**Word Count: 696**

Video, Advanced Linux Commands

In this video, we will learn about advanced Linux commands for the Raspberry Pi.

Let’s say you want to search string in a text. You can use a powerful tool called **grep** to search for something in a file or to filter the output of another command or script. For example, **grep "search" \*.txt** will look in all the files in the current directory ending with .txt for the string search. The **grep** command supports regular expressions, which allows special letter combinations to be included in the search.

If you want to read more about any of the Linux commands, you can use the **man** command followed by the command. It gives the manual page of a particular command. For example, type **man grep** & press enter to view the manual of the grep command.

If you are lost and could not find a lost file, there is a command that lets you search and locate the file with its filename. It's called the **find** command. Type **find** followed by the directory to search for, then followed by **-iname** then followed by the filename inside quotes. Using **-iname** instead of **-name** ignores the case of your query. The **-name** command is case-sensitive.

To know about all the running processes on your Raspberry Pi 4, you can use the **ps** command. To display all the running process, enter **ps aux**. You can also display the process started by a specific user using **ps -u** followed by user name. Now once you look at the process list, if you want to stop some process, use the **kill** command followed by the PID or the process ID.

The Raspberry Pi 4 tends to get quite hot sometimes. Thus it's always a good idea to know the following command to monitor the CPU temperatures.

Enter **vcgencmd measure\_temp** to get the temperature of the CPU.

If you are facing some boot issues with the Raspberry Pi, you can use the **dmesg** command. It will show you every event that happened in the start sequence. Here you can see errors with drivers or services and understand why something doesn’t work the way you want.

A very powerful tool for network monitoring is called **netstat**. For example, you could see every port open and every traffic flow. **netstat** is a complex tool as it has a lot of capabilities.

Entering **netstat -l** allows you to see every port and traffic flow. Go to the manual page of netstat to know more, by typing **man netstat.**

You are already familiar with the **ls -l** which lists file with permissions. But what if you want to change the permissions of a file. Then you need to know to use the **chmod** command.

To use chmod to change file permissions, you have to tell it three things:

1. Who you’re setting permissions for
2. How you’re setting them
3. What you’re setting them to

I will explain with an example:

**sudo chmod a+w filename-or-fullfilepath**

1. Selecting who - The following table shows you how to pick a letter to tell the command who you’re setting the permissions for.
   * u means the owner of the file
   * g means the file group
   * o means everyone who isn't the owner or the group
   * a means everyone
2. Selecting how - Next, you specify how you want to change the permissions. The following table has the details.
   * + means add or turns on a permission
   * - removes or turns off a permission
   * = ignores current permissions and sets some new ones
3. Selecting what - The following table shows you which letters to type to select the different permissions.
   * r means read permission
   * w means write permission
   * x means execute permission
   * Capital X means special execute permissions for folders

I will now show the chmod command in action, Here you can see that the file permission has changed after I used the chmod command like shown here. The **ls -l** command reveals that the file permission has indeed changed. Here is a before and after permission info of the same file.

Summary

In this video, we have learned some advanced Linux commands and its functions

In the next video, we will learn to automate and schedule tasks in raspberry pi 4