FINAL YEAR INTERNSHIP ON ISP SETUP ON LINUX SERVER AND MIKROTIK PLATFORM

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering.

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APPROVAL

This Internship titled "**ISP Setup on Linux Server and MikroTik Platform**", submitted by **Samal Chandra Bhowmic,** ID No: **152-15-6180** to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on **May, 2018.**

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DECLARATION

I thus announce that, this internship report is finished by me, **Samal Chandra Bhowmic, ID No: 152-15-6180** to the department of Computer Science and Engineering, Daffodil International University has been done by me and under the supervisor of **Ms**. **Afsara Tasneem Misha**, Lecturer, Department of CSE Daffodil International University. I also declare that neither this internship report nor any parts of this internship report has been presented elsewhere for reward of any Degree. I also declare that, I gather information from Daffodil Online Limited (DOL), Data Center and Internet Service Provider (ISP) Based Company, held on all Vendor certified exam, Books and Internet.

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I am grateful to **Mr. Kazi Mahbubul Alam, Manager of Daffodil Online Limited**. I am also grateful to Mr. **Mohammad Abul Basher, System Admin (Network& Training) of Daffodil Online Limited**. Without their continuous support I can't continue my internship in the company. Other members of the company helped me tremendously for doing my internship

I fell extremely appreciative and wish my significant my obligation to **Ms**. **Afsara Tasneem Misha**, **Lecturer**, Department of CSE Daffodil International University, and Dhaka. Profound Knowledge and unmistakable fascination of our chief in the field of "**ISP Setup on Linux Server and MikroTik Platform** ", to do this temporary job. She is perpetual persistence, academic direction ceaseless support, steady and vigorous supervision; helpful feedback, significant exhortation, perusing numerous substandard draft and revising them at all stage have made it conceivable to finish this temporary position.

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I might want to thank my whole course mate in Daffodil International University, who part took in this examine while finishing the course work.

Finally, I must acknowledge with due respect the constant support, inspiration and patients of my parents

ABSTRACT

The aim of the internship was to develop an instant communication server with protected message or data by using Linux operating system. This system communicated by two or more computers are interconnection and able to exchange data or information sharing and one to another that time need to special pc's is called server. The first part of the internship report gives an overview of Linux Operating System and server details. Second part discusses about the basic commands, the vi editor, network configuration and Centos Package Manage and MikroTik Configuration. There is various type of work in the network that is why also different types of server have. For Example- FTP Server, SAMBA Server. Each of them works differently and without them it is impossible to maintain a network. If network is connected to the Internet and we want to secure your information they must setup server using Linux Operating System. lastly I configuration to Mikrotik Router with a ISP line using WAN network and other configuration to LAN ports. In this parts testing details are given. As the entire work was done practically, a lot was learned regarding set up and testing of the individual ISP services.

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CHAPTER 1

Introduction

1.1 Introduction

This is the period of Information Technology. Presently a day's countless everywhere throughout the world utilize web innovation and server is an integral part. Linux is perhaps the most vital free programming accomplishment since the first Space War, or, all the more as of late. We can't do anything identifying with web correspondence without server. So DNS server is critical for web innovation. Temporary job is an old practice to influence understudies to comprehend the genuine working, condition and difficulties of employments. Medicinal Science, Engineering and Accounts all branches have their own particular significance of temporary job before degree grant. Today every business and trade is particularly identified with programming based correspondence and web innovation. This is called E-Commerce. Web Banking, SMS Alert Banking, Mobile Banking, EFT (Electronic Fund Transfer) and so forth are impractical without server. DNS (space name framework) is additionally extremely valuable server and we can work distinctive sorts of administrations by utilizing this framework. Web innovation, E-mail, E-Business, Telecommunication, Mobile innovation and so forth are impractical without server and DNS is one of them. Today, banking industry and different business association thoroughly relies on various kinds of Software and Online Technology and Server is exceptionally fundamental. ATM Technology (Switching Software), Banking Software, Debit Card, Credit Card, Online Transaction and so forth are particularly relies on Software and distinctive kinds of Server and Linux is one of them. It has formed into a working framework for business, training, and individual profitability.

1.2 Internship Objective

The main objective of education is to gather knowledge. I choose an internship because I wanted to gain practically experience. So this is very effective of skill development. I would like to gather some extraordinary quality to provide myself as skilled one. Working as a Network Support Engineer performing duties and activities and analyzing them from different perspectives. I tried

my level best to present my practical knowledge as well as:

- To fulfill the requirement of the internship program under CSE program.
- To achieve details knowledge about Linux server and MikroTik platform configuration.

1.3 Motivation

I am currently pursuing my Bachelors in Computer Science Engineering at Daffodil International University, I understand the importance of gaining practical knowledge which will complement the textbook knowledge and help a student gain a wider perspective of the subjects.

During the internship I have found that I am perfectly skilled in the details of Linux network and server management and mikroTik and Cisco. As an internet service provider I've getting my point across very well, communicating with people, understanding their needs and providing them better service. My skills lie in my ability to comprehensively read and understand the situation and act quickly and yet smartly.

1.4 Introduction to the Company

Daffodil Online Ltd. prides itself as one of the main across the country Internet Service Provider (ISP) in Bangladesh. They are the most experienced and most established organization in the ICT field where they are fundamental business morals is Long Term Relationship with they are clients. As we take a gander at the development throughout the decade since our initiation, they are to a great degree pleased with what they have accomplished, and significantly more amped up for they are standpoint for a similarly encouraging future.

It might satisfy you to realize that they began they are activity in the year 2002. Amid the previous years, they expanded they are task and administration portfolio as indicated by the client's suggestion and thinking about requests of time. They worked with numerous national ventures and global associations and accomplished the notoriety. They are utilizing the most recent advances and updating the administrations wherever it is required. They are Corporate Network Solution division is skilled to give condition of-craftsmanship system and media transmission arrangements with a very effective specialized ability gathering.

1.5 Report Layout

In the chapter (1) I have described Introduction, Internship Objective, Motivation, Introduction to the company and Report Layout.

In the chapter (2) I have written the methodology of my internship. And this chapter gives the information about where the internship has been combine to contain this program. Also comprehend about how did perform the internship works, about the company, what are the IT service offered in DOL and what are the roles of in jobs market of Linux and platform mikrotik.

In the part (3) I have depicted about every day assignment and exercises, Events and Activities.

In the part (4) I have depicted is Problem and Solution, Learning Outcome, Challenges.

In the part (5) I have depicted is Discussion and Conclusion and Future Scope. I talk about Future Scopes of Linux and compose conclusion.

CHAPTER 2

Internship Enterprise

2.1 About the Company

Daffodil Online Ltd. (DOL) is proud to be one of the trailblazers and oldest ISP/ASPs in Bangladesh and providing one stop integrated ICT services and solution since July 2002. It has its own Fiber Optic& Radio Link WAN infrastructure to serve corporate, SME and individual clients. The institute worked with many national projects and international organizations with high appreciation from all concerned. It using the latest technologies and upgrading the services

Table: Company details

Main office	
Name of Company	Daffodil Online Ltd.
Address of Company	102, Shukrabad (3rd floor), Mirpur Road, Dhanmondi, Dhaka - 1207, Bangladesh
Fax	+880-2-9124280
Telephone	+880-2-9143258-9
Email	info@daffodil.com.bd
Website	www.daffodil.com.bd
Type of Organization	State wide Internet Service provider (ISP)

Table 1:Information table of company details

The centers Corporate Network Solution department is capable of providing state-of art network and telecommunication solutions with a group of highly efficient technical experts. DOL has a very strong professional engineering and management team certified and associated with SUN, Cisco, Microsoft, Linux, Jumper and Oracle and actively involved with world leading computing associations including IEEE, ACM, ACS, BCS, and PMI., Workstation, Location and Market place. As a Group concern, DOL promotes 3 major platforms e.g., education, nation-building and environment, through its programs and services. [1]

2.2 IT Services Offered

Daffodil Online Ltd provides different It Services and Professional Training services. These are given below:

- ✓ Corporate Internet Solution
- ✓ Security solution.
- ✓ Domain registration and web hosting.
- ✓ Website development.
- ✓ Open source application solution.
- ✓ Internet Service Provider
- ✓ State of the Art Data Centers.
- ✓ Hi speed Wi-Fi Zone.
- ✓ Data Connectivity, Data center& Co-Location.
- ✓ Proxy & DNS Server solution, Mail Server Solution.
- ✓ And All computer accessories

Professional course and trainings:

- ✓ ISP Setup and administration using Linux.
- ✓ Training Course on Certified Ethical Hacking (CEH).
- ✓ ISP Setup and Administration using MikroTik.
- ✓ Web site Development with Joomla.
- ✓ PHP and MYSQL for Website Development.
- ✓ E-commerce & Open source Joomla Virtue Mart.
- ✓ Red Hat Certified Security Specialist (RHCSS).
- ✓ Red Hat Certified Engineer (RHCE).

2.3 Target Group

The organization's client base incorporates all buyers and all little to medium-sized organizations, including new companies. The organization intends to focus on SOHO customers, as these are

ideal focuses for our new rapid offerings, and hold the best development potential for the organization. Web Solutions feels that these market fragments have unique estimating and administration needs, and make more devoted, solid clients.

2.4 Rules of Market Place

Bangladesh is a duly populated developing country and setting its Goals to be Digital within 2021. So every sector and every organization of our country need to be digitalized. So a huge number of IT expert and IT professionals are required during the next few years. So Daffodil Online Ltd. Playing a very important role in the job market by providing various services like:

A. Linux Administration.
B. Networking Administration.
C. Web Server Administration.
D. Linux System Developer.
E. System Administration.
F. Security Engineers.
G. Technical Support.
H. Kernel Developers.
I. Senior Network Engineer.
J. Broadband Network Manager (ISP).
K. NOC Engineer - ISP - MPLS Core Network.
L. Line Network Support Engineer (TCP/IP).
M. Support Engineer - (Windows/Linux/ VMware/ Network).
N. Network Engineer – (CISCO / Juniper / Ethernet / Networks.)
O. Marketing and Communications Manager.

2.5 Organizational Structure

Organogram Structure of Daffodil Online Ltd. shows in fig 2.1:

Figure2. 1: Shows Organogram of Daffodil Online Ltd.

CHAPTER 3

Internship Roles and Responsibilities

3.1 Daily Task and Activities

Internship Training is very much related to the part of completion of our B.sc Degree specially in CSE. It was a 4 months training course on ISP server configuration on Linux system and mikroTik Platform. DOL is going to conduct the most challenging & demanding IT professional courses and training in the day Training Attended: Internship Training is very much related to the part of completion of our B.sc Degree specially in CSE. So I took part in this enterprise for better training and completion of my internship program.

- **Month -1:** In the first month of internship on daffodil online limited I have learned and performed the following tasks
  - ✓ Learning & understanding About Network Components.
  - ✓ Learning & understanding Basics of Linux.
  - ✓ Understanding Linux HDD Partitions.
  - ✓ Learning & understanding Linux Run Level.
  - ✓ Linux Installation.

- **Month - 2:** In the second month of internship on daffodil online limited I have learned and performed the following tasks:
  - ✓ Basic CentOS Commands.
  - ✓ Linux User and Password Management.
  - ✓ Linux Root password break.
  - ✓ Know About logged in users.
  - ✓ File and Directory Accessing.
  - ✓ Understanding to File and Directory Permission.
  - ✓ To Copy and Move File and Directories.
  - ✓ Compressed and Decompressed File and Directories.

- **Month – 3:** In the second month of internship on daffodil online limited I have learned and performed the following tasks:
    - ✓ Configuration to Static and DHCP MikroTik Routers.
    - ✓ Configuration to Bridge MikroTik Routers.
    - ✓ Concept of IP Addressing.
    - ✓ Configuring IP Address in CentOS.
    - ✓ Install, Update and Remove Package Using YUM.

- **Month – 4:** The last month of internship on daffodil online limited I have learned and performed the following tasks:

    - ✓ Learning, understanding and configuring FTP Server.
    - ✓ Learning, understanding and configuring SAMBA Server.
    - ✓ Remote Login Service.
    - ✓ Firewall.
    - ✓ Backup and Monitoring.

3.2 Events and Activities

- Monitor and Maintain Computer Systems and Network.
- Setting up user accounts, permissions and passwords.
- Troubleshooting servers and routers.
- Troubleshooting local area networks and switches.
- Fixing network faults.
- Technical support for people using the network.
- Day to day admin and monitoring of network use.
- Suggesting IT solutions to business problems.
- Client Support over the phone or Physical move to client Ends.
- Checking Fiber Optical Media Convertor & Fiber Optic Transmission devices.

3.3 Project Task and Activities

Centos 6.4 Install

➢ 3.4.1 Creating Linux Partition

For Installation of Linux we have to create at least 3 partitions root (/), boot, and swap.

- **Root Partition: /**

A Root Partition there is where "/" The root directory is located all files (except in /boot) are on the root partition. Minimum 5 GB HDD Space Required.

- **Boot Partition: /boot**

The partition boot (200 MB): the partition mounted on /boot/ contains the operating system kernel (which allows your system to boot Linux), along with files used during the bootstrap process. Due to limitations, creating a native ext3 partition to hold these files is required. For most users, a 200 MB boot partition is sufficient.

- **SWAP Partition: swap**

The partition swap is used to help virtual memory. In different words, data is formed to a swap partition when there isn't adequate RAM to store the data your parcel is getting ready. partition Swap should approach 2x physical RAM for up to 2 GB of physical RAM, and a short time later an additional 1x physical RAM for any total more than 2 GB, be that as it may it can't under 32 MB [4]

➢ 3.4.2 To Know About the Logged In User

w

who

who am i

➢ 3.4.3 Seven Linux Run-Level Used by Centos

Command **Description**

- init 0 = Shut Down.
- init 1 = Single User Mode.
- init 2 = Multi User Mode.
- init 3 = Full Multi User Mode.
- init 4 = Unused.
- init 5 = X-Window (GUI Mode)
- init 6 = Reboot.

See current run-level = who –r

➢ 3.4.4Two Type of User

= this is supper user

$ = this is Normal user

➢ 3.4.5 The Basic Command of Linux Centos

Command	**Description**
poweroff ,init 0	Shutdown
reboot or init 6	Reboot
Cal, Cal 2018,cal 20 2002	Display a calendar
Date	Display or change date or time
touch samol1 samol2 samol3	Create 3 new file
mkdir samol	Create a new directory
logout	Logs the current user off the system.
ls	List information about file
cd /root/Desktop	Chang Working Directory

➢ 3.4.6 Single and Group User Create and Password Management

Adding a user = useradd samol(username).

Set a Password to New User = passwd samol(username).

Password Disable/Remove = passwd -d samol(username).

Locking an account = passwd -l samol(username).

Unlock an account = passwd –u samol(username).

Delete a user = userdel samol(username).

Delete a user with home directory = userdel –r samol(username).

➢ 3.4.7 Vi Editor

To Edit A File = vi samol (file name)

To insert Text = press a or i

To delete the character = press x or dd

To copy line = press esc key and type 5yy to copy 5 line.

To paste = press p for paste.

To set line number =: set nu

To delete line number = set nonu

Search something = /abc for search abc

For Go top of the lines = :0

For Go bottom of the lines =: $

For Go Specific Line = :50 to go 50 no line.

To save the document =: wq! {save the current changes and exits vi editor}

=: w {save the current changes but does not exist vi editor}

= :q {exits vi editor without saving any changes}

➢ 3.4.8 To Copy or Move a File

Copy = cp filename destination example: cp file1 /home/samol/bhowmik

Move = mv filename destination example: cp file1 /home/samol/bhowmik

➢ 3.4.9 Create a Group and under many Users and Set Password

Show in create a group and under many users and set password figure :3.1

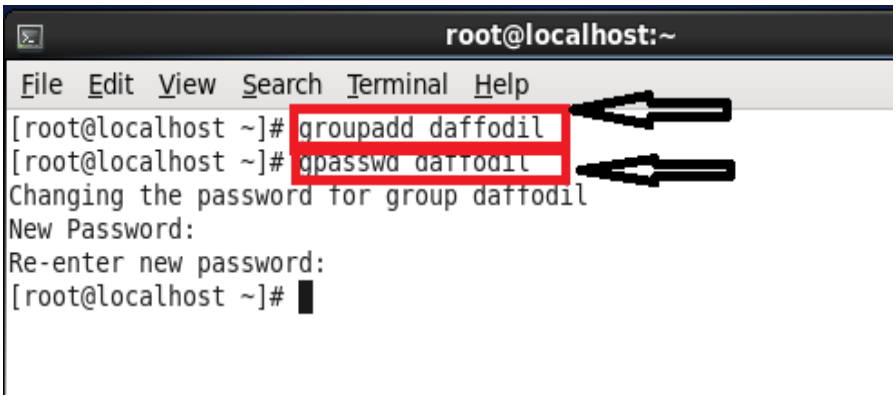

Figure3.1:Show in create a group and under many users and set password

➢ 3.4.10 Show to Directory and File Permission

Show in directory and file permission figure :3.2

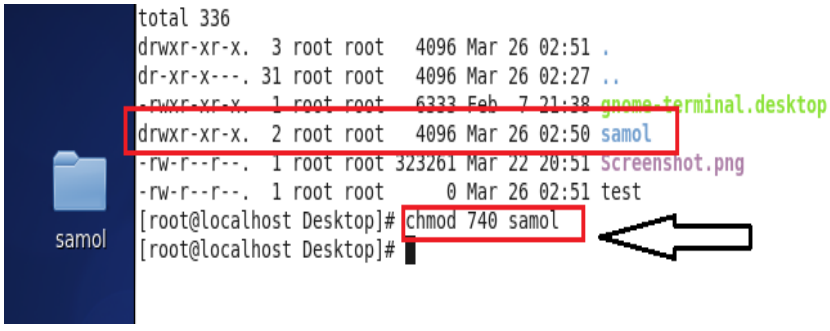

Figure3.2:show in directory and file permission access

➢ 3.4.11 Install/Update Packages in Centos /Remove

- Install a package using yum install

  Yum install (package name)

  e.g. yum insallmysql

- Uninstall a package using yum

  yum remove (package name)

  e.g yum remove mysql

- Update a package using yum

  yum update (package name)

  e.g yum update firefox

- Search a package using yum

  yum search (package name)

  e.g yum search firefox

- Display Additional Information about a Package

  yum info (package name)

  e.g yum info firefox

- View All Available Package

  yum list | less

- View Already Installed Package

yum list installed

- List of all available software group

  yum grouplist

- Install a specific soft group

  yum groupinstalldnsnameserver

3.4.12How to Add Change Delete and Display IP Address In Centos

Before configuring FTP server, we have to setup network configuration.

ip address: vi /etc/sysconfig/network-scripts/ifcfg-eth0Show figure 3.3

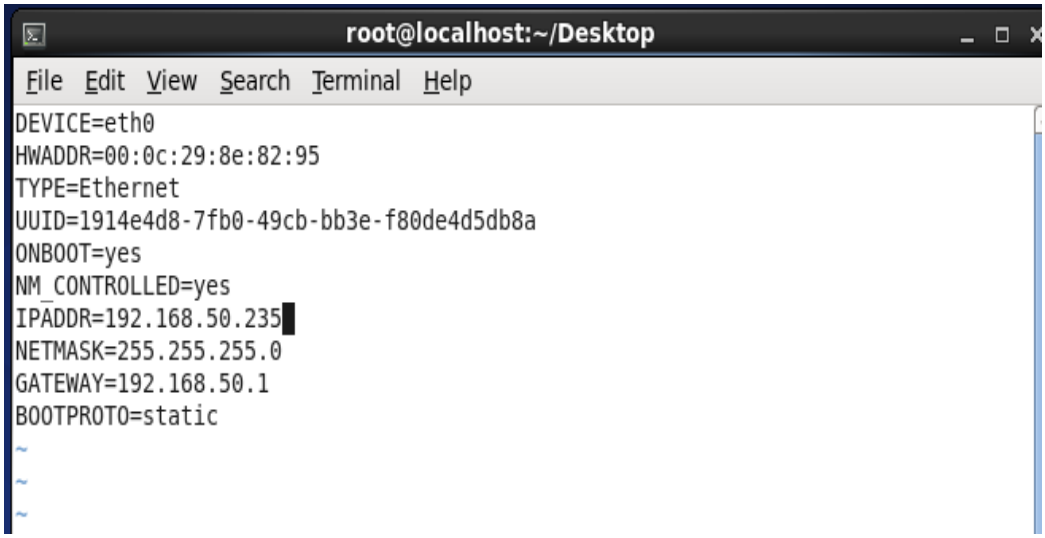

Figure3.3:Shows set ip address insysconfig file eth port permanently

To see DNS address: vim /etc/resolv.conf configuration show Figure 3.4

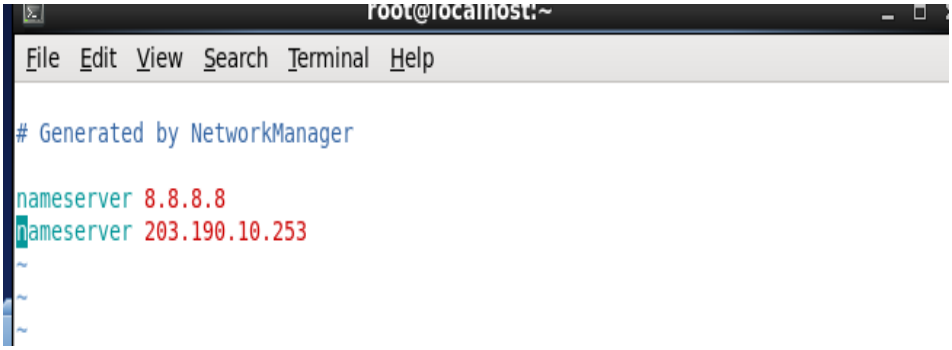

Figure3.4:show in DNS address configuration

Then the network has been restarted for the purpose of starting the network.

(# service network restart) show in Figure 3.5:

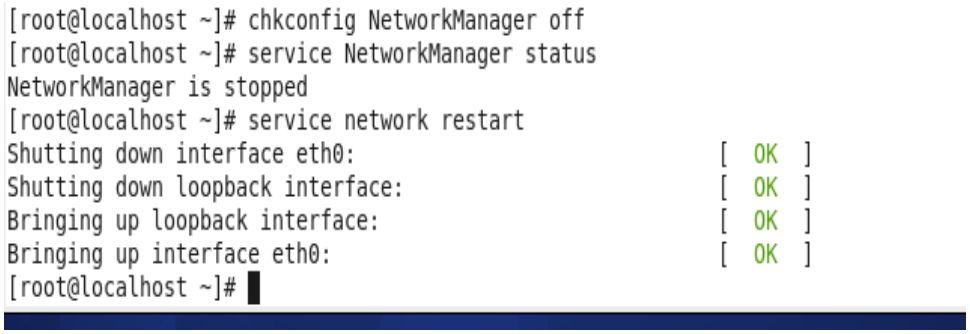

Figure3.5:show Starting process of the network system

3.4.13 Server Configuration

In Internet Service Provider [ISP] the Server Configuration is very important purpose. Server Selection is important for each server services. Many servers contain in Linux Operating System. Within Those Servers DNS server, DHCP server, FTP server, NFS server, PROXY server, MAIL server, WEB server, SAMBA server Internet Service Provider [ISP] can be configured.

- **FTP Server**

FTP servers are computers that deliver Web pages. Every Web server has an IP address and possibly a domain name. For example, if you enter the URL http://facebook.com in your browser,

this sends a request to the Web server whose domain name is facebook.com. The server then fetches the page named index.html and sends it to your browser.

❖ Centos 6.4 FTP Server Configuration Requirements

To set up your own web site is a computer, an operating system, a web server, a domain name, an IP address of a name server is required.

The computer is capable of running Linux can be used on any system. The language of the operating system, we, of course, you would assume using Centos 6.4. Centos operating system up and running once the previously mentioned can be easily installed the Apache Web server supports. A domain name can be registered with a domain name registration services.

Your ISP provides static IP address, and then you will need to add your domain with static IP addresses. This is achieved by using a name server. Most domain registration services will provide this service for you.

If you configure your domain name and your name server, the next step is to install and configure your web server. [5]

❖ FTP Server Configuration

The package name of FTP server is VSFTPD. The elaboration of VSFTPD is “Very

Secured File Transfer Protocol Daemon”. The steps of configuring FTP server has

been given below-

1. Hostname Setup

2. SELINUX Disable

3. IP Tables stop

4. Configuring VSFTPD file

✓ Step 1

At first we execute the command which is (#vim /etc/sysconfig/selinux), we wrote down “SELINUX=disabled” instead of “enforcing” which has been attached below. Show in figure :3.6

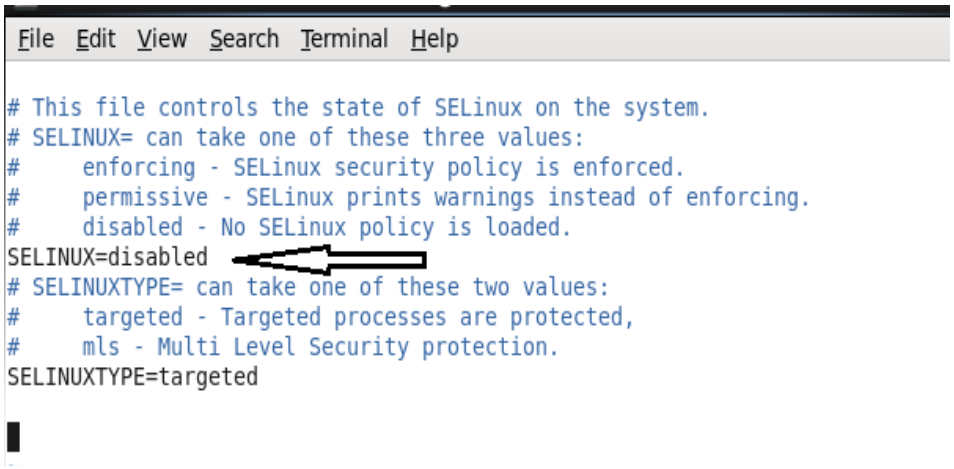

Figure3.6:show in setup selinux disabled

✓ Step 2

we have to install package of ftp name vsftpd : yum install vsftpd*

There Show Already install because of its already installed in my pc.

Show 3.6 in install FTP in command yum install vsftpd*

Figure3.7:show in VSFTPD download and install

✓ Step 3

For configuring nonuser based FTP server to command vim /etc/vsftpd/vsftpd.conf, "anonymous_enable=YES" has been configured "NO" which is represented on the following figure 3.8:

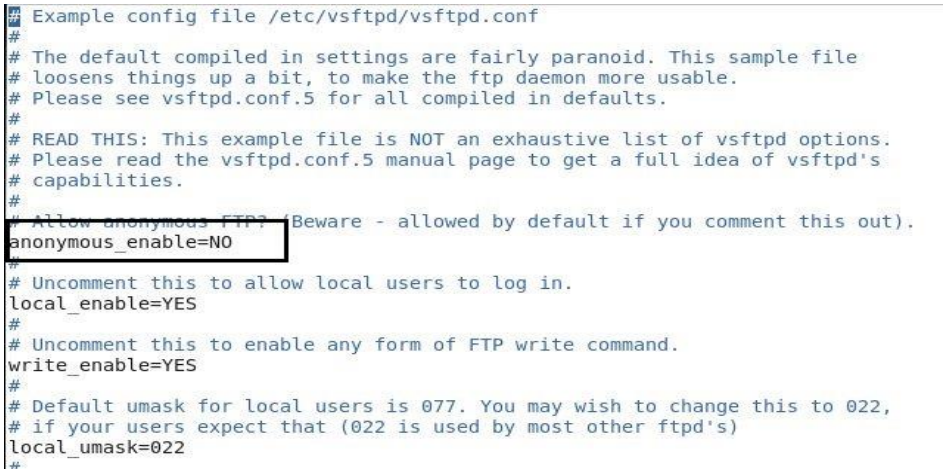

Figure3.8:show in Nonuser Based Configuration

✓ Step 4

The upload and download option have been configured due to upload and download any file or folder in the FTP server is represented below Figure 3.9

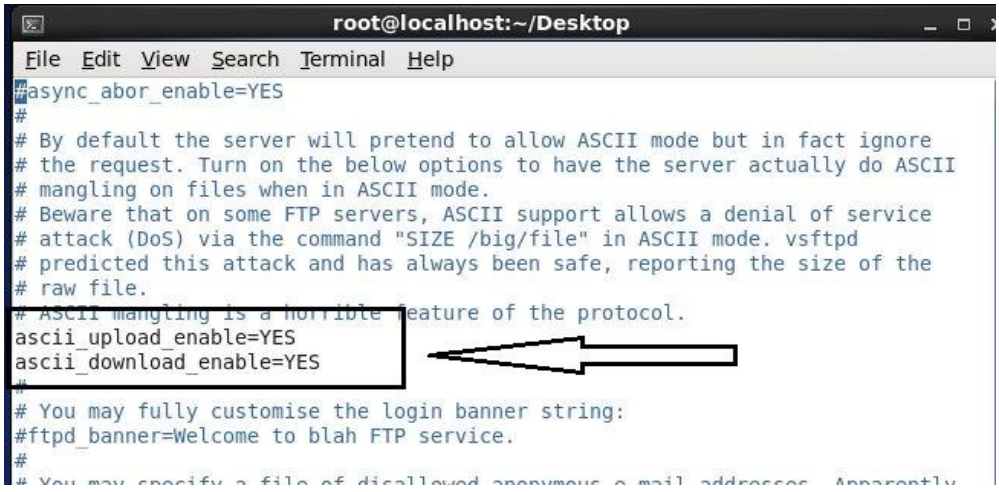

Figure3.9:show in Enable Upload and Download

✓ Step 5

A user has been created to access FTP client which is shown figure 3.10. The purpose of creating the user and set password only for access the FTP client but the user cannot access the FTP server.

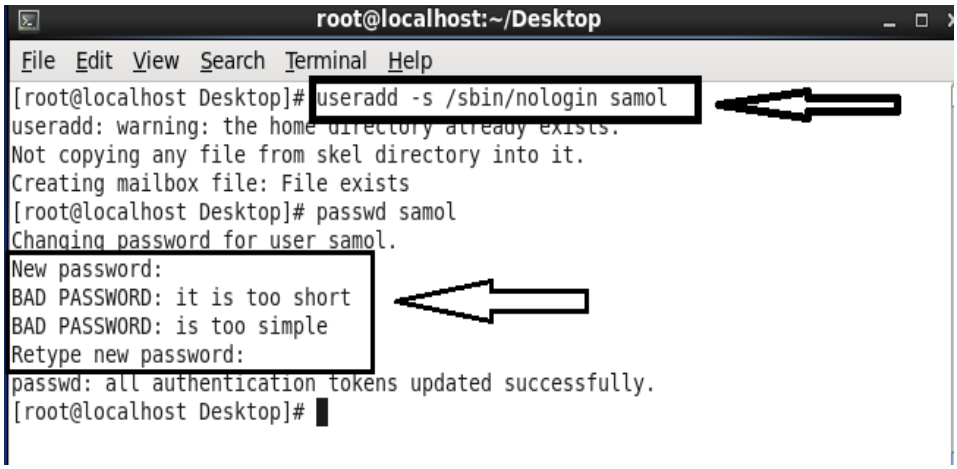

Figure3. 10:show in a user create and set password

✓ Step 6

The user based FTP server is checked by web browser which has been represented figure 3.11

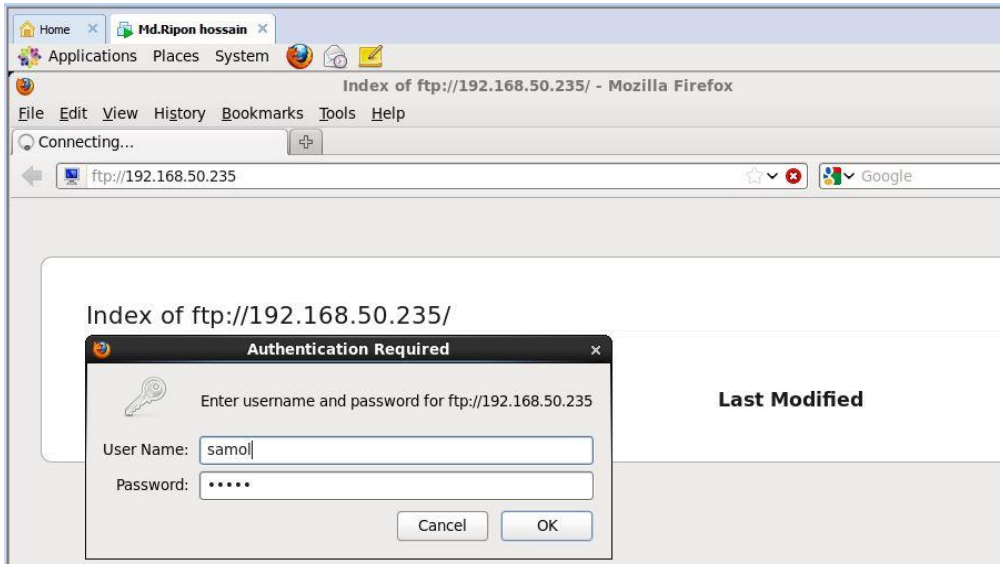

Figure3.11:show in Checking by Web Browser

It can be said that our FTP server has been successfully configured.

3.5 MikroTik Router

MikroTik Ltd. Referred to globally as MikroTik is a Latvian producer of PC organizing hardware. It offers remote items and switches. The organization was established in 1995, with the expectation or offer in the rising remote innovation advertise. Starting at 2014, the organization has in excess of 100 representatives. The organization's items are known for being low-valued other options to costly switches and Ethernet radio hand-off lines.

The primary product of MikroTik is a working framework in light of the Linux bit, known as the MikroTik RouterOS. Introduced on the organization's restrictive equipment (Router board arrangement), or on standard x86-based PCs, it transforms a PC into a system switch and executes different extra highlights, for example, firewalling, virtual private system (VPN) administration and customer, transmission capacity molding and nature of administration, remote access point capacities and other normally utilized highlights while interconnecting systems. The framework is additionally ready to fill in as a hostage entry based hotspot framework. [11]

3.6 Features

RouterOS supports many applications used by Internet service providers. For example

- It can be used as a router
- It provides OSPF, BGP, Multiprotocol Label Switching(VPLS/MPLS), Open Flow etc
- It can be used as a switch or bridge
- Provides PPPoE Client-Server
- Provides VPN-Virtual Private Network.
- Provides Firewall rules
- Provide DHCP Server service
- Provide Wi-Fi and captive portal based Hotspot System
- Bandwidth management is very easy
- Easy GUI interface
- Easy administration
- Supports both IPv4 and IPv6

The item is upheld by MikroTik through a gathering and a wiki, giving various and topical cases of designs. RouterOS bolsters Internet Protocol Version 4 (IPv4) and also Internet Protocol Version 6 (IPv6).

The product offers help for practically all system interfaces that the Linux part 2.6.16 backings, aside from remote, where the Atheros and Prism chipsets are the main bolstered equipment, starting at 3.x variant.

3.7 Release history

MikroTik has released different version of RouterOS at different times. Some of them are given below.

- RouterOS version 6.41**:** Dec 2017
- RouterOS version **6**: May 2013
- RouterOS version **5**: Mar 2010
- RouterOS version **4**: Oct 2009
- RouterOS version **3**: Jan 2008 [10]

3.8 Cloud Core Router

In November 2012 MikroTik discharged the Cloud Core Router 3.19 figure coordinated unit which depends on the Tiler a CPU supporting 16 to 36 CPU centers, 12 1000Base-T Ethernet interfaces, and up to four SFP (MiniGBIC) interfaces, and in addition "quick way" parcel sending between interfaces (with guaranteed 24 million bundles for each second sending rate). This unit focuses on the medium-sized system suppliers and in addition attempt to be a very much valued contrasting option to the next more notable brands

Show in MikroTik Cloud Core Router 1036 Series .figure 3.19

Figure3.12:Show in MikroTik Cloud Core Router 1036 Series

3.9 Propose Network Diagram (MikroTik Configuration)

Network Diagram shows in fig 3.20:

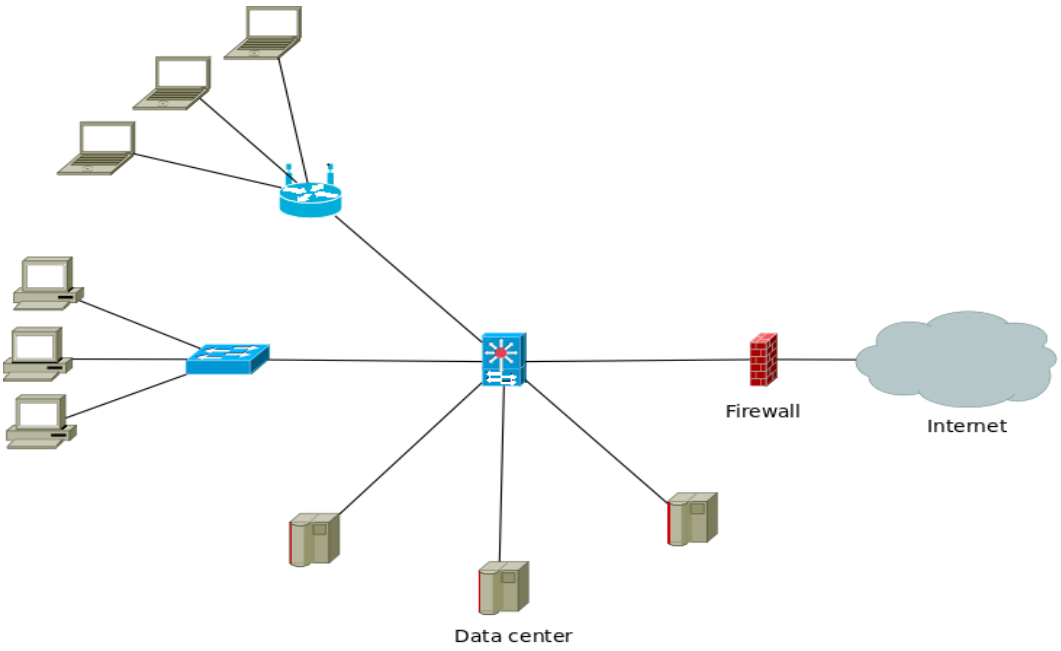

Figure3.13:show in Network Diagram

Winbox is the graphical configuration utility for MikroTik router OS. At first we should download winbox. After download the winbox it can be run straight away as no installation is required 3.20 network diagram.

private ip Address Range show in table:3.14

Class	Private Networks	Subnet Mask	Address Range
A	10.0.0.0	255.0.0.0	10.0.0.0 - 10.255.255.255
B	172.16.0.0 - 172.31.0.0	255.240.0.0	172.16.0.0 - 172.31.255.255
C	192.168.0.0	255.255.0.0	192.168.0.0 - 192.168.255.255

Table3.14:show in private IP Address Range

➢ 3.10 Step 1:

- Give Power to the MikroTik Router
- Plug in a UTP cable in mikroTik LAN port and the other port to the PC.
- Browse with **Winbox**.
- Click to icon and hare show a IP address and MAC address. Click to Mac address then write ‘admin’ in login box and don’t need to give Password. .
- Router reset command: **system reset-configuration**

Show in figure 3.15 mikroTik reset command

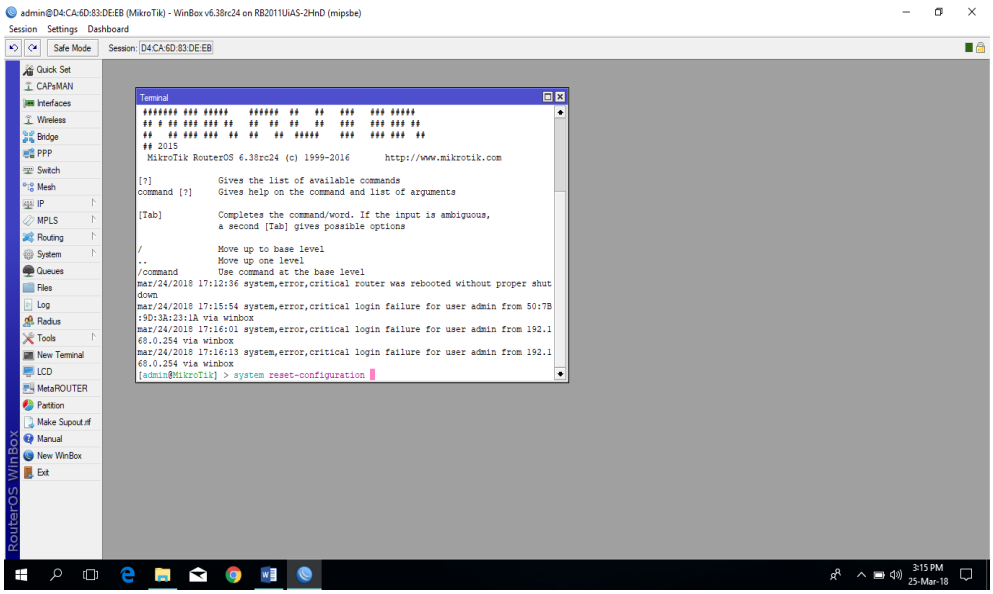

Figure3. 15:Shows Screen Print Reset MikroTik Router

➢ **Step2**:

Defining routes or Setting up Gateway

Process:

IP > address> “+” >

IP>Route>” +”>Gateway

N.B: Here one thing must be noticed that the Dist. Address will be 0.0.0.0/0 (default route). Then we can set our gateway.

Apply>Ok

IP add set in mikroTik router show in Figure 3.16

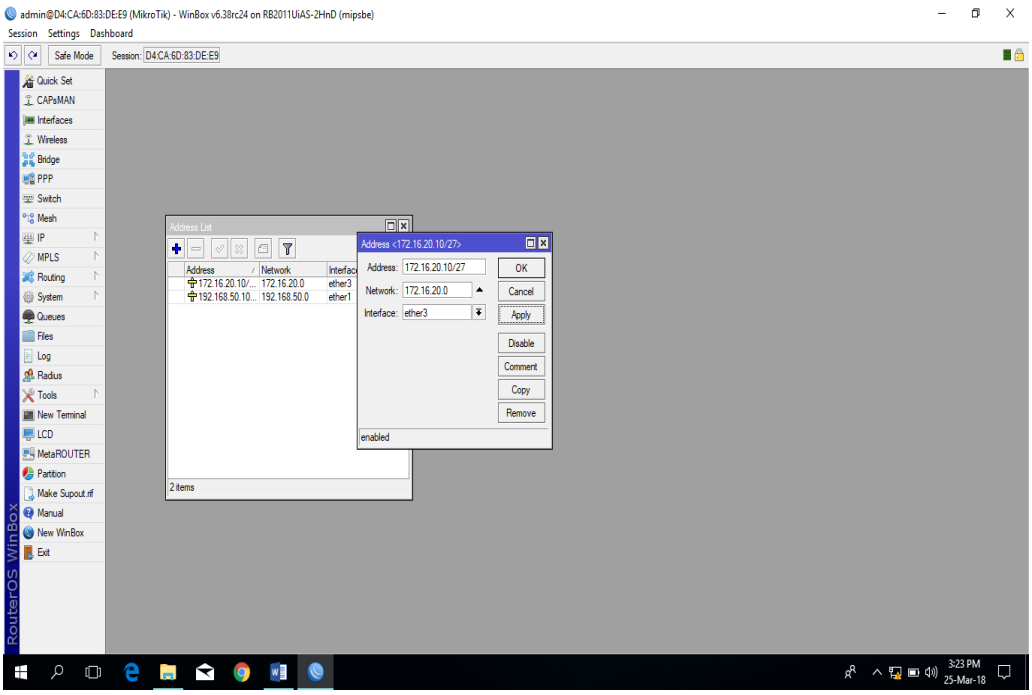

Figure3.16:IP show in add set in mikroTik router

Setup route ip add in figure 3.17 show:

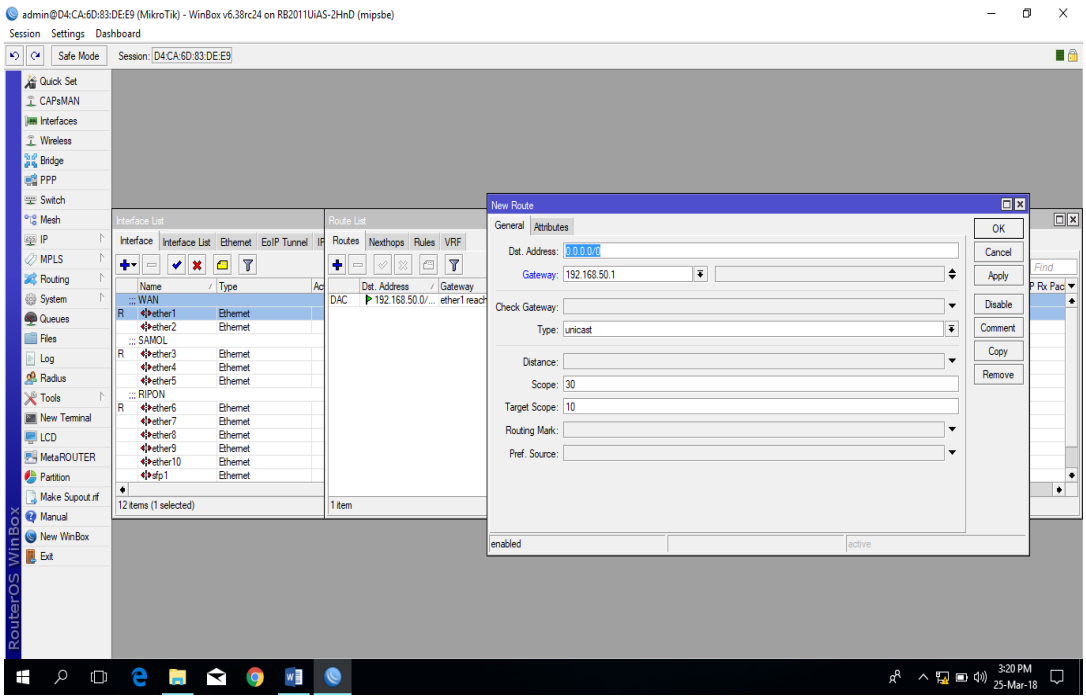

Figure3.17:Show in route Gateway

➢ Step3

Process:

IP > Firewall > NAT > “+’

General:

Chain:srcnat

Src. Address: local block/IP with subnet mask of the network.

Action:

Masquerade

Apply>Ok.

Local network ip address NAT rule in fig 3.18 shows:

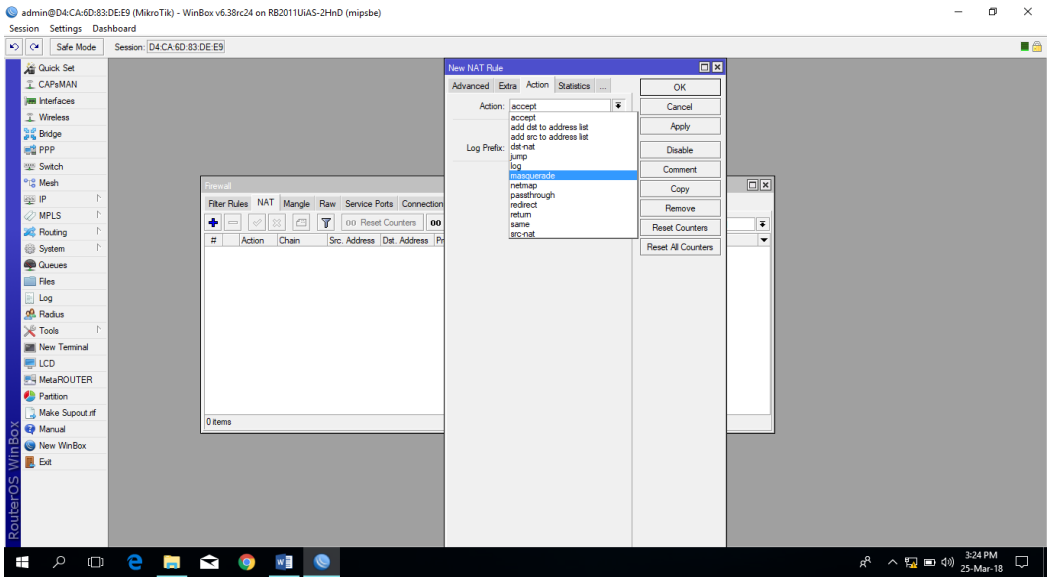

Figure3.18:show in Local network ip address NAT

show in PC IP address setup. fig 3.19

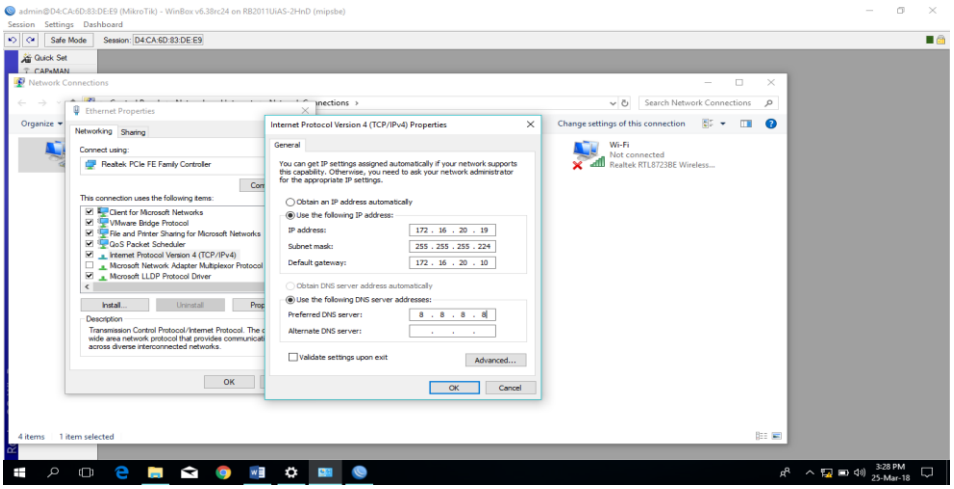

Figure3.19:show in PC IP address Configuration

➢ Step 4:

Knowing the profile of bridge with the DHCP Server 3.28 figure

Process:

IP > DHCP Server > Interface: Daffodil (bridge name)

DHCP Setup Screen Print show in fig 3.20

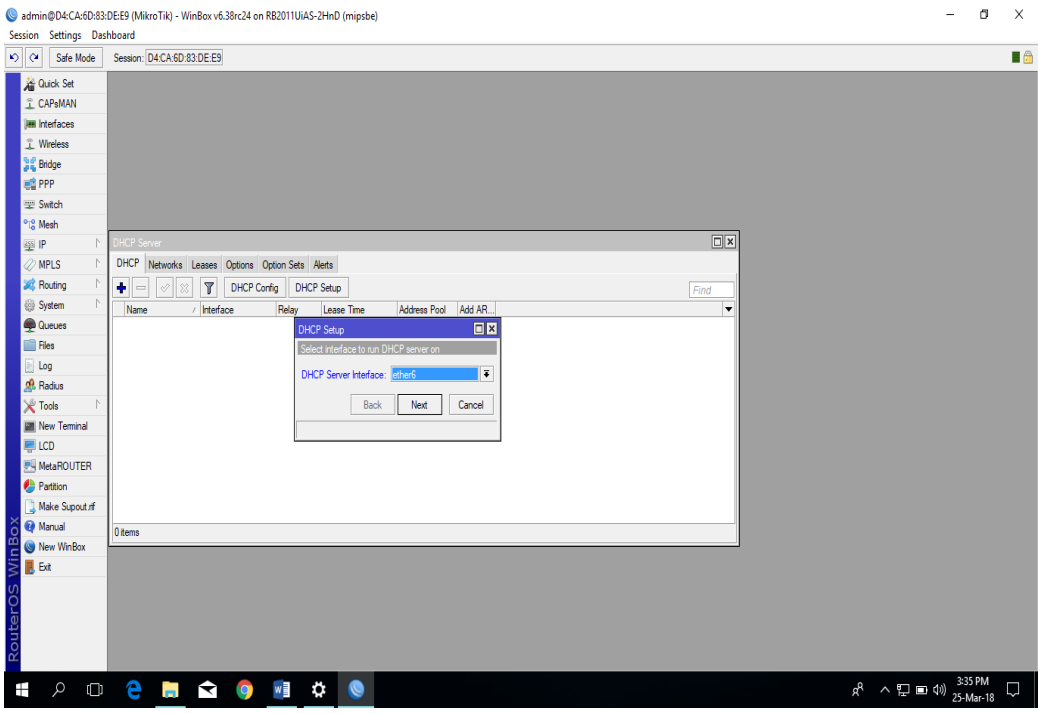

Figure3.20:show screen DHCP Setup

Local Network IP pool address shows in 3.21 figure

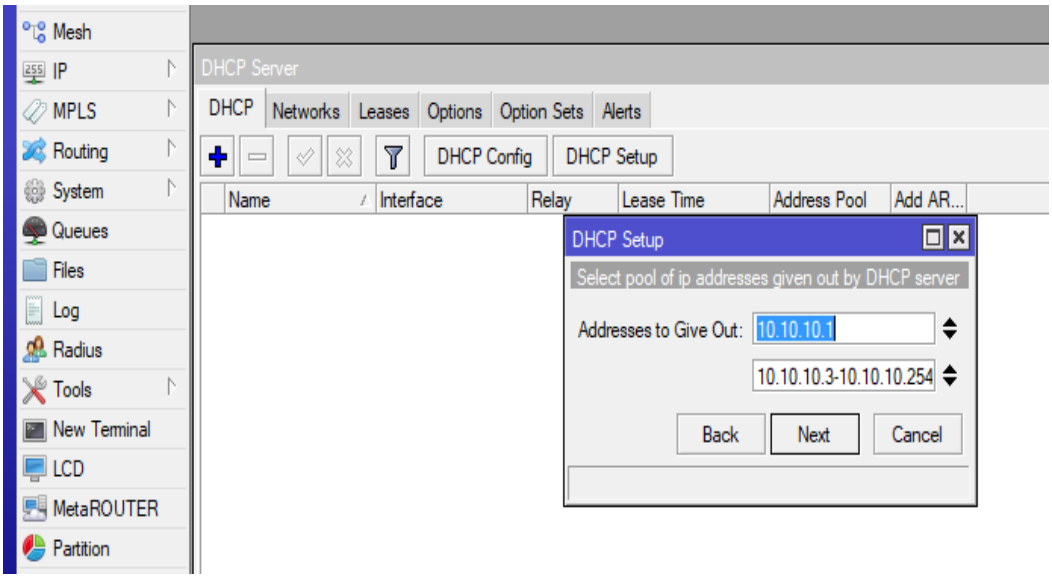

Figure3.21:show in Local Network IP pool address

Setup DNS ip address show in 3.22 figure

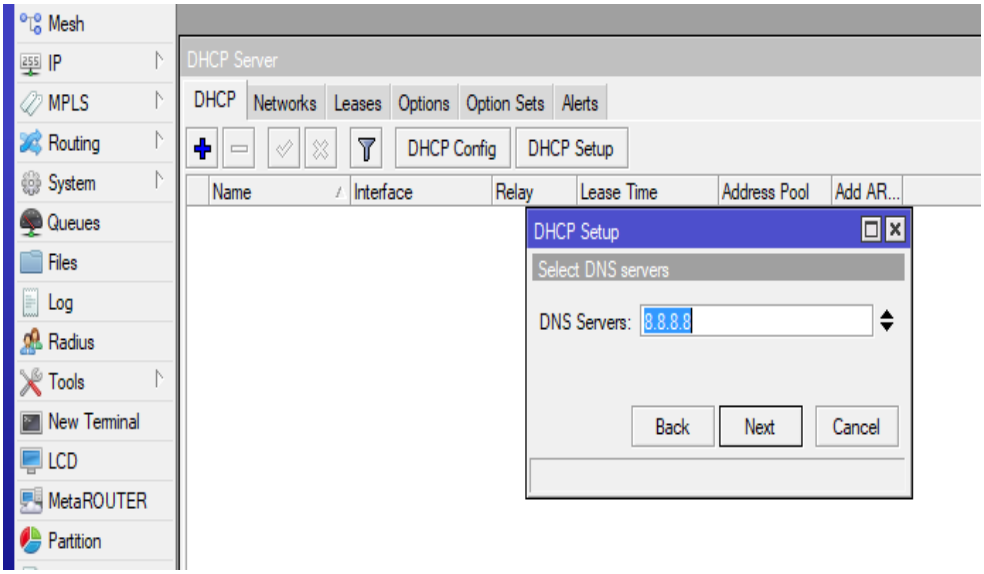

Figure3.22:show in DNS IP Address

DNA Setup successfully show in 3.23 figure

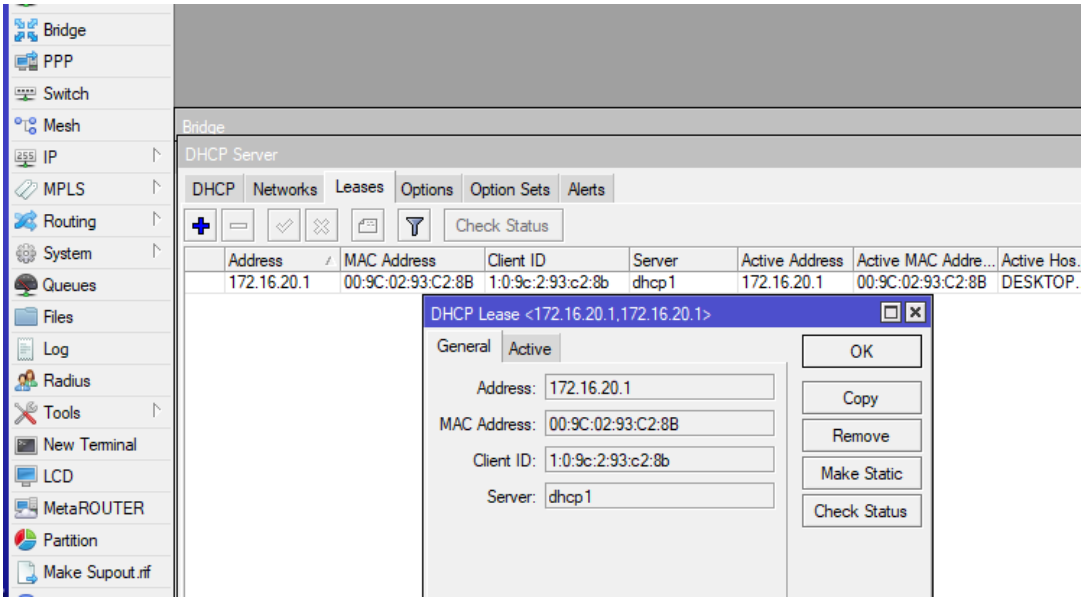

Figure3.23:show in DNS configuration Successfully

➢ Step 5:

Doing the task of bridging the related ports with each other 3.26 in figure

Process:

Bridge> "+" > (bridge n, here n=1,2,3….)

Settings:

- ✓ Tick mark to 3 options

Bridge Settings Screen Print shows in fig 3.24

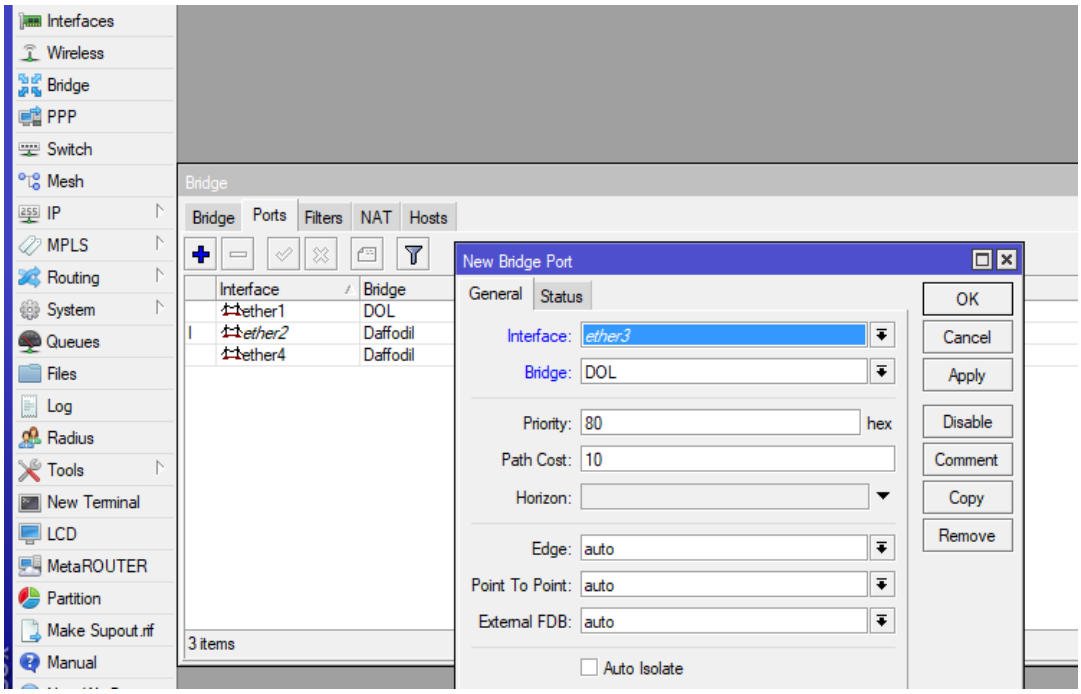

Figure3.24:Show in Bridge Setting LAN interface

➢ Step 6:

Wireless LAN configuration

Process

Wireless > Wlan1 (enabling it with tick mark) >Mode: ap bridge

Wireless sitting SSID Mode show in figure 3.25:

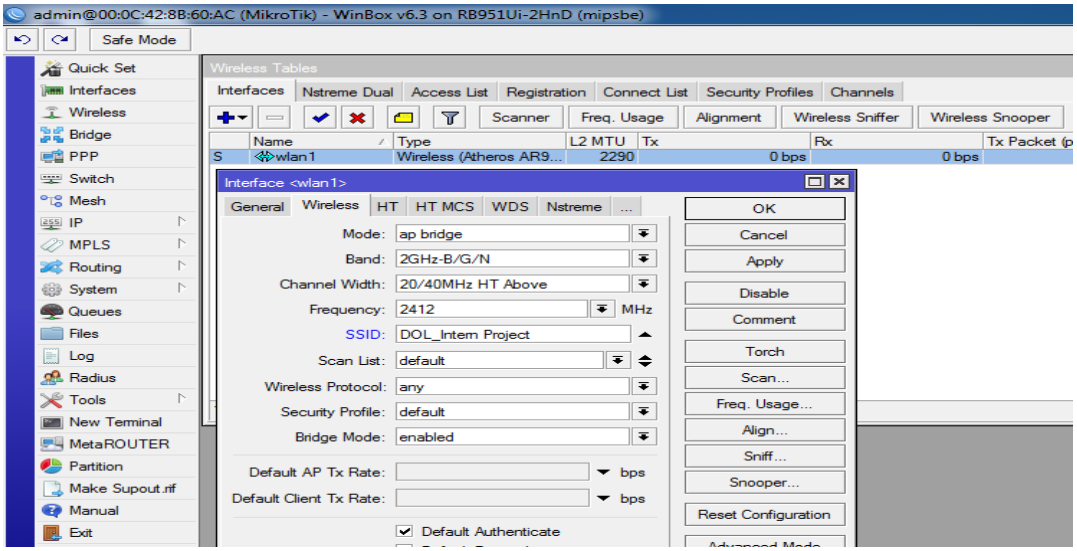

Figure3.25:Shows Screen Print Wireless Setting

Wireless password setting shows in 3.26 figure:

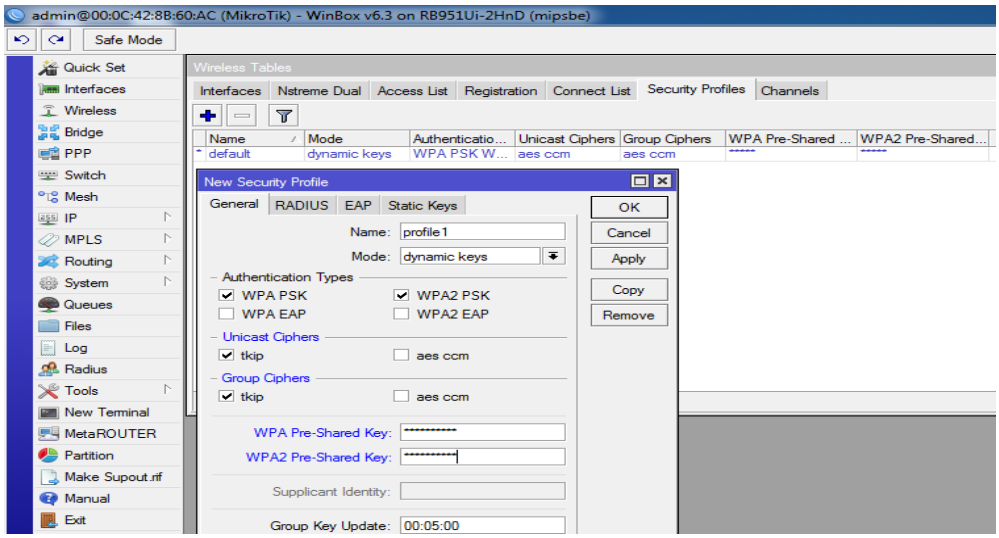

Figure3.26:Shows Screen Print Wireless Security Setting

➢ 3.11.1 User Create and Permission to Access and Set Password

✓ User Create

Process

User list > "+" >user name

N.B: Here create a new user then setup a password and permission to "read, write, full"

Set.

Apply >OK

user creates and select to permission and set password show in fig 3.27:

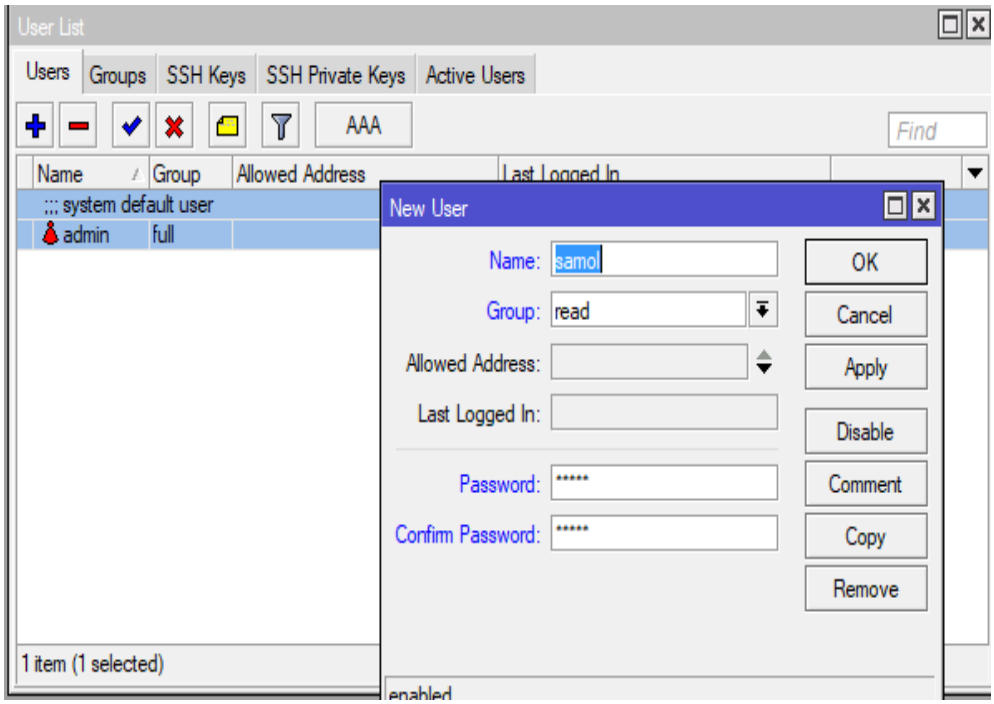

Figure3.27:show in user create and set permission and set password

➢ 3.11.2 ARP setting

✓ **Process**

IP > ARP list > select ip > copy ip and mac address

N.B: Copy PC IP and MAC address get to DHCP server Leases

ARP Setting to permission access internet show in fig 3.28

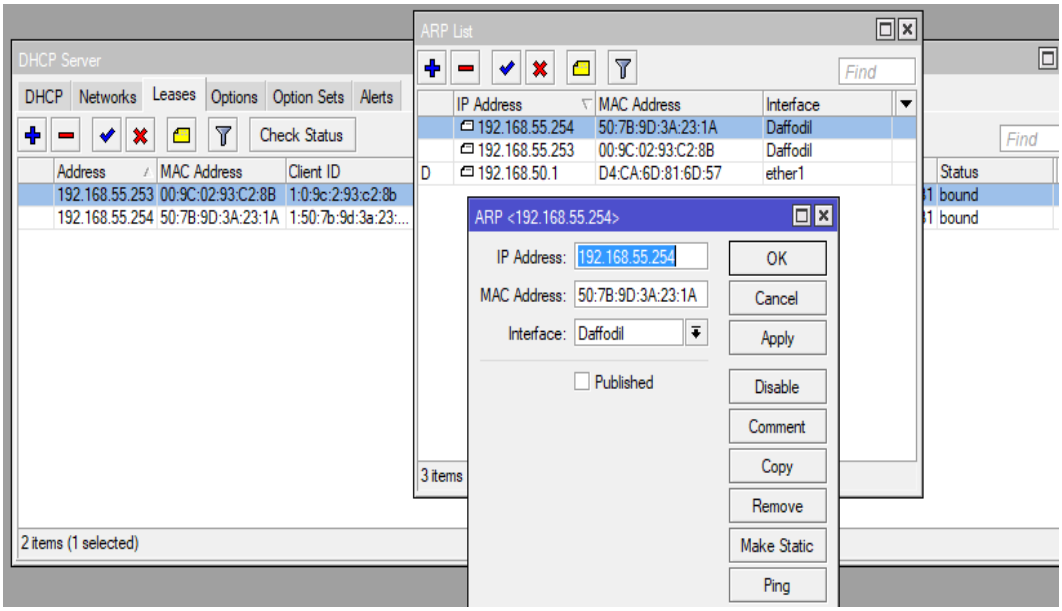

Figure3.28:show in ARP setting to permission access to internet

CHAPTER 4

Internship Outcomes

4.1 Problems and Solution

Problem Determination for Linux on System specific products or solutions, while getting hands-on experience with leading-edge. Due to problems concerning environment model we could only present some new errors. I believe that providing Linux operating system models will lead to a solution that resembles or even extends besides helpful discussions. A manufacturer of premium carbide end mills and special application rotary cutting tools. ... Description: Designs state-of-the-art, high quality Linux clusters, servers, and RAID storage solutions for universities, life sciences, Laboratory applies science, by means of advanced technology, to critical problems of national security.

4.2 Learning Outcomes

A learning outcome is a statement of what a learner is expected to know, understand or be able to do as a result of a learning process. Install and decommission of both network and server machines at two datacenters. Lead role in advanced Linux software implementations, for example LDAP HA, aligned to program learning outcomes, field and internship evaluations. The Student Association office funds many student Intern Learning Outcomes: Gathering and organizing information into a Internship Project Description: Participate in the redesign of the Linux Lab web site. Learning Outcomes. Install & Configure software and upgrades; Install, configure & test network Employer Services • Furthermore, consistent with the learning outcomes, the Internship On-Site Supervisor will provide an orientation concerning organizational policies and procedures.

4.3 Challenges

As rewarding your internship can be, there are challenges to be aware of when joining a public relations firm as an intern. Internships are opportunities to gain relevant experience in the workplace but sometimes they can be challenging and you'll want to learn how to navigate the

process. Internships are not without their own bumps in the road! I‟m going to cover some concerns that many interns struggle with. However, keep in mind that all. An Intern can face different challenges these are given below:

- ✓ To adopt with the work environment.
- ✓ Achieve some organizing capability.
- ✓ Adjust with the official decorum and norms.
- ✓ Established interpersonal relations with the officials.
- ✓ Make himself capable with the competitive job market.
- ✓ Achieve some reward from the organization g)
- ✓ Use simple language with the officials for communication.
- ✓ Develop Corresponding capacity with different level of customers.
- ✓ Be helpful and keep patient at the time of customer service
- ✓ At last an intern has to face many other challenges including all above.

Ultimately, we can say that if there is no challenge, there is no success. So, we have to take every challenge positively in the way of your success.

CHAPTER 5

Conclusion and Future Scope

5.1 Discussion and Conclusion

Review this internship has been a wonderful and rewarding experience. I have seen the future and I will be able to help me with the opportunity to network with a lot of people have been able to confirm that. Through this internship, I have learned that one of the main issues and time management skills as well as self-motivation. When I first started I was eight hours a day, six days a week is going to be able to sit in an office and did not think that. Once I realized what I had to do my hours of overlapping is not broken, so I organize my day job. Organized and it was the right time, when I get a response prepared for questions that need to be learned. This internship and time management of the office for many hours, I had to learn how to motivate yourself through. I'm still looking for using the company came up with the various proposals and ideas. I'm still keeping my options open to new opportunities, however, are continuing to work for the University of Bangladesh in the world. I'm enjoying this line of work. I continue to work hard for my position and hope to continue to learn about the industry and meet new people will. It was a wonderful experience, and I hope the other intern got a lot out of it [5]

5.2 Future Scopes

Career opportunities are available in different areas under Linux. The career opportunities in Linux's mentioning not only the Linux platform, it covers lot of different areas like: Desktop Application Development, Kernel & Device Drivers Development Today their huge demand open source software's and open source software's developers and network engineers. There many company today migrated to Linux and open source software's. The company like Google, Yahoo, Boeing, Lufthansa, wiki.org, many companies migrated to cost effective open source solution. There is a huge demand for the skilled professionals in LINUX, MICROTIK etc.

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