***FREE AND OPEN SOURCE SOFTWARE LAB REPORT***

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Page no: 1 ***EXPERIMENT NO : 1***

***LINUX COMMANDS***

**DATE : 10/02/2019**

**AIM:**

This experiment was to familiarize and learn about most important linux commands. By this experiment it becomes helpful to use the commands in the following tasks. We use the **man command** to know much more about the commands and its syntax.

**Description :**

The commands that has been familiarized are;

* ls : It will show the files in the current directory ,ls –l : shows the detailed list
* cd : Used to change directory
* cat : Displays content
* grep : Search the substring inside the file
* rm : Remove the particular file
* mkdir : Make a new directory
* passwd : password can be changed by the user at any time using this

Thus got familiarized with some of the commands in Linux . There are a large number of commands in linux in which some of which has been learned and used in the further tasks. So this experiment has introduced to linux basics and about the linux server .

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**EXPERIMENT NO : 2**

***SCRIPTING TASK***

**DATE : 11/02/2019**

**AIM** :

The aim of the experiment was to calculate the CGPA of the results s1 and s2 for the students of the S4D

**Description :**

* Results has been downloaded
* Results of s1 was converted from pdf file to a text file using **pdftotext** command
* Computer science students were searched in the results using the **grep** command
* The grade was converted into points using **sed –I ,s/(grade)/ point /g’newFilename.txt**
* The SGPA of all the students is calculated using **awk ‘{s=$a+$b}{r=s/number}{print r}’ filename .txt**
* The name ,Register no and SGPA has been copied to a file.
* Did the same for the s2 results
* Added SGPA’s and calculated CGPA using **awk ‘{s=$a+$b}{r=s/number}{print r}’ filename.txt**
* The **echo** command wsa used to diplay the result as Name ,Register no, and CGPA
* **cat** command was used to display the output

Through this experiment got much better in using linux and studied some more commands in linux.

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***NETWORKING TASK***

**DATE** : **25/02/2019**

**AIM** :

Set up network with ifconfig, route, etc

**Description :**

Network has been set up in the following methods using these commands;

* The command **ifconfig** is used to view the network configuration
* This network has been set by logging in into the root user
* A network was enabled using tha command **sudo ifconfig<interface-name>up**
* And that network can be disabled using **sudo ifconfig<interface-name>down**
* A new IP can be set up by using **sudo ifconfig eth0<ip>**
* Route command is used to manipulate the IP routing table.
* **route delete default** command can be used to delete the default IP
* **ping** command is used to change the route from the existing IP to some other IP’s which we have to be used

This is how the network was setup using ifconfig ,route etc.

This will also increase our knowledge in networking in linux.

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***TRANSFERRING FILES***

**DATE : 17/03/2019**

**AIM** :

Transferring files using ssh, rsync, scp e.t.c

**Description** :

There are different commands for transferring files in linux they are;

* secure shell is first used for the file transfer in linux
* ssh was implemented using **ssh cs17d20 @ 192.168.0.30**
* rsync is also used for transferring and synchronizing filees
* syntax used for sync data transfer is **rsync –a<source><Destination>**
* scp is used to securely copy files and directories between remote hosts
* scp requires password or paraphrase for authentification
* the syntax that is used for the file transfer using scp is **scp <source> <Destination>**
* using these three commands data csan be transterred In between different devices

This experiment gave much better knowledge on file transfer using these commands .This experiment also familiarized us with a number of commands.

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***FTP USAGE***

**DATE** :**17/03/2019**

**AIM** :

File transferring using ftp(FILE TRANFER PROTOCOLS)

**Description** :

* It is the simplest file transfer protocol to exchange file to and from a remote computer or network
* Install ftp using **sudo apt install vsftpd**
* A user can be added using **adduser username**
* **sudo mkdir** can be used to make a new directory for file transfer
* **sudo ls** shows the file in the new directory
* **sudo nano** can be used to exit
* **echo** can be used to show the file created to be in the particular file list of that particular directory

Thus learned to create an ftp server and to transfer

files from a client and a server on a computer network..FTP is a client-server model architecture using separate control and data connections between the client and the server.

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***LINUX INSTALLATION***

**DATE** : **7/04/2019**

**AIM** :The task was to install linux using the DVD provided.

**Desciption** :

The installation was done in the following steps;

* The CD was provided it was Fedora 14 and then inserterted it into the device.
* Click on the install to hard drive button
* Select the time zone and click the next button
* Then enter the root password for the system
* Choose the mode of installation in which installation has to be done
* A table Summary of changes will be asking for further changes choose the one which suits the most and click next
* Wait for it to complete the install
* Re-boot the computer after the installation is finished
* Click on the forward on the first boot wizard and accept license agreement
* Click on forward again and then set the date and time
* Then login and enter your password and fedora has been installed to the device

Thus installation was done successfully.

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***Http and Ftp servers***

**DATE** :**11/04/19**

**AIM** :

Set up ftp and http server.

**Description:**

Ftp was set up using the following ways;

* Install ftp using **sudo apt install vsftpd**
* A user can be added using **adduser username**
* **sudo mkdir** can be used to make a new directory for file transfer
* **sudo ls** shows the file in the new directory
* **sudo nano** can be used to exit
* **echo** can be used to show the file created to be in the particular file list of that particular directory

Http can be set up by following ways;

* It can be installed using **sudo apt install nginx**
* To check whether the server is running or not **service nginx status** is used
* A gedit file is opened using **sudo gedit/etc/nginx/sites-enabled/default**
* Firefox localhost can be created by **sudo gedit/var/www/html/index.html**

This is how ftp and http servers are created and it becomes helpful of being familiarized with these backbones of world wide web.

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***FURTHER TASKS***

**DATE** :**29/04/2019**

**AIM** :

To implement;

Package management, pearl, Lamp stack, kernel compilation

**Desription :**

1. **Package management**

* To update the package **apt update ,apt upgrade** to upgrade
* **apt search<search string>** is used to search in package
* **apt install<package.name>** is used to install package
* **apt remove<package name>**  to remove package

1. **Pearl**

* **sudo apt install perl** is used to install perl
* Added two numbers using **use strict and use warnings**

1. **Lamp stack**

* **sudo apt install apache2** is used to install lamp
* **sudo systemctl enable apache2** is used to enable the lamp
* Then install sudo mysql
* **sudo service apache2 restart** is used to restart
* **sudo nano /var/www/html/info.php** firefox localhost

1. **Kernnel compilation**

* Install using **sudo apt install git fakeroot**

**tar xvzf linux – 5.0.9.tar.xz**

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* **cp/boot/config – 4.19.0-kali 4-and 64 config** is used copy this config
* **make menu config** used to configure menu
* **make modules – install** is used to install module

This is how the four further task is being performed and the output is obtained. Thus these four further tasks were completed successfully.

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***WEBPAGE CREATION***

**DATE** :**(9/05/2019)**

**AIM** :

To create a webpage and upload all the tasks into that webpage.

**Description** :

* This has been created using the html file “index.html” which we can edit the file.
* An href tag was used to give link to those html files which were uploaded earlier.

Thus through this webpage all other codes can be accessed.

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***ASSIGNED\_TASK***

**DATE** : **(12/05/2019)**

**AIM** :

***Shell Programming : Write shell script to show various system configuration like***

*1. Currently logged user and his login name*

*2 Your current shell*

*3. Your home directory*

*4. Your operating system type*

*6. Your current path setting*

*7. Your current working directory*

*8. Number of users currently logged in*

**Description****:**

There solution are as follows;

**Currently logged user and his login name** :

* In this task we use **logname** ,**id –un** or **echo $USER** is used and thus we get the logged user name as the output.

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**Your current shell**

* In this task we have to find the current shell using the particular command and the command is **echo $SHELL** so we could be able to get the name of the current shell as the output

**Your home directory**

* The command that is used to find the home directory is **echo $HOME** , by using this command we will come to know about the current directory in which the file is getting stored

**Your operating system type**

* Here we have to find the command that is used to show that which is the operating system that the system is using and the command used is **echo $OSTYPE** and so we will get the operating system in the device as the output.

**Your current path setting**

* In this task we will be able to know the current path of the file through the command **echo $PATH** and thus we will get the path as the output

**Your current working directory**

* The working directory can be found out by using the command **echo $PWD** thereafter we can find the current working directory where the file is stored

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**Number of users currently logged in**

* Currently logged in users can be viewed by using the commands **users,w,** and **who** so in the output it will list out the users logged in

The screenshot of the code and the output from the terminal is presented along with the report as well as the script of the code is also submitted along with this report.

This experiment was so helpful because it made much more understandable with the commands for finding out such details like logged in users , os type etc.