequently changes such as log files and therefore cannot be read only.
C: The /tmp (temporary) partition is used to store temporary files and therefore cannot be read only.
E: The /tmp (temporary) partition is used to store temporary files and therefore cannot be read only.

QUESTION 79:

You routinely compress old log files. You now need to examine a log from two months ago. In order to view its contents without first having to decompress it, use the _____ utility.

Answer: zless

QUESTION 80:

As a system administrator, you are instructed to backup all the users home directories. Which of the following commands would accomplish this?

A. tar rf usersbkup home/*
B. tar cf usersbkup home/*
C. tar cbf usersbkup home/*
D. tar rvf usersbkup home/*

Answer: B

Explanation: The c option used with the tar command is used to create an archive. The f <filename> option allows you to specify a filename.
Reference: http://www.oreillynet.com/linux/cmd/t/tar.html
Incorrect Answers
A: The r option is used to append the files to an existing archive.
C: The b option is used to specify a block size. As no block size is specified, this answer is incorrect.
D: The r option is used to append the files to an existing archive.

QUESTION 81:

What would be displayed as the result of issuing the command ps ef?

A. A listing of the users running processes formatted as a tree.
B. A listing of the stopped processes.
C. A listing of all the running processes formatted as a tree.
D. A listing of all system processes formatted as a tree.

Answer: A

Explanation: Without any options, the ps command displays the running processes associated with the current user ID. The e option displays the processes' environment and the f option displays the processes in a tree format, illustrating the relationship between parent and child relationships.
Reference: http://www.oreillynet.com/linux/cmd/p/ps.html
Incorrect Answers
B: Only the running processes are listed, not the stopped processes.
C: You would need the a option to display all the running processes.
D: Only the user processes are listed, not the system processes.

QUESTION 82:

You have installed a new application but when you type in the command to start it you get the error message:
Command not found
What do you need to do to fix this problem?

A. Add the directory containing the application to your path.
B. Specify the directory's name whenever you run the application.
C. Verify that the execute permission has been applied to the command.
D. Give everyone read, write and execute permissions to the application's directory.

Answer: A

Explanation: One important environment variable is PATH, a list of directories separated by colons (':'). These directories are searched through to find commands. If you try to invoke command 'foo', all the

directories in PATH (in that order) are searched for an executable file 'foo' (one with x-bit on). If a file is found, it is executed.
Reference: http://www.tldp.org/HOWTO/mini/Path-3.html
Incorrect Answers
B: It is not necessary to specify the directory's name, if the directory is in the path.
C: If you didn't have execute permission, you would get a permission denied error.
D: It is not necessary to give everyone these permissions. Users shouldn't have write access to an application directory.

QUESTION 83:

You typed the following at the command line: ls -al /home/ hadden
What key strokes would you enter to remove the space between the '/' and 'hadden' without having to retype the entire line?

A. Ctrl-B, Del
B. Esc-b, Del
C. Esc-Del, Del
D. Ctrl-b, Del

Answer: B

Explanation: The Esc-b keystroke combination will move the curser back one word (to the start of the word 'hadden'). The Del keystroke will delete the previous character; in this case, it will delete the space before the word 'hadden'.
Reference:
http://sseti.udg.es/marga/books/O'Reilly-The_Linux_Web_Server-CD-Bookshelfv1.0/linux_web/lnut/ch07_06.htm
Incorrect Answers
A: The Ctrl-B keystroke will move the curser back one letter.
C: The Esc-Del keystroke will cut the previous word, for pasting later.
D: The Ctrl-b keystroke will move the curser back one letter. (Ctrl-b is the same as Ctrl-B).

QUESTION 84:

What file will show you the IRQs being used by different hardware devices?

A. /proc/interrupts
B. /proc/irqs
C. /proc/irq
D. /proc/int
E. /proc/ints

Answer: A

Explanation: The IRQs being used by the hardware devices are listed in the /proc/interrupts file.

Reference: http://linuxcommand.org/man_pages/lsdev8.html
Incorrect Answers
B: The IRQs are not listed in the /proc/irqs file.
C: The IRQs are not listed in the /proc/irq file.
D: The IRQs are not listed in the /proc/int file.
E: The IRQs are not listed in the /proc/ints file.

QUESTION 85:

When setting up a client to log to a central logging server, you should:

A. Start the syslogd daemon on the server with all of the clients in its hostlist.
B. Add @servername to the appropriate log line in /etc/syslog.conf
C. Use the server as a DHCP server for the client.
D. Share the log file on the server using NFS.
E. None of the above.

Answer: B

Explanation: The file /etc/syslog.conf contains information used by the system log daemon, syslogd to
forward a system message to appropriate log files and/or users. When forwarding messages to a remote
logging server, you would specify the name of a remote host, prefixed with an @, as with: @server, which
indicates that messages are to be forwarded to the syslogd on the named host.
Reference: http://www.unidata.ucar.edu/cgi-bin/man-cgi?syslog.conf+4
Incorrect Answers
B: The syslogd daemon on the local machine needs to be configured to send messages to the remote logging
server.
C: DHCP is unrelated to logging and is therefore not required.
D: The log file does not need to be shared using NFS.
E: You must edit the syslog.conf file; therefore, this answer is incorrect.

QUESTION 86:

You have been asked to block network access to an NFS sever. You need to block all access except NFS access.
Which of the following actions would you take to achieve this?

A. Make sure that xinetd is switched off.
B. Place "ALL: ALL" in /etc/hosts.deny and "NFS: ALL" in /etc/hosts.allow
C. Add IPChains rules to deny all incoming packets except for portmapper
D. Place "ALL: ALL" in /etc/hosts.deny and "portmap: ALL" in /etc/hosts.allow
E. Ensure that the nfs-access.o module is configured into the kernel and use the command "nfs-ctl-allow <your
IP range>" to provide the required access

Answer: D

Explanation: The hosts.allow file is read before the hosts.deny file. This means that you can block access

to 'all' in the hosts.deny file, but allow access to specific ports by specific hosts in the hosts.allow file. In this answer, we are blocking all ports to all hosts in the hosts.deny file. However, we are allowing access to the portmap service for all hosts in the hosts.allow file. (The portmap service is for access to NFS). Reference: http://www.mandrakeuser.org/docs/connect/cnfs2.html
Incorrect Answers
A: Xinetd must be running.
B: NFS uses the portmapper service. Therefore, you should enter 'portmap: ALL' in the hosts.allow file.
C: IPChains is a firewall program. This may work (if you have IPChains running), however using the hosts.allow and hosts.deny files is much simpler.
E: The module and command in this question don't exist or are incorrectly named.

QUESTION 87:

What command would you type to use the cpio command to create a backup called backup.cpio of all the users home directories?

Answer: find /home | cpio -o > backup.cpio

Explanation: The cpio command expects to receive a list that contains one file per line. That is exactly the type of list that the find utility creates. The ls utility can also create this type of list, meaning that you will see either of the ls or the find utilities used in conjunction with cpio. And since cpio archives a list of files it receives from standard input, you usually use a pipe (|) whenever you create an archive with the cpio utility.
A lot of documentation suggests using the -print option with the find command. For example, find /home -print | cpio -o > backup.cpio. However, this is not required on Linux systems, and other systems that use GNU find, although it is required on Unix systems.
Reference: http://www.unet.univie.ac.at/aix/cmds/aixcmds1/cpio.htm

QUESTION 88:

What is wrong with the following command? tar cvfb //dev/tape 20

A. You cannot use the c option with the b option.
B. The correct command should be tar -cvfb /dev/tape20.
C. The arguments are not in the same order as the corresponding modifiers.
D. The files to be backed up have not been specified.

Answer: C

Explanation: The command should read tar cvfb /dev/tape 20 / .
The letters c, v, f and b are the 'modifiers'. The arguments are the options for the modifiers and should be in the same order as the modifiers. The c modifier is to create an archive. The v modifier is for verbose mode. The f modifier specifies the name of the tar file and so needs an 'argument' (in this case a tape drive called /dev/tape). The b modifier is used to set a block size and so needs an 'argument' (in this case 20). Note that the arguments following the modifiers are in the same order as the modifier. The "f" precedes the "b" modifier so the arguments have the device before the blocking factor. The arguments

must be in the same order as the modifiers, which can sometimes cause a little confusion.
After the modifiers and arguments have been entered, you need to enter the files to be backed up (in this case the root directory '/').
Reference: http://freebooks.boom.ru/view/LinuxUnleashed/ch45/759-762.html
Incorrect Answers
A: You can use the c option with the b option.
B: You don't need a hyphen (-) when specifying tar options. Furthermore, the files to be backed up haven't been specified.
D: The files to be backed up have been entered (the root partition '/'), but they are entered in the wrong place.

QUESTION 89:

Many factors are taken into account when planning a backup strategy. The one most important one is how often does the file _____.

Answer: change

Explanation: The frequency of a file changing will determine the frequency of your backup. If the file changes often, you will need to back up the file often, otherwise the backed up version of the file will be an old version.

QUESTION 90:

You enter the command cat MyFile | sort > DirList &
and the operating system displays
[4] 3499
What does this mean?

A. This is job number 4 and the PID of the sort command is 3499.
B. This is job number 4 and the PID of the job is 3499.
C. This is job number 3499 and the PID of the cat command is 4.
D. This is job number 4 and the PID of the cat command is 3499.

Answer: A

QUESTION 91:

In order to create a file called DirContents containing the contents of the /etc directory you would type _____.

Answer: ls /etc >DirContents

Explanation: Mostly all commands send their output to the screen or take input from the keyboard, but in Linux it is possible to send output to a file or to read input from a file. For example, the ls command sends it's output to screen; to send the output to a file, you can use the command ls > filename. This will send the output of the ls command to filename.

In this question, the ls command lists the contents of the /etc directory and sends the list to a file named DirContents.
Reference: http://www.netti.hu/doc/LinuxShellScript/rpf.htm

QUESTION 92:

You are running out of space in your home directory. While looking for files to delete or compress you find a large file called .bash_history and delete it. A few days later, it is back and as large as before. What do you need to do to ensure that its size is smaller?

A. Set the HISTFILESIZE variable to a smaller number.
B. Set the HISTSIZE to a smaller number.
C. Set the NOHISTFILE variable to true.
D. Set the HISTAPPEND variable to true.

Answer: A

Explanation: The bash_history file is a file in a user's home directory that contains a list of the (recent) commands issued by this user at the bash command line. This file can grow to up to the number of lines specified in the HISTFILESIZE variable; therefore, to reduce the maximum size of the file, you should set the HISTFILESIZE variable to a smaller number.
Reference: http://www.slug-vt.org/bash.html
Incorrect Answers
B: The HISTSIZE variable contains the number of commands in the history. When a user logs off, the commands are written to the bash_history file.
C: There is no NOHISTFILE variable.
D: If the HISTAPPEND variable is set to true, the history will be appended to the history file (bash_history), otherwise the file will be overwritten. Therefore, setting the HISTAPPEND variable to false, not true would work.

QUESTION 93:

You would like to temporarily change your command line editor to be vi. What command should you type to change it?

Answer: set -o vi

Explanation: The readline support in the bash shell defaults to emacs editing mode. You can easily switch that to vi mode by issuing the following command: set -o vi. This will last until you logoff. The next time you log on, the default editing mode will be used.
Reference: http://www.portico.org/index.php3?catList=26

QUESTION 94:

Which of the following interprets your actions when typing at the command line for the operating system?

A. Utility
B. Application
C. Shell
D. Command

Answer: C

Explanation: The "shell" is another name for the command shell or command interpreter. This is the
program that gives you a command prompt, accepts the commands you type there, and basically makes
the computer do what you tell it to.
The shell's job is to interpret your commands and run the programs you request. Linux was designed to be a
multitasking operating system, which means you can run more than one program at one time. Linux was also
designed as a multi-user OS, which means that you can have more than one shell running at the same time.
(Each user gets his own shell at login.) As a user, you have access only to the programs you are running, not the
ones other users are running (though you can run your own copy of the same program). The programs are kept
separate because they are "enclosed" in a "shell".
Reference: http://www.control-escape.com/lx-shell.html
Incorrect Answers
A: A utility is a program that can be run from the shell.
B: An application is another name for a utility or program.
D: A command is what you enter to run a utility/program/application.

QUESTION 95:

You have created a local ext2 file system on the third partition of your first IDE disk drive. You want to
facilitate easy manual mounting but you DO NOT wish the filesystem to be automatically mounted at a boot.
What is the correct /etc/fstab entry?

A. /dev/hda3/newfilesystem ext2 noboot 0 1
B. /newfilesystem /dev/hda3 ext2 defaults 0 1
C. /newfilesystem ext2 /dev/hda3 user 0 1
D. /dev/hda3/newfilesystem ext2 noauto 0 1
E. /dev/hda3 ext2 /newfilesystem defaults 0 -1

Answer: D

Explanation: /dev/hda3 indicates the 3rd partition on the first IDE hard disk (hda). Ext2 indicates the
filesystem type. Noauto means that the filesystem will not be automatically mounted. The first '0' means
that the filesystem shouldn't be backed up and the 1 means that the filesystem should be checked for
errors when the machine boots.
Reference: http://www.humbug.org.au/talks/fstab/fstab_options.html
Incorrect Answers
A: Noboot is an incorrect option.
B: The syntax of this command (the path of the filesystem) is incorrect.
C: The syntax of this command (the path of the filesystem) is incorrect.

E: The defaults option will use the default fstab options. The default is to automatically mount the filesystem at boot time.

QUESTION 96:

The command _____ flushes the filesystem buffers and ensures that the changes that you have made to a file are written to disk.

Answer: sync

Explanation: The sync command is used to flush the filesystem buffers and ensures that the changes that you have made to a file are written to disk. When you shutdown the system, the system runs the sync command to flush the buffers to disk, but the command can be manually entered at any time.
Reference: http://www.oreillynet.com/linux/cmd/s/sync.html

QUESTION 97:

How would you find out the version of the kernel in /usr/src/linux?

A. cat /usr/src/linux/.version
B. cat /usr/src/linux/VERSION
C. Look in the README
D. head -4 /usr/src/linux/Makefile

Answer: D

Explanation: The head command is used to display the first few lines of a file. The default is 10 lines but you can specify a number (in this case 4). The makefile is a script the tells the make utility how to build a program or programs (in this case, the kernel). Most makefiles contain comments at the top of the file which describe the program and version information.
Reference: http://www.opussoftware.com/tutorial/TutMakefile.htm
Incorrect Answers
A: .version doesn't usually exist as a subdirectory of file. Rather, it is usually a directory /usr/src/linux.version or /usr/src/linux[VERSION] containing the kernel source.
B: VERSION doesn't usually exist as a subdirectory of file. Rather, it is usually a directory /usr/src/linux.version or /usr/src/linux[VERSION] containing the kernel source.
C: There usually isn't a README file containing version information.

QUESTION 98:

You suspect malicious behavior by one of your console session users. Which of the following methods could be used so that you will be notified whenever the suspect user is logged in? The method should not tip off the suspect user or affect overall system integrity or performance to a noticeable degree.

A. Pipe the btmp file to a filter and launch a notification script if the user logs on.
B. Insert into the suspect user's profile a script to notify you.

C. Configure syslogd to pipe all auth log messages to a script which checks for the suspect user and then notifies you via email.
D. Modify the user's login script to inform you of his presence and then exec itself with the real shell.

Answer: C

Explanation: Syslogd (the system log daemon) can be configured via the syslog.conf file. This file specifies where log entries should be written. You can configure syslogd to send authentication log messages to a script which checks for the suspect user and then notifies you via email.
Incorrect Answers
A: The btmp file is used to record failed logon attempts. This won't work because the user is able to log on successfully.
B: Inserting a script into the users profile file won't work because the user may notice the script if he/she looks at the profile file.
D: Modifying the users login script won't work because the user may notice the modification if he/she looks at the script.

QUESTION 99:

You want to compile a kernel with an experimental change that is distributed in "patch" format. However, you want to make sure that the patch works correctly before changing the original kernel source code. How can you test the patch before actually applying it?

A. patch -p1
B. patch --context
C. patch --unified
D. patch --dry-run

Answer: D

Explanation: The patch -dry-run command is used to test a patch before applying it. This will produce a text output listing all the files that would be patched. If there are no 'Failed' messages, then the patch is safe to install.
Reference: http://www.hmug.org/man/1/patch.html
Incorrect Answers
A: Patch -p1 will apply the patch.
B: Patch --context will apply the patch as a 'context diff' file.
C: Patch --unified will apply the patch as a 'unified diff' file.

QUESTION 100:

On a running system, where can you find specific information about the partition tables, such as major and minor device numbers, and number of blocks?

A. /proc/partitions
B. /proc/cpuinfo

C. /proc/fstab
D. /etc/partitions
E. /etc/fstab

Answer: A

Explanation: The /proc/partitions file contains information about the partition tables, such as major and minor device numbers, and number of blocks.
Reference: http://www.goavatar.com/linux_pcmcia.htm
Incorrect Answers
B: The /proc/cpuinfo file contains information about the CPU, not the disks.
C: The /proc/fstab file contains information about mounted filesystems and permissions on the filesystems. It does not contain information such as the number of blocks.
D: The partitions file is in the /proc directory, not /etc.
E: The fstab file is in the /proc directory, not /etc.

QUESTION 101:

On bootup, LILO prints out LIL and stops. What is the cause of this?

A. The descriptor table is bad.
B. LILO failed to load the second stage loader.
C. LILO failed to load the primary stage loader.
D. LILO failed to locate the kernel image.

Answer: A

Explanation: If you only see LIL- when booting the system, it means that LILO could not load the map file (descriptor table).
Reference: Roderick W. Smith. Sybex Linux + Study Guide: Page 634.
Incorrect Answers
B: If LILO failed to load the second stage loader, you would see only LI during bootup.
C: If LILO failed to load the primary stage loader, you wouldn't see anything during bootup.
D: If LILO failed to locate the kernel image, you would see LILO during bootup followed by an error message about the missing kernel image.

QUESTION 102:

What file will tell you at what frequency the system processor is running?

A. /proc/cpuinfo
B. /proc/frequency
C. /proc/speed
D. /proc/mhz
E. /proc/bogomips

Answer: A

Explanation: The /proc/cpuinfo file contains information about your system's processor(s).
Reference: http://people.debian.org/~wouter/laptop/node21.html
Incorrect Answers
B: This file doesn't exist.
C: This file doesn't exist.
D: This file doesn't exist.
E: This file doesn't exist.

QUESTION 103:

The following shell script is run by cron on a regular basis:
x=$(find /home -name .rhost 2>/dev/null)
for i in $x; do
$y=$(echo $I | cut -d -f3);z="$z $y"
rm $I;done
echo "Notice: $z" | mail root@example.com
Which best defines the action of this script?

A. Verify the existence of users' .rhost files and removes the user.
B. Remove all .rhosts files and notify each user of your action.
C. Find all misplaced rhost files and remove them.
D. This script checks for the existence of .rhost files, deletes them and reports the offending user names to root.
E. Notify the root user of all .rhost files.

Answer: D

QUESTION 104:

Configuration of X is complete and now the default runlevel can be changed from runlevel 3 to runlevel
5. In which of the following configuration files should this be done?

Answer: /etc/inittab

QUESTION 105:

You have written a little startup script (/usr/local/bin/startup.sh) that should automatically execute when
entering runlevel 3. According to the standards, how can this best be achieved?

A. chmod 700 /usr/local/bin/startup.sh; cd/etc/init.d/rc3.d/; In-s/user/local/bin/startup.sh
B. chmod 700 /usr/local/bin/startup.sh; cd/etc/init.d/rc3.d/; In-s/user/local/bin/startup.sh $99startup.sh
C. chmod 700 /usr/local/bin/startup.sh; cd/etc/init.d/rc3.d/; In /user/local/bin/startup.sh
D. chmod 700 /usr/local/bin/startup.sh; cd/etc/init.d/rc3.d/; In-s/user/local/bin/startup.sh /usr/locl/bin/startup.sh
E. chmod 700 /usr/local/bin/startup.sh; cp /user/local/bin/startup.sh /ect/init.d/rc3.d/$99Startup.sh

Answer: B

QUESTION 106:

You have configured a workstation to boot in runlevel 4, but you now find that the X server will not start correctly and the machine will not allow local access. What would be the most effective command to run at the LILO prompt to regain local access to the machine, when the last known working kernel image was linux?

Answer: linux single

Answer: linuxemergency

Answer: linux1
Ref: http://www.control-escape.com/linux/lilo-cfg.html

QUESTION 107:

The Linux kernel is loaded successfully by the boot loader. However, straight after the kernel mounts the root filesystem, the boot process stops and an error message regarding init is shown. Which of the following actions is the best one to be used in order to identify and fix the problem?

A. The administrator reboots the system with a recovery disk and checks the root file system for errors with fsck.
B. The administrator reboots the system with a recovery disk and restores from a backup.
C. The administrator reboots the system and tells the kernel, through the boot loader prompt, to use /bin/bash as the initial process.
D. The administrator reboots the system with a recovery disk and installs a new kernel.
E. The administrator reboots the system and tells init, through the boot loader prompt, to use a different runlevel.

Answer: A

QUESTION 108:

When using SysV init system, the file /etc/rc3.d/S55sshd is a symbolic link. Type the full path and file name to which this is linked.

Answer: /etc/init.d/sshd

QUESTION 109:

Which e2fsck option is used to automatically repair an ext2 filesystem?

Answer: -p

Explanation: man e2fsck

QUESTION 110:

What command must be used to create an ext3 filesystem?

A. mke2fs
B. mkext2fs
C. mke3fs
D. mkext3fs
E. mkjfs

Answer: A

QUESTION 111:

After a crash, the system needs to be booted into runlevel 1. Which option(s) must be typed at the LILO prompt to achieve this, assuming that the working kernel image is called 'linux'?

Answer: linux single

Answer: linux 1

QUESTION 112:

A Linux server is running in single user mode, but the problem that existed before is now fixed. What command is most appropriate to restore the server to service?

A. reboot
B. telinit 2
C. shutdown -r now
D. telinit 3
E. shutdown -h now

Answer: D

Explanation: man telinit

QUESTION 113:

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

Answer: initdefault

Explanation: man inittab

QUESTION 114:

A machine is running in single user mode and, as such, not all file-systems are accessible. What command must be run to make all of the other file-systems listed in /etc/fstab accessible?

A. mount --all
B. mountfs --all
C. mountfs -a
D. mount -a

Answer: D

Explanation: man mount

QUESTION 115:

Which of the following commands should be used in a bash script that needs a variable containing the IP address of the eth0 interface? The output from the command ifconfig eth0 is shown below:

```
eth0      Link encap:Ethernet  HWaddr 00:0C:29:CB:FA:30
          inet addr:192.168.246.11  Bcast:192.168.246.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packet  4731 enrolls 0 dropped : overruns:0 frame :0
          TX packet  3210 enrolls 0 dropped : overruns:0 frame :0
          collisions:u txqueuelen:1000
          RX bytes:445184 (434.7 Kb)  TX bytes:512968 (500.9 Kb)
          Interrupt:185 Base address:0x1080
```

A. IP=LANG= ifconfig eth0 | awk "{print $2}" | cut -f2
B. IP=$(LANG= ifconfig eth0 | grep inet | cut -d: -f2)
C. IP='LANG= ifconfig eth0 | awk "{print $3}"'
D. IP='LANG= ifconfig eth0 | grep inet | cut -d: -f2 | awk {print $1}'
E. IP=$ (LANG= ifconfig eth0 | grep inet | awk "{print $2}" | cut -d: -f2)

Answer: E

QUESTION 116:

What command can be used to install a Perl module ('$module') from the CPAN archieve?

A. perl --cpan -i $module
B. perl -MCPAN -e "install $module"
C. perl -i $module
D. perl --cpan -e "make $module"
E. perl -MCPAN --install $module

Answer: B
man perlmod

QUESTION 117:

What does the following script do?
#!/bin/bash
find / -perm +4000 | mail -s "Daily find output" root

A. Emails a report of all guid files to root
B. Emails a report of all important files to root
C. Emails a report of all writeable files to root
D. Emails a report of all suid files to root
E. Corrects permissions on files and emails the result to root

Answer: D

QUESTION 118:

Which TWO statements about crontab are true?

A. Every user may have their own crontab.
B. Changing a crontab requires a reload/restart of the cron deamon.
C. The cron daemon reloads crontab files automatically when necessary.
D. hourly is the same as "0****".
E. A cron daemon must run for each existing crontab.

Answer: A, D

Explanation: man crontab

QUESTION 119:

Which of the following configuration lines will export /usr/local/share/ to nfsclient with read-write access, ensuring that all changes are written straight to the disk?

A. /usr/local/share nfsclient(rw)
B. nfsclient: /usr/local/share/:rw,sync
C. /usr/local/share nfsclient:rw:sync
D. /usr/local/share nfsclient(rw,sync)
E. nfsclient(rw,sync) /usr/local/share

Answer: D

Explanation: A too, if 2 answers possible

QUESTION 120:

To allow more than one client username to share one local account on a Samba server, which of the

following configuration directives can be used?

A. users
B. force user
C. client map
D. map users
E. username map

Answer: E
man smb.conf

QUESTION 121:

Which of the following is needed, to synchronize the Unix password with the SMB password, when the encrypted SMB password in the smbpasswd file is changed?

A. Nothing, because this is not possible.
B. Run netvamp regularly, to convert the passwords.
C. Rin winbind --sync, to synchronize the passwords.
D. Add unix password sync = yes to smb.conf.
E. Add smb unix password = sync to smb.conf.

Answer: D
http://www.linuxhilfen.org/netz/smb.conf

QUESTION 122:

The new file server is a member of the Windows domain "foo". Which TWO of the following configuration sections will allow members of the domain group "all" to read, write and execute files in "/srv/smb/data"?

A. [data]
comment = data share
path = /srv/smb/data
write list = @foo+all
force group = @foo+all
create mask = 0550
directory mask = 0770
B. [data]
comment = data share
path = /srv/smb/data
write list = @foo+all
force group = @foo+all
create mask = 0770
directory mask = 0770
C. [data]

path = /srv/smb/data
write list = @foo+all
force group = @foo+all
create mask = 0770
directory mask = 0770
D. [data]
comment = data share
path = /srv/smb/data
write list = @foo+all
force group = @foo+all
directory mask = 0770
E. [data]
comment = data share
path = /srv/smb/data
write list = @foo+all
force group = all
create mask = 0550
directory mask = 0770

Answer: B, C

QUESTION 123:

Which TWO of the following options are valid, in the /etc/exports file?

A. rw
B. ro
C. rootsquash
D. norootsquash
E. uid

Answer: A, B

QUESTION 124:

A user requests a "hidden" Samba share, named 'confidential', similar to the Windows Administration Share. How can this be configured?

A. [confidential]
comment = hidden share
path = /srv/smb/hidden
write list = user
create mask = 0700
directory mask = 0700
B. [$confidential$]
comment = hidden share

path = /srv/smb/hidden
write list = user
create mask = 0700
directory mask = 0700
C. [$confidential]
comment = hidden share
path = /srv/smb/hidden
write list = user
create mask = 0700
directory mask = 0700
D. [%confidential]
comment = hidden share
path = /srv/smb/hidden
write list = user
create mask = 0700
directory mask = 0700
E. [confidential$]
comment = hidden share
path = /srv/smb/hidden
write list = user
create mask = 0700
directory mask = 0700

Answer: E
man smb.conf; http://www.cae.wisc.edu/site/public/print.php?title=linbegin

---

QUESTION 125:

How must Samba be configured, so that it can check passwords against the ones in /etc/passwd and /etc/shadow?

A. Set the parameter "encrypt passwords = yes" and "password file = /etc/passwd".
B. Set the parameter "encrypt passwords = yes" and "password file = /etc/passwd" and "password algotihm = crypt".
C. Delete the smbpasswd file and create a symbolic link to the passwd and shadow file
D. It is not possible for Samba to use /etc/passwd and /etc/shadow
E. Run smbpasswd to convert /etc/passwd and /etc/shadow to a Samba password file

Answer: D

QUESTION 126:

If the path parameter is not set for a share in the smb.conf file, the share will refer to which of the following directories?

A. /tmp

B. /var/spool/samba
C. ~/.samba
D. /var/samba
E. /var/smb/tmp

Answer: C
If no path was given, the path is set to the user's home directory -> man smb.conf

QUESTION 127:

Which option is used in the Samba configuration file to set which files and directories are neither visible to or accessible by the clients?

A. hide files
B. veto files
C. hide special files
D. hide dot files
E. mangle names

Answer: B
http://us2.samba.org/samba/docs/man/manpages-3/smb.conf.5.html

QUESTION 128:

With which parameter in the smb.conf file can a share be hidden?

Answer: $

QUESTION 129:

The Samba configuration file uses the parameter read only=yes. Which of the following is equivalent?

A. browseable=no
B. read write=no
C. writeable=no
D. write only=no
E. write access=no

Answer: C

QUESTION 130:

By default, which file will Samba use to store the user passwords? (Please enter only the file-name without the path)

Answer: smbpasswd

QUESTION 131:

What command can be used to check the Samba configuration file?

A. testconfig
B. testsmbconfig
C. smbtestcfg
D. smbtestparm
E. testparm

Answer: E

Explanation: man smb.conf

QUESTION 132:

Consider the following excerpt from an RPM spec file:
Sumary: Complete Web authoring system for Linux
Name: nvu
Version: 0.50
Release: 5
Source0: %(name)-%(version).tar.bz2
Patch0: nvu-freetype2.patch.bz2
Patch1: nvu-mozilla-1.1-system-myspell-dicts.patch.bz2
Patch2: nvu-mozilla-1.7-spellcheck-full-langname.patch.bz2
License: MPL/LGPL/GPL
Group: Development/Other
Url: http://www.nvu.com
BuildRoot: %{_tmppath}/%{name}-buildroot
BuildRequires: libjpeg-devel libpng-devel libIDL-devel
BuildRequires: zip tcsh
BuildRequires: gtk+2-devel >=2.2.0
Which TWO of the following sentences are true about this package?

A. Package gtk+2-devel version 2.2.0 or higher needs to be present in the system before this nvu package may be installed.
B. The file nvu-freetype2.patch.bz2 must be present in the SOURCES/PATCHES directory.
C. The macro %_tmppath must be defined in system-wide or in local configuration files.
D. The nvu-0.50.tar.bz2 will be unpacked into %{_tmppath}/%{name}-buildroot.
E. The nvu-0.50.tar.bz2 file contains pristine sources for nvu.

Answer: A, E

QUESTION 133:

Hundreds of people log in to a server from remote locations per day. Which of the following commands show remote SSH, FTP & telnet sessions for a particular day?
Select two.

A. cat /var/log/messages | grep "`date "+%b %e"`" | egrep '(telnet|ssh|ftp)'
B. cat /var/log/messages | egrep '(telnet|ssh|ftp)'
C. cat /var/log/messages | grep "`date "+%b %e"`" | grep -E '(telnet|ssh|ftp)'
D. cat /var/log/messages | date | egrep '(telnet|ssh|ftp)'
E. cat /var/log/messages > grep "`date "+%b %e"`" > egrep '(telnet|ssh|ftp)'

Answer: A, C

Explanation: man grep + man egrep

QUESTION 134:

Which of the following must be configured in the syslogd configuration file, so that ONLY kernel related messages with the priority crit are reported?

A. kern.crit
B. kern.!crit
C. kern.=crit
D. kern.*=crit
E. kern.-crit

Answer: A

Explanation: man syslogd

QUESTION 135:

When building an RPM package, which rpmbuild option is used to unpack sources and apply patches before proceeding with the next step?

A. -ba
B. -bb
C. -bc
D. -bs
E. -bp

Answer: E

Explanation: man rpm

QUESTION 136:

What backup arrangement should be used for an intranet web server the contents of which is updated fairly regularly by different staff?

A. Daily incremental backups with a weekly full backup tape sent off-site.
B. Monthly full backups with the tape sent off-site.
C. Daily full backups with all tapes sent off-site.
D. Weekly full backups with all tapes sent off-site.
E. Daily full backups with one tape sent off-site per week

Answer: A

Explanation: best fit

QUESTION 137:

You are not sure whether the kernel has detected a piece of hardware in your machine. What command, without options or parameters, should be run to present the contents of the kernel ring-buffer?

Answer: dmesg

Explanation: dmesg is used to examine or control the kernel ring buffer.

QUESTION 138:

What command is used to mount a floppy disk image under /mnt/floppy?

A. mount -l root.img /mnt/floppy
B. mount --loop root.img /mnt/floppy
C. mount root.img /mnt/floppy
D. mount root.img
E. mount -o loop root.img /mnt/floppy

Answer: E

Explanation: To mount the image file, there is one option loop should use as
mounting option.
Some Mounting Options are: ro, rw, user, nouser, auto, noauto, suid, nosuid, loop
etc all there options should give with -o option.

QUESTION 139:

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

A. An error message is shown, showing which device couldn't be mounted or informing that init couldn't be found.
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 and the administrator is asked to specify a valid root filesystem to continue the boot process.
E. An error message is shown, stating that the corresponding kernel module couldn't be loaded.

Answer: A

Explanation: Some Required information to Boot loader is boot partition, root partition, kernel file, initrd image file. If Kernel unable to mount the / filesystem, it shows error like
mount: error 15 mounting ext3
mount: error 2 mounting none
switchroot: mount failed: 22
umount/initrd/dev/: 2
Kernel Panic: no syncing: Attempted to kill init !
This error occurred in your system before showing welcome redhat linux. That means problem in grub boot loader.

QUESTION 140:

During which stage of the boot process would this message be seen?
ide0: BM-DMA at 0xff00-0xff07, BIOS settings: had:DMA, hdb:DMA

A. Boot loader start and hand off to kernel.
B. Kernel loading.
C. Hardware initialization and setup.
D. Daemon initialization and setup.

Answer: B

QUESTION 141:

What command is used to permanently set the options in the kernel when making a boot disk?

A. blockdev
B. kconfig
C. lilo
D. rdev
E. dd

Answer: D

Explanation:
System administration command. If invoked with no arguments, show the current root filesystem in /etc/mtab syntax. Otherwise, change the values in the kernel image that specify the RAM disk size (by default located at decimal byte offset 504 in the kernel),

VGA mode (default 506), and root device (default 508). You must specify the kernel
image to be changed, and may specify a new value and a different offset. Using rdev to
change these values directly in an image file is discouraged. These values can all be set
by a boot loader such as lilo or grub.
Options:
-r
Behave like ramsize.
-v
Behave like vidmode.
-R
Behave like rootflags

QUESTION 142:

Journalling doesn't appear to be working on an ext3 file-system. When booting, the following line
appears:
VFS: Mounted root (ext2 filesystem) readonly.
What could be causing the problem?

A. An old version of e2fsprogs is installed.
B. The kernel does not contain ext3 support.
C. The file-system is specified as ext2 in /etc/fstab.
D. The system was not shut down cleanly

Answer: B

Explanation: Main cause the that your kernel is not supporting the ext3 filesystem.
To support ext3 filesystem kernel should load the ext3 module.

QUESTION 143:

During which stage of the boot process would this message be seen?
ide_setup: hdc=ide-scsi

A. Boot loader start and hand off to kernel.
B. Kernel loading.
C. Hardware initialization and setup.
D. Daemon initialization and setup.

Answer: B

QUESTION 144:

When bash is invoked as an interactive login shell, which of the following sentences is true?

A. It first reads and executes commands in /etc/profile and then does the same for ~/.bash_profile and ~/.bashrc.

B. It first reads and executes commands in /etc/bashrc and then does the same for etc/profile.

C. It reads and executes commands in ~/.bashrc only if /etc/profile or another initialization script calls it.

D. It ignores /etc/profile and only reads and executes commands in ~/.bashrc.

E. It first reads and executes commands in /etc/profile and then does the same for ~/.bash_profile, ~/.bash_login and ~/.profile.

Answer: E

Explanation:
Startup Scripts:
For Login shell provided users:
i. /etc/profile which calls /etc/profile.d/*.sh
ii. ~./bash_profile
iii. ~/.bashrc
iv. /etc/bashrc
For non-Login Shell provided users
1. ~/.bashrc
2. /etc/bashrc which calls /etc/profile.d/*.sh

QUESTION 145:

Messages from programs are not appearing in the user's native language. What environment variable must be set for this to happen?

A. LANG
B. I18N
C. MESSAGES
D. MSGS
E. LC_MSGS

Answer: A

Explanation: LANG is the environmental variable, which carrying value of default Language.
You can check: echo $LANG

QUESTION 146:

You have installed some new libraries, but these are not available to programs and are not listed by ldconfig -p. What file should the path to the libraries be added to, before running ldconfig?

Answer: ld.so.conf
Explanation: ldconfig creates the necessary links and cache to the most recent shared libraries found in the directories specified on the command line, in the file /etc/ld.so.conf, and in the trusted directories (/lib and /usr/lib). The cache is used by the run-time linker, ld.so or ld-linux.so. ldconfig checks the header and file names of the libraries it encounters when determining which versions should have their links updated. Some

files: /lib/ld.so run-time linker/loader /etc/ld.so.conf File containing a list of colon, space, tab, newline, or comma spearated directories in which to search for libraries. /etc/ld.so.cache File containing an ordered list of libraries found in the directories specified in /etc/ld.so.conf.

QUESTION 147:

Where should the LILO code reside, on a system with only one installation of Linux and no other operating system?

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

Answer: A
Explanation: LILO called Linux Loader resides on MBR (Master Boot Record) and configuration if is /etc/lilo.conf. Every time of modifying the /etc/lilo.conf should update on MBR using the lilo command.

QUESTION 148:

Which file contains the software RAID configuration? (Please enter the file-name without the pat)

Answer: raidtab

Explanation: /etc/raidtab file contains the RAID configuration and /proc/mdstat file contains the status of RAID device.

QUESTION 149:

What command is used to re-add a partition to a software RAID setup?

A. raidhotadd
B. raidadd
C. addraid
D. raidaddhot

Answer: A

Explanation: raidhotadd command is used to add the new disk on RAID array or as a RAID spare disk.
Example: raidhotadd /dev/hda13 /dev/md0

QUESTION 150:

A system has one hard disk, configured as master and connected to the primary IDE controller, and one CD writer, configured as slave and connected to the secondary IDE controller. If the system is correctly

configured, which device is used to represent the CD writer?

A. /dev/scd0
B. /dev/hdd
C. /dev/hdb
D. /dev/sr1
E. /dev/scd1

Answer: B

Explanation: IDE Device Recognition
Primary Master /dev/hda
Primary Slave /dev/hdb
Secondary Master /dev/hdc
Secondary Slave /dev/hdd
According to question CD-ROM is connected as Secondary Slave so device named
should be /dev/hdd.

QUESTION 151:

What command can be used to configure the baud rate on a serial port?

A. setserial
B. serialconfig
C. ttyconfig
D. setty
E. serialmode

Answer: A

Explanation:
setserial is a program designed to set and/or report the configuration information
associated with a serial port. This information includes what I/O port and IRQ a
particular serial port is using, and whether or not the break key should be
interpreted as the Secure Attention Key, and so on.
Example: setserial /dev/ttyS0

QUESTION 152:

Which directory contains the PCMCIA configuration files?

Answer: /etc/pcmcia

Explanation: /etc/pcmcia directory contains the configuration file for PCMCIA.
Some Configuration files are:
bluetooth config.opts ieee1394.opts parport serial wireless.opts

bluetooth.conf ide isdn parport.opts serial.opts
cis ide.opts network scsi shared
config ieee1394 network.opts scsi.opts wireless

QUESTION 153:

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

A. 1
B. 2
C. 3
D. 4
E. 5

Answer: C

Explanation: For RAID Level 1 minimum Required Disks is 2 and for RAID Level 5
required number of disks is 3.

QUESTION 154:

The server has two network cards. The driver for the first card is the module 8139too and the driver for
the second card is the module ne2k-pci. How is it possible to ensure that the card using the 8139too driver
is detected before the card using the ne2k-pci driver?

A. modprobe 8139too dev=eth0; modprobe ne2k-pci dev=eth1
B. install mod 8139too; install mod ne2k-pic
C. modprobe eth0=8139too, eth1=ne2k-pci
D. ifconfig modadd eth0=8139too, eth1=ne2k-pci
E. modprobe 8139too; modprobe ne2k-pci

Answer: A

Explanation: At System booting time, tries to bring up the Ethernet devices, first try to
eth0 and then eth1. We can set the module to specific device using modprobe command
modprobe 8139too dev=eth0 than means 8139too alias to eth0 and system first try to
bring up the eth0 device.

QUESTION 155:

What command should be used to find out what PCI devices can be seen, without querying the kernel?

A. lspci -v
B. lspci -s
C. lspci -x
D. lspci -b

E. lspci -p

Answer: D

Explanation:
lspci is a utility for displaying information about all PCI buses in the system and all
devices connected to them. -b option is used to display the IRQ numbers and address
without querying to the kernel.

QUESTION 156:

What needs to be done to enable 32 bit I/O transfer mode for (E)IDE disks, on a system running a 2.4
series Linux kernel?

A. The Linux kernel must be recompiled.
B. The sysctl utility must be used.
C. The hdparm utility must be used.
D. This feature isn't supported in 2.4 series kernels.
E. This feature is enabled by default in 2.4 series kernels

Answer: C

Explanation:
hdparm provides a command line interface to various hard disk ioctls supported by
the stock Linux ATA/IDE device driver subsystem. Some options may work
correctly only with the latest kernels.
-d Disable/enable the "using_dma" flag for this drive. This option now works with
most combinations of drives and PCI interfaces which support DMA and which are
known to the IDE driver. It is also a good idea to use the appropriate -X option in
combination with -d1 to ensure that the drive itself is programmed for the correct
DMA mode, although most BIOSs should do this for you at boot time. Using DMA
nearly always gives the best performance, with fast I/O throughput and low CPU
usage. But there are at least a few configurations of chipsets and drives for which
DMA does not make much of a difference, or may even slow things down (on really
messed up hardware!). Your mileage may vary.

QUESTION 157:

Which RAID level provides most redundancy?

A. RAID0
B. RAID1
C. RAID4
D. RAID5

Answer: B

Explanation: RAID Level 1 is called mirroring and also requires two RAID Partitions. The resulting RAID device is virtual partition the size of the smallest of the member RAID partitions. All RAID partitions which are members of the RAID device contain identical data. IF any disk in the RAID device fails, the RAID device continues to function without losing data. This is useful for fault tolerance, but is costly terms of disk space.

QUESTION 158:

A new PCMCIA network card is not functioning correctly. To troubleshoot this, the socket information should be checked. How can this be done? Select two.

A. cardctl info
B. cardctl -s
C. cardmgr -s
D. cat /var/lib/pcmcia/stab
E. cat /proc/pcmcia

Answer: B, D

Explanation:
Cardmgr monitors PCMCIA sockets for card insertion and removal events. When a card is inserted, cardmgr looks up the card in a database of known cards. If the card can be identified, appropriate device drivers will be loaded and bound to the card. When a card is ejected, that cards drivers will be shut down and unloaded if possible. Based on the contents of the PCMCIA card configuration database, cardmgr may also execute arbitrary commands when appropriate cards are either inserted or removed.
All insertion and removal events, device driver loads and unloads, and startup and shutdown commands are reported in the system log file. Warnings and errors will also be logged. Current card and device information for each socket is recorded in /var/lib/pcmcia/stab.
Cardctl is used to monitor and control the state of PCMCIA sockets. If a socket is specified ,the command will be applied to just one socket;otherwise,all sockets will be affected.

QUESTION 159:

The Human Interface Device (HID) is being used, which of the following represents a USB mouse connected to the PC?

A. /dev/psaux
B. /dev/ttyS0
C. /dev/input/mice
D. /dev/usb/mouse0

E. /dev/ttyUSB0

Answer: C

Explanation:
In the kernel configuration stage, you need to turn on USB Human Interface Device
(HID) support and Mouse Support Do not turn on USB HIDBP Mouse support. Perform
the normal kernel rebuild and installation steps. If you are installing as modules, you
need to load the input.o, hid.o and mousedev.o modules.
Plug in a USB mouse and check that your mouse has been correctly sensed by the kernel.
If you don't have a kernel message, look for the changes to /proc/bus/usb/devices.
Since USB supports multiple identical devices, you can have multiple mice plugged in.
You can get each mouse seperately, or you can get them all mixed together. You almost
always want the mixed version, and that is what will be used together. You need to set up
a device node entry for the mixed mice. It is customary to create the entries for this
device in the /dev/input/ directory. Use the following commands:
mkdir /dev/input
mknod /dev/input/mice c 13 63

QUESTION 160:

Considering that a 2.4 series Linux kernel is being used, which kernel module must be loaded to enable
CD burning with an IDE CD writer?

A. ide-cd
B. ide-cdrw
C. ide-cdb
D. ide-scsi
E. None of the above

Answer: D

Explanation:
ide-scsi module should be loaded to enable CD burning with an IDE CD Writer.
Verify either loaded or not using lsmod command

QUESTION 161:

One of the IDE hard drives in a server is transferring data very slowly. What command must be run to
enable DMA on it?

A. hdparm -d /dev/hda
B. hdparm --dma /dev/hda
C. hdparm --dma /dev/hda1
D. hdparm -d /dev/hda1
E. hdparm -d 1 /dev/hda

Answer: E

Explanation:
hdparm provides a command line interface to various hard disk ioctls supported by the stock Linux ATA/IDE device driver subsystem. Some options may work correctly only with the latest kernels.
-d Disable/enable the "using_dma" flag for this drive. This option now works with most combinations of drives and PCI interfaces which support DMA and which are known to the IDE driver. It is also a good idea to use the appropriate -X option in combination with -d1 to ensure that the drive itself is programmed for the correct DMA mode, although most BIOSs should do this for you at boot time. Using DMA nearly always gives the best performance, with fast I/O throughput and low CPU usage. But there are at least a few configurations of chipsets and drives for which DMA does not make much of a difference, or may even slow things down (on really messed up hardware!). Your mileage may vary.

QUESTION 162:

Which pseudo-file contains information on the status of software RAID devices?

A. /proc/raidstat
B. /proc/mdstatus
C. /proc/raidstatus
D. /proc/mdstat
E. /proc/raid/status

Answer: D

Explanation: /proc/mdstat file contains the status of software RAID devices.
Another Way is:
lsraid -a /dev/md? If raid tools is used
mdadm --detail /dev/md ? If mdadm is used for software RAID.

QUESTION 163:

Which program can be used to adjust the DMA settings of an IDE hard drive?

A. idectl1
B. dmaparm
C. dmactl
D. hdtctl
E. hdparm

Answer: E

Explanation:
hdparm provides a command line interface to various hard disk ioctls supported by
the stock Linux ATA/IDE device driver subsystem. Some options may work
correctly only with the latest kernels.

QUESTION 164:

Which command displays information about connected USB devices?

A. cat /proc/usbdevices
B. cat /proc/usb/devices
C. cat /proc/bus/usb/devices
D. cat /proc/usbbus/devices
E. cat /proc/hotplug/usb

Answer: C

Explanation:
/proc/bus/usb
An interface to USB devices provided by the post-2.3.15 Linux kernels. Contains
per-bus subdirectories with per-device files and a devices file containing a list of all
USB devices. This interface is also support by some 2.2 Linux kernels.
Or
Use the lsusb command

QUESTION 165:

The administrator notices that a 10GB ext2 file-system used only for data storage has approximately
540MB reserved for root. Which command can be used to change the file-system parameters to make all
of the partition available to users, WITHOUT losing data?

A. e2fsck
B. tune2fs
C. mke2fs
D. dumpe2fs
E. debug2fs

Answer: B

Explanation: When we creates the ext2/ext3 filesystem always 5% of total space
reserved to super user (root). If you want to modify during filesystem creating time
use -m option. After you can use the tune2fs to change the value by -m option.

QUESTION 166:

Which of the following best describes the format of the /etc/fstab file?

A. mount point; device name; filesystem type; mount options; dump filesystem; fsck order
B. device name; mount point; filesystem type; mount options; dump filesystem; fsck order
C. mount point; filesystem type; device name; mount options; dump filesystem; fsck order
D. device name; mount point; mount options; filesystem type; dump filessystem; fsck order
E. device name; filesystem type; mount point; mount options; dump filesystem; fsck order

Answer: B

Explanation:
The file fstab contains descriptive information about the various file systems. fstab
is only read by programs,and not written;it is the duty of the system administrator
to properly create and maintain this file. Each filesystem is described on a separate
line;fields no each line are separated by tabs or space .lines starting with#are
comments. The order of records in fstab is important because sequentially iterate
through fstab doing their thing.
Pattern of /etc/fstab is:
device mount point filesystem mount option dump fsck order
Example
/dev/hda1 /boot ext3 defaults 1 1

QUESTION 167:

With which of the following can the reserved blocks on /dev/hda1 be displayed? (Enter the command
with all parameters and/or options)

Answer: tune2fs -l /dev/hda1

Explanation: using tune2fs -l device can list the contents of the filesystem
superblock.
[root@localhost ~]# tune2fs -l /dev/hda1
See the sample out put
tune2fs 1.35 (28-Feb-2004)
Filesystem volume name: /boot
Last mounted on:
Filesystem UUID: c03a3e0f-b3f9-4b9b-8f2f-798b3399cdb1
Filesystem magic number: 0xEF53
Filesystem revision #: 1 (dynamic)
Filesystem features: has_journal ext_attr resize_inode dir_index filetype n
eeds_recovery sparse_super
Default mount options: (none)
Filesystem state: clean
Errors behavior: Continue
Filesystem OS type: Linux
Inode count: 26104
Block count: 104388

Reserved block count: 5219
Free blocks: 92231
Free inodes: 26069
First block: 1
Block size: 1024
Fragment size: 1024
Blocks per group: 8192
Fragments per group: 8192
Inodes per group: 2008
Inode blocks per group: 251
Filesystem created: Thu Mar 23 15:16:22 2006
Last mount time: Mon Mar 27 10:26:45 2006
Last write time: Mon Mar 27 10:26:45 2006
Mount count: 24
Maximum mount count: -1
Last checked: Thu Mar 23 15:16:22 2006
Check interval: 0 ()
Reserved blocks uid: 0 (user root)
Reserved blocks gid: 0 (group root)
First inode: 11
Inode size: 128
Journal inode: 8
Default directory hash: tea
Directory Hash Seed: 5725b537-2bb5-434a-a243-d6448a3631dc
Journal backup: inode blocks

QUESTION 168:

After a lot of write operations, the changes should be written to the disk. Please enter the appropriate command, without the path or any options or parameters that would achieve this.

Answer: sync

Explanation: sync command force changed blocks to disk, update the super block.

QUESTION 169:

What command is used to create a file-system to be burned to a CD? (Please enter the command without the path or any options or parameters)

Answer: mkisofs

Explanation: mkisofs - create an hybrid ISO9660/JOLIET/HFS filesystem
with optional Rock Ridge attributes.

QUESTION 170:

What command can be used on an existing (formatted) partition, to configure the interval between disk checks when mounting partitions?

A. mke2fs
B. e2fsck
C. e2fsckconfig
D. config2fs
E. tune2fs

Answer: E

Explanation: using -i option with tune2fs command cat set the interval between disk checks.

QUESTION 171:

Which mount option must be used in the example /etc/fstab entry below, to ensure that a specific filesystem is not mounted when the system is booted?
/dev/had /media/cdrom iso9660 _____,ro 0 0

Answer: noauto

Explanation:
There are auto and noauto options, auto option is used to mount the filesystem when system is booted automatically and to not mount use the noauto option.

QUESTION 172:

What command is used to force a file-system check, when rebooting?

A. reboot -f
B. shutdown -f now
C. shutdown -c -f now
D. fsck -r
E. shutdown -F -r now

Answer: E

Explanation: -F option is used to forcely checks the file system on reboot and -r option reboot the system by now.

QUESTION 173:

The swap usage on a system needs to be checked. Which TWO commands can be used to display a swap

usage summary?

A. cat /proc/swaps
B. swapon -s
C. cat /etc/fstab
D. swapshow
E. swapconfig

Answer: A, B

Explanation: /proc/swaps file contains the size of virtual memory as well as using
swapon -s command display the swap usages memory.

QUESTION 174:

A system is running out of swap space. To initialize 5GB 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; swapon/tmp/swapfile
B. dd if=/dev/zero of=/tmp/swapfile bs=1024 count 5120000; mkswap/tmp/swapfile;
C. dd if=/dev/zero of=/tmp/swapfile bs=1024 count 5120000; mkswap/tmp/swapfile; mount/tmp/swapfile
D. touch -5G/tmp/swapfile; swapon/tmp/swapfile
E. mkswap/tmpswapfile 5120000; swapon/tmp/swapfile

Answer: A

Explanation:
By Creating the image file, we can use as a Virtual Memory.
To use as a swap space:
1. Create the image file using dd command where if means input from and of means
output filename. bs means byte sector and count means how many times to read.
2. mkswap command creates the swap filesystem
3. To on/off the swap memory: swapon swapfile and to off swapoff swapfile
4. Verify using free command

QUESTION 175:

What command is used to create a ISO9660 filesystem that can be properly accessed from a Windows
95/98 machine?

A. mkisofs -l -o backup.iso /home/joe
B. mkisofs -J -T -r -o backup.iso /home/joe
C. mkisofs -D -T -o backup.iso /home/joe
D. mkisofs -j -T -o backup.iso /home/joe
E. mkisofs -d -T -r -o backup.iso /home/joe

Answer: B

Explanation:
mkisofs - create an hybrid ISO9660/JOLIET/HFS filesystem with optional
Rock Ridge attributes.
-D Do not use deep directory relocation, and instead just pack them in the way we see
them. If ISO9660:1999 has not been selected, this violates the ISO9660 standard, but it
happens to work on many systems. Use with caution.
-T Generate a file TRANS.TBL in each directory on the CDROM, which can be
used on non-Rock Ridge capable systems to help establish the correct file names.
There is also information present in the file that indicates the major and minor
numbers for block and character devices, and each symlink has the name of the link
file given.
-r This is like the -R option, but file ownership and modes are set to more useful
values. The uid and gid are set to zero, because they are usually only useful on the
authorâs system, and not useful to the client. All the file read bits are set true, so
that files and directories are globally readable on the client. If any execute bit is set
for a file, set all of the execute bits, so that executables are globally executable on the
client. If any search bit is set for a directory, set all of the search bits, so that
directories are globally searchable on the client. All write bits are cleared, because
the CD-Rom will be mounted read-only in any case. If any of the special mode bits
are set, clear them, because file locks are not useful on a read-only file system, and
set-id bits are not desirable for uid 0 or gid 0. When used on Win32, the execute bit
is set on all files. This is a result of the lack of file permissions on Win32 and the
Cygwin POSIX emulation layer.

QUESTION 176:

Which THREE statements concerning automounter are true?

A. The autofs service does not need to be restarted after changing automounter map files.
B. Only one entry in master map can refer to each map file.
C. The automounter service does not rely on the kernel configuration.
D. For each entry in auto.master, a separate automounter daemon is started.
E. Changes to auto.master require automounter to reload its configuration.

Answer: A, D, E
http://linux.about.com/library/cmd/blcmdl8_autofs.htm

QUESTION 177:

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/fd0 /media/floppy vfat user,noauto 0 0
What command can an ordinary (non-root) user use to mount a floppy disk in this system? (Please enter
the command with all parameters and/or options)

Answer: mount /media/floppy

Explanation: See the output that mount option of /dev/fd0 is user that means
ordinary user can mount the filesystem. To disallow to normal users to mount use
the nouser option. The mount point for /dev/fd0 is specified /media/floppy so can
directly mount the floppy device just using :
mount /media/floppy

QUESTION 178:

Which of the following is a valid location in the automount configuration, when a Windows share needs
to be made available to the system?

A. \\server\sharename
B. ://server/sharename
C. server:/sharename
D. :server/sharename
E. \\\\server\\sharename

Answer: B
http://linux.about.com/od/commands/l/blcmdl5_autofs.htm

QUESTION 179:

With which command can the reserved blocks count for a file-system be seen? (Please enter only the
command without the path or any parameters or options)

Answer: tune2fs

Explanation: tune2fs allows the system administrator to adjust various tunable
filesystem parameters on Linux ext2/ext3 filesystems.

QUESTION 180:

Which command, with options, could be used to change an ext2 file system on /dev/hda1 to an ext3 file
system?

Answer: tune2fs -j /dev/hda1

Explanation:
tune2fs allows the system administrator to adjust various tunable filesystem
parameters on Linux ext2/ext3 filesystems.

-j Add an ext3 journal to the filesystem. If the -J option is not specified, the default journal parameters will be used to create an appropriately sized journal stored within the filesystem. Note that you must be using a kernel which has ext3 support in order to actually make use of the journal.

QUESTION 181:

Which file contains configuration data for automount?

A. /etc/automount
B. /etc/auto.mount
C. /etc/automaster
D. /etc/auto.master
E. /etc/automount/mounts

Answer: D

Explanation:
autofs will consult a configuration file /etc/auto.master .
The auto.master map is consulted when the autofs script is invoked to set up the necessary mount points for the automounter. Each line in this file describes a mount point and points to another file describing the file systems to be mounted under this mountpoint. The access to those maps is governed by a key.

QUESTION 182:

To restore the kernel source to the previous, unpatched, version, which of the following commands could be used?

A. patch --restore
B. patch --remove
C. patch -U
D. patch --undo
E. patch -R

Answer: E

Explanation:
patch takes a patch file patchfile containing a difference listing produced by the diff program and applies those differences to one or more original files, producing patched versions
-R or --reverse :Assume that this patch was created with the old and new files swapped. Patch attempts to swap each hunk around before applying it. Rejects come out in the swapped format. The -R option does not work with ed diff scripts because there is too little information to reconstruct the reverse operation.

QUESTION 183:

After configuring a new 2.4 series kernel, all dependencies, such as included files, need to be created.
How can this be achieved?

A. make dependencies
B. make clean
C. make mrproper
D. make dep
E. make test

Answer: D

Explanation:
Make dep command create the necessary file dependencies information.

QUESTION 184:

A new kernel version needs to be compiled to use a new feature. If the old kernel configuration file is available, which make target will only update the configuration file for the new kernel version? (Please enter only the make target.)

Answer: oldconfig
Not make oldconfig. Would only make the target.

Explanation:
oldconfig will read the defaults from an existing .config and rewrite necessary links and
files. Necessary means what new features are added then the running kernel. Use this
option if you've made minor changes to source files or need to script the rebuild process.
Note that oldconfig will only work within the same major version of the kernel. You
cannot, for example, use a 2.4.x .config with the 2.6.x kernel.

QUESTION 185:

Your newly-compiled kernel can not find any modules it needs to load. What command was missed when compiling and installing the kernel?

Answer: make modules_install

Explanation: make modules_install must be run as a root user because it creates the
directory under /lib/modules/kernel-version and places all modules to load by
kernel. If you forget at kernel-recompile time, your new kernel doesn't get the
modules to load.

QUESTION 186:

A pre-compiled module has been moved to /lib/modules/ but 'modprobe -a
' fails to load it. What needs to be done to enable usage of this module?

A. modules.conf or modprob.conf must be edited.
B. The system must be rebooted.
C. Make modules_install must be run.
D. Depmod must be run.
E. The kernel must be re-compiled.

Answer: D

Explanation: While we load the modules, it checks the dependency whether loaded
or not ? For dependency it checks the modules.dep file that file should generate by
running the depmod command. Most probably unable to load the modules is due to
dependencies.
-a or --all
Insert all modules matching the given wildcard. This option is
provided for backwards compatibility:

QUESTION 187:

Which command would you use to apply a diff file to an original?

A. patch > diff-file
B. patch < diff-file
C. patch << diff-file
D. cat diff-file >> kernel
E. cat diff-file << kernel

Answer: B

Explanation:
patch takes a patch file patchfile containing a difference listing produced by the diff
program and applies those differences to one or more original files, producing
patched versions. Normally the patched versions are put in place of the originals.
Running patch command by taking input from the diff-file

QUESTION 188:

Your routing configuration relies on eth0 being a 3com card that requires the 3c59x module. What line
must be added to modules configuration file, to ensure that eth0 always uses this module?

A. eth0=3c59x
B. alias eth0=3c59x
C. alias eth0 3c59x
D. set eth0 3c59x

E. set eth0=3c59x

Answer: C

Explanation: /etc/modules.conf or /etc/modprobe.conf file contains the alias with
modules as well as parameter used by program.
Syntax of /etc/modules.conf or /etc/modprobe.conf :
alias aliasname modulename parameter
So,
alias eth0 3c59x

QUESTION 189:

What information does the file modules.dep provide?

A. A list of all modules available to the kernel.
B. A list of modules required by each module.
C. A list of devices and their module name.
D. A list of modules compiled for this kernel.
E. A list of modules the kernel needs to run.

Answer: B

Explanation:
The modules.dep as generated by module-init-tools depmod, lists the dependencies
for every module in the directories under /lib/modules/version.

QUESTION 190:

If the current directory is /root and the kernel source is located in /usr/src/linux, which of the following
commands should be used to apply the patch /tmp/foopatch?

A. cat /tmp/foopatch | patch -p0
B. cd/usr/src/linux; cat/tmp/foopatch | patch -p0
C. cd/usr/src/linux; cat/tmp/foopatch | patch
D. cd/usr/src/linux; patch -p1 </tmp/foopatch
E. cd/usr/src/linux; patch -p1 >/tmp/foopatch

Answer: D

Explanation:
patch takes a patch file patchfile containing a difference listing produced by the diff
program and applies those differences to one or more original files, producing patched
versions. Normally the patched versions are put in place of the originals.
Answer D is correct because first changes the directory and running patch command by
taking input from the /tmp/foopatch.

QUESTION 191:

What script is included with the kernel source to patch a kernel?

A. patch
B. patch-kernel
C. apply-patch
D. update-kernel

Answer: B

Explanation:
The linux/scripts/patch-kernel is a Perl program that attempts to automate this process. patch-kernel will deduce the current source version number and compare this to the patch files found in the current directory. If higher-version patch files are found, the script will step through these sequentially upgrading the sources. Frankly, I have never had much luck with this script, but your mileage may vary.

QUESTION 192:

A 2.6.9-ac1 kernel would be

A. an alpha kernel.
B. someone's patch to a stable kernel.
C. a stable kernel.
D. an unstable kernel.
E. someone's patch to an unstable kernel.

Answer: B

Explanation: This file is the patch file for security bugs of 2.6.9 version kernel.
This bug fixes the following bugs:
Security Fixes
o Set VM_IO on areas that are temporarily marked PageReserved (Serious bug)
o Lock ide-proc against driver unload
Bug Fixes
Working IDE locking And a great deal of review by Bartlomiej
o Handle E7xxx boxes with USB legacy flaws
Functionality
o Allow booting with "irqpoll" or "irqfixup"
on systems with broken IRQ tables.
o Support for setuid core dumping in some
environments (off by default)
o Support for drives that don't report geometry
o IT8212 support (raid and passthrough)

o Allow IDE to grab all unknown generic IDE devices (boot with "all-generic-ide")
o Restore PWC driver
o Small pending tty clean-up to moxa
o Put VIA Velocity (tm) adapters under gigabit

QUESTION 193:

It is possible to configure kernel parameters at runtime (e.g the maximum size of the shared memory segment (shmmax)). In which TWO ways can this be changed to 2GB (2147483648 Bytes) on a running system?

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

Answer: C, D

Explanation: /proc is the Virtual File system, which contains the running kernel information. To tune the running kernel, we should change the value on /proc. Regarding the shared memory, either we can change the value of /proc/sys/kernel/shmmax which brings the changes recently on running kernel. To set the permanent Value of maximum size of shared memory: kernel.shmmax=?? in /etc/sysctl.conf, but you should reboot the system to bring changes on kernel.