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| **Questions** | **Answers** | **Instructors Comments** |
| 1. What is the difference between mv and cp commands in Linux?   Mv command helps to rename a file or a directory.  mv command is used to move files and directories from one place to another.  mv file1 folder2 = move file1 into folder2  cp command is used to copy file and directories from one place to another.  cp file2 folder3 = copy file2 into folder3  the file will be in the original place and the new location |  |  |
| 1. What is a swap partition in Linux?   Swap partition it’s the fact that the hard drive behaves like the RAM memory because this one it’s  running out of memory or space. |  |  |
| 1. What is the meaning of the first slash ( /)  in Linux   The first slash means Root |  |  |
| 1. What is a kernel in Linux?   A kernel it’s the main component of a Linux Operating system. It’s the core interface between a  computer’s hardware and it’s processes. |  |  |
| 1. What is a difference between file and directory in Linux?   In Linux a file it is a document that stores data, information, settings or commands.  A directory is a folder that can contain or store files and other directories. |  |  |
| 1. what is the difference between a regular user and root user in Linux?   Regular user: dollar sign, cannot run some commands, the commands that he can run are  stored in the Bin directory.  root user: able to run command that need privileges, their commands are stored in the Sbin directory. |  |  |
| 1. If you have a configuration file in Linux in which directory it can be found?   Etc directory |  |  |
| 1. Where is the passwd file located on Linux?   The Linux password file is stored in /Etc directory |  |  |
| 1. Where is the shadow file located on Linux?   The shadow file is located at /etc/shadow in the Etc directory |  |  |
| 1. Where is the hosts file located on Linux?   At /etc/hosts |  |  |
| 1. What command can you use to modify a user account in Linux?   Usermod |  |  |
| 1. What are some commands that you can used to view the content of a file in Linux?   Cat, more, less and nl commands |  |  |
| 1. How do you know which Linux distribution or flavor you are using?   Cat /etc/os-release |  |  |
| 1. Group the following by family: ubuntu, alpine, Debian, redhat, fedora, kali Linux, centos, window, suse   Debian, ubuntu, kali Linux  Redhat, centos, fedora  Suse |  |  |
| 1. What is the difference between open source and close source?   open source means that the source code it’s open to the public, we can freely access a  program and modify it with the validation of the community.  close source: the source code is closed meaning that public is not given access to the source code. |  |  |
| 1. What command can you use to modify a user account in Linux?   Usermod |  |  |
| 1. What is the difference between Unix and Linux?   Linux: open-source operating system, created in 1991, free, flavors (fedora, Debian, ubuntu…), highly secure  Unix: close source, launched 1959, it’s not totally free, flavors (IBM AIX, MacOS x, Solaris), highly secure |  |  |
| 1. What is the difference between Linux and Windows?   Linux: open source, created by Linus Torvalds, free, unlicensed, secure, used for servers, case sensitive,  Windows: close source, created by Microsoft, costly, licensed, unsecure, used for home PC,  don’t care about the case |  |  |
| 1. what is the client and a host?   A client is a program or computer that request information from the server (host)  A host is a computer that respond to the request made by the client. |  |  |
| 1. What command can you use to delete a file in Linux?   rm command |  |  |
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| 1. if you are not able to login on the server through ssh, what can be the problem?   The server can be down  Maybe you are reaching the wrong server.  Maybe the user’s account or password is locked. |  |  |
| 1. How can you check if the user account is locked?   Passwd -S username |  |  |
| 1. How can you force a user to change his password at net login?   Passwd -e username |  |  |
| 1. if you are not able to delete a file on the server, what can be the problem?   You don’t have proper permission |  |  |
| 1. Write the command that will create a file called “learning” in the folder called “love” located in the   “var” directory  Cd /var/  Mkdir love  Cd love  Touch learning |  |  |
| 1. What is Linux? Is it open-source or a close source?   Linux is a close source operating system |  |  |
| 1. How Do you troubleshoot a slow web server or Linux server?   I will run the command top to check if the processes used a lot of memory. If so, I will let the lead know and  ask which processes can be killed. The other solution is to add more CPUs to the system or increase the speed.  of the CPU.  I will run the command df -h to check the state of the HDD if it is full, I can add more disk or delete some  data with the approbation of the lead.  I will also run free command to check the amount of the physical and swap memory as well as the free and  use memory.  I will run the command ping to check for the network issue. |  |  |
| 1. What are some directories that are in the root (/) files system?   We have home directory, temporary directory, sbin directory, bin directory, etc directory and lib directory. |  |  |
| 1. How do you get help in linux?   We get help in Linux by running the commands help, man and info. |  |  |
| 1. What is the difference between append and redirect in Linux?   Redirect can create a file and put something in it, it can also delete the content of a file.  Append can also create a file. Unlike redirect who deletes files, append adds a new content on the  file without deleting the old one. |  |  |
| 1. How do you check the memory used and available in Linux?   Free -h command |  |  |
| 1. How do you check all running processes in Linux   Ps -aux command |  |  |
| 1. Take a look at the following: Which one is a file and which one is a directory explain why?  * /home/john/linux * /home/john/linx/ |  |  |
| 1. What is the difference between the GUI and CLI?   GUI means graphical user interface and CLI command line interface.  The user interacts with the computer through the GUI by clicking on icons and visual representations.  On the other hand, CLI is a text-based interface, the user interacts with the operating system by typing  Commands. |  |  |
| 35.What is the purpose of the loopback address?  The loopback address helps to troubleshoot the Nic Card |  |  |
| 36.What is the difference between the 32 bit and 64 bit OS?  With 32-bit OS, the computer can only install programs of 32 bit while with 64 bit OS, the computer can  install programs of 32 bits and 64 bit. |  |  |
| 37. How do you move from one directory to another in Linux CLI?  By running cd command |  |  |
| 38. What is a NIC and how can you troubleshoot a NIC?  NIC means network interface card. It provides networking capabilities to the computer.  To troubleshoot a NIC, we must reboot the router,  run the command ping to check the connectivity.  We should also ping the loopback address. |  |  |
| 39. How do you quit a file without saving it while using vim editor?  When vim is in a command line mode, we run the command q! |  |  |
| 40. What is the difference between Redhat, CentOs and ubuntu?  There are all Linux flavors.  First, CentOS is based on Redhat and Ubuntu is based on Debian architecture.  Second, centOS update scarcely while ubuntu update frequently.  Third, we use yum command to install packages in CentOS on the other hand, we run the  command apt to install packages.  Last, ubuntu has a large user and developer community unlike centOS who has a small user and developer  community. |  |  |
| 41. What tools do you use to connect to a remote server?  Command prompt, PowerShell, Gitbash, Putty, Mobaxterm, visual studio code |  |  |
| 42. What command do you use to connect to a remote server using ssh?  ssh [username]@[server IP or DNS] |  |  |
| 43.What is the meaning of the current directory?  Current directory is the directory where the user is working at a given time. |  |  |
| 44. What can you do to know your location in Linux?  Run the command pwd |  |  |
| 45.What is the command that allows you to view files and directory located in your current directory?  Ls command |  |  |
| 46. If I want to create a file called “devops” and a directory called “learning” what are the commands that  you need to type to my terminal?  Touch devops to create the file devops  Mkdir learning to create the directory learning |  |  |
| 47.What is the command that take users to their home directory in Linux  Cd ~ |  |  |
| 48. How to move one step and two steps back in Linux  To move one step back, we run the command cd ..  To move 2 steps back, we must run the command cd ../.. |  |  |
| 49. How to move to a previous directory in Linux?  Cd - |  |  |
| 50. In linux what is the command that can tell you the last time the server was rebooted and for how long  it has been running.  Who -b command |  |  |
| 51. What is the meaning recursively? Explain it with the command “cp -r”  When we want to copy a directory and add option -r, is to specify that we want to copy the directory and  his content. It can be directories, subdirectories or files. |  |  |
| 52. What is the meaning of parent directory?  The parent directory is the directory that contains the current directory. |  |  |
| 53. In Linux, what is the command to create the following directory in one command if none of them exist “/devops/Linux/learning/100k”  Mkdir -p devops/Linux/learning/100k |  |  |
| 54. What is the maximum number of characters that can be used to name a file or directory in Linux.  The maximum number of characters is 63 |  |  |
| 55. What do you know about the home directory?  The home directory is the place where the user stores his files and folders. |  |  |
| 56.What is a sudoers file in Linux?  It’s a file used to allocate rights and permissions to the system users. |  |  |
| 57. What command do you used to edit a sudoers file in Linux and why?  Visudo command. Because with visudo command we are sure at 100% that we are not going to  lock the files system. |  |  |
| 58. What is the difference between the primary and the secondary group in Linux?  The primary group carry the name of the user and it is created automatically when creating the user.  The secondary group is a group assigned to the user. We must add the user to a secondary group. |  |  |
| 59. How can you check all ports that the server is listening to?  Netstat -ano |  |  |
| 60. How can you check if the server is up and running though the CLI?  Uptime command |  |  |
| 61. If you are not able to connect to a server, what can be the issue?  My account could be lock, the server might be down, it might also be a network problem |  |  |
| 62. If you are working at Google as a system administrator and your boss hired 5 system administrators,  how can you give them root access on all the servers without them knowing the root password of  those servers?  I will create a group systemadmin. Groupadd systemadmin  I will create their account. Useradd systemadmin{1..5}  I will assign proper permission to the group systemadmin by running the command visudo (modified the sudoers file)  I will add my users systemadmin{1..5} to the group systemadmin |  |  |

**Log in to one of your Linux servers and do the following:**

a-Type a command to check the kernel version of your centos server. Uname -r

b- Type a command to check the number of CPUs on your server. nproc

c- Type a command to check the size of your total memory. What size is used? What size is available? Free -h

d- Type a command to check a root file system size. Df -h

What size is used? What size is available?

On server 03, there is a directory, or a file called **mysecretstuff. Do the following**

 1- Write the command to find the path of that file or directory find /-iname mysecretstuff

2- **mysecretstuff** is a file or directory and why? Find / -type d -iname mysecretstuff

3- Copy it to your home directory cp-r mysecretstuff /home/s5ludivine/

  4- display the content: cat mysecretstuff

   5- display the first 5 lines: cat mysecretstuff |head -n5

    6- display the last 5 lines: cat mysecretstuff |tail -n5

    7- append “I love Linux” at the end of the file. Echo “I love Linux” >> mysecretstuff

    8- edit that file and add as a first line “I am learning Linux” at the beginning: vim mysecretstuff

**Create 4 groups called [your prefer anme]sysadmin, [your prefer anme]manager, [your prefer anme]shipping, and [your prefer anme]hr. Create a new user call [your prefer anme]john [your prefer anme]smith with the following:**

Creation of 4 groups

Groupadd s5ludivine-sysadmin

Groupadd s5ludivine-manager

Groupadd s5ludivine-shipping

Groupadd s5ludivine-hr

Username creation

Useradd s5ludivine-john

Useradd s5ludivine-smith

a-[your prefer anme]Jhon password should be "redhat"

passwd s5ludivine-john = redhat

b- [your prefer anme]Jhon should not have access to the shell, and his password should be locked

usermod -s/sbin/nologin s5ludivine-john

d- [your prefer anme]Jhon primary group should be [your prefer anme]hr

usermod -G s5ludivine-hr s5ludivine-john

e- [your prefer anme]Jhon should be a member of [your prefer anme]sysadmin, [your prefer anme]shipping, and [your prefer anme]manager group.

Usermod -aG s5ludivine-sysadmin,s5ludivine-shipping,s5ludivine-manager s5ludivine-john

 How can delete a user with his home directory?

What is SCP command in Linux and why it is useful?

How do you edit a file in Linux without opening it?

Have you worked on a project where you have to back up data?

If you are not able to delete a file on the server, what can be the problem?

If you are not able to log in on the server through ssh, what can be the problem?

How can you check if the user account is locked?

How can you force a user to change his password at net login?

How do you troubleshoot a slow web server or Linux server?

What is the difference between append and redirect in Linux?

How do you check all running processes in Linux?

What is a NIC and how can you troubleshoot a NIC?

What is the meaning recursively in Linux?

What is a sudoers file in Linux?

What is /dev/null in Linux?

What is the daemon?

How do you kill the process? Kill -9 hard skill and soft kill -15

How do you start a daemon? Systemctl start daemon.

How do you check the Linux distribution that you are working with? Cat /etc/\*release

What is the awk command used for? It used to print the output of a command by column.

How can you identify the shell that you are using? Echo $SHELL

What are the challenges that you face working as a Linux system administrator?

How do you write the output of a command in the file. By using echo command and redirect

What does permission 777 mean in Linux? Means the user the group and others have the full permissions read write and execute.

How to move one step and two steps back in Linux? Cd .. and cd ../..

How to move to a previous directory in Linux? Cd ..

What is a NIC? Stand for Network Interface Card it provides networking capabilities for a computer.

What is a DHCP and DNS?

How can you troubleshoot a NIC? Ping command, checking the physical connection and the driver.

What is a ping command? Why it is useful? A Ping command is used to check the connectivity between two network devices. It is useful for troubleshooting.

What is the meaning of a parent directory? A parent directory is the main directory that hosts subdirectories.

How can you check a kernel version in Linux? Uname -r

What command do you use to edit a sudoers file in Linux and why?

What is the difference between the primary and the secondary group in Linux?

How can you check all ports that the server is listening to?

If you are working at Google as a system administrator and your boss hired 5 system administrators, how can you give them root access on all the servers without them knowing the root password of those servers?

What is the difference between the etc shadow and password

How do you add a user to the group?

What are the different types of permission in Linux?

What is the difference between the home and the current directory?

Is it possible to create a user without being a root? If yes, why? If no, why?

What is your day-to-day activities as a Linux system administrator?

What are some directories under the root file system?

How do you harden or patch a Linux server?

How do you free up a server to have more space or a hard disk drive?

How can you terminate a running process in Linux?

What is the difference between Ubuntu and Centos?

 How can you search for a particular string in the file? | Grep ‘string’

Have even run into an issue that you have to troubleshoot? Yes, one of my colleagues was not able to login on the server. I had to troubleshoot and find the issue. First, I checked the connectivity by using ping command, I found out that is not a network issue. I tried to login myself and see if it was a general issue, but I was able to connect. I checked if he even exists as user by using cat /etc/passwd |grep colleague name. it was effectively an user by I noticed that his account was lock while using passwd -S colleague name.

Can you run me through your day-to-day activities?

What is the default shell in Linux and why? The default shell in Linux is bash. Bash is open-source software and widely available on most Linux distributions and Unix-based operating systems, making it easy to use for most users. Bash is a powerful shell with a wide range of features and options, including support for variables, functions, and control structures. Bash is widely used and well-documented, making it easier for users to find help and support when they encounter problems or need to learn how to use it.

How do you schedule a task in Linux? By using Cronjob

What is the thickening system that you guys use?

What drive you in the Linux world?

What is the difference between the awk and grep command? AWK command print column of a file separated by a space, grep print the word (command) that it provided.

Can two Linux processes have the same process ID? No, two Linux processes cannot have the same ID.

How can make a file executable and why? By changing permissions using chmod command.

What is the difference between pipe and redirect? Redirect is used to delete the content of a file; it is also used to edit a file. Pipe is used to take the output of one command and feeds it as input to another command. This allows you to chain commands together and create more complex workflows.

What is the export command? Export command is used to set the environment variable in the current shell. Export username=” admin”

How can delete a user with his home directory? Userdel -r (username)

Can you give me an example of a project or tasks you have worked on? I deployed an application using docker compose, the application was made of 12 services. While trying to launch my application I encountered a lot of issues, but the main was the slow server.

What is your troubleshooting pattern? I had to check the processes running into the server, I noticed that we had a lot of zombie processes, I used the kill -15 to remove them, I also used docker system prune to remove all unused data in the system.

What is the difference between the awk, cut, and grep commands? They are all used to filter information. Awk and cut used a film separator to print information by column. Grep it used to filter a specific word or string.

What are some challenges that you faced in the past working as a Linux system admin? As Linux syst admin I faced multiples challenges, the first one was to secure the Linux system by implementing security protocols, monitoring logs and processes, and staying up to date with security patches. The second one was to manage user accounts with different permissions. Lastly, Troubleshooting: Diagnosing and resolving issues with Linux systems can be difficult.

Is it a good practice to delete a user account with the home directory if the user resigns from his current position? No, it is not a good idea because there is probably important data inside his home directory. I will delete the user account first, backup data from his home directory before deleting it.

What can we benefit from you if we offer you a position in our company or why should we hire you? I am sure that I am going to be a great access for your company because I am familiar with multiples tools such as Jenkins, git, gitlab, docker, docker compose, Kubernetes, I am a team player and a fast learner.