

**INTERNSHIP REPORT ON ISP SETUP AND CONFIGURATION WITH  
MIKRO-TIK AND LINUX PLATFORM**

**BY**

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This report is presented by the partial fulfillment of the requirements for  
the Degree of Bachelor of Computer Science and Engineering.

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**DAFFODIL INTERNATIONAL UNIVERSITY**

**DHAKA, BANGLADESH**

**DECEMBER 2018**

## **APPROVAL**

My internship titled is “**ISP Setup and Configuration with Mikro-Tik and Linux Platform**”, submitted by Md. Mahmud Hasan, ID no: 161-15-6935 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 its style and contents. The presentation has been held on 10 December 2018.

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## **DECLARATION**

I hereby declare that, this internship report is prepared by me Md. Mahmud Hasan, ID No: 161-15-6935 to the department of Computer Science and Engineering, Daffodil International University, under my honorable supervision Shaon Bhatta Shuvo, Lecturer, Department of CSE, Daffodil International University. I also declare that, I collect information from my internship organization Daffodil Online Limited (DOL), ISP based Corporation, Books, Internet and my friends also.

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I am grateful to **Sabbir Ahmed (Polash)**, the CEO of Daffodil Online Limited. I also thanks to **Md Abul Basher and Md. Imran Hossain, (System and Network Trainer)** of Daffodil Online Limited for their support. Without their help of support, I can't complete my internship training in the company. Other members of the company also my batch mate helped me tremendously for doing my internship program.

I would like to thanks my heartiest gratitude to **Dr. Sayed Akther Hossain (Department Head of CSE, DIU)** for his kind help to finish my internship and also to other faculty member and the staff of CSE department of Daffodil International University.

Finally, I must acknowledge with due respect the all support and inspiration of my parents. <sup>[1]</sup>

## **ABSTRACT**

MikroTik operating system is designed for a network router. These functions include IP Addressing, Firewall & Nat, Routing, Bandwidth Limiter, Point to Point Tunneling Protocol, DNS server, DHCP server, Hotspot, and many other features. It is very useful for our daily life. In this sector we will know about Cisco, MikroTik, Cabling, Linux System etc. Network devices are connected to computers, peripherals, even LOT devices. Switches, routers and wireless access points are the essential networking basic. Through them device connected to network can communicate with one computer to another computer and with other networks, like the internet. Now today a large number of people all over the world usage internet technology with their dally life. So, the networking is so much important fact right now. Now-a-days every single people, business and e-commerce, every work station is fully depending on software-based communication and internet technology. That is the reason it's extremely valuable to anchor the system. Computer system and peripheral are connected to form a network. They provide various advantages, for Example-Instant messaging, parallel computing, video conference, interaction with other users using dynamic web pages, sharing information by using internet or web.

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# CHAPTER 1

## Introduction

### 1.1 Introduction:

A network device is connecting to computer, peripherals, even IoT devices. Routers, switches and wireless access points are the essential networking basics. I choose this internship because I wanted to benefit from the experience. Through them device connected to network can communicate with one computer to another computer.

### 1.2 Motivation:

I am currently pursuing in the final semester of my Bachelor Degree program in CSE. I choose my internship at Daffodil Online Limited (DOL) because I discovered that the Daffodil Online limited has overcome every customer satisfaction & services because of their excellent reputation. Daffodil Online Limited (DOL) is now a well-known and reputed Internet Service Provider (ISP) in Bangladesh. I think that I can successfully prove my experience by the help of Daffodil Online Limited.

### 1.3 Objectives:

Now in the modern world “Basic MIKRO TIK & LINUX” is a very generic term. The internship program is making me as a compatible one in the job market. Temporary job in software engineering is a stage to give better work encounter when an understudy is still in school, to equivalent occupation aptitude with scholarly preparing, and to assist understudy with preparing the change from school to work.

- Install Mikro Tik and perform network configuration.
- Install Linux for server administration and maintained hardware equipment.

Perform user and group administration.

## **1.4 Introduction of Company:**

Daffodil Online Ltd is a top-rated Internet Service Provider (ISP) in Bangladesh and furthermore the most experienced and prominent organization in the ICT field where they are essential business morals is Long Term Relationship with their clients. They are exceptionally future. In the time of 2002 they are begun their excursion. Since the earlier years, they expounded grateful of what they have picked up, and furthermore more enthusiastic about their viewpoint for a similarly cheerful their exercises and administration office following to the client's proposal and thinking about need of time.  
[2]

## **1.5 Layout of the Report:**

In this report I shown the introduction, motivation, objective, introduction of company, introduction about my internship organization, and also about the company, company product for marketing and organization structure of the company.

After that I show my internship dally task with activities events and project task and activities.

At last I described Conclusion & Discussion, Future Career & Scope, and also discussed Future Scopes of the platform MikroTik and Linux.

## **CHAPTER 2**

### **Organization**

#### **2.1 Introduction:**

The internship enterprise where I have taken my Training is Daffodil Online Ltd. Daffodil Online Ltd. (DOL) is proud to be one of the promoters and oldest ISP/ASPs in Bangladesh and providing one stop integrated ICT services and solution since July 2002. During the past years, they extended their operation and service portfolio according to the customer's recommendation and considering demands of time.

#### **2.2 Product for Marketing:**

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.

The Daffodil Online Ltd provides us particular IT Based Professional Training services. These are:

- ISP support.
- IT Security protection.
- Web Hosting & Domain Registration.
- Corporate level Internet Solution.
- IT based Professional Courses & Training.
- Open Source application solution.
- Web site Development.

## 2.3 Organizational Structure of Daffodil Online Limited:



Figure 2.3.1.0: Organization of Daffodil Online Limited

## CHAPTER 3

### Internship Roles & Responsibilities

#### 3.1 Daily Task and Activities:

- Month - 1: In the first month of my internship at daffodil online limited I have learned and performed the following tasks:
  - ✓ About IP address.
  - ✓ Introduction of MikroTik.
  - ✓ PC based Installation of MikroTik Router OS using VMware.
  - ✓ Configure Mikro-Tik Router with Commands.
  - ✓ How to configure ISP link.
  - ✓ How to configure your LAN Network.
  
- Month - 2: In this month I have learned and performed the following tasks:
  - ✓ Bandwidth Control in different ways.
  - ✓ Bridge mode configure.
  - ✓ Firewall and NAT Configuration.
  - ✓ Network Security.
  
- Month – 3: In this month of I have learned and performed the following tasks:
  - ✓ Introduction of LINUX.
  - ✓ Installation of Linux CentOS 6.4.
  - ✓ Managing User Accounts and passwords.
  - ✓ Basic Linux Commands.
  - ✓ File and Directory Making and Control.
  - ✓ Work Effectively on the Unix Command Line and Run level concept.
  
- Month – 4: In this month of my internship at daffodil online limited I have learned and performed the following tasks:
  - ✓ File and Directory Permissions.
  - ✓ User and Group Add and Modification.
  - ✓ Ownership, Group and User Permission.
  - ✓ ACL Permission Configuration.
  - ✓ Linux System Administration.

## **3.2 Events and Activities:**

Preparing is critical for temporary position is the main stage, when an understudy faces some issue amid entry level position, at that point it is obligatory to give preparing to address the issue. Issue has been identified& preparing can be tackling it. Preparing can be depicted aptitudes, ideas, enhanced execution in temporary position condition. In this internship on daffodil online limited I have learned and performed the following tasks:

- ✓ About IP address for all class of IP with Subnet.
- ✓ Mikro-Tik Router and Configuration.
- ✓ Learning & understanding About Network Components.
- ✓ Install and Configuration in Linux, step by step full describe with figure.
- ✓ Linux System Administration.

## **3.3 Project Task and Activities:**

### **3.3.1 About IP address:**

An Internet Protocol address (IP address) is a numerical name pointed to every gadget associated with a PC organizes that uses the Internet Protocol for correspondence. An IP address serves two main capacities: host or system interface ID and area tending to. Web Protocol form 4 (IPv4) characterizes an IP address as a 32-bit number. Be that as it may, in light of the development of the Internet and the exhaustion of accessible IPv4 addresses, another adaptation of IP (IPv6), utilizing 128 bits for the IP address, was created in 1995, and institutionalized as RFC 2460 out of 1998. IPv6 organization has been continuous since the mid-2000s. IP addresses are normally composed and shown in intelligible documentations, for example, 172.16.254.1 in IPv4, and 2001:db8:0:1234:0:567:8:1 in IPv6. <sup>[3]</sup>

### 3.3.2 Introduction of MikroTik:

MikroTik is a network-based equipment manufacturing company. MikroTik was founded by Latvia in 1996 to develop ISP System with Router & Wireless Devices. [4]

### 3.3.3 PC based Installation of MikroTik Router OS using VMware:

Requirement Items:

- VMware Workstation Application.
- Mikro-Tik Router OS ISO image file.
- Winbox.

Now I show the Install Guideline Step by Step:

Step 1: At first install VMware application and open it, then click on **File>New Virtual Machine>Typical>Next**.

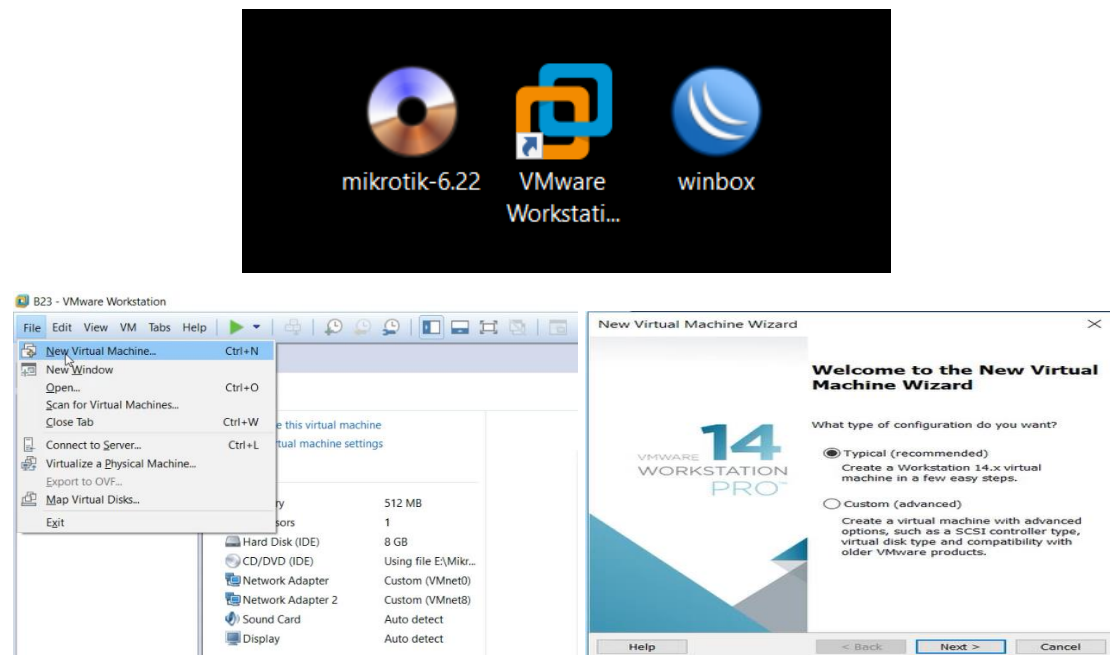


Figure 3.3.3.1: VMware welcome screen

Step 2: Now Select on the Installer disk image file(iso) and choose the iso image file and then click on Next. After that create a virtual machine name and also choose a location where the machine is Install, then click Next. Now configure the Hardware requirement how we have need.



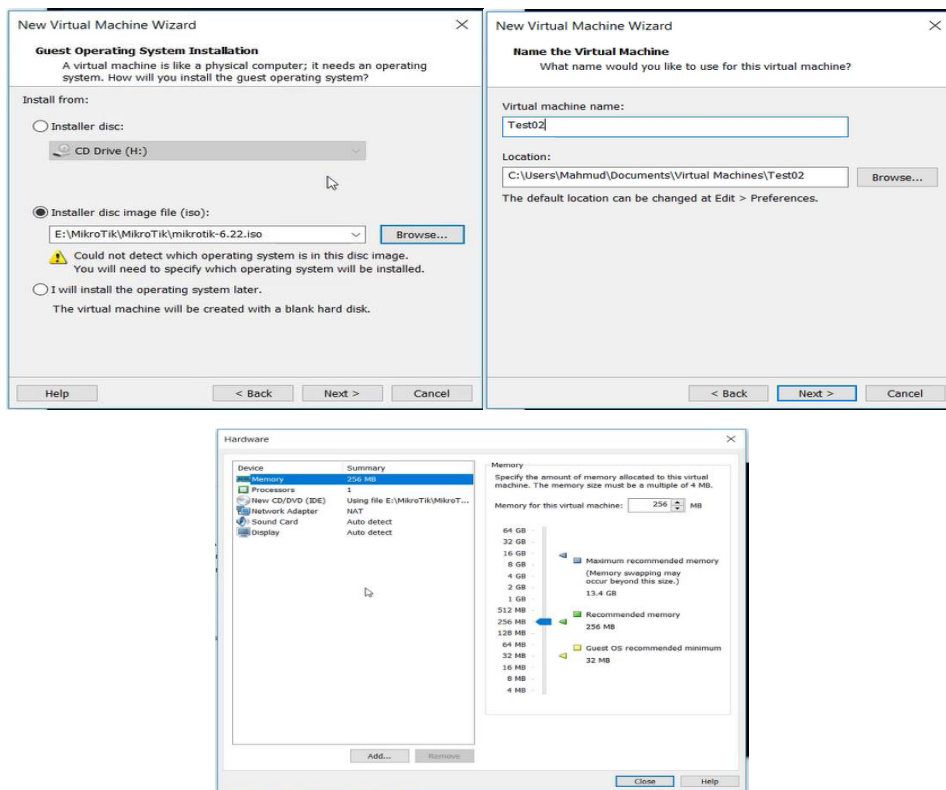


Figure 3.3.3.2: VMware Configuration for MikroTik OS

Step 3: Now click on the “Power on the virtual machine” and then show a welcome screen where click “a” for select all and then press “I” to install. Then press “n” to do not keep configuration and “y” to continue. After install complete show a login screen, where press MikroTik Login: admin and password: admin then enter.

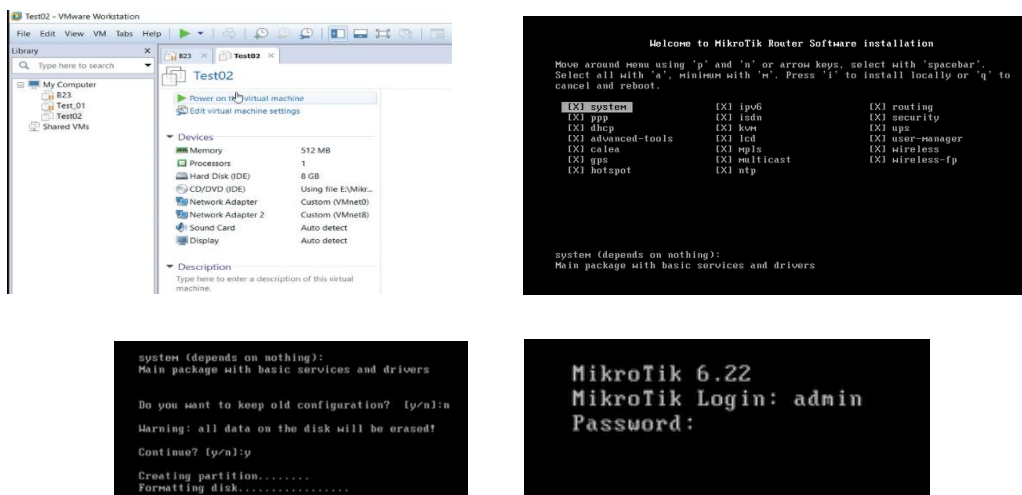


Figure 3.3.3.3: MikroTik OS Installation

### 3.3.4 MikroTik Router Configuration:

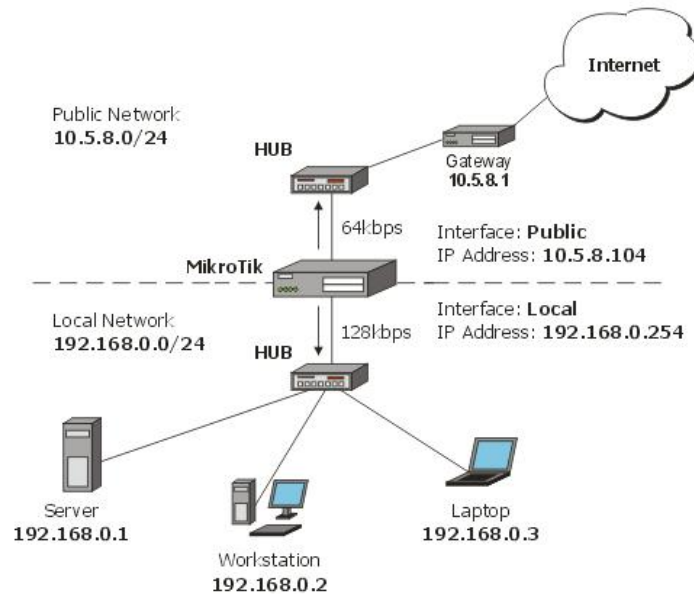


Figure 3.3.4.1: Network Topology of MikroTik

At first download Winbox and router os ISO image file, after that install router os in vmware and run winbox, now click on the Mac address type “admin” in login window and do not need to give user Password. [5]

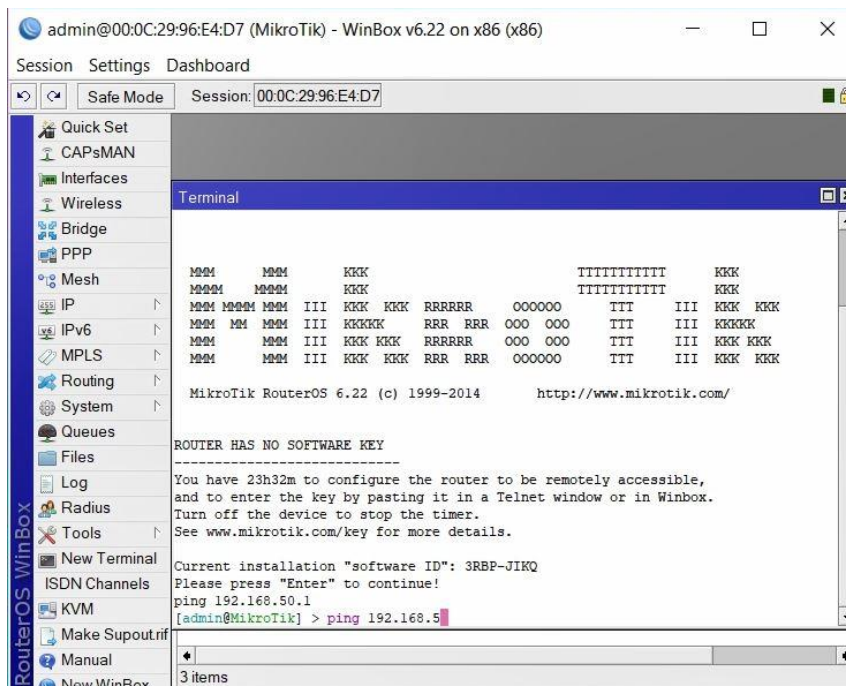


Figure 3.3.4.2: Winbox Dashboard

### 3.3.5 Static-IP Configuration in MikroTik Router:

At first Click on “**Interface**” to show and define our port such as LAN, MAN, WAN.

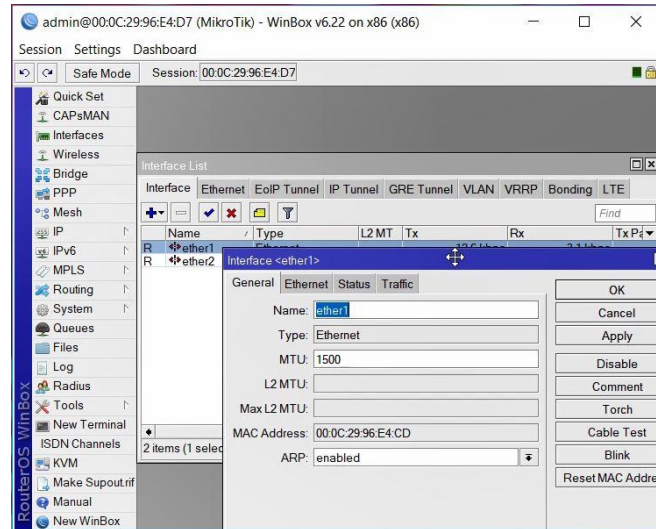


Figure 3.3.5.1: Interface

Now, click on “**IP>Address>Add IP on Address and Network>Apply OK**”.

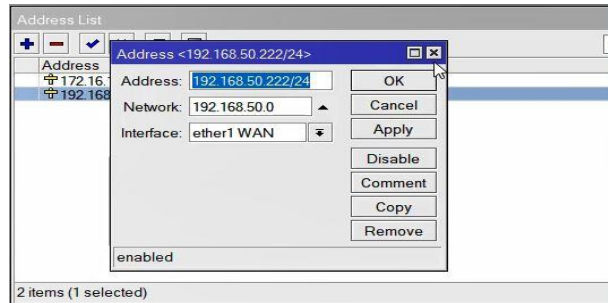


Figure 3.3.5.2: IP Addressing

Next, click “**IP>DNS>Add Server IP address>Apply OK**”.

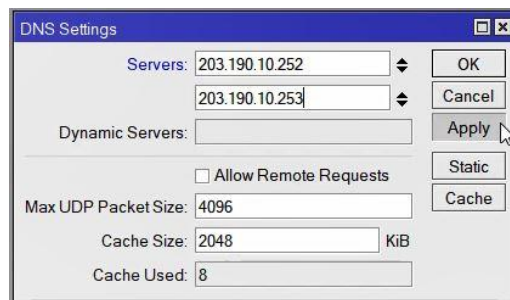


Figure 3.3.5.3: DNS Server

After that click on “IP>Firewall>Add+>Action>Select=masquerade>Apply Ok”.

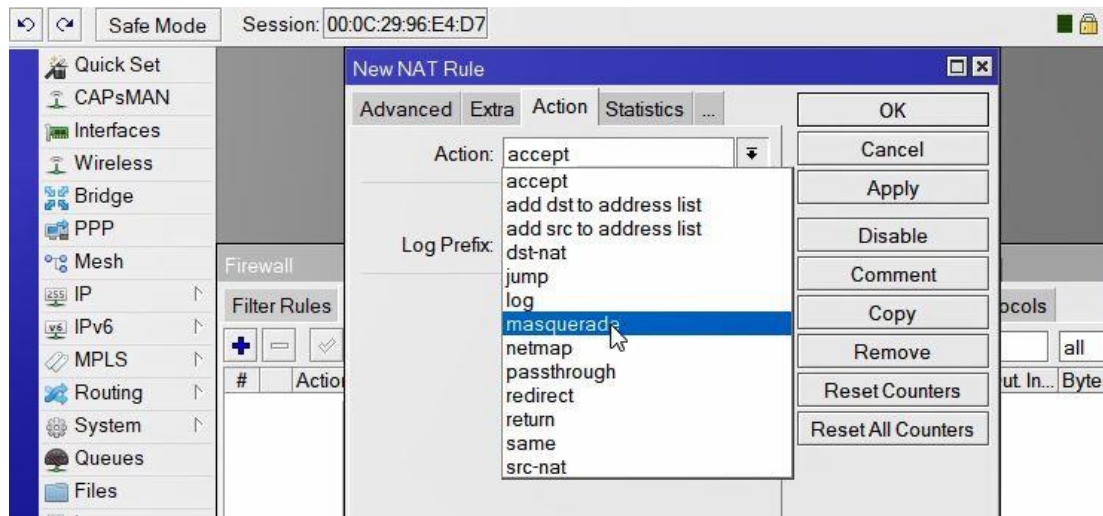


Figure 3.3.5.4: Firewall

Now click “IP>Routs>Add+ New Route=Dst. Address + Gateway>Apply OK”.

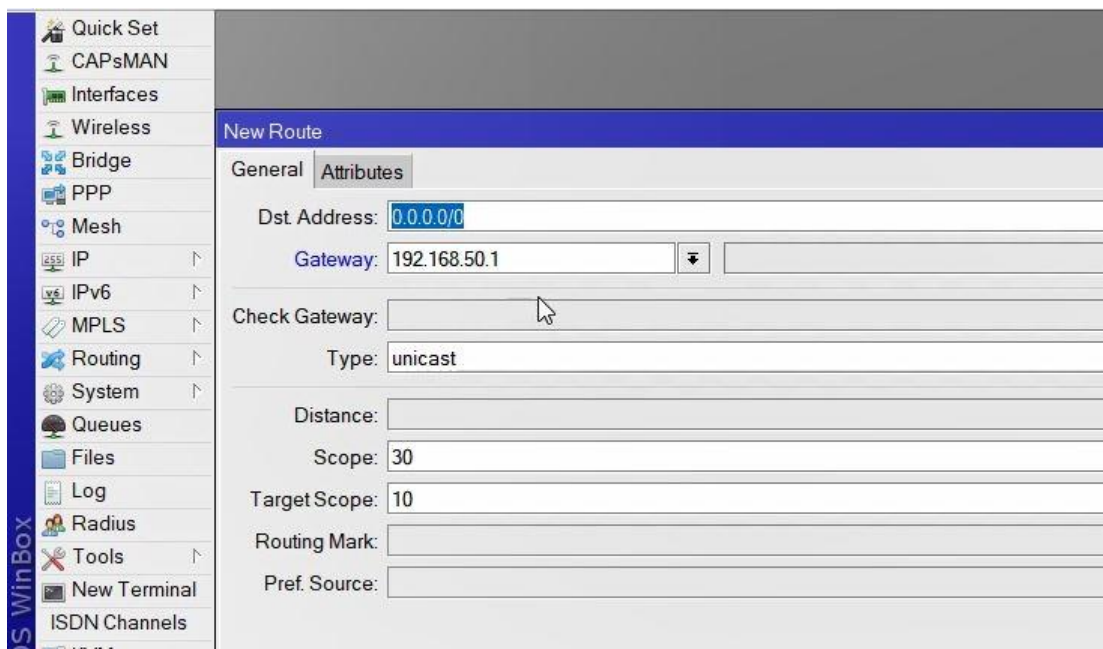


Figure 3.3.5.5: IP Routing

After process are complete then check the instruction by “**New Terminal>Terminal=ping (IP)>OK**”.

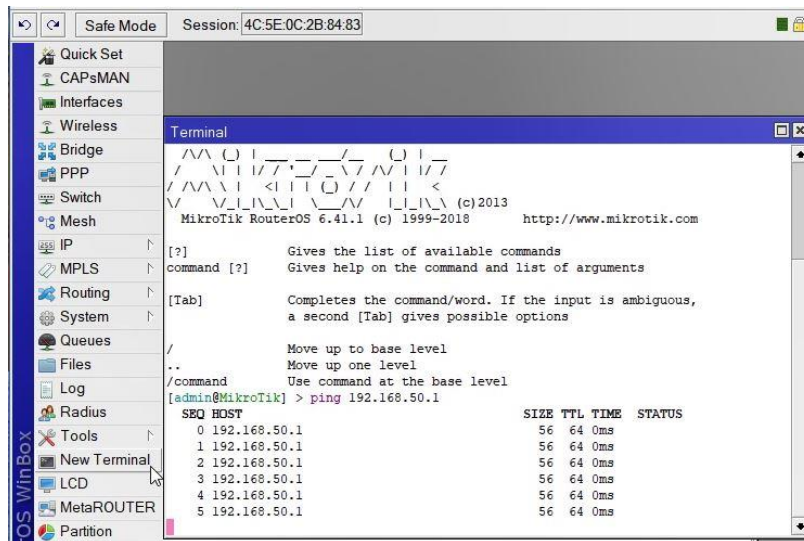


Figure 3.3.5.6: IP Ping

**Final Step**, now connect pc with static IP click on “**PC Setting>Network>Change adapter setting>Ethernet>Properties>IPv4=Use your static IP address, gateway, subnet mask and DNS server>Apply OK**”. [6]

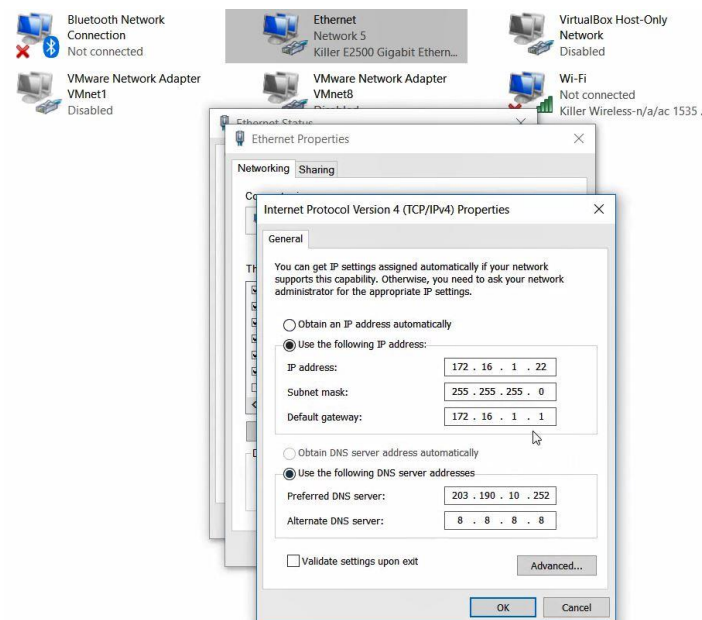


Figure 3.3.5.7: TCP/IPv4 Configuration

3.3.6 At first click on “IP>DHCP Server>DHCP Setup= select needed server interface>Next>DHCP Address Space= example (172.160.20.0/24)>Next>Gateway DHCP Network= example (172.160.20.1)>Next>Address to Give Out>Next>DNS Server>Next>Lease Time”.

### 6 (DHCP) Dynamic Routing Configuration with MikroTik:

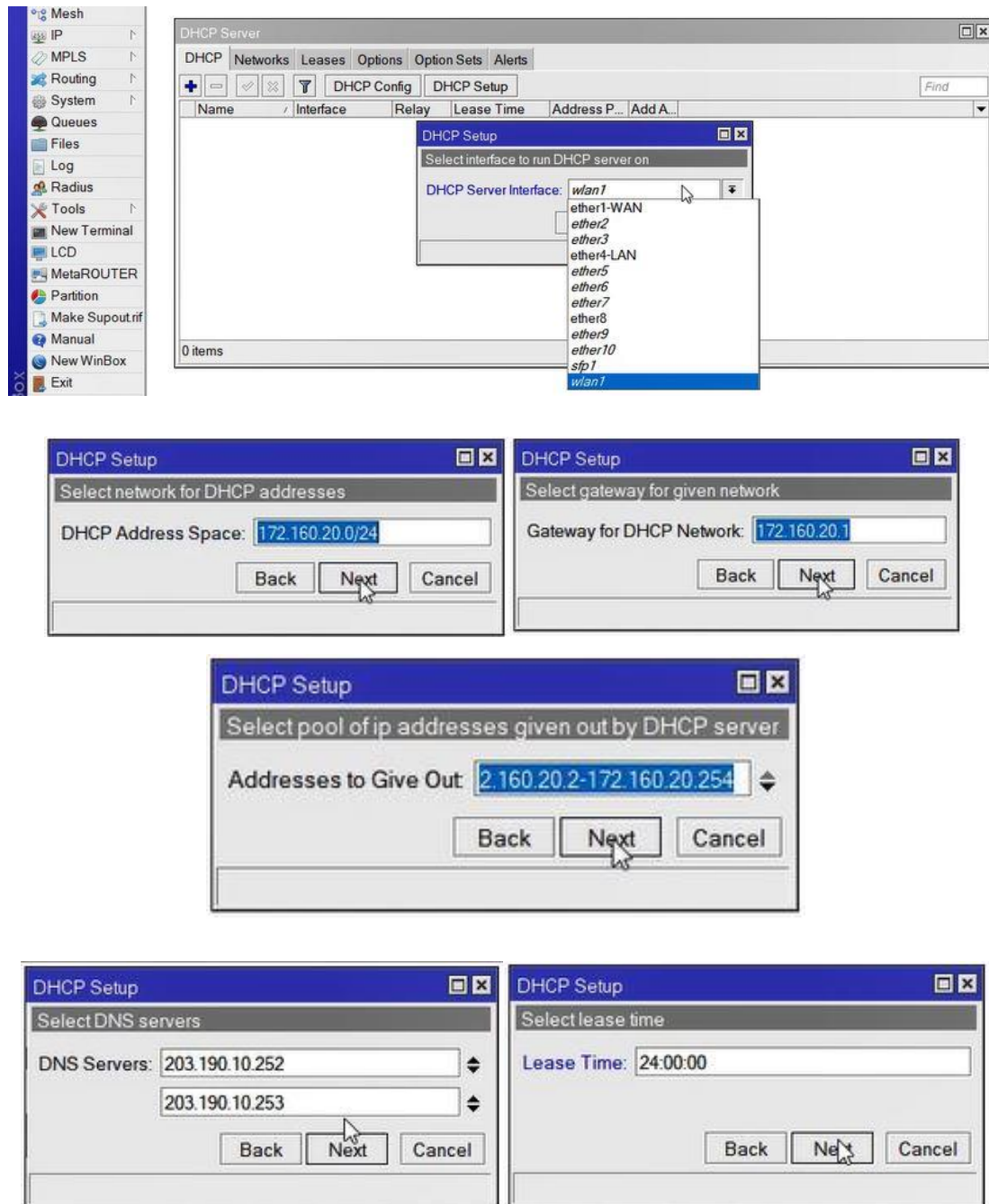


Figure 3.3.6.1: Dynamic (DHCP) Configuration

Now Restart winbox and reconnect ethernet port IPv4 into automatic from pc then click from winbox “**IP>ARP=** where show ARP list”. [6]

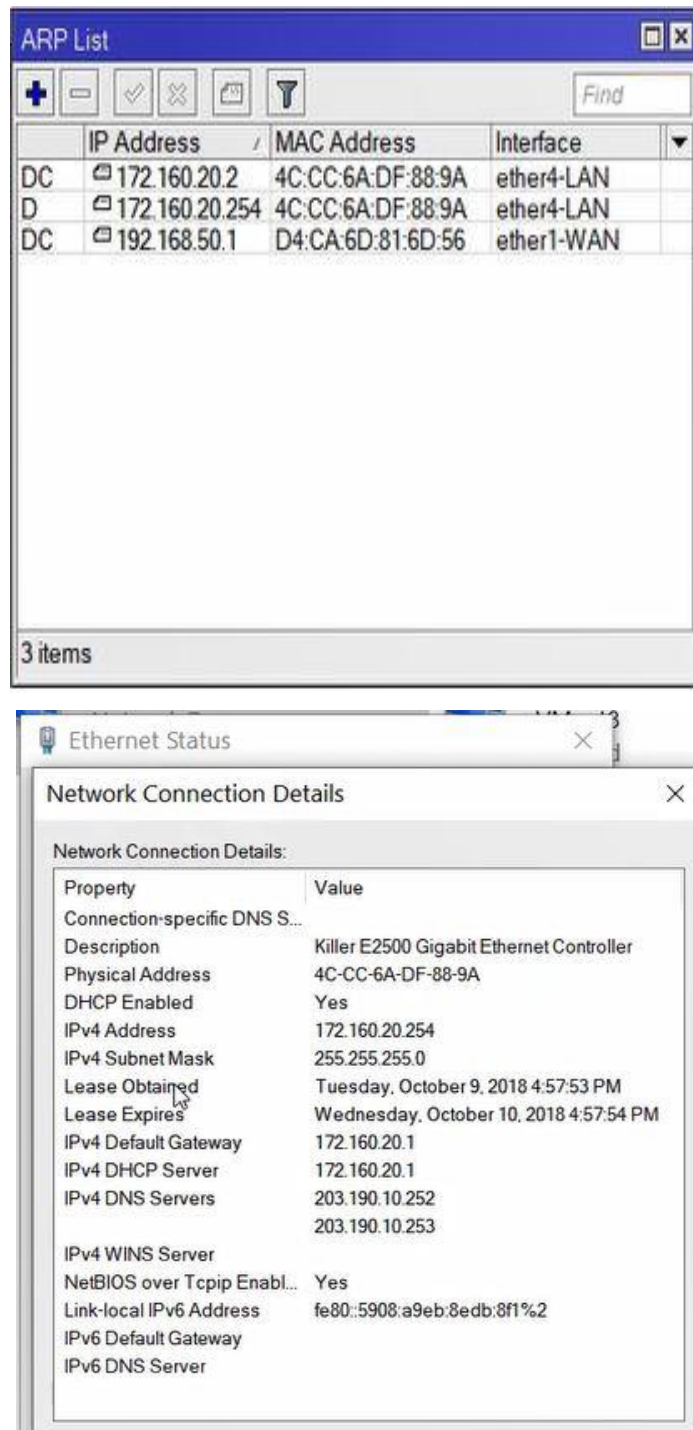


Figure 3.3.6.2: ARP for Dynamic (DHCP) Configuration

### 3.3.7 Bridge Configuration with MikroTik:

“Bridge>click + Add>Bridge n= 1,2,3.... > +name fill up>Apply Ok”

Select Ports:

- ✓ ether2
- ✓ ether3\_LAN
- ✓ ether6\_MAN
- ✓ ether9
- ✓ wlan1

“IP>DHCP server >DHCP setup>Next>Apply Ok”.

➤ Step 1:

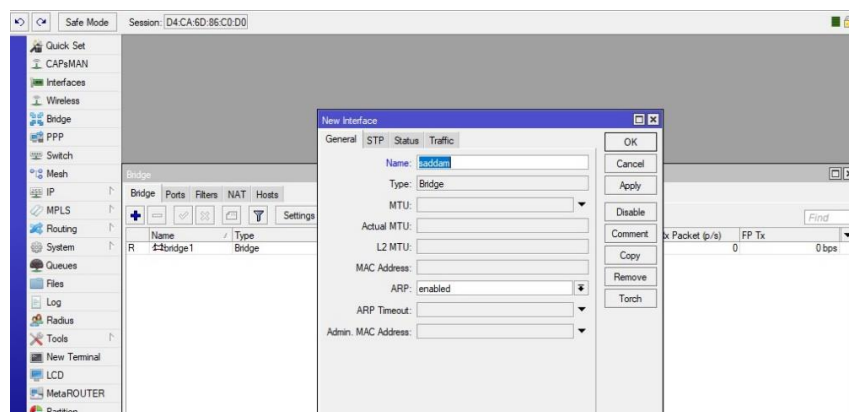


Figure 3.3.7.1: Create Bridge name

➤ Step 2:

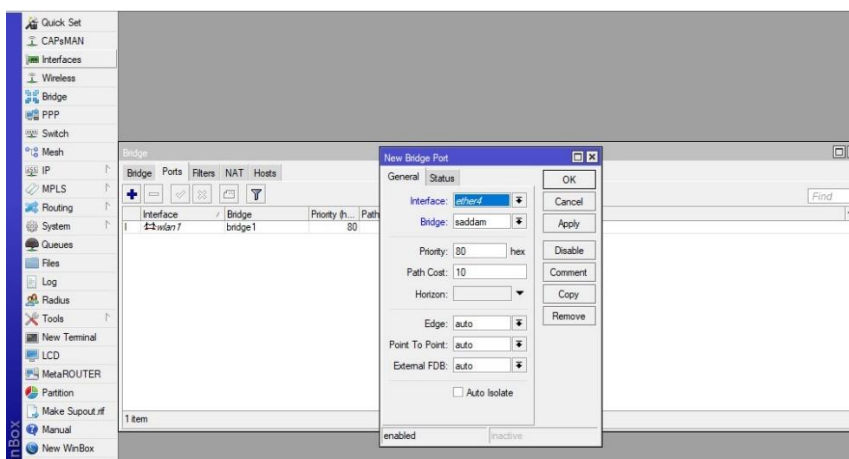


Figure 3.3.7.2: WAN configure of Bridge port



➤ Step 3:

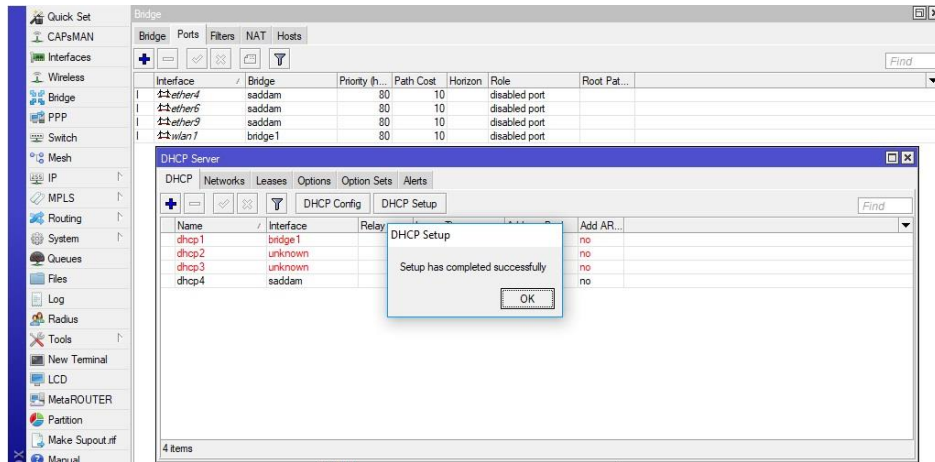


Figure 3.3.7.3: DHCP Setup configure

### 3.3.8 Site Blocking Configuration:

Site Blocking Rules: “Such as YouTube and Facebook”

Regex>

^ .+ (youtube.com).\* \$,

^ .+ (facebook.com).\* \$

This is the rule for block site, we need to apply these rules.

“IP>IP address>IP assign 172.10.0/24>Firewall>New firewall 7 Protocol>YouTube name assign>Apply Ok>New firewall rule>General>source address IP assign 172.10.0/24>Apply Ok”. [6]

➤ Step 1:

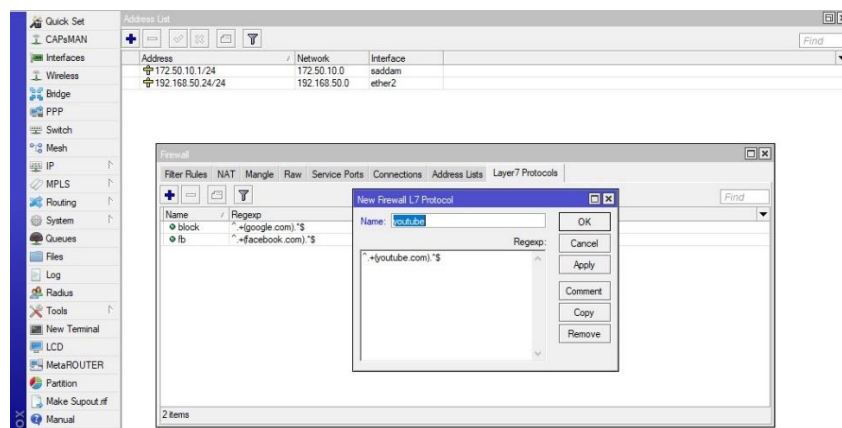


Figure 3.3.8.1: Block IP configure and create rule

➤ Step 2:

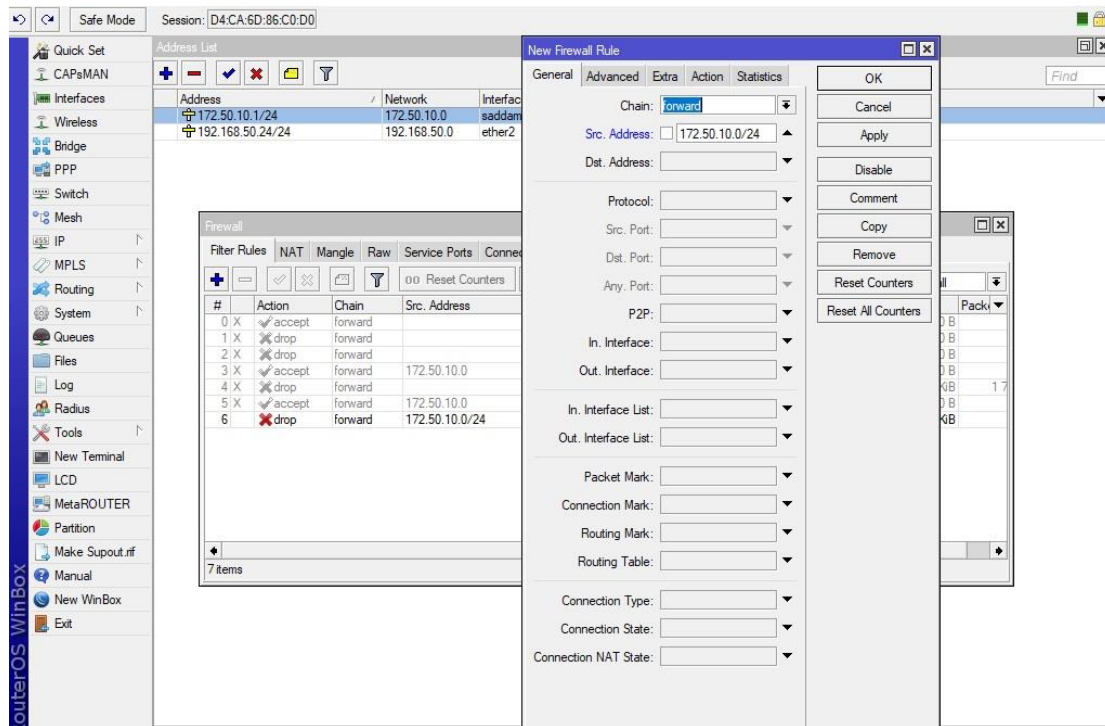


Figure 3.3.8.2: IP source configure, drop and forward

➤ Step 3:

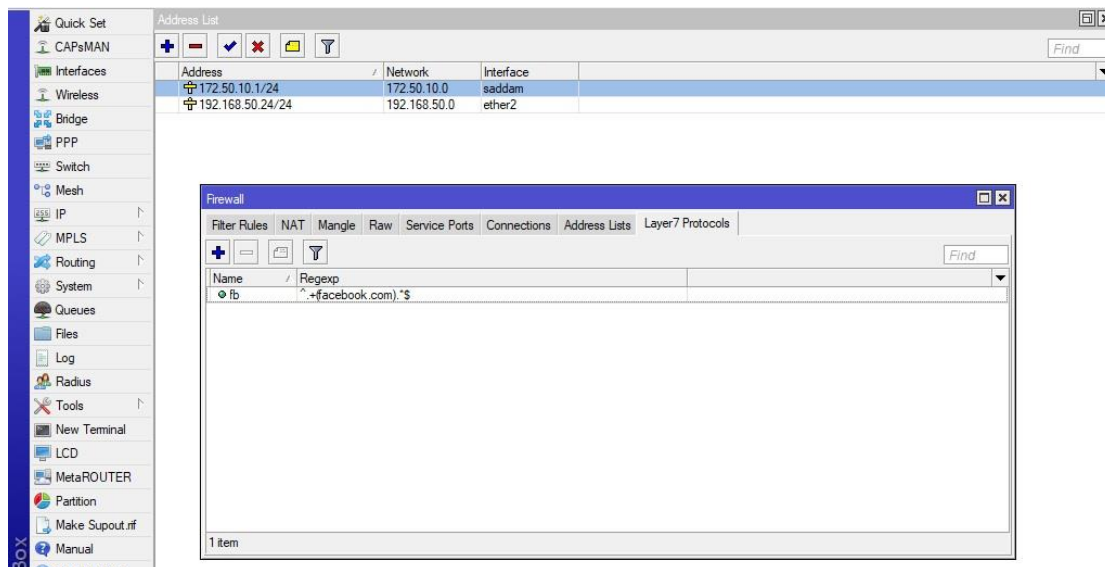


Figure 3.3.8.3: Final Result of Site Block

### 3.4.1 Installation of Linux CentOS 6.4:

In this session, I will show that how to install **CentOS 6.4** using the ISO image file in USB device. <sup>[7]</sup>

### 3.4.2 CentOS 6.4 Installation Guide:

1. First we need to download the **CentOS 6.4** DVD ISO image file and then create a bootable USB stick using LiveUSB Creator called **Rufus**.
2. After that, boot our pc and select the bootable USB, press any key to access the Grub boot menu, then select USB disk and click **Enter to Install**.

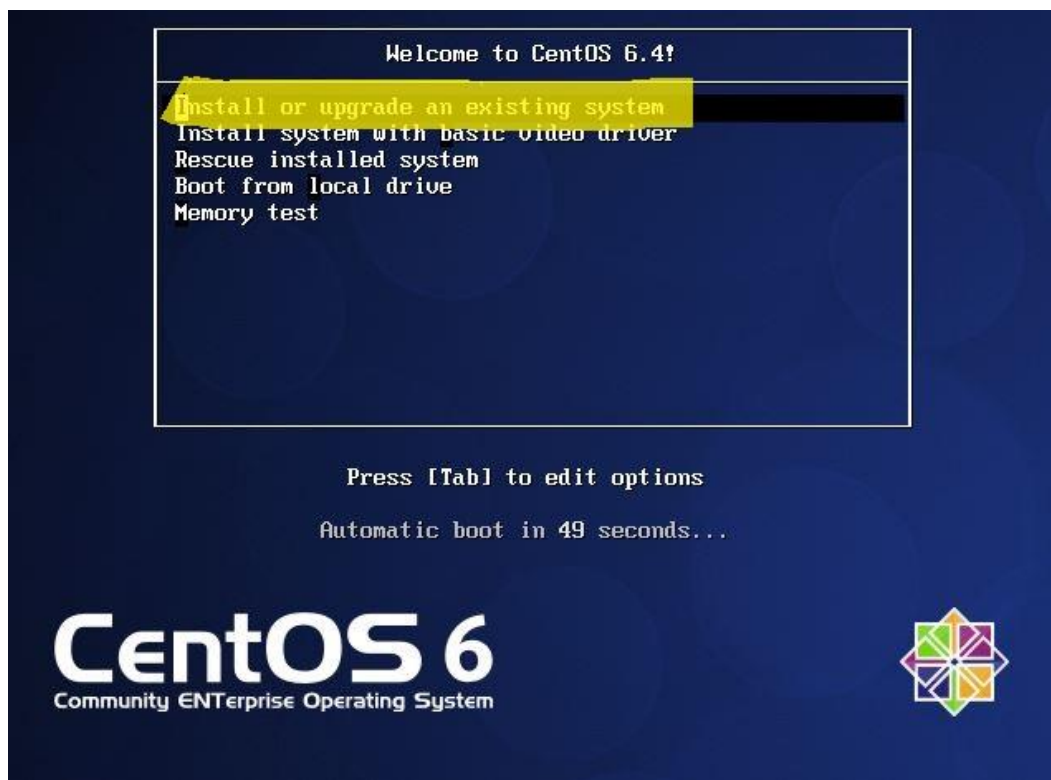


Figure 3.4.2.1: CentOS 6 installation Welcome Screen

3. Click on **Next** to proceed, then choose the **installation language** package whatever you wish to use, and click on **Next**.

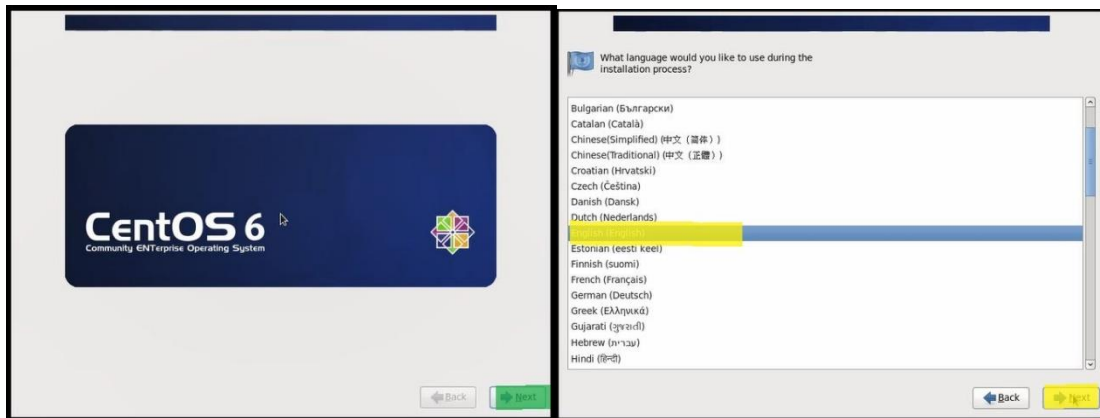


Figure 3.4.2.2: Language pack for Setup

4. Select the appropriate **keyboard layout** you wish to use such as “**U.S. English**” and click on **Next** and select the **storage devices** and click **Next** to install process.

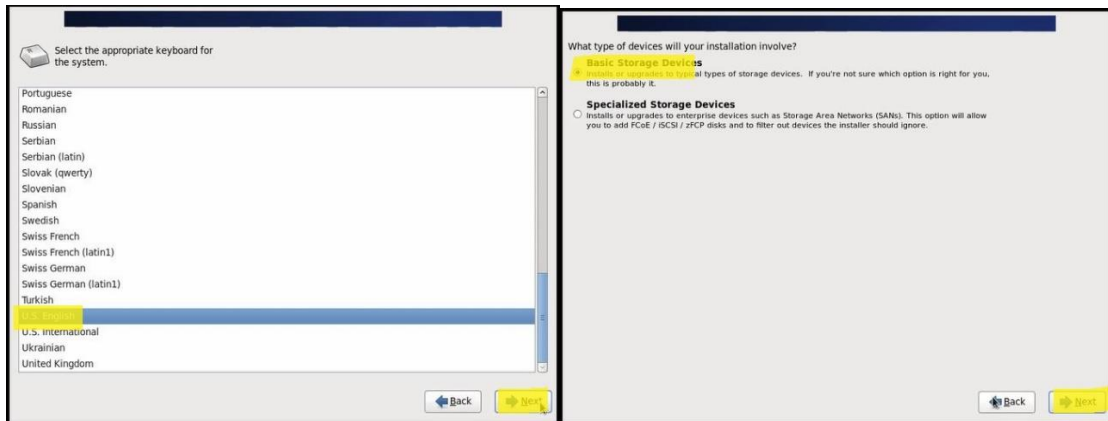
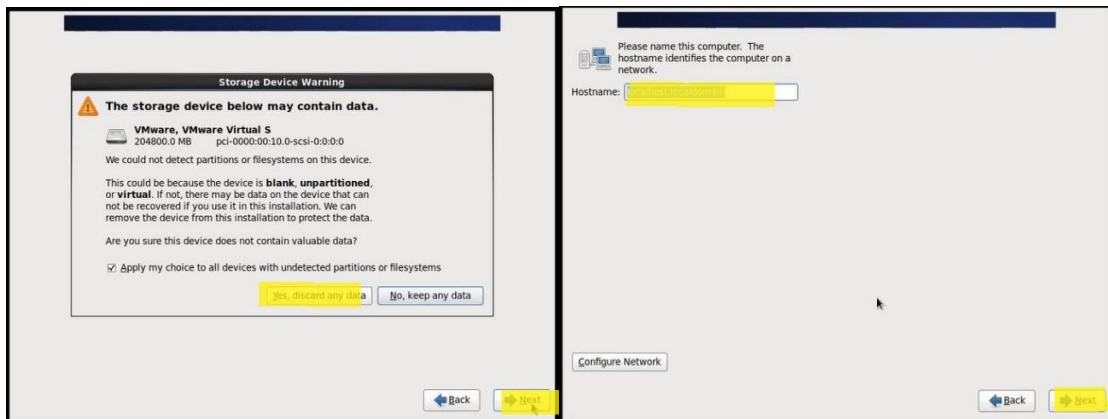


Figure 3.4.2.3: Keyboard Type and Storage Selection

5. In storage device warning, select the option to **clear data** on the storage disk by selecting **Yes**, discard any data and click **Next**. Now set the **Hostname** and click **Next**.



6. Set the **Time zone** for your location and click **Next** to proceed, then set the **root** user password and confirm it and click on **Next**.

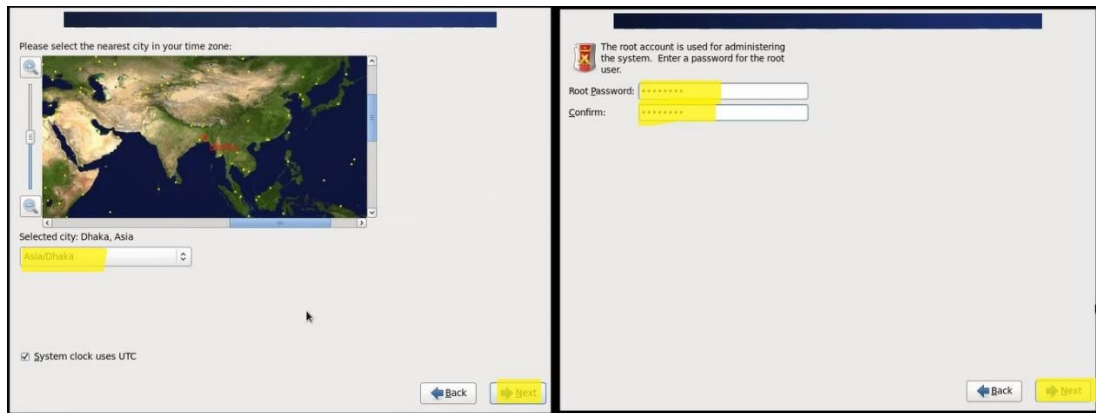
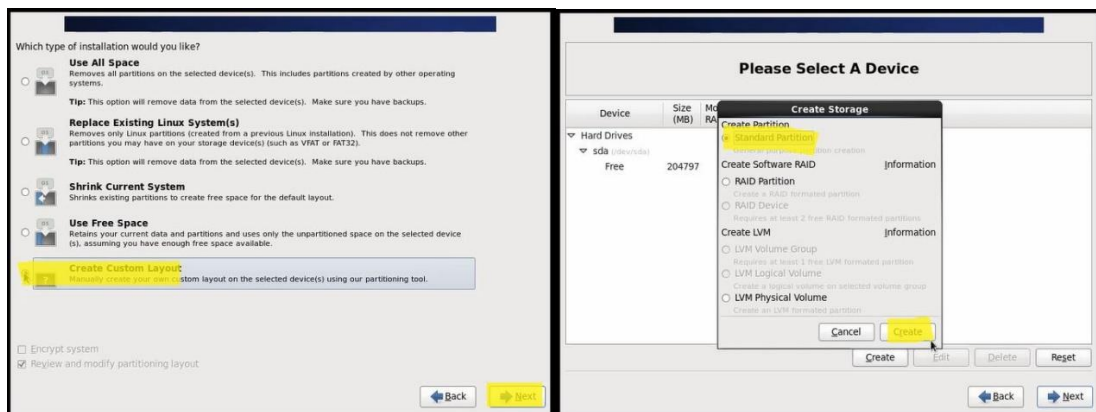


Figure 3.4.2.4: Time Zone Selection

7. Now, you need to choose which type of installation you want to install. Now flow the instruction step by step for partition all drive.

Step 1:



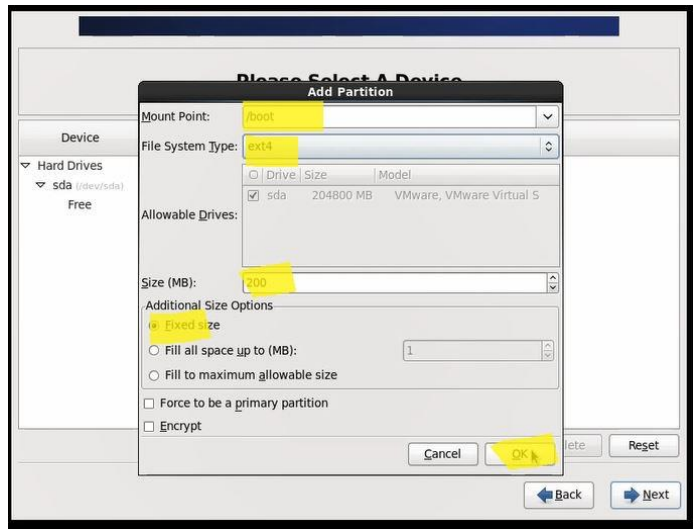
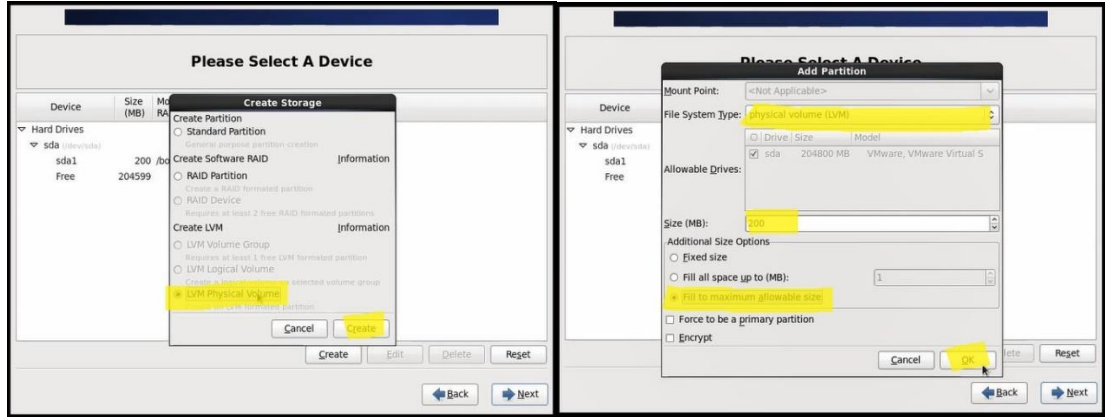
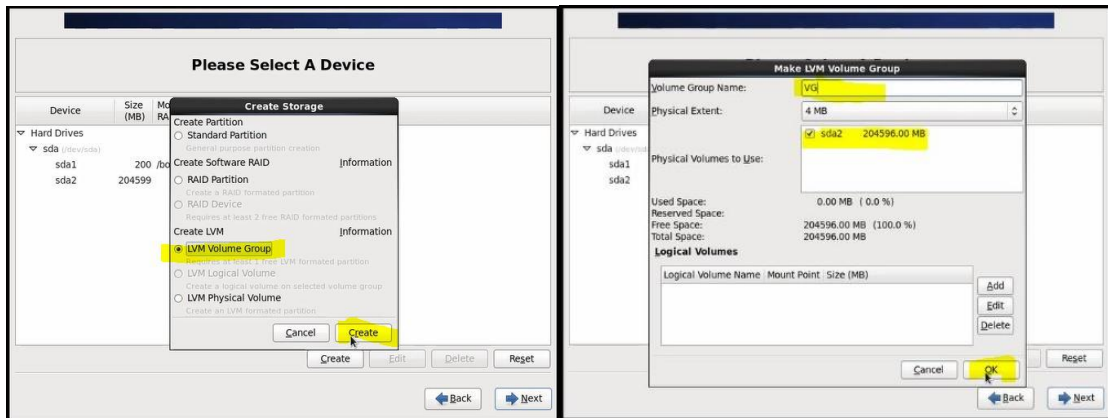


Figure 3.4.2.5: Partition layout Selection

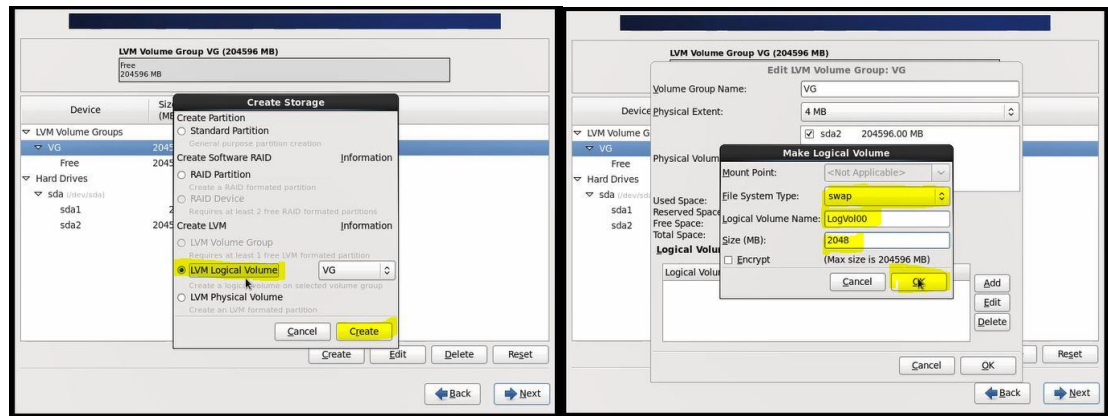
Step 2:



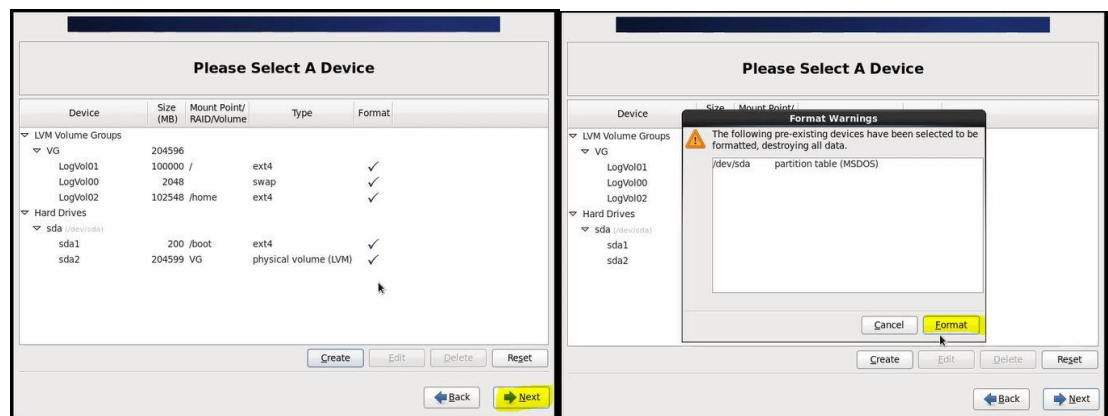
Step 3:



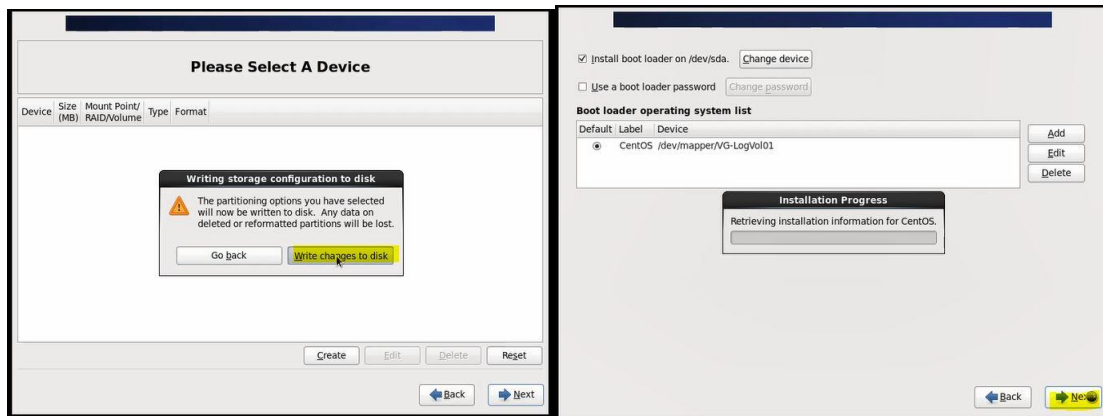
Step 4:



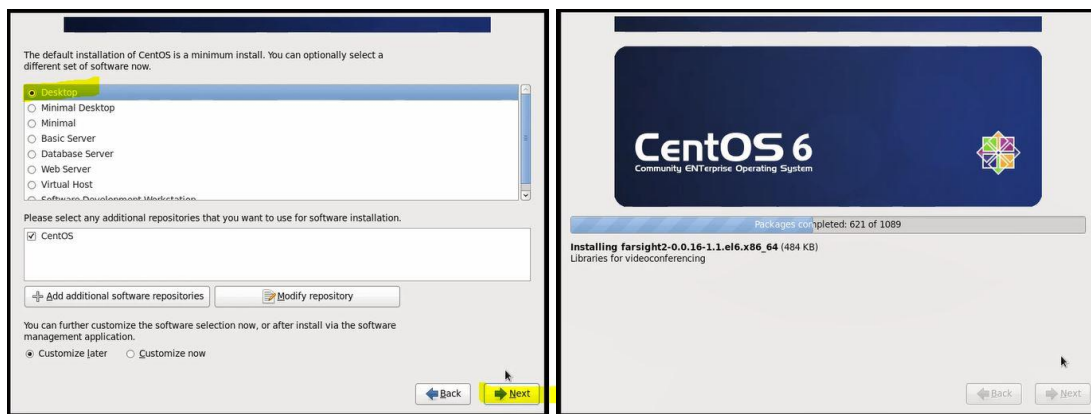
Step 5:



13. Then **Click Write changes to disk** and then click **Next** to proceed and now, **select** the installer to install the boot loader, then click **Next** to start installation process of files.



15. For GUI Select Desktop and then click **Next** to proceed and wait for until complete the installation.



17. After rebooting and starting all services, you will land at the Welcome screen, click on **Forward** to continue. Now, agree to the **CentOS License Agreement** and click on **Forward**.

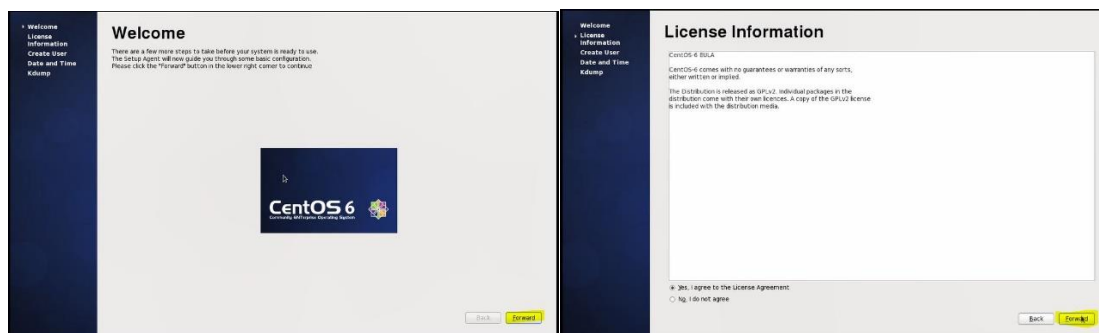


Figure 3.4.2.6: CentOS License Agreement



18. Now create an additional user, enter the username, full name and set for it a password and confirm the password and click **Forward** to proceed. Next, set the **Date and Time** for your system. It is recommending to synchronize data and time over network. Once you are done, click **Forward**.

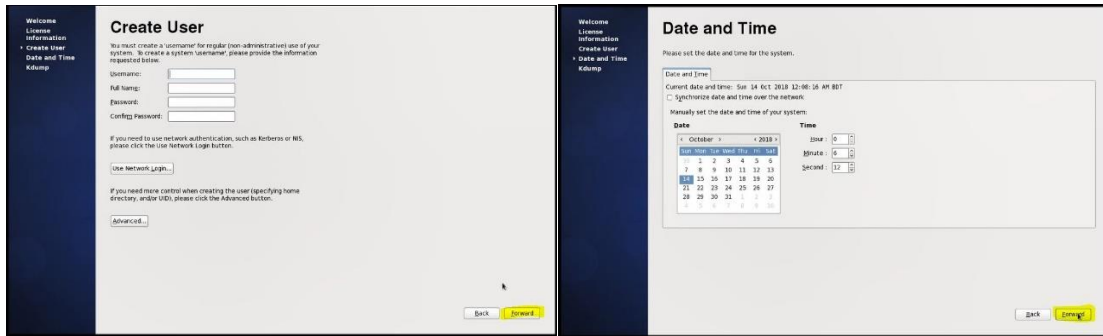


Figure 3.4.2.7: CentOS User Create, Date and time setting

19. Finally, log into new **CentOS 6.4** system as shown. Use your Username and password to log in. [8]

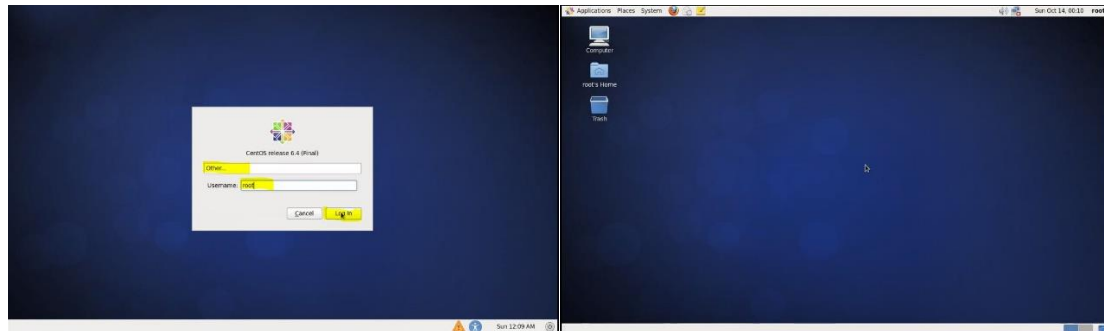


Figure 3.4.2.8: CentOS User Login and Welcome Screen

### 3.4.3 Introduction to Linux Kernel and Shell:

#### Kernel:

The kernel is a computer program that is use for the core of a computer’s operating system, with complete control over everything in the system. The manages resources of the Linux system is—

- Process management.
- Memory management.

- I/O management.
- File management.
- Device management etc.

### Shell:

A shell is special user program which based on interface to user to use operating system services. Shell program accept human readable commands from user and convert them into something which kernel can understand. It is a command language interpreter that execute commands read from input devices such as from files or keyboards. The shell started when the user log in or start the terminal program. [9]

Shell is broadly classified into two categories –

- Command Line Shell
- Graphical shell

```

override@Atul-HP: ~
override@Atul-HP:~$ ls -l
total 212
drwxrwxr-x  5 override override 4096 May 19 03:45 acadenv
drwxrwxr-x  4 override override 4096 May 27 18:20 acadview_deno
drwxrwxr-x 12 override override 4096 May  3 15:14 anaconda3
drwxr-xr-x  6 override override 4096 May 31 16:49 Desktop
drwxr-xr-x  2 override override 4096 Oct 21  2016 Documents
drwxr-xr-x  7 override override 40960 Jun  1 13:09 Downloads
-rw-r--r--  1 override override 8980 Aug  8  2016 examples.desktop
-rw-rw-r--  1 override override 45005 May 28 01:40 hs_err_pid1971.log
-rw-rw-r--  1 override override 45147 Jun  1 03:24 hs_err_pid2006.log
drwxr-xr-x  2 override override 4096 Mar  2 18:22 Music
drwxrwxr-x 21 override override 4096 Dec 25 00:13 Mydata
drwxrwxr-x  2 override override 4096 Sep 20  2016 newbin
drwxrwxr-x  5 override override 4096 Dec 20 22:44 nltk_data
drwxr-xr-x  4 override override 4096 May 31 20:46 Pictures
drwxr-xr-x  2 override override 4096 Aug  8  2016 Public
drwxrwxr-x  2 override override 4096 May 31 19:49 scripts
drwxr-xr-x  2 override override 4096 Aug  8  2016 Templates
drwxrwxr-x  2 override override 4096 Feb 14 11:22 test
drwxr-xr-x  2 override override 4096 Mar 11 13:27 Videos
drwxrwxr-x  2 override override 4096 Sep  1  2016 xdn-helper
override@Atul-HP:~$

```

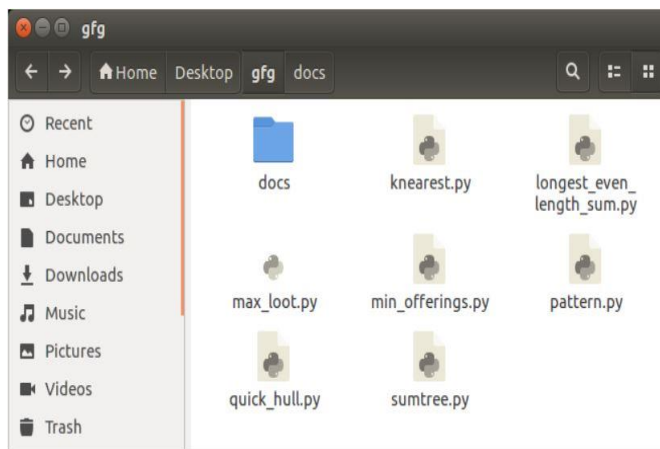


Figure 3.4.3.1: Command Line Shell and Graphic Shell

### 3.4.4 How to break Root password in Linux OS:

In VMware we have to do at first

**press ctrl alt delete or restart the system >space press > e >kernel /vmlinuz  
select>e>space 1>enter >b>passwd>new password input>retype password>  
init 6>login root user with new password then apply.**

➤ Step 1:

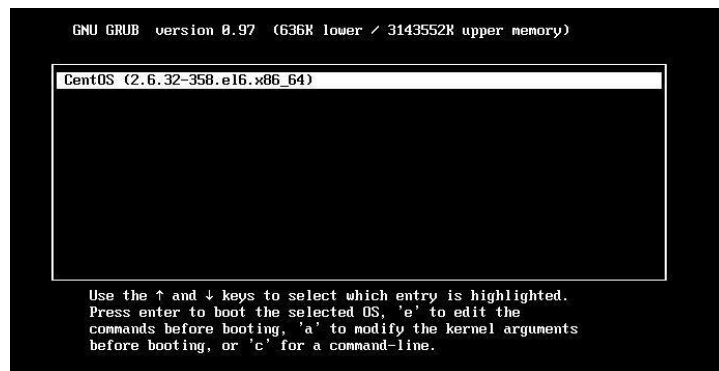


Figure 3.4.4.1: Press space to select centos version mode

➤ Step 2:

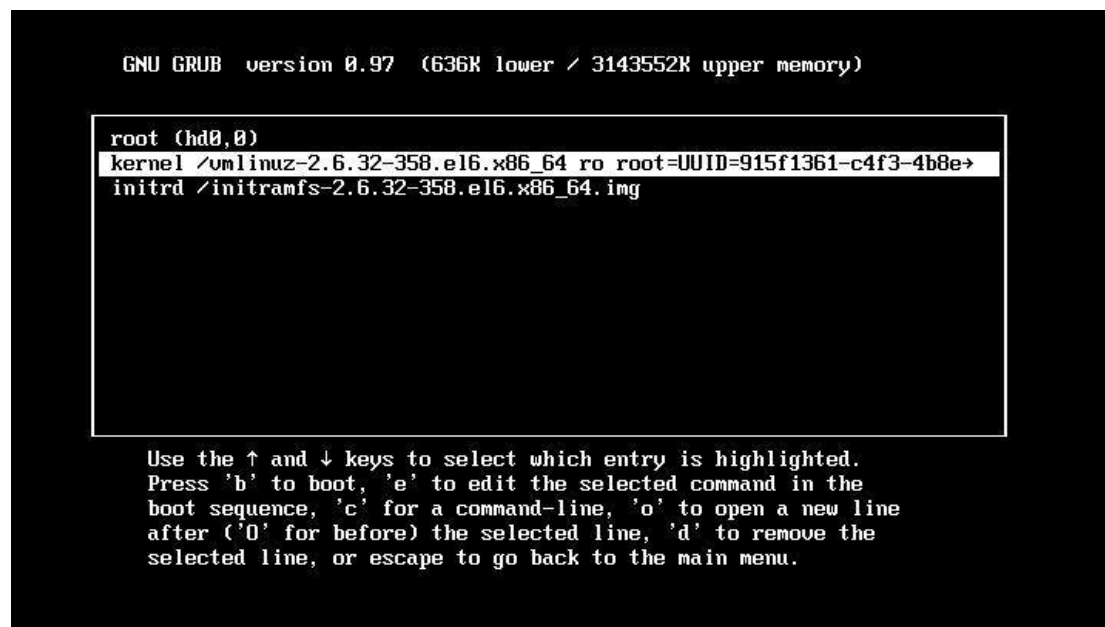


Figure 3.4.4.2: Select Kernel mode

```
Telling INIT to go to single user mode.
init: rc main process (1229) killed by TERM signal
[root@localhost ~]# root
bash: root: command not found
[root@localhost ~]# passwd
Changing password for user root.
New password:
BAD PASSWORD: it does not contain enough DIFFERENT characters
BAD PASSWORD: is too simple
Retype new password:
passwd: all authentication tokens updated successfully.
[root@localhost ~]# _
```

Figure 3.4.4.3: Password Configuration

### 3.4.5 Static IP Routing Configuration with Linux:

For Static IP routing, at first configure IP Address, Network and Gate Way By

# **vim ifcfg-eth0** and follow my image instruction. <sup>[10]</sup>

➤ Step 1:

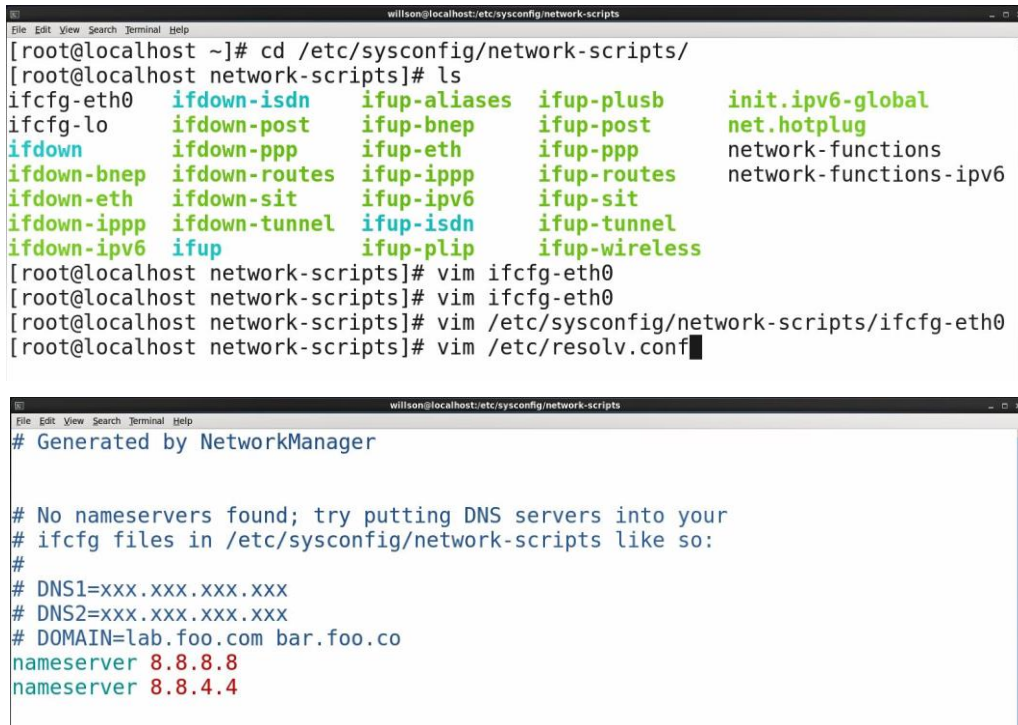
```
willson@localhost:/etc/sysconfig/network-scripts
[root@localhost ~]# cd /etc/sysconfig/network-scripts/
[root@localhost network-scripts]# ls
ifcfg-eth0  ifdown-isdn  ifup-aliases  ifup-plusb  init.ipv6-global
ifcfg-lo    ifdown-post  ifup-bnep     ifup-post   net.hotplug
ifdown     ifdown-ppp   ifup-eth      ifup-ppp    network-functions
ifdown-bnep ifdown-routes ifup-ipppp    ifup-routes network-functions-ipv6
ifdown-eth  ifdown-sit   ifup-ipv6     ifup-sit
ifdown-ippp ifdown-tunnel ifup-isdn     ifup-tunnel
ifdown-ipv6 ifup         ifup-plip     ifup-wireless
[root@localhost network-scripts]# vim ifcfg-eth0
```

```
willson@localhost:/etc/sysconfig/network-scripts
DEVICE=eth0
HWADDR=00:0C:29:D1:AC:1F
TYPE=Ethernet
UUID=fd57d75-46e8-491c-9328-798e5a91b6b4
ONBOOT=yes
NM_CONTROLLED=yes
BOOTPROTO=static
IPADDR=192.168.50.35
NETMASK=255.255.255.0
GATWAY=192.168.50.1
```

Figure 3.4.5.1: IP Configuration Static

➤ Step 2:

DNS server configuration by pressing # **vim /etc/resolv.conf** and assign DNS name server



```
willson@localhost:~/etc/sysconfig/network-scripts
[root@localhost ~]# cd /etc/sysconfig/network-scripts/
[root@localhost network-scripts]# ls
ifcfg-eth0  ifdown-isdn  ifup-aliases  ifup-plusb  init.ipv6-global
ifcfg-lo    ifdown-post  ifup-bnep     ifup-post   net.hotplug
ifdown      ifdown-ppp   ifup-eth      ifup-ppp    network-functions
ifdown-bnep ifdown-routes ifup-ipppp    ifup-routes network-functions-ipv6
ifdown-eth  ifdown-sit   ifup-ipv6     ifup-sit
ifdown-ipppp ifdown-tunnel ifup-isdn     ifup-tunnel
ifdown-ipv6 ifup         ifup-plip     ifup-wireless

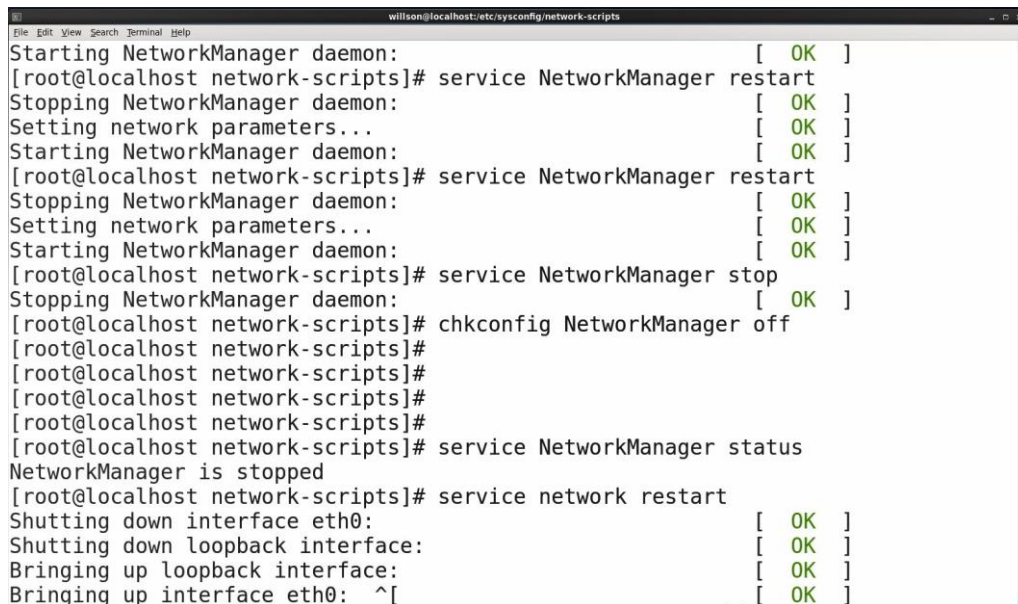
[root@localhost network-scripts]# vim ifcfg-eth0
[root@localhost network-scripts]# vim ifcfg-eth0
[root@localhost network-scripts]# vim /etc/sysconfig/network-scripts/ifcfg-eth0
[root@localhost network-scripts]# vim /etc/resolv.conf

willson@localhost:~/etc/sysconfig/network-scripts
# 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.co
nameserver 8.8.8.8
nameserver 8.8.4.4
```

Figure 3.4.5.2: DNS Name server Configuration

➤ Step 3:

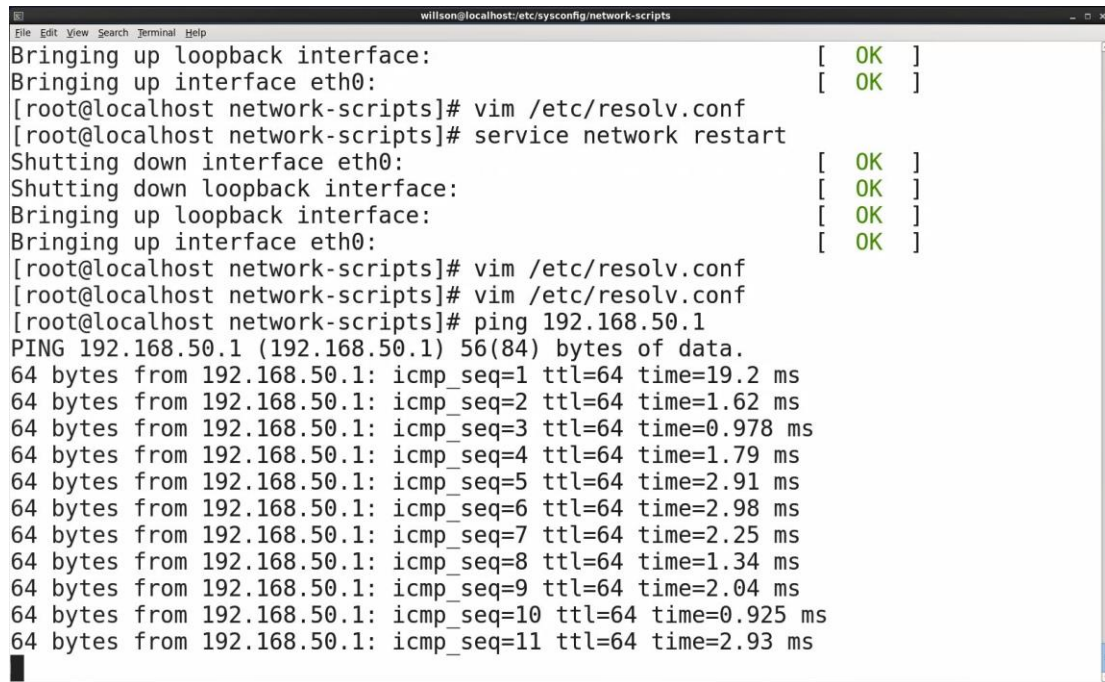


```
willson@localhost:~/etc/sysconfig/network-scripts
Starting NetworkManager daemon: [ OK ]
[root@localhost network-scripts]# service NetworkManager restart
Stopping NetworkManager daemon: [ OK ]
Setting network parameters... [ OK ]
Starting NetworkManager daemon: [ OK ]
[root@localhost network-scripts]# service NetworkManager restart
Stopping NetworkManager daemon: [ OK ]
Setting network parameters... [ OK ]
Starting NetworkManager daemon: [ OK ]
[root@localhost network-scripts]# service NetworkManager stop
Stopping NetworkManager daemon: [ OK ]
[root@localhost network-scripts]# chkconfig NetworkManager off
[root@localhost network-scripts]#
[root@localhost network-scripts]#
[root@localhost network-scripts]#
[root@localhost network-scripts]# service NetworkManager status
NetworkManager is stopped
[root@localhost network-scripts]# service network restart
Shutting down interface eth0: [ OK ]
Shutting down loopback interface: [ OK ]
Bringing up loopback interface: [ OK ]
Bringing up interface eth0: ^ [ OK ]
```

Figure 3.4.5.3: Service Network Restart

➤ Step 4:

When all configuration is complete then ping the IP # **ping 192.168.50.1**



```
willson@localhost:/etc/sysconfig/network-scripts
File Edit View Search Terminal Help
Bringing up loopback interface: [ OK ]
Bringing up interface eth0: [ OK ]
[root@localhost network-scripts]# vim /etc/resolv.conf
[root@localhost network-scripts]# service network restart
Shutting down interface eth0: [ OK ]
Shutting down loopback interface: [ OK ]
Bringing up loopback interface: [ OK ]
Bringing up interface eth0: [ OK ]
[root@localhost network-scripts]# vim /etc/resolv.conf
[root@localhost network-scripts]# vim /etc/resolv.conf
[root@localhost network-scripts]# ping 192.168.50.1
PING 192.168.50.1 (192.168.50.1) 56(84) bytes of data.
64 bytes from 192.168.50.1: icmp_seq=1 ttl=64 time=19.2 ms
64 bytes from 192.168.50.1: icmp_seq=2 ttl=64 time=1.62 ms
64 bytes from 192.168.50.1: icmp_seq=3 ttl=64 time=0.978 ms
64 bytes from 192.168.50.1: icmp_seq=4 ttl=64 time=1.79 ms
64 bytes from 192.168.50.1: icmp_seq=5 ttl=64 time=2.91 ms
64 bytes from 192.168.50.1: icmp_seq=6 ttl=64 time=2.98 ms
64 bytes from 192.168.50.1: icmp_seq=7 ttl=64 time=2.25 ms
64 bytes from 192.168.50.1: icmp_seq=8 ttl=64 time=1.34 ms
64 bytes from 192.168.50.1: icmp_seq=9 ttl=64 time=2.04 ms
64 bytes from 192.168.50.1: icmp_seq=10 ttl=64 time=0.925 ms
64 bytes from 192.168.50.1: icmp_seq=11 ttl=64 time=2.93 ms
```

Figure 3.4.5.4: IP Ping of Static Routing

## CHAPTER 4

### Conclusion and Future Career & Scope

#### 4.1 Conclusion and Discussion:

In short of my internship project I will learn about configuring network by MikroTik and Linux platform and how to make and configure network. I will also learn and complete understanding about IP Classes. Main learning of this project was how to configure ISP link, bandwidth Control in different ways, bridge mode configuration, Firewall and NAT Configuration, Network Security, Linux installation, Run level of Linux, Linux server administration. All of the instruction helps and improved me to increase build my job aims and career skillful. That's why now I can create ISP based setup and administration on the Linux platform and provide entry-level work and support. This project is completely hand course and provides information and aptitudes which will introduce me to a Linux server for informative, informative and basic system administration. Along with improving the most recent forms and server security, we always see the reconstruction and role of the programming department. The MikroTik and Linux operating system provide us a comprehensive introduction of steady, reliable and successful administration. The Linux system provide us almost all system administrators, Web server pioneer, SS, Telnet, DNS, FTP, mail server and so one. Now, today most of the organizations are highly dependent on their work on the network thought Internet. Therefor a proper network design is very important think of an organization, without this it is not possible to manage all network support.

#### 4.2 Future Career & Scope:

In real life finding a job can be a big challenge of anyone of our country, especially if we have no experience. That's why I choose internship, because it can help me to improve my career opportunity into an experience. So, this internship provides me to find scope in future life:

- Work in ISP based platform.
- Work at as an IT manager of a company.
- Work at as a Network Engineer.
- Work at as a technical support and security manager.

## Reference

[1] About Daffodil International University, available at <<<https://daffodilvarsity.edu.bd/>>>, access on 02 October 2018, 9.46PM.

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[3] About IP, available at <<<https://www.techopedia.com/definition/2435/internet-protocol-address-ip-address/>>> access on 06 October 2018, 9.36AM.

[4] Concepts of MikroTik, available at <<<https://mikrotik.com/aboutus/>>>, access on 06 October 2018, 12.17PM.

[5] MikroTik Configuration Rules, available at <<<https://systemzone.net/mikrotik-router-basic-configuration-using-winbox/>>>, access on 07 October 2018, 1.02PM.

[6] Manual of MikroTik, available at <<[https://wiki.mikrotik.com/wiki/Manual:Initial\\_Configuration/](https://wiki.mikrotik.com/wiki/Manual:Initial_Configuration/)>>, access on 07 October 2018, 3.43PM.

[7] Concepts of Linux, available at <<<https://www.tutorialspoint.com/unix/>>>, access on 13 October 2018, 10.46AM.

[8] Linux installation guide, available at <<<https://www.tecmint.com/centos-6-10-installation-guide/>>>, access on 19 October 2018, 11.15PM.

[9] Introduction to Linux Kernel and Shell, available at <<<https://www.geeksforgeeks.org/introduction-linux-shell-shell-scripting/>>>, access on 02 November 2018, 12.15AM.

[10] Linux server administration = Static IP Routing, available at <<[https://en.wikiversity.org/wiki/Linux\\_server\\_administration/](https://en.wikiversity.org/wiki/Linux_server_administration/)>>, access on 05 November 2018, 10.39PM.



## APPENDICES

### Appendix: Company Information



#### 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	Nationwide Internet Service Provider (ISP)
Employees	12

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