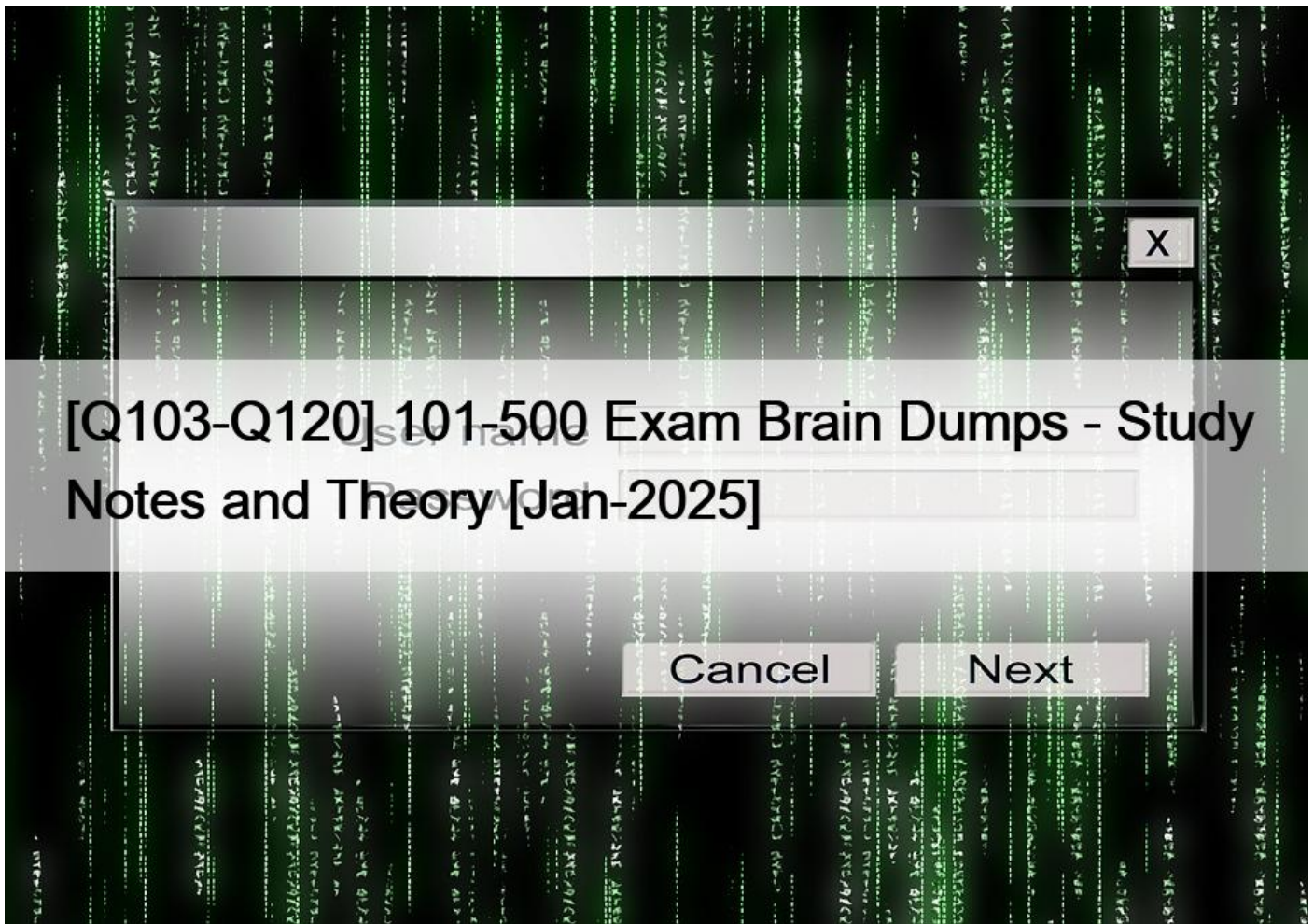# [Q103-Q120 101-500 Exam Brain Dumps - Study Notes and Theory [Jan-2025

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What topics are included in LPI 101-500 exam? **The LPI 101-500 exam consists of 4 topics that are divided into several subtopics. This means that the applicants have to prepare thoroughly. The domains that are presented in the test are as follows: Unix Commands & GNU:** This topic evaluate the learners' proficiency in working on the command line, using streams, redirects, and pipes, processing text streams with the help of filters, as well as creating processes, monitoring them, and killing if needed. Their skill set should include the knowledge of modifying process execution priorities, basic file editing, and searching text files with the use of regular expressions. The test takers should also perform their skills in using single shell commands and one-line command sequences in order to perform basic tasks on the command line, as well as invoking commands inside and outside the defined path. It also includes the process of sending output streams and text files through the text utility filters in order to modify the output with the use of the standard UNIX commands that are found in the GNU textutils package. It is also required to have knowledge of how to copy, move, and also remove the directories and files individually, use simple/advanced wildcard specifications in commands, as well as use the output of one command as arguments to another command. A potential candidate has to be able to select and sort processes for display, run a program with higher or lower priority than the default, create simple regular expressions that contain several notational elements, configure the standard editor, and more.**Devices, Linux Filesystems, &**

Filesystem Hierarchy Standard: In this part, the examinees have to be good at partitions and filesystems creation, maintenance of the integrity of filesystems, controlling of the mounting and unmounting processes of filesystems, and management of file permissions and ownership. Their knowledge base should also include the information about the hard and symbolic links as well as the creation, changing, and finding processes related to system files and their placement in the correct location. Also, this objective evaluates one's ability to understand the correct locations of files under FHS, use links to support system administration tasks, create links, and skills in managing the access permissions on regular files, special files, as well as directories. It is important to have the expertise in using the group field to grant file access to group members, using labels and UUIDs for identifying and mounting file systems, repairing simple filesystem problems, and managing MBR and GPT partition tables.**Linux Installation & Package Management:** To cover the questions of this subject area, the candidates have to demonstrate their understanding of Linux as a virtualization guest, knowledge of installing the boot manager, designing hard disk layout, managing shared libraries, as well as knowledge of the Debian package management as well as RPM and YUM package management. They have to know how to backup boot options and provide alternative boot locations, install the boot loader and configure it, as well as install, upgrade and uninstall Debian binary packages. Also, you should know how to obtain information on the RPM packages, including version, dependencies, status, integrity, and signatures. In addition, the professionals need to have an understanding of the general concepts of virtual machines and containers as well as common elements of virtual machines in IaaS Cloud. It includes block storage and networking, computing instances, unique properties of a Linux system, which have to change when a system is cloned or used as a template, and Linux extensions that integrate Linux with a virtualization product.**System Architecture:** This section requires the students' knowledge of booting the system, changing runlevels or boot targets, configuring hardware settings, and shutdowning or rebooting the system. They have to be able to enable and disable integrated peripherals, determine hardware resources for devices, as well as provide options to the kernel and common commands to the boot loader at boot time. You should be able to demonstrate the skills in using the boot sequence from BIOS or UEFI to boot completion, check boot events in log files, set default runlevel or boot target, shutdown and reboot from the command line, and so on.

Q103. Which of the following commands changes all occurrences of the word "bob" in file data to "Bob" and prints the result to standard output?

* sed`/bob/Bob' data
* sed`s/bob/Bob/g' data
* sed`s/bob/Bob/' data
* sed`/bob/Bob/' data
* sed`s/bob,Bob/' data

Q104. Which of the following examples for Bash file globbing matches a file named root-can-do-this.txt when used in the directory holding that file? (Choose three correct answers.)

* root*can?do-this.{txt,odt}
* r[oOoO]t-can-do*.txt
* {root,user,admin}-can-??-this.txt
* root*can*do??this.txt
* root***{can,may}-do-this.[tT][xX][tT]

Explanation

The examples for Bash file globbing that match a file named root-can-do-this.txt are:

* root*can?do-this.{txt,odt}: This matches any file that starts with root, followed by any number of characters, followed by can, followed by any single character, followed by do-this, followed by either

.txt or .odt extension.

* {root,user,admin}-can-??-this.txt: This matches any file that starts with either root, user or admin, followed by a hyphen, followed by can, followed by any two characters, followed by -this, followed by

.txt extension.

* root***{can,may}-do-this.[tT][xX][tT]: This matches any file that starts with root, followed by any

* number of characters, followed by either can or may, followed by -do-this, followed by any combination of t, T, x or X for the extension.

The examples that do not match are:

* r[oOoO]t-can-do*.txt: This matches any file that starts with r, followed by either o, O, o or O, followed by t-can-do, followed by any number of characters, followed by .txt extension. This does not match because the file name has only one o after r.

* rootcando??this.txt: This matches any file that starts with root, followed by any number of characters, followed by can, followed by any number of characters, followed by do, followed by any two characters, followed by this, followed by .txt extension. This does not match because the file name has a hyphen between do and this. References:

* LPI Exam 101 Detailed Objectives, Topic 103: GNU and Unix Commands, Weight: 25, Objective

103.3: Perform basic file management

* LPI Linux Essentials Study Guide, Chapter 3: Working on the Command Line, Section 3.3: Globbing, Page 58

Q105. Which of the following statements is correct regarding the command foo 1> bar?
* The stdout from the command foo is appended to the file bar.
* The stdout from the command foo overwrites the file bar.
* The command foo receives its stdin from the file bar.
* The command foo receives its stdin from the stdout of the command bar.
* The stderr from the command foo is saved to the file bar.

Q106. Which of the following commands can be used to download the RPM package kernel without installing it?
* yum download –no-install kernel
* yumdownloader kernel
* rpm –download –package kernel
* rpmdownload kernel
Explanation

The command that can be used to download the RPM package kernel without installing it is yumdownloader kernel. This command is part of the yum-utils package, which contains a suite of helper tools for yum package manager. To use this command, you need to install the yum-utils package first1. The downloaded package will be saved in the current directory. You need to use root privilege because yumdownloader will update package index files during downloading. Unlike yum command, yumdownloader will not download any dependent packages1.

The other commands are either invalid or do not have the desired functionality. yum download –no-install kernel is not a valid yum command, as yum does not have a –no-install option2. rpm –download –package kernel is not a valid rpm command, as rpm does not have a –download or a –package option3. rpmdownload kernel is not a standard Linux command. rpm has a native support to download a package from a URL and install it, but not to download a package without installing it4.

References:

* How to use yum to download an RPM package without installing it – Xmodulo

* yum(8) – Linux manual page

* rpm(8) – Linux manual page

* How to download an RPM package and install it in one line?

Q107. Which of the following properties of a Linux system should be changed when a virtual machine is cloned?

(Choose two.)
* The partitioning scheme
* The file system
* The D-Bus Machine ID
* The permissions of /root/
* The SSH host keys

Q108. You are using quota on your system. How can you see disk quota details?
* repquota
* quota-l
* quota
* quotacheck
* quota –list

Q109. Which command is used to query information about the available packages on a Debian system?
* apt-cache
* apt-get
* apt-search
* dpkg
* dpkg-search

Q110. What RPM command would show you detailed information for a package called openssh-

3.6.i386.rpm?
* rpm –showinformation openssh-3.6.i386.rpm
* rpm –showdetails –package openssh-3.6.i386.rpm
* rpm –query –info –package openssh-3.6.i386.rpm
* rpm –verify openssh-3.6.i386.rpm

Q111. Which grep command will print only the lines that do not end with a / in the file foo?
* grep’/$’ foo
* grep ‘/#’ foo
* grep -v ‘/$’ foo
* grep -v ‘/#’ foo
Explanation

Thegrepcommandthatwillprintonlythelinesthatdonotendwitha/inthefilefooisgrepv/’ foo. This command uses the following
options and pattern:

-v: Inverts the matching, meaning that it only outputs the lines that do not match the pattern.

/:Matchesa/characterattheendofaline.The symbol represents the end of a line in regular expressions. foo: The name of the file to search.

The output of this command will show all the lines in the file foo that do not have a / as the last character. For example, if the file foo contains the following lines:

/home/user/ /var/log/messages /etc/passwd /usr/bin/

The output of the command will be:

/var/log/messages /etc/passwd

The other commands are incorrect for the following reasons:

* grep '/$' foo: This command will print only the lines that do end with a / in the file foo, which is the opposite of what is required.

* grep '/#' foo: This command will print only the lines that contain the string /# in the file foo, which is not related to the question.

* grep -v '/#' foo: This command will print only the lines that do not contain the string /# in the file foo, which is also not related to the question.

References:

* [LPI Exam 101 Detailed Objectives], Topic 103: GNU and Unix Commands, Objective 103.7: Perform basic file management, Weight: 4, Key Knowledge Areas: Use ofegrepto search for extended regular expressions in text output.

* [How to Use the grep Command on Linux], Topic: Start and End of Lines.

Q112. Which command will print out the attributes of the file foobar?
* ls –attrfoobar
* lsattr foobar
* printattr foobar
* fileattr foobar

Q113. After installing and configuring Xfree86, you notice that when you start X, the display is not centered. What program can you run to find a better modeline setting?
* XF86Setup
* xf86config
* xvidtune
* xvideoagent

Q114. Which permissions and ownership should the file /etc/passwd have?
* -rw——-1 rootroot531 Jun 5 22:45 /etc/passwd
* -rw-r–r–1 rootroot531 Jun 5 22:45 /etc/passwd
* -rw-r–r–1 11531 Jun 5 22:45 /etc/passwd
* -rw——-1 11531 Jun 5 22:45 /etc/passwd

Explanation

The correct permissions and ownership for the file /etc/passwd are:

B: -rw-r-r– 1 root root 531 Jun 5 22:45 /etc/passwd

The /etc/passwd file is a plain text-based database that contains information for all user accounts on the system. It is owned by root and has 644 permissions. The file can only be modified by root or users with sudo privileges and readable by all system users. The permissions and ownership of the file are important for the security and functionality of the system. The permissions and ownership of the file can be viewed by using the ls -l command. For example:

ls -l /etc/passwd

The output of the command will show the following information:

-rw-r-r– 1 root root 531 Jun 5 22:45 /etc/passwd

The first column shows the permissions of the file, which are composed of 10 characters. The first character indicates the file type, which is – for regular files. The next nine characters indicate the permissions for the user (owner), the group, and the others, respectively. Each set of three characters indicates the read , write (w), and execute (x) permissions. A dash (-) means no permission. In this case, the permissions are:

* rw- for the user, which means the user can read and write the file, but not execute it.

* r– for the group, which means the group can only read the file, but not write or execute it.

* r– for the others, which means the others can only read the file, but not write or execute it.

The second and third columns show the owner and the group of the file, which are both root. The root user is the superuser or the administrator of the system, who has full access and control over the system. The root group is the primary group of the root user, which usually has no other members.

The fourth column shows the size of the file in bytes, which is 531 in this case. The fifth and sixth columns show the date and time of the last modification of the file, which are Jun 5 22:45 in this case. The last column shows the name of the file, which is /etc/passwd in this case.

The other options are not correct because:

* A: -rw————- 1 root root 531 Jun 5 22:45 /etc/passwd: This option has the wrong permissions for the file.

The permissions are 600, which means only the user (root) can read and write the file, and the group and the others have no permissions at all. This would prevent the system users from reading the file, which would cause problems for the login process and other utilities that rely on the file.

* C: -rw-r-r– 1 1 531 Jun 5 22:45 /etc/passwd: This option has the wrong owner and group for the file.

The owner and group are both 1, which is the numeric ID of the user and group. However, the numeric ID of the root user and group is 0, not 1. The user and group with the numeric ID of 1 are usually bin, which is a system user and group that own some system binaries and directories. Thebin user and group should not own the /etc/passwd file, as this would compromise the security and functionality of the system.

* D: -rw——- 1 1 531 Jun 5 22:45 /etc/passwd: This option has both the wrong permissions and the wrong owner and group for the file. The permissions are 600, which means only the user can read and write the file, and the owner and group are both 1, which is the numeric ID of the bin user and group.

This would prevent the system users from reading the file, and give the bin user and group full access to the file, which would cause problems for the security and functionality of the system.

Q115. What can the Logical Volume Manager (LVM) be used for? (Choose three.)
* To create snapshots.
* To dynamically change the size of logical volumes.
* To dynamically create or delete logical volumes.
* To create RAID 9 arrays.
* To encrypt logical volumes.

Q116. Which of the following files are found in the /boot/file system? (Choose two.)
* Linux kernel images
* Bash shell binaries
* systemd target and service units
* Initial ramdisk images
* fsck binaries

Q117. You are compiling some software from source. After running ./configure with the appropriate arguments and no errors, what is the next command to run?
make

Explanation:

The purpose of the make utility is to determine automatically which pieces of a large program need to be recompiled, and issue the commands to recompile them. example C programs, since they are most common, but you can use make with any programming language whose compiler can be run with a shell command. In fact, make is not limited to programs. You can use it to describe any task where some files must be updated automatically from others whenever the others change.

To prepare to use make, you must write a file called the makefile that describes the relationships among files in your program, and the states the commands for updating each file. In a program, typically the executable file is updated from object files, which are in turn made by compiling source files.

Q118. In the vi editor, what vi command will copy (but not paste) from the current line at the cursor and the following 16 lines (17 lines total)? Specify the correct vi command without spaces.
17yy

Explanation

The vi editor is a text editor that operates in two modes: command mode and insert mode. In command mode, the user can enter commands to perform various operations on the text, such as copying, pasting, deleting, moving, searching, etc. In insert mode, the user can type text into the file. To switch from command mode to insert mode, the user can press i, a, o, or other keys. To switch from insert mode to command mode, the user can press Esc. The yy command is used to copy (yank) the current line into a buffer. The number before the yy command specifies how many lines to copy, starting from the current line. Therefore, the command 17yy will copy the current line and the following 16 lines (17 lines total) into a buffer. The buffer can then be pasted into another location by using the p or P command. Note that the command 17yy does not paste the copied lines, it only copies them. References:

* LPI 101-500 Exam Objectives, Topic 103.8, Weight 4

* LPI Learning Materials, Chapter 3.8, Advanced Scripting

* Web Search Results, 1

Q119. What is contained on the EFI System Partition?
* The Linux root file system
* The first stage boot loader
* The default swap space file
* The Linux default shell binaries
* The user home directories
Explanation

The EFI System Partition (ESP) is a special partition on a disk that contains the UEFI boot loaders, applications and drivers for the installed operating systems. The UEFI firmware will load these files from the ESP when the system boots. The ESP is mandatory for UEFI boot and it is usually formatted with a FAT file system. The ESP is part of the 101.1 Determine and configure hardware settings topic of the LPI Linux Essentials certification program12.

The other options are false or irrelevant. The Linux root file system is not contained on the ESP, it is usually on a separate partition with a Linux file system, such as ext4 or btrfs. The default swap space file is not contained on the ESP, it is usually on a swap partition or a swap file on the Linux root file system. The Linux default shell binaries are not contained on the ESP, they are usually on the /bin directory of the Linux root file system. The user home directories are not contained on the ESP, they are usually on the /home directory of the Linux root file system or on a separate partition. References:

* Linux Essentials – Linux Professional Institute Certification Programs1

* Exam 101 Objectives – Linux Professional Institute2

* EFI system partition – ArchWiki3

* /boot/efi Linux partition: What is, usage recommendations

Q120. What command will remove duplicate lines from a sorted file?
* filter
* trim
* uniq
* wc