

**ISP SERVER CONFIGURATION AND MAINTENANCE ON LINUX AND
MIKROTIK PLATFORM**

SUBMITTED

BY

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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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**DAFFODIL INTERNATIONAL UNIVERSITY
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APPROVAL

This Internship titled “**ISP Server Configuration and Maintenance on Linux and MikroTik Platform**”, submitted by Shikut Ahammed 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 August 2018.

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DECLARATION

I hereby declare that, this internship report is prepared by me, Shikut Ahammed, ID No: 161-15-6836 to the department of Computer Science and Engineering, Daffodil International University. Under the supervision of **Most. Hasna Hena, Senior Lecturer, Department of CSE**, Daffodil International University.

I also declare that neither this internship report nor any part of this internship report has been submitted elsewhere for award of any Degree or Diploma. I also declare that, I collect information from Daffodil Online Limited (DOL), Data Center and Internet Service Provider (ISP) Based Company, Books and Internet.

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ABSTRACT

The purpose of this internship is to gain proper knowledge about the computer network, Linux operating system and MikroTik routers. Because proper knowledge in these subjects is important to build a career in a challenging and competitive job environment. Every organization is becoming digitalized day by day. And they largely depend on networking infrastructure. There are various types of computer network. One is client-server network. Servers are computers that provides the services. There are huge job opportunities in these organization as network engineers. But to get a better position in such a competitive sector one must need proper knowledge about the networking devices and software.

That is why I choose my intern as “ISP Server Configuration and Maintenance on Linux and MikroTik Platform”. This report discusses about the purpose of the specific server using on ISP, hardware requirement for the server, choosing software and installation process of the software, server configuration process step by step and simple troubleshooting of the server.

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CHAPTER 1

Introduction

1.1 Introduction

This is the era of information technology. No industry can live up without using information technology infrastructure now a day. Technology made life easier and hassle free. The most important invention of the late 20th century is probably the internet. In 21st century we can't imagine a day without the internet. We depend on internet in every sector of our life likely in shopping, communication, education, medical, banking etc.

In the back of the internet lies something called server, which serves the services we tend to use via internet. Servers are powerful computers which provides the infrastructure of our favorite services. I found it's very important to know about maintaining and managing these powerful computers. There are many types of servers. Like DNS (Domain Name System) server, MikroTik server, Mail Server, Web Server etc.

These servers usually powered by the Open Source and free operating system called Linux. It's a very popular Unix based operating system software which powers more than half of the world's servers and routers. Developed by a Finish university student, it's possibly the best invention of system software. Linux is found everywhere. From super computers to handheld devices like our lovely smartphones. I also found that I need the proper skill of Linux in order to survive on the competitive job market.

1.2 Motivation

I am at present seeking after my Bachelors in Computer Science and Engineering at Daffodil International University; I comprehend the significance of increasing viable learning which will supplement the course reading information and help an understudy gain a more extensive point of view of the subjects.

In the Internship time frame I am hoping to end up splendidly talented in the subtle elements of Linux system and server administration and MikroTik. I am additionally hoping to get the best possible abilities of speaking with individuals, understanding their requirements and giving them better administration. My aptitudes lie in my capacity to completely peruse and comprehend the circumstance and act rapidly but insightfully.

1.3 Internship Objectives

Extreme goal of my internship program is to set myself up as a qualified one in the focused activity advertises. So this is exceptionally viable of ability advancement. I might want to accumulate some uncommon quality to give myself as gifted one.

The internship in computer science engineering is intended to give work understanding while understudies is still in school, to organize work involvement with scholastic preparing, and to assist understudy with making the change from classroom to work.

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 their clients. As we take a gander at the development throughout the decade since their origin, they are to a great degree pleased with what they have accomplished and much more amped up for their standpoint for a similarly encouraging future.

It might satisfy you to realize that they began their activity in the year 2002. Amid the previous years, they expanded their task and administration portfolio as indicated by the client's suggestion and thinking about requests of time. They worked with numerous national tasks and universal associations and accomplished the notoriety. They are utilizing the most recent advancements and updating the administrations wherever it is required. Their Corporate Network Solution office is proficient to give condition of-craftsmanship system and media transmission arrangements with an exceedingly productive specialized ability gathering.

1.5 Report Layout

In the chapter (1) I have described objective of internship, Motivation of internship and Introduction to the company.

In the chapter (2) I have described the methodology of my internship. And this chapter gives the information about where the internship has been attached to undertake this program. Also included 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.

In the chapter (3) I have described about daily task and activities, Events and Activities and Challenges.

In the chapter (4) I have described is Competencies Earned, Smart Plan, Reflections.

In the chapter (5) I have described is Conclusion and Future Scope. I discuss Future Scopes of Linux and write 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 wherever it is required.

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, and Oracle and actively involved with world leading computing associations including IEEE, ACM, ACS, BCS, and PMI. Its Corporate Social Responsibility ethos strengthens the sense of responsibility on Community, 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 Product and Market Situation

Daffodil Online Ltd. prides itself as one of the main across the nation Internet Service Provider (ISP) in Bangladesh. They are the most experienced and most seasoned organization in the ICT field where they are fundamental business morals is Long Term Relationship with their clients. As they take a gander at the development throughout the decade since our origin, they are to a great degree glad for what we have accomplished and considerably more amped up for our viewpoint for a similarly encouraging future. Daffodil Online Ltd likewise gives distinctive IT Services and Professional Training administrations. These are given underneath.

➤ IT Service

- Security Arrangement.
- Area enrollment and web facilitating.
- Site Improvement.
- Open source application arrangement.
- Network access Provider

➤ **Professional Training Services**

- ISP Setup and administration using Linux.
- Training Course on Certified Ethical Hacking (CEH).
- ISP Setup and Administration using MikroTik.
- PHP and MYSQL for Website Development.

2.3 Target Group

The organization's client base incorporates all purchasers and all little to medium-sized organizations, including new businesses. The organization intends to focus on SOHO customers, as these are ideal focuses for our new fast contributions, and hold the best development potential for the organization. Web Solutions feels that these market sections have unique evaluating and administration needs, and make more committed, solid clients.

2.4 SWOT Analysis

SWOT analysis is an effective strategy to understand your strengths and weaknesses and to understand both open opportunities and threats for you.

➤ **Strengths:**

- ✓ Between communication isolated individuals by separation (at home and inside the working environment)
- ✓ Always work from home.
- ✓ Create an online business
- ✓ Data collection (profitable resources in the business world)

➤ **Weaknesses:**

- ✓ New participants, I think we will be able to survive the market.
- ✓ Large Creating big money hole is necessary to create institutions.
- ✓ Competition for small approved.
- ✓ Many guess levies and administration choices.

➤ **Opportunities:**

- ✓ Population change age formation.
- ✓ The number of UK households is increasing.
- ✓ Review of the administrative system.

➤ **Threats:**

- ✓ Economic Crisis – families are less likely to increase their Broadband subscriptions. The lack of confidence in the digital communication market.

- ✓ It remains to be seen to what extent consumers can be persuaded to embrace access to the internet.

2.5 Organizational Structure



Figure 2.5: Shows Organizational Structure of Daffodil Online Limited.

CHAPTER 3

Tasks, Projects and Activities

3.1 Daily Task and Activities

- Month - 1: In the first month of internship on daffodil online limited I have learned and played out the accompanying errands:
 - Basic Networking Concepts.
 - Basic Network Addressing(IPv4 Addressing)
 - Basic Concepts of VLAN and Configuration.
 - Learning UTP Cabling and Optical Fiber.

- Month - 2: In the second month of internship on daffodil online limited I have learned and performed the following tasks:
 - MikroTik RouterOS configuration
 - Installation
 - Static Configuration.
 - Bridge Configuration.
 - DHCP Configuration.
 - PCQ Bandwidth Management.

- Month – 3: The last month of internship on daffodil online limited I have learned and performed the following tasks:
 - Basic CentOS command.
 - Password created using by Linux.
 - File directory & accessing by Linux
 - Single user mode password break.

3.3 Project Task and Activities

3.3.1 MikroTik Router

MikroTik is a Latvian organization which was established in 1996 to create switches and remote ISP frameworks. MikroTik currently gives equipment and programming to Internet availability in a large portion of the nations around the globe. Our involvement in utilizing industry standard PC equipment and finish steering frameworks enabled us in 1997 to make the RouterOS programming framework that gives broad steadiness, controls, and adaptability for a wide range of information interfaces and directing. In 2002 we chose to make our very own equipment, and the Router BOARD mark was conceived. We have affiliates in many parts of the world, and clients in most likely every nation on earth. [2]

3.3.2 RouterOS

RouterOS is the working arrangement of Router BOARD. It can likewise be introduced on a PC and will transform it into a switch with all the important highlights-steering, firewall, transmission capacity administration, remote passage, backhaul connect, and hotspot entryway, VPN server and the sky is the limit from there. [3]

Features

- It provide DHCP server service
- Can be used as e router
- 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
- Provides BGP, OSPF, Mu
- Easy management of bandwidth

Release History

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

- RouterOS Edition 6-05-2013
- RouterOS Edition 5-03-2010
- RouterOS Edition 4-10-2009
- RouterOS Edition 03-01-2008

3.3.3 Router Board

MikroTik RouterOS is the working arrangement of MikroTik Router BOARD equipment. It can likewise be introduced on a PC and will transform it into a switch with all the important highlights - steering, firewall, data transmission administration, remote passageway, backhaul connect, hotspot portal, VPN server and the sky is the limit from there. [5]



Figure 3.1: 450G Series MikroTik Router

3.3.4 Cloud Core Router

Cloud Core Router is a transporter review switch with a bleeding edge multicore Tiler CPU! Phenomenal power and great execution - this is our new lead gadget. More than 20 times quicker than our past best model, the Cloud Core underpins throughput of up to 41.5 million parcels for each second, or up to 28 gigabits - full wire speed. [6]

Highest performance

- 8 mbps standard forwarding
- 24 mbps fast path forwarding (wire speed for all ports)
- Up to 16Gbit/s throughput



Figure 3.2: A MikroTik Cloud Core Router 1036 Series

3.3.5 Proposed Network Model (MikroTik Configuration)

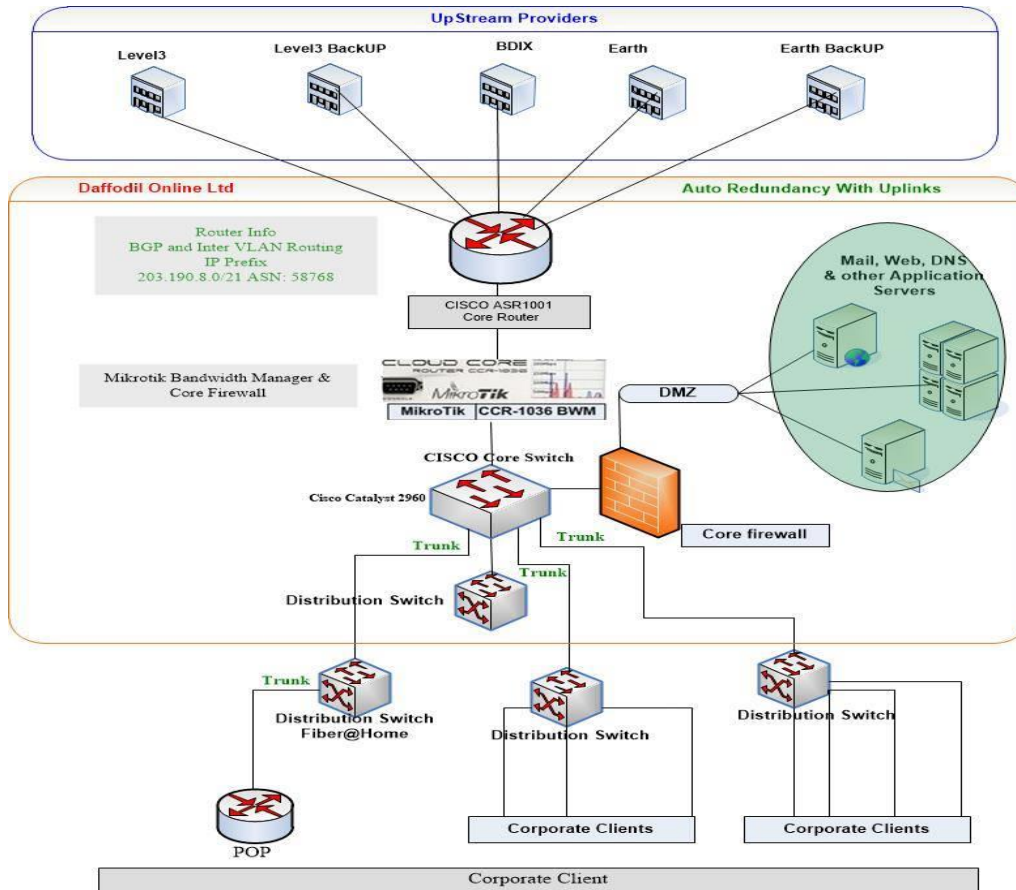


Figure 3.3: Shows Network Diagram

Initial Step

ISP provides for internet three ways.

1. Static Configuration
2. Dynamic Configuration
3. PPPoE Configuration

3.3.6 Static MikroTik Router Configuration:

Static routing refers to routing in which IP address cannot be automatically updated. One must manually configure static routers when network changes occur. It is used to access the internet.

Firstly, the ISP Company must give us things for static configuration, these are-

1. IP Address
2. Subnet mask / CIDR Notation
3. Gateway.
4. DNS.

Step 1:

First of all I've included LAN & WAN Configuration.

Process:

Interface> Ethernet 1>Ethernet 1 WAN> Apply Ok.

N.B: In the same way I did LAN work

Interface> Ethernet 2>Ethernet 2 LAN>

Apply Ok.

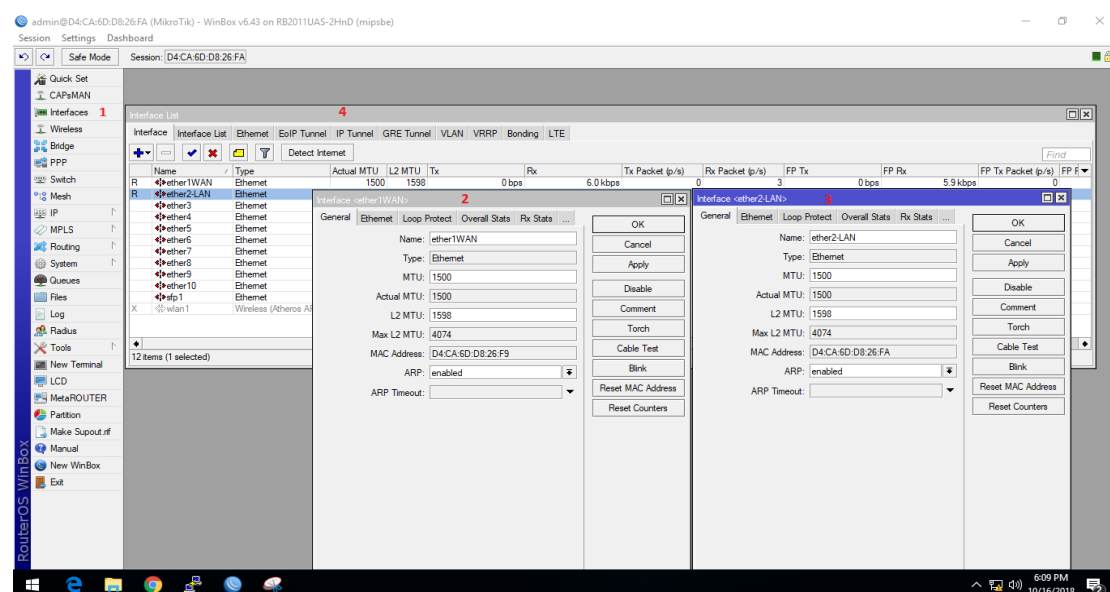


Figure 3.4: : Shows Screen Print Static MikroTik Router Setup.

Step 2:

Here I've selected IP Address & Network Address.

Process:

IP>Address>(+)>

N.B: When it opens the address list dialogue box I've clicked the plus button to open the add IP address window.

Here I gave the IP address in the address place. The same way I've given the Network IP in the Network place. And the LAN & WAN are selected in the Interface.

Apply>Ok.

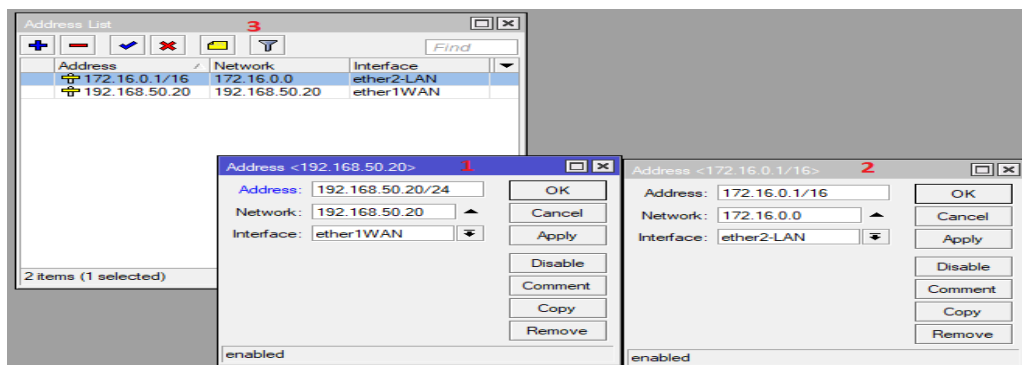


Figure 3.5: Shows Screen Print WAN & LAN IP address.

Step 3:

Process:

IP>Routes>(+)>Gateway

N.B: Here I gave the Gateway IP in the Gateway place.

Apply>Ok

Set in Gateway IP address in MikroTik router show in Figure 3.22

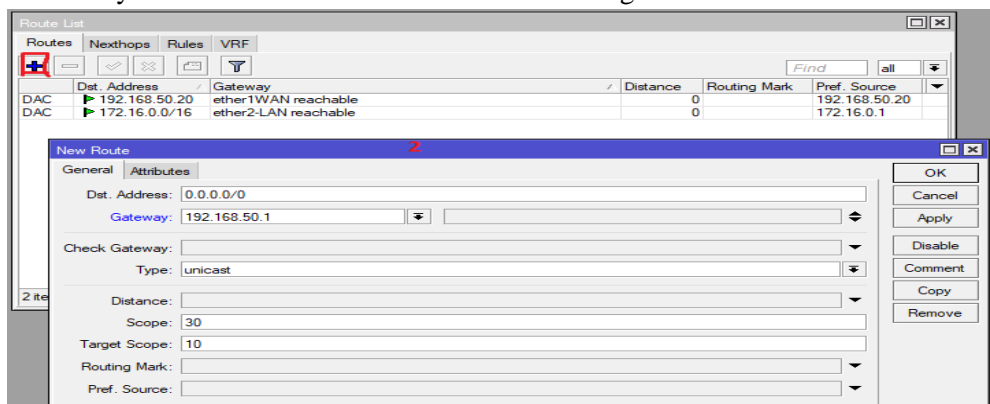


Figure 3.6: Show screen print Gateway IP address configuration in MikroTik router.

Step 4:

Process:

IP>DNS>

N.B: Here I will give IP to DNS Server.

Apply > Ok.

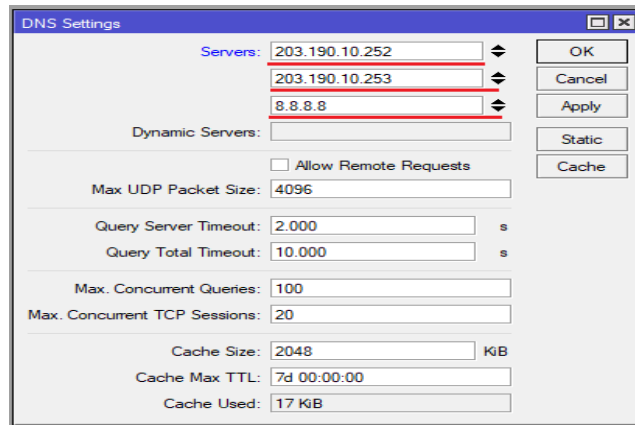


Figure 3.7: Shows Screen Print DNS Server

Step 5:

Process:

IP > Firewall > NAT > “+” > Action > Masquerade

N.B: Here the Action is displayed by Masquerade

Apply>Ok.

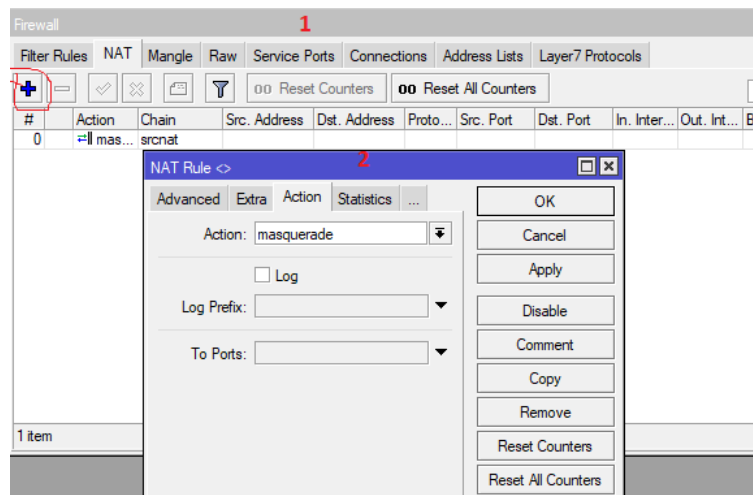


Figure 3.8: Show Screen Print Firewall.

Step 6:

Process:

In order to get Net in pc, you have to place the IP manually.

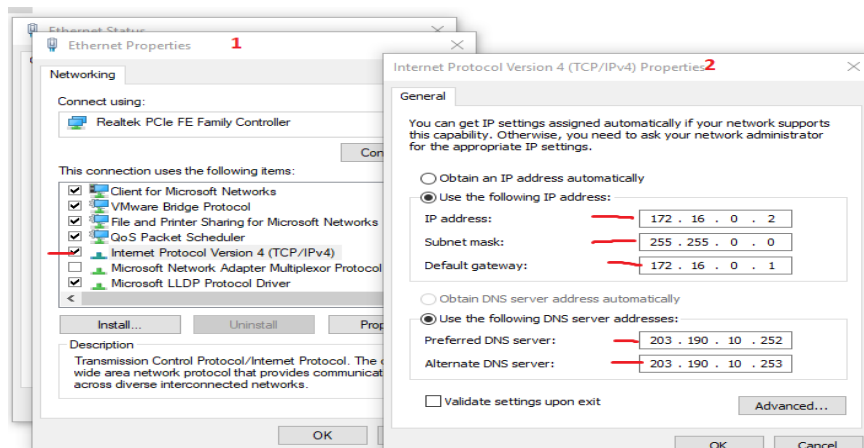


Figure 3.9: Shows Screen Print Internet protocol version.

Step 7:

Process:

4. Open Command Prompt
5. Then type: ping 8.8.8.8 -t
6. Enter

NB: The ping command used to test if the network works or not.

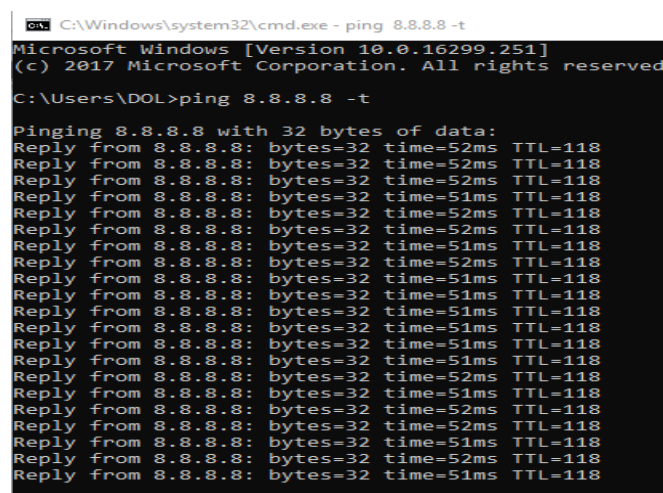


Figure 3.10: Show Screen Print Command promote.

3.3.7 DHCP Configuration in MikroTik Router:

Dynamic Host Configuration Protocol (DHCP) is a client/server protocol. It gives IP address and other related data, for example, subnet cover, default entryway and DNS to DHCP client. Each MikroTik Router has a worked in DHCP advantage. Thusly,

structure chairman can without a lot of a stretch change MikroTik Router into a DHCP server and can without a doubt diminish his framework association assignment. The setup of DHCP in MikroTik switch is given below with both GUI and command line interface.

3.3.8 DHCP setup

Step 1:

Process:

IP> DHCP > (+) >

N.B: IP to DHCP Server Interface IP

Then in the same way I will use “Gateway for DHCP” “Address to Give Out” “DNS Server” “Least Time” In the Step. And finally DHCP Setup will be done. Apply >Ok.

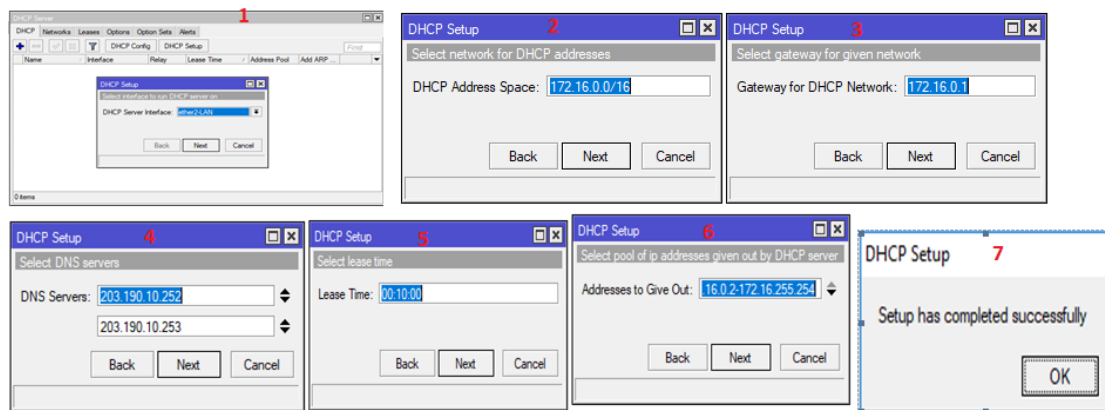


Figure 3.11: Show Screen print shot for DHCP setup.

3.3.9 Bridge Configuration:

The Interface supports different Network, if we want the same Network in two or more Interface, then the Bridge will be created.

Step 1:

Process:

Bridge > (+) >

N.B: There will be dialog box, from there to the name of the Total LAN will be selected.

Apply > Ok.

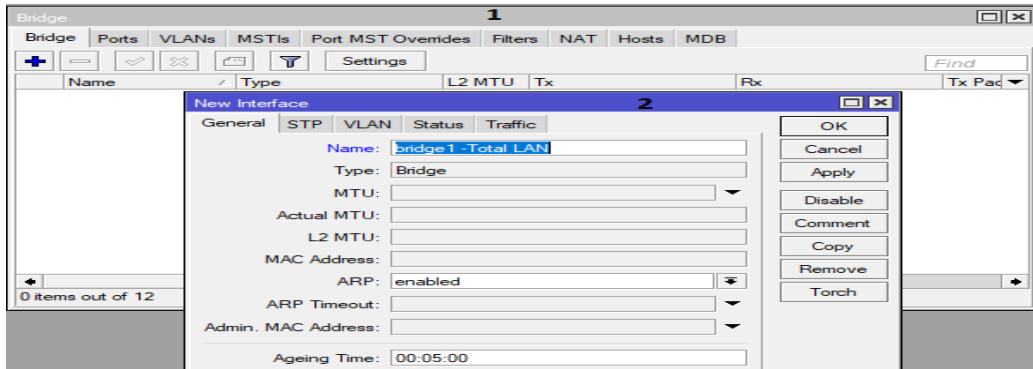


Figure 3.12: Show Screen print for Bridge Configuration.

Step 2:

Process:

Bridge> Port > (+) >

N.B: There will be a dialog box, In the Interface, we will be able to select from several Ethernet step by step.

Apply > Ok.

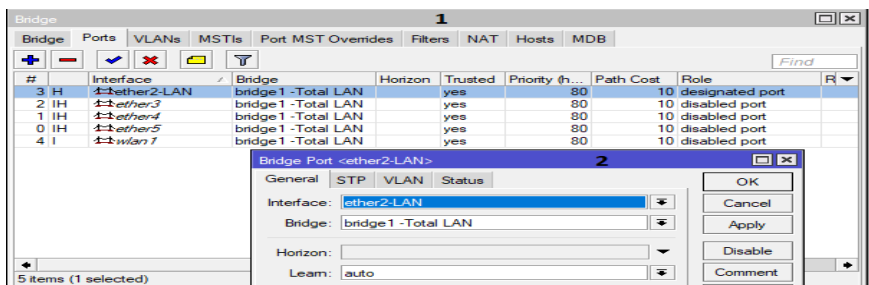


Figure 3.13: Shows Screen Print Port Configuration.

Step 3:

Process:

IP > Address List >

N.B: There will be a dialog box, from there LAN & WAN IP will have to be selected Total LAN in the Interface.

Apply > Ok.

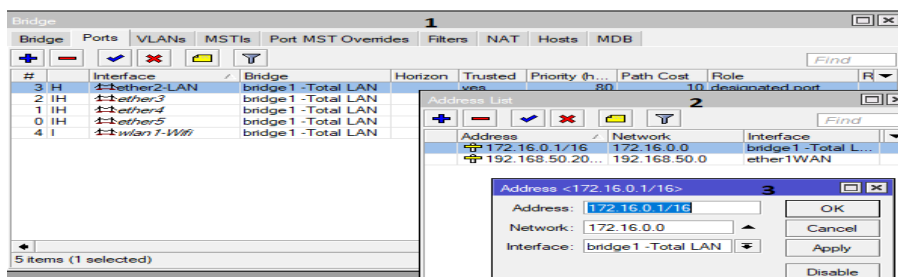


Figure 3.14: Shows Screen Print for Address List.

3.3.10 Bandwidth Configuration:

We will take limited Bandwidth from ISP companies, and we will make a Bandwidth configuration for the distribution to everyone.

Step 1:

Process:

IP > DHCP Server > Leases >

N.B: There will be a dialog box, from there Address & MAC Address IP will have to select DHCP Leases.

Apply > Ok.

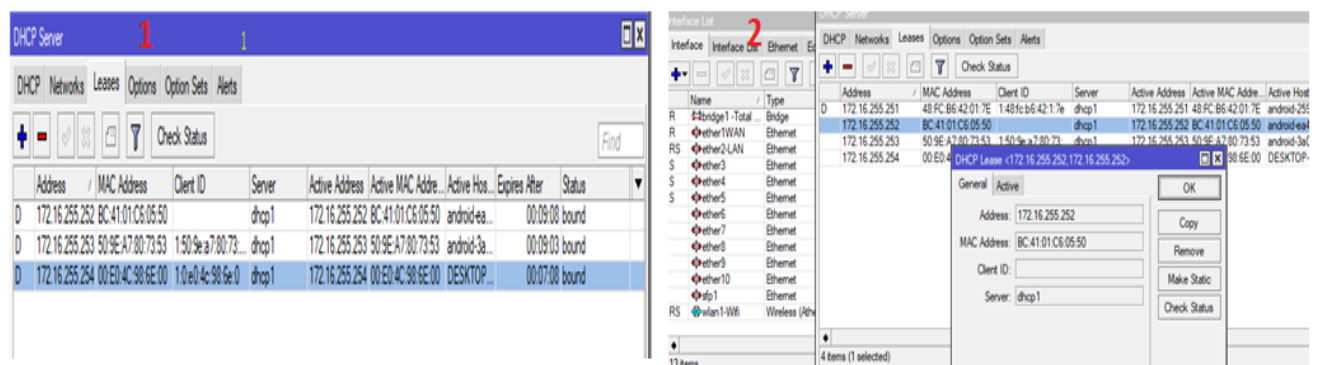


Figure 3.15: Shows Screen Print for DHCP Lease IP.

Step 2:

Process:

1. Queue > Queue List > Simple Queue > (+) >

N.B: There will be a dialog box, from their Name, Target & maximum limit will have to be selected.

Apply > Ok.

2. Queue > Queue List > Simple Queue > (+) >

N.B: We will do the same things in the same way.

In this way we can have a user or all users Queue for different names.

Apply > Ok.

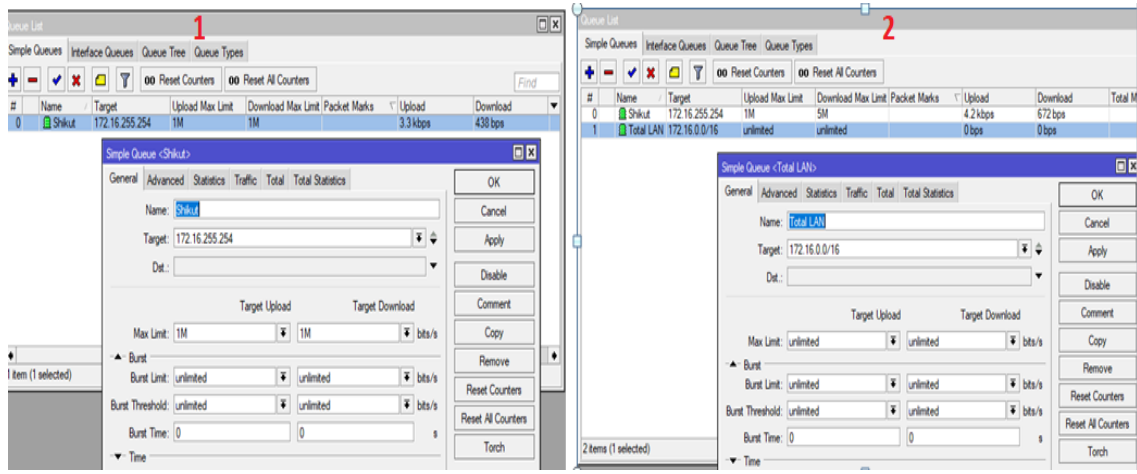


Figure 3.16: Shows Screen Print for Queue List.

Step 3:

Process:

IP > Queue > Queue Type >

N.B: There will be a dialog box, here we have selected Name, Limit & Classifier in the same way for Upload & download.

Apply > Ok.

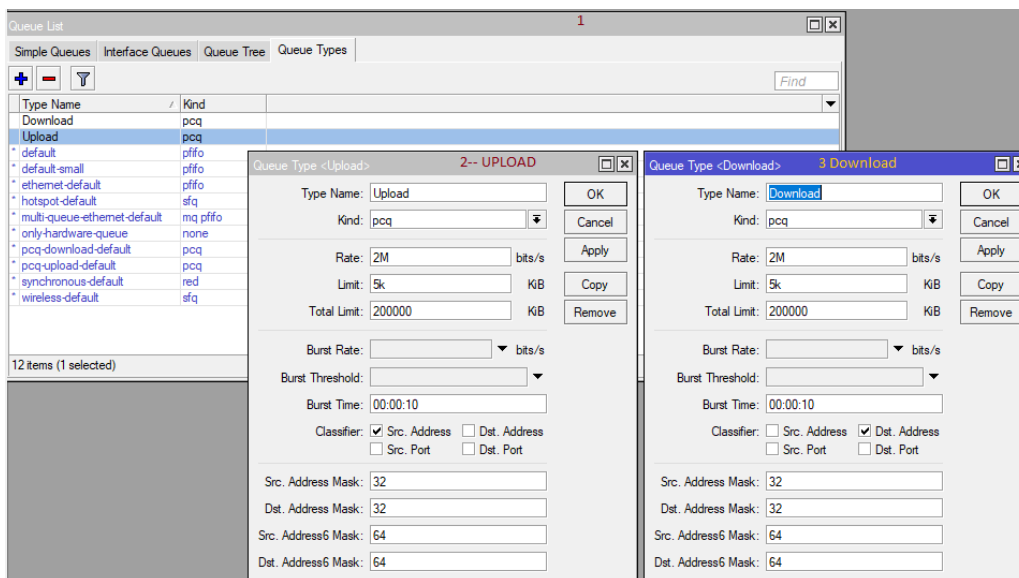


Figure 3.17: Shows Screen Print Upload & Download for Queue List.

3.3.11 YouTube / Facebook Separation:

Our minimum requirement for YouTube 7 MBPS & Facebook 3MBPS. If we want to use YouTube or Facebook without buffering, we need to separate YouTube or Facebook.

Step 1:

Process:

IP > Firewall > Address List >

N.B: There will be a dialog box, from there Name & Address have to be selected.

Apply > Ok.

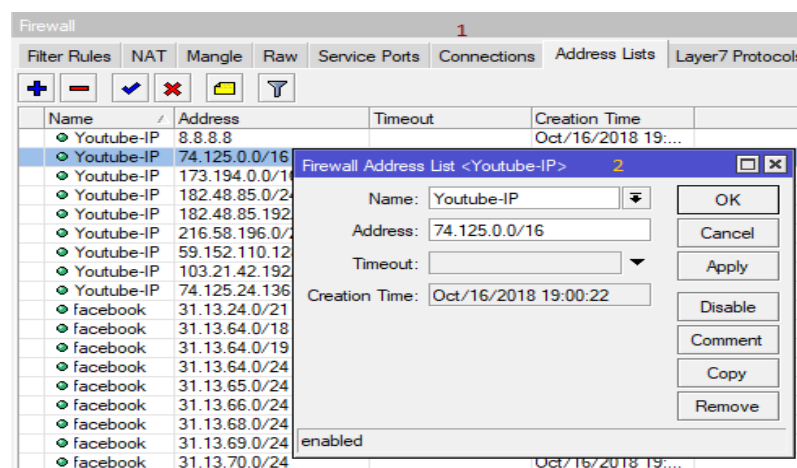


Figure 3.18: Shows Screen Print for Firewall Address List.

Step 2:

Process: All Process step by step-

1. IP > Firewall > Mangle > General >
N.B: There will be a dialog box, from here to Chain, we need to select the prerouting in the box.
Apply > Ok.
2. IP > Firewall > Mangle > Advance >
N.B: There will be a dialog box, from here to Dst. Address List, we need to select the YouTube or Facebook in the box.
Apply > Ok.
3. IP > Firewall > Mangle > Action >
N.B: There will be a dialog box, from there to Action, we need to select the mark connection in the box.
Apply > Ok.

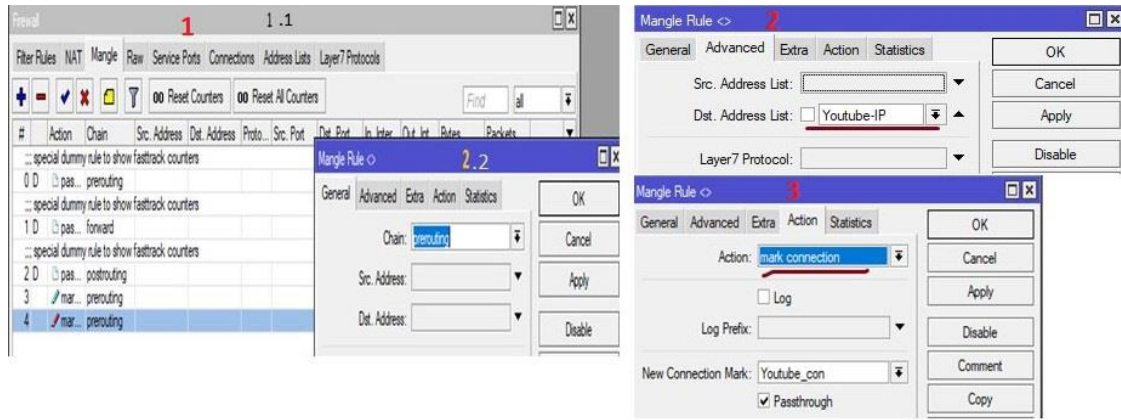


Figure 3.19: Shows all Screen Print Firewall, Mangle rules for YouTube separation

Step 3:

Process:

IP > Mangle Rule > General >

N.B: There will be dialog box, from there to Chain, we need to select the prerouting in the box. Again from there to connection mark, we need to select YouTube or Facebook.

Apply > Ok.

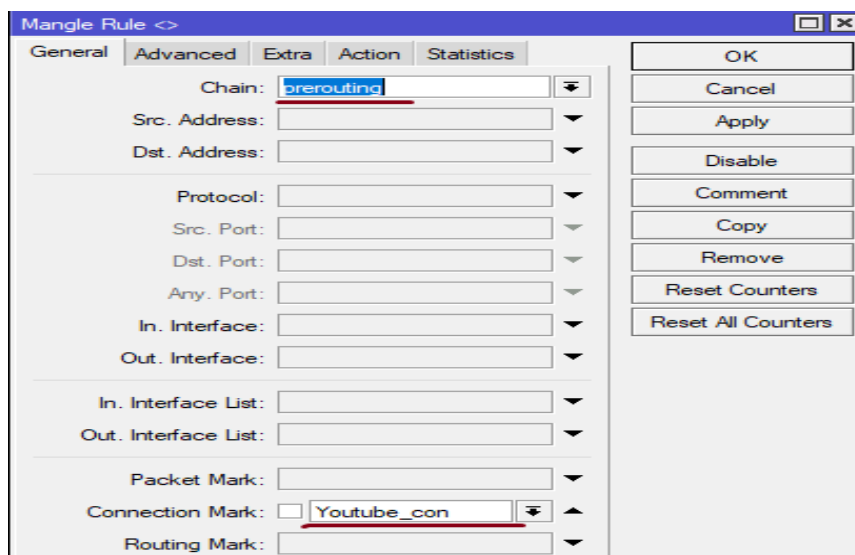


Figure 3.20: Shows Screen Print Mangle rules.

Step 3:

Process:

Queue > Queue List > Queue Types >

N.B: There will be a dialog box, since we are working with YouTube or Facebook, so we will select the choice of Upload & Download speed.

Apply > Ok.

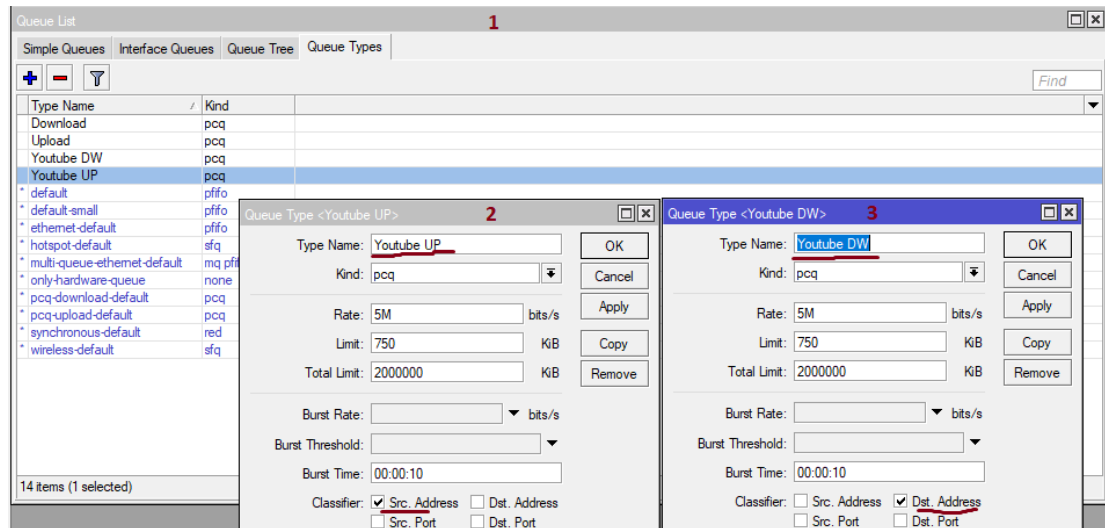


Figure 3.21: Shows Screen Print Screen Shot Queues List

Step 4:

Process:

1. Queue > Queue List > Simple Queue > General >

N.B: There will be a dialog box, from here to Name, we need to select YouTube in the box. Again here to Target, we need to select IP Address.

Apply > Ok

2. Queue > Queue List > Simple Queue > Advance >

N.B: There will be a dialog box, since we are working with YouTube or Facebook, so we will select the choice of YouTube or Facebook

Apply > Ok

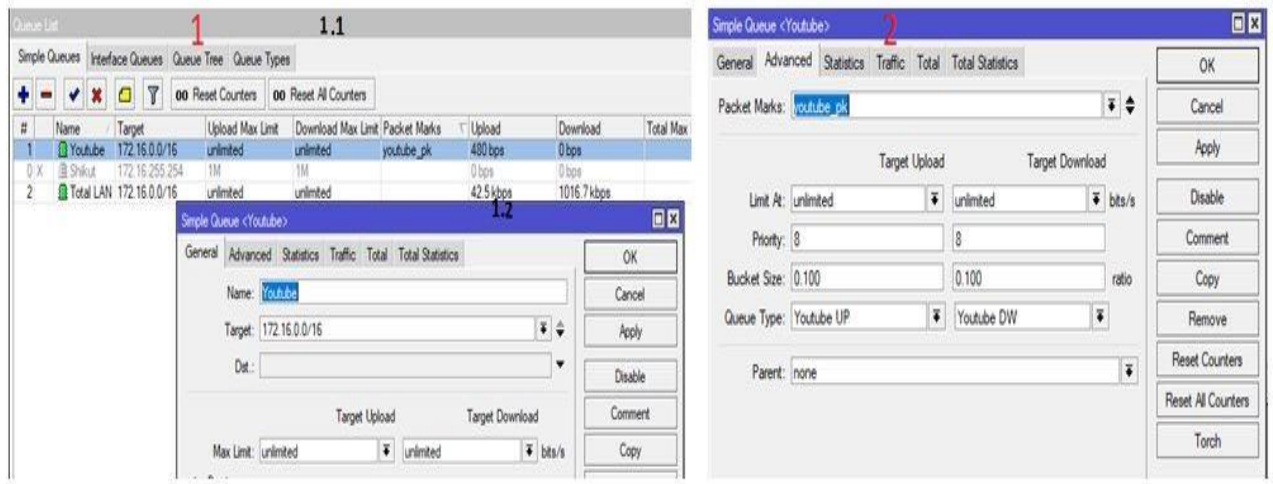


Figure 3.22: Shows Screen Print Queues List & Simple Queue

3.3.12 Network Security:

Without the permission of the network system admin, anyone else may not be able to access the Internet. For this we have Network security in MikroTik Router.

Step 1:

Process:

IP > Firewall >

N.B: There will be a dialog box, first we need to click on General and give Chain & Src. Address, then click on Action and select Drop & Accept.

Apply > Ok.

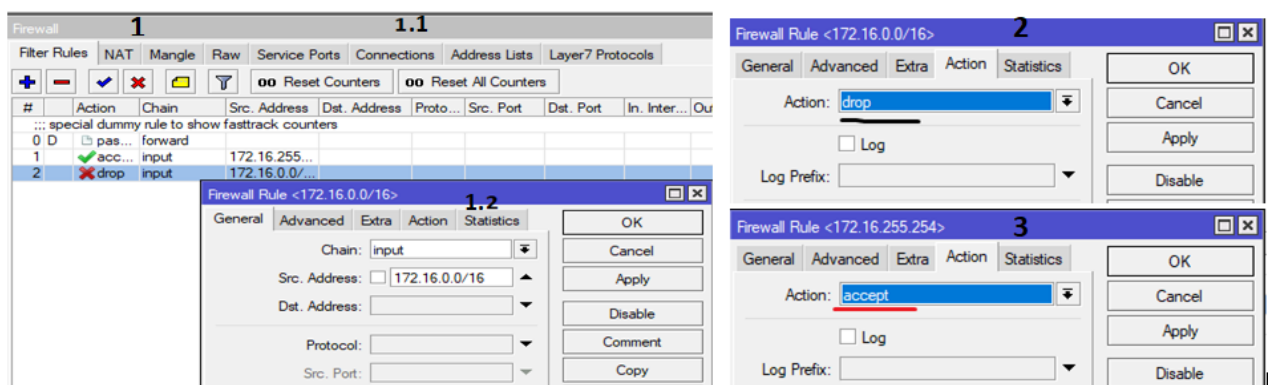


Figure 3.23: Shows all Screen Print for Network Security.

Step 2:

Process:

DHCP > Least > Make static.

N.B: We only need to reply from ARP to the Interface. You must add ARP to IP & MAC Address.

Apply > Ok.

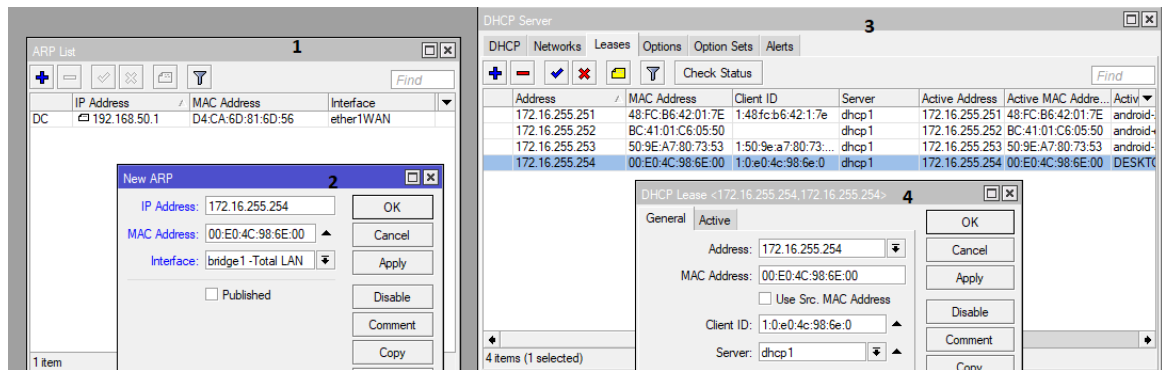


Figure 3.24: Shows Screen Print for Network Security Arp List.

3.3.13 Website Block:

We need to block some websites to specify how much website can be used, as per the specific requirement of the corporate house.

Step 1:

Process:

1. IP > Firewall > Layer 7 Protocol >

N.B: There will be a dialog box, since we want to block facebook.com we have given Facebook code [^(facebook.com).*\$]

Apply > Ok.

2. IP > Firewall > Filter Rules >

N.B: There will be a dialog box, first we need to click on General and give Chain & Protocol.

Apply > Ok.

3. IP > Firewall > Advance >

N.B: Since we want to block Facebook, we will select Facebook on Layer & Protocol.

Apply > Ok.

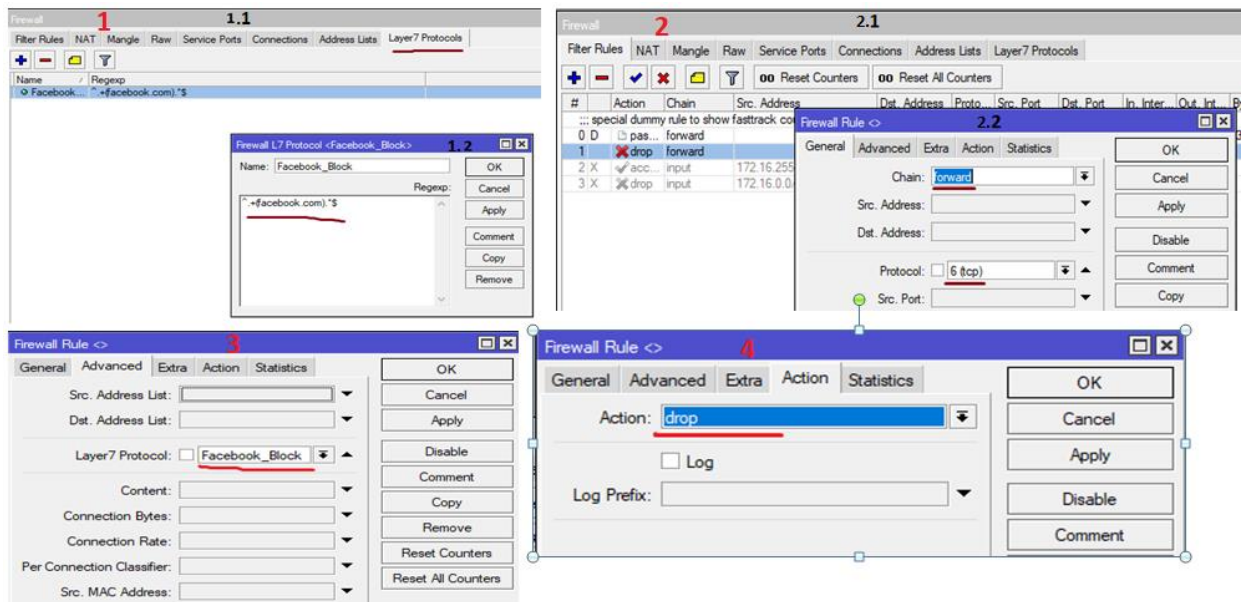


Figure 3.25: Shows all Screen Print for Website Block.

Step 2:

Process:

Open browser and enter facebook.com.

N.B: At the end of all work when Facebook is opened, we can see that Facebook is not opened.

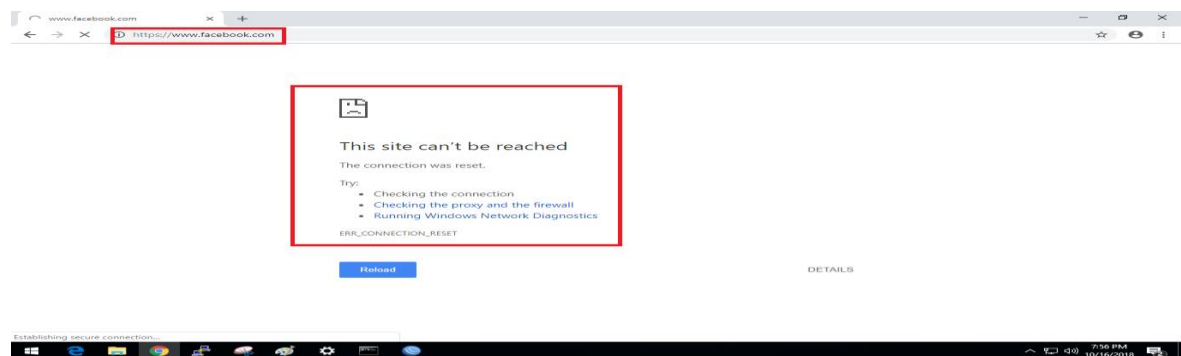


Figure 3.26: Shows Screen Print for Facebook Block.

3.3.14 PPPoE:

Internet is protected, and PPPoE is used for handling users easily. Here the User Name & Password are provided.

Step 1:

Process: All process step by step-

IP > Pool >

N.B: There will be a dialog box, first we need to click on Pool and give Name & Address.

Apply > Ok.

IP > PPP > PPPoE Servers >

N.B: There will be a dialog box, first we need to click on PPPoE Servers and give Service Name & Interface.

Apply > Ok.

IP > PPP > Profile >

N.B: There will be a dialog box, first we need to click on Profile and give Name, Local Address & Remote Address.

Apply > Ok.

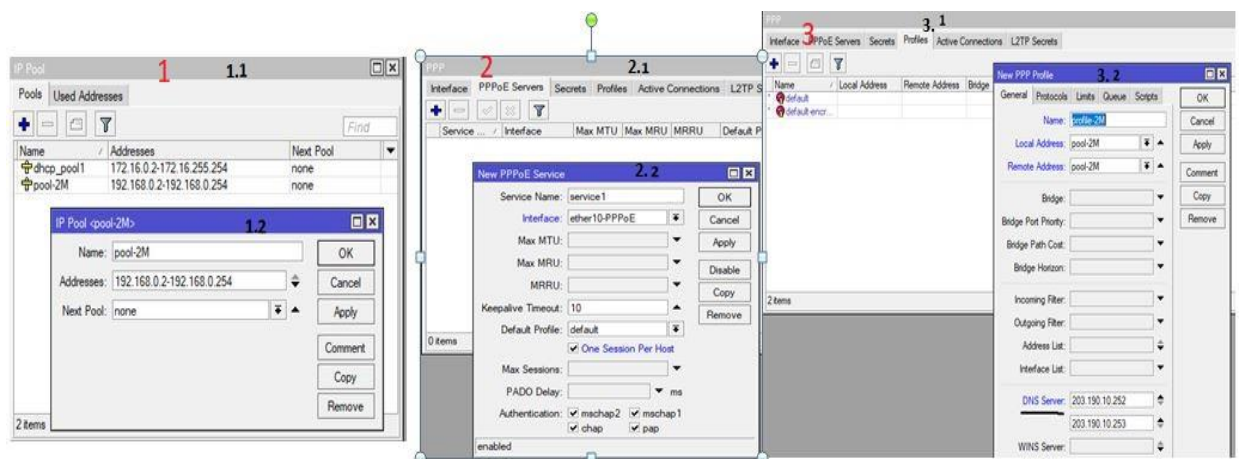


Figure 3.27: Shows all Screen Print Shot for PPPoE.

Step 2:

Process:

1. IP > PPPoE >

N.B: There will be a dialog box, we will set Upload & Download speed in the Rate Limit Box.

Apply > Ok.

2. IP > PPP > Secret >

N.B: There will be a dialog box, first click on Secret and give Name, Password & select Profile.

Apply > Ok.

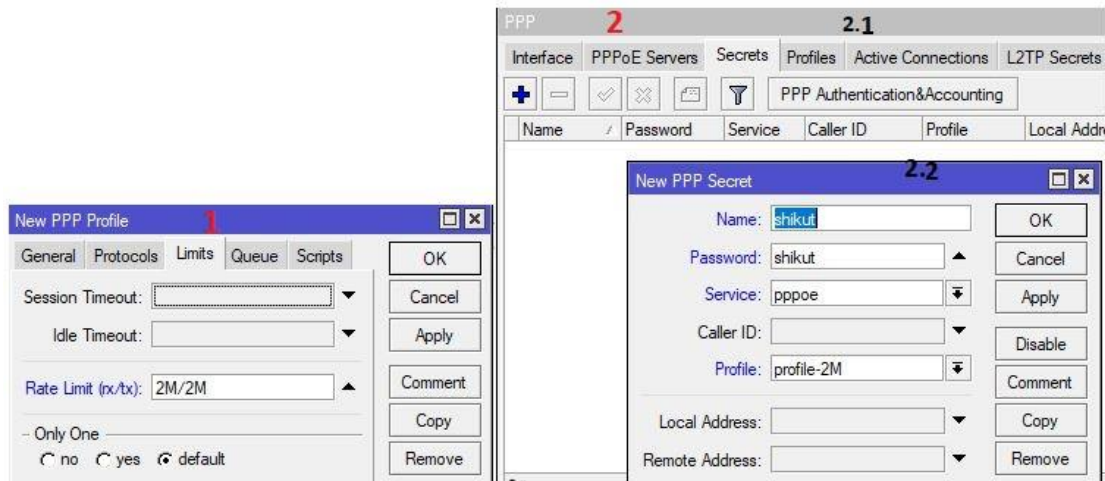


Figure 3.28: Shows all Screen Print for PPPoE.

Step 3:

Process:

N.B: Finally, internet can be accessed by the User Name and Password and we can login with User Name & Password.

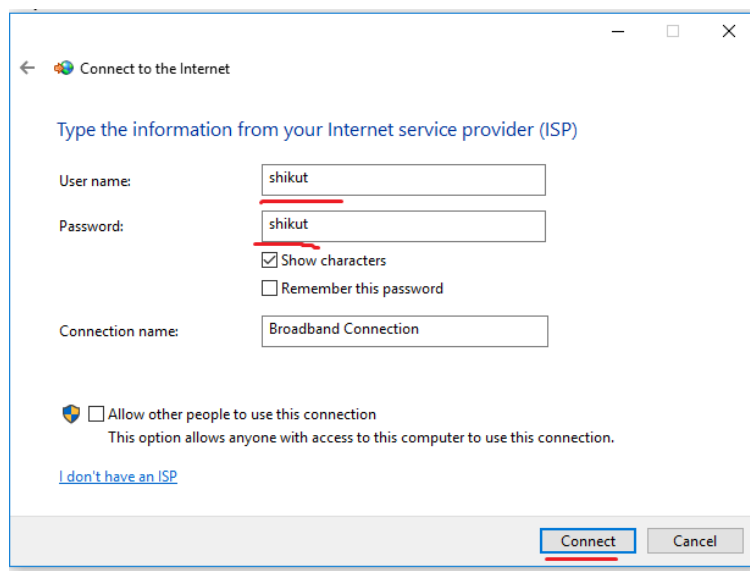


Figure 3.29: Shows Screen Print for Internet connection.

3.3.15 Installation Process in Linux Configuration

3.3.16 Installation Centos OS 6.4

Step 1:

Process:

File > New Virtual Machine >

N.B: There will be a dialog box, first click on Virtual Machine Workstation, & Selected Typical dropdown box.

>Next.

Step 2:

Process:

N.B: There will be a dialog box, & Selected Store virtual disk a single file dropdown box.

>Next.

Step 3:

N.B: There will be a dialog box, and Centos OS are selected.

> Next

Step 4:

N.B: There will be a dialog box, and select typical dropdown box.

> Next

Step 5:

N.B: There will be a dialog box, this name Virtual Machine Setting, click Hardware & select Specific Virtual Machine.

> Next

Step 6:

N.B: There will be a dialog box, this name Virtual Machine Setting, click CD/DVD (IDE) & select Use ISO image file.

> Ok.

Step 7: We will show two file are created in browser.

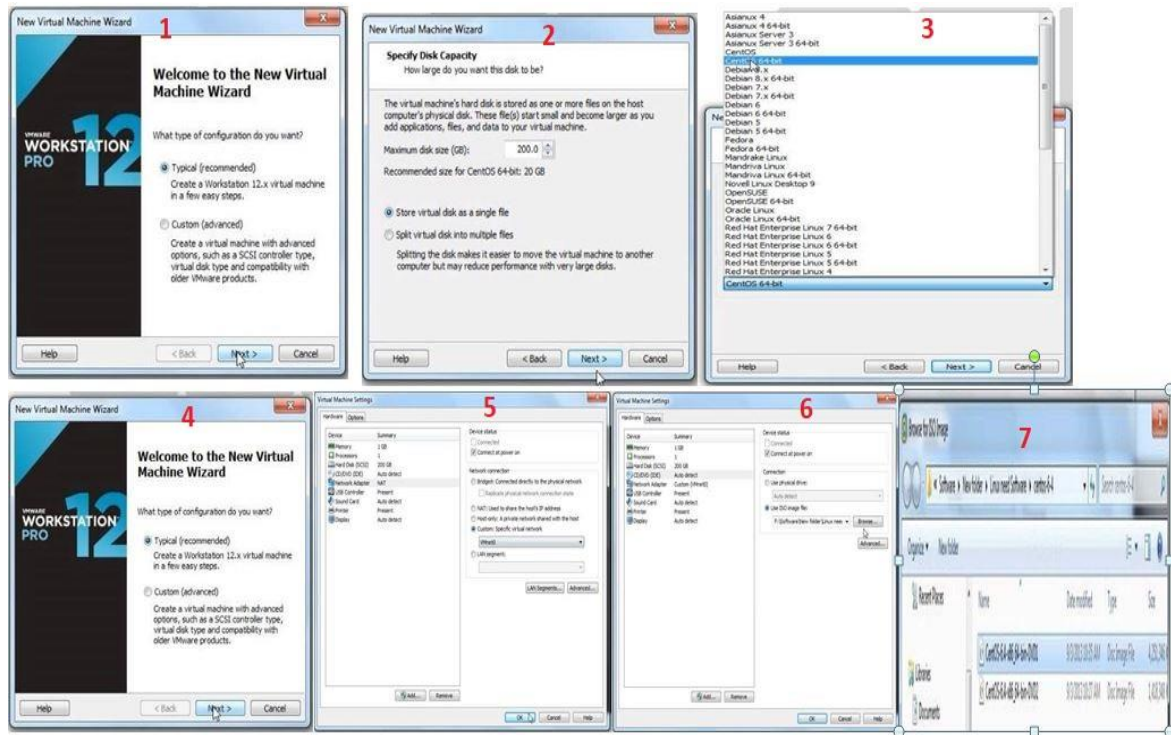


Figure 3.30: Shows all Screen Print for Centos OS Install.

Step 1:

Process:

N.B: There will be a dialog box, first click Power on Virtual Machine.
>Next.

Step 2:

Process:

N.B: There will be a Black Screen, & click Ok.

Step 3:

N.B: There will be a dialog box, and US English Language selected.
> Next

Step 4:

N.B: There will be a dialog box, and select Use all space dropdown box.
> Next

Step 5:

N.B: There will be a dialog box, here Disk Configuration.
> Next

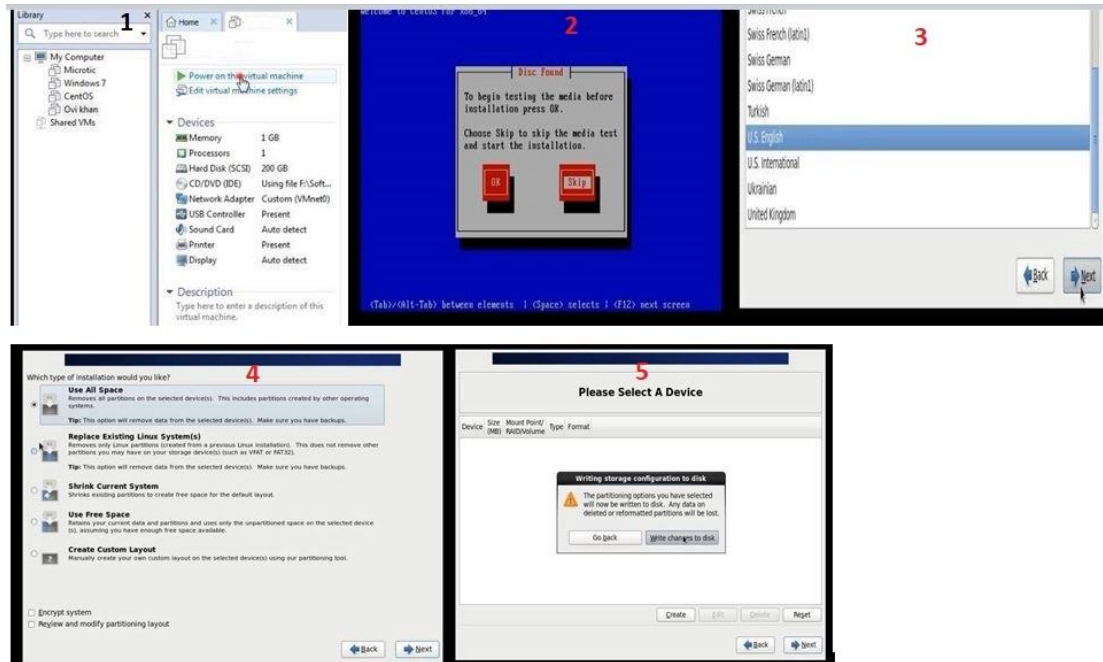


Figure 3.31: Shows all Screen Print for Centos OS Install.

Step

Process

N.B: There will be a dialog box,

> Next.

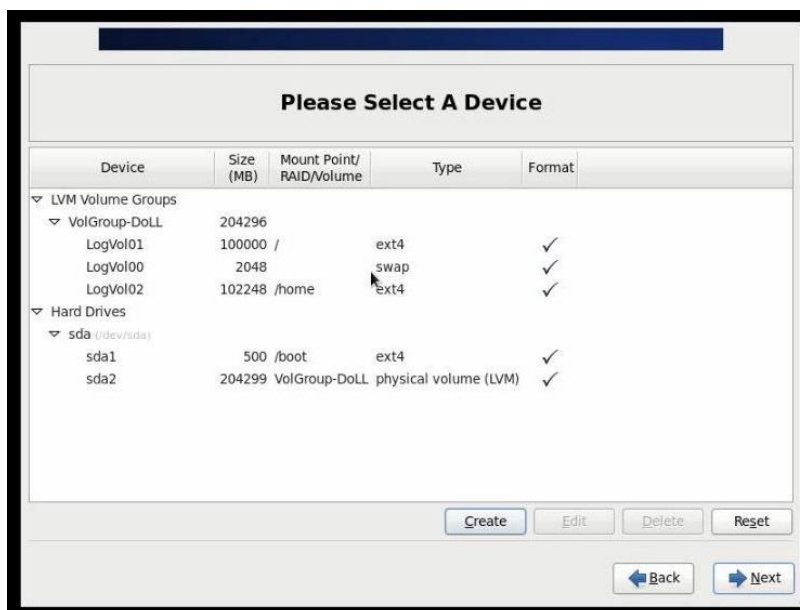


Figure 3.32: Shows Screen Print for a Device.

Step

Process

N.B: There will be a dialog box, and Finally Install CentOS 6



Figure 3.33: Show Screen Print for centOS Install.

3.3.17 Linux Run-Level Used by Centos

Command	Description
init 0	Shut Down
init 1	Single Mode User
init 2	Multi User Mode
init 3	Full Multi User Mode
init 4	Unused
init 5	X-Windows (GUI Mode)
who -r	See current run-level

3.3.18 The Basic Command of Linux Centos

Command	Description
pwd	Present Working Directory
Power off , init 0, shutdown -h now	Shutdown
cd /root/Desktop(directory path)	Chang Working Directory
ls	List information about file
Cal , cal 2014, cal 10 1989	Display a calendar
touch shikut(File name).	Create a clear document
mkdir shikut(name of directory).	Create a index

3.3.19 Initial Step

User Create and Password Management

Command	Description
addusershikut(username).	Adding a user
passwdshikut(username).	Set a Password to New User
passwd-d shikut(username).	Password Disable/Remove
fingershikut(username).	Verify user information
passwd-l shikut(username).	Locking an account
passwd -u shikut(username).	Unlock an account
userdelshikut(username).	Delete a user
userdel -r shikut(username).	Delete a user with home directory

To Know About the Logged In User

w

who

who am i

To Copy or Move a File

Copy = cp filename goal precedent: cp file1 /home/shikut/ahammed

Move = mv filename goal precedent: cp file1 /home/shikut/ahammed

Network Configuration

After providing Internet connection to server, static IP will be displayed in phases.

Process 1:

If i want to type in the (ifconfig) Command, you can connection to the cable connection and get an <etho0>

Process 2:

Than we will edit the (vim /etc/sysconfig/network –scripts) command by typing.

Then save command < wq >

Process 3:

In the same way, I want to type in the (vim /etc/resolv.com) command

Than here I will place the DNS.

Process 4:

I will check with google ping.

```
root@localhost:~/Desktop
File Edit View Search Terminal Help
root@localhost Desktop# ifconfig
ethb  Link encap:Ethernet  Hwaddr 00:0C:29:75:64:EA
      inet6 addr: fe80::20c:29ff:fe75:64ea/64 Scope:Link
      UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
      RX packets:953 errors:0 dropped:0 overruns:0 frame:0
      TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
      collisions:0 txqueuelen:1000
      RX bytes:97975 (95.6 KiB)  TX bytes:468 (468.0 b)

lo    Link encap:Local Loopback
      inet addr: 127.0.0.1  Mask:255.0.0.0
      inet6 addr: ::1/128 Scope:Host
      UP LOOPBACK RUNNING  MTU:16436  Metric:1
      RX packets:12 errors:0 dropped:0 overruns:0 frame:0
      TX packets:12 errors:0 dropped:0 overruns:0 carrier:0
      collisions:0 txqueuelen:0
      RX bytes:720 (720.0 b)  TX bytes:720 (720.0 b)

[root@localhost Desktop]#
```

```
root@localhost:~/Desktop
File Edit View Search Terminal Help
DEVICE=eth0
HWADDR=00:0C:29:75:64:EA
TYPE=Ethernet
UUID=7942fb91-e891-4ad7-b26b-6418832fdaf7
ONBOOT=yes
NM_CONTROLLED=yes
BOOTPROTO=static
IPADDR=192.168.30.224
NETMASK=255.255.255.0
GATEWAY=192.168.30.1

...

*/etc/sysconfig/network-scripts/ifcfg-eth0* 10L, 204C  10,1  All
```

```
root@localhost:~/Desktop
File Edit View Search Terminal Help
# Generated by NetworkManager
# No nameservers found; try putting DNS servers into your
# ifcfg files in /etc/sysconfig/network-scripts like so:
# DNS1=xxx.xxx.xxx.xxx
# DNS2=xxx.xxx.xxx.xxx
# DOMAIN=lab.foo.com bar.foo.com
nameserver 0.0.0.0
nameserver 8.8.4.4

...

*/etc/resolv.conf* 11L, 266C  11,1  All
```

```
root@localhost Desktop# ping google.com
PING google.com (74.125.24.139) 56(84) bytes of data:
64 bytes from 74.125.24.139: icmp_seq=1 ttl=44 time=51.7 ms
64 bytes from 74.125.24.139: icmp_seq=2 ttl=44 time=51.4 ms
64 bytes from 74.125.24.139: icmp_seq=3 ttl=44 time=51.6 ms
64 bytes from 74.125.24.139: icmp_seq=4 ttl=44 time=51.4 ms
64 bytes from 74.125.24.139: icmp_seq=5 ttl=44 time=51.5 ms
64 bytes from 74.125.24.139: icmp_seq=6 ttl=44 time=51.4 ms
^C
--- google.com ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5162ms
rtt min/avg/max/mdev = 51.484/51.549/51.798/0.190 ms
[root@localhost Desktop]#
```

Figure 3.34: Shows all Screen Print Shot for Network Configuration on Linux.

File Permission

Define how much authentication it receives.

Let's see the chmod command in action.

Number	Permission Type	Symbol
0	No permission	---
1	Execute	--x
2	Write	-w-
3	Execute + Write	-wx
4	Read	r--
5	Read + Execute	r-x
6	Read + Write	rw-
7	Read + Write + Exectute	Rwx

Process 1:

(touch shikut) create the file in the desktop.

With this command (ls) I can see the location file.

Process 2:

To see the permissions of the file, type (ls -la) command.

Process 3:

To check the file has been read, write & execute types this command (ls -ls I grep shikut)

```
[root@localhost Desktop]# touch shikut
[root@localhost Desktop]# ls
dol frouts shikut
[root@localhost Desktop]# ls -la
total 16
drwxr-xr-x. 3 root root 4096 Oct 29 23:02 .
dr-xr-x---. 26 root root 4096 Oct 29 22:39 ..
drwxr-xr-x. 2 root root 4096 Oct 29 20:56 dol
-rw-r--r--. 1 root root 159 Oct 29 21:11 frouts
-rw-r--r--. 1 root root 0 Oct 29 23:02 shikut
[root@localhost Desktop]# chmod 764 shikut
[root@localhost Desktop]# ls -la | grep shikut
-rwxrw-r--. 1 root root 0 Oct 29 23:02 shikut
```

Figure 3.35: Shows all Screen Print Shot for File permission.

User Management

Process 1:

(useradd shikut) create the user in the desktop.

I will create a new password.

Process 2:

(cat /etc/passwd | grep shikut) type the command, user id & group id(500:500)

<pre>[root@localhost ~]# useradd shikut [root@localhost ~]# passwd shikut Changing password for user shikut. New password: BAD PASSWORD: it is based on a dictionary word BAD PASSWORD: is too simple Retype new password: passwd: all authentication tokens updated successfully.</pre>	<pre>[root@localhost ~]# cat /etc/passwd grep shikut shikut:x:500:500::/home/shikut:/bin/bash</pre>
<pre>[root@localhost ~]# usermod -g diu shikut [root@localhost ~]# cat /etc/passwd grep shikut shikut:x:500:501::/home/shikut:/bin/bash</pre>	<pre>[root@localhost ~]# id shikut uid=500(shikut) gid=501(diu) groups=501(diu)</pre>

Figure 3.36: Shows all Screen Print Shot for User Management.

3.4 Challenges

There don't have any work which has no difficulties, however four months of my temporary job understanding and to share companions in the wake of finding out about the party time, I've discovered that there is some regular difficulties in entry level position. I think it is that assistants can be unpaid, impermanent and they are in a race to pick up involvement.

Lacking work: Sometimes is happened that there's insufficient work allocated to me. I was get exhausted, underutilized, strumming my fingers at my work area and enticed to sit idle.

At times excessively work: Because of assistants are only happy to get a foot in the entryway, some work spots may exploit from youthful laborers by giving them extend periods of time dull work.

Dread to make inquiries: abruptly there's a deluge of work, and I at long last have the opportunity to substantiate myself! Be that as it may, I don't know about x, y, z... . I may feel the strain to be an autonomous and independent laborer; however it's such a great amount of better to illuminate vulnerabilities!

Contend with other Intern: Luckily I was an assistant; we make inquiries of one another and can without much of a stretch collaborates with undertakings that have worked in groups where there was such a community oriented relationship. Understudies in a future employment opportunity, or a proposal for a decent letter will contend in other office conditions, may not be so inviting.

A New Lifestyle: As an ongoing alumnus, I might become acclimated to another way of life that can be very jostling. Rather than awakening at eight and heading off to a couple of class's multi day, I'm sitting at a work area 9-5. I may inhabit my folks to set aside extra cash. The hours and the new living circumstance unmistakably make mingling more troublesome than previously.

CHAPTER 4

4.1 Competencies Earned

Abilities earned or learning result is an announcement of what a student is required to know, comprehend or have the capacity to do because of a learning procedure. Introduce and decommission of both system and server machines at two datacenters. Lead job in cutting edge Linux programming executions, for instance LDAP HA, adjusted to program learning results, field and temporary position assessments. The Student Association office finances numerous understudy Intern Learning Outcomes: Gathering and arranging data into an Internship Project Description: Participate in the upgrade of the Linux Lab site. Learning Outcomes. Introduce and Configure programming and redesigns; Install, design and test arrange Employer Services • Furthermore, steady with the learning results, the Internship On-Site Supervisor will give an introduction concerning hierarchical strategies and methods.

4.3 Smart Plan

Each organization ought to have a keen intend to pick up the achievement. Essentially some regular things of mix make a savvy plan.

4.3 Reflections

Daffodil Online Ltd. begun they are activity in the year 2002. Amid the previous years, they broadened they are activity and administration portfolio as per the client's proposal and thinking about requests of time. They worked with numerous national ventures and worldwide associations and accomplished the notoriety. They are utilizing the most recent advancements and overhauling the administrations wherever it is required. They are Corporate Network Solution office is skilled to give condition of-craftsmanship system and media transmission arrangements with an exceptionally proficient specialized aptitude gathering.

CHAPTER 5

Conclusion and Future Career

5.1 Discussion and Conclusion

Audit this entry level position has been a magnificent and compensating background. I have seen the future and I will have the capacity to assist me with the chance to connect with many individuals have possessed the capacity to affirm that. Through this temporary job, I have discovered that one of the primary issues and time administration abilities and additionally self-inspiration. When I began first I was going eight hours per day, six days seven days to have the capacity to sit in an office and did not feel that. When I understood what I need to do my long periods of covering isn't broken, so I sort out my normal everyday employment. Composed and it was the perfect time, when I get a reaction to arranged for inquiries that should be scholarly. This temporary job and time administration of the workplace for a long time, I needed to figure out how to rouse thy self through. Despite everything I'm searching for utilizing the organization thought of the different proposition and thoughts. Despite everything I'm keeping my alternatives open to new chances, nonetheless, are proceeding to work for the University of Bangladesh on the planet. I'm getting a charge out of this profession. I keep on buckling down for my position and would like to keep on finding out about the business and meet new individuals will. It was a superb affair, and I trust the other assistant received a great deal in return.

5.2 Scope for Further Career

Profession openings are accessible in various territories under Linux. The profession openings in Linux's making reference to not just the Linux stage, it covers parcel of various territories like: Desktop Application Development, Kernel and Device Drivers Development Today their enormous interest open source programming's and open source programming's designers and system engineers. There many organizations today relocated to Linux and open source software's. The organization like Google, Yahoo, Boeing, Lufthansa, wiki.org, numerous organizations moved to financially savvy open source arrangement. There is an enormous interest for the talented experts in LINUX, MICROTİK and so forth.

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Appendices

➤ Appendix : Company Detail



Head Office

Name	Daffodil Online Limited
Address	102, Shukrabad (3rd floor), Mirpur Road, Dhanmondi, Dhaka - 1207, Bangladesh
Telephone	02-9143258-60
Fax	880-2-8116103
E-mail	info@daffodilnet.com
Website	www.daffodilnet.com
Type of Organization	Nation wide Internet Service Provider (ISP)
Employees	12