

**INTERNSHIP ON LINUX SERVER SYSTEM AND MIKROTIK AT
DAFFODIL ONLINE LIMITED**

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

DHAKA, BANGLADESH

OCTOBER 2020

APPROVAL

This Project titled “**INTERNSHIP ON LINUX SERVER SYSTEM AND MIKROTIK AT DAFFODIL ONLINE LIMITED**”, submitted by Rajib Malo ID:172-15-9740 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 October 08,2020.

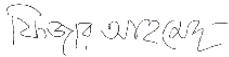
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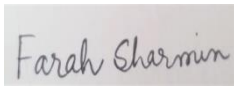
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DECLARATION

I hereby declare that, this project has been done by us under the supervision of **Ms. Farah Sharmin, Senior lecturer, Department of CSE**, Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

Supervised by:



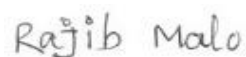
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I would like to express our heartiest gratitude to **Dr. Syed Akhter Hossain, Professor and Head**, Department of CSE, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University.

I would like to thank our entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

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

ABSTRACT

Linux Server Administration may be a well-known method for handling the system correspondence as far as its execution, dependability and security. This Internship shows the whole setup procedure of an ISP server Administration alongside the various administrations offered in Linux working framework. there's different quite add the system that's the rationale additionally unique kinds of server and the way to design different administration. For Example-DSN Server, Web Server, Mail Server, Proxy Server, FTP Server, Firewall. within the event that two and more PCs are interconnected and prepared to trade information or data then we call organize. I have to create a quantity of PC and trade information quantities and if quite one PC is needed then they ought to be launched within the server name. MikroTik may be a minimal effort and straightforward access Router which will be used for managing small and enormous systems. Particularly this systems administration gadget suits for small system from each viewpoint like customer administration and security. MikroTik RouterOS is that the working arrangement of MikroTik Router Board which can likewise introduce during a standard PC also; the PC will transforms into a MikroTik Router.

TABLE OF CONTENTS

CONTENTS	PAGE
Board of examiners	ii
Declaration	ii
Acknowledgements	iii
Abstract	iv,v
Table of Contents	v
CHAPTER 1: Introduction	01-03
1.1 Introduction	1
1.2 Motivation	1
1.3 Internship Objectives	1-2
1.4 Introduction To The Company	2-3
1.5 Report Layout	3
CHAPTER 2: Organization	3-6
2.1 Introduction	4
2.2 Product Market Situation	4
2.3 SWOT Analysis	4-5
2.4 Organization Structure	6
CHAPTER 3: Tasks, Projects and Activities	7-30
3.1 Daily Task and Activities	7
3.2 Events and Activities	8
3.3 Projects Tasks and Activities	9-32
3.4 Challenges	30
CHAPTER 4: Competencies and Smart Plan	30-33
4.1 Competencies Earned	31-32
4.2 Smart Plan and Reflections	32-33

CHAPTER 5: Conclusion and Future Career	33-35
5.1 Discussion and Conclusion	33-34
5.2 Scope For Future Career	34
REFERENCES	35
APPENDIX	36

LIST OF FIGURES

FIGURES	Page
Figures 2.2.1 SWOT Analysis	5
Figures 2.2.2 Organization Structure	6
Figure 3.3.09 Network Configuration Step-1	17
Figure 3.3.09 Network Configuration Step-2	17
Figure 3.3.09 Network Configuration Step-3	17
Figure 3.3.09 Network Configuration Step-4	18
Figure 3.3.09 Network Configuration Step-5	18
Figure 3.3.09 Network Configuration Step-6	19
Figure 3.3.09 Network Configuration Step-7	19
Figure 3.3.09 Network Configuration Step-8	20
Figure 3.10: Simple network diagram of MikroTik router	21
Figure 3.11: WAN configuration in MikroTik router	22
Figure 3.12: LAN configuration in MikroTik router	23
Figure 3.13: Gateway configuration in MikroTik router	24
Figure 3.14: DNS configuration in MikroTik router	25
Figure 3.15: NAT configuration in MikroTik router	26
Figure 3.16: DHCP Server window and DHCP Setup in MikroTik router	27
Figure 3.17: DHCP address space Setup in MikroTik router	27
Figure 3.18: Choose gateway address in DHCP network	28
Figure 3.19: Provide IP range from which DHCP client in MikroTik router	28
Figure 3.20: Provide DNS IP & IP lease time DHCP client in MikroTik router	29
Figure 3.21: Show successful DHCP Setup message	29

CHAPTER 1

Introduction

1.1 Introduction

The Internship is understood on makings aware expertise from the several organizations which will aid to form a bond between the ideal and efficient wisdom. It added expensive expertise to the students future life way. As a student of computer science and engineering at Daffodil International University. Even I have studied of network engineering courses by lattermost 4 year. However it often plentiful understood the computer networking. As a result to urgent a correct consciousness about inspiration networking. I am attracted try to that internship on any Internet Service Provider or IT concerned industry. Those Internship Report is **“INTERNSHIP ON LINUX SERVER AND MIKROTIK AT DAFFODIL ONLINE LIMITED“**At Daffodil Online Limited. This report makeup the entire program that it done over around the Web Server, Linux Configuration, Server Setup, Server Security and Monitoring System.

1.2 Motivation

I acknowledged that Daffodil Online Limited has a superb authority for client satiety and service. Daffodil Online Ltd is documented and first among the highest Internet Service Provider (ISP) in Bangladesh. I recognized that the composition of my expertise, learn to networking and Linux server will built me asset to Daffodil Online Limited. I have determine to more recent objection and this can give me a perpendicular knowledge at Daffodil Online Limited. I think that internship will give me perfect scope to advanced my career. Whereas an intern, I applied to be set Daffodil Online Ltd workflow and learn the highest amount as I perform. Daffodil Online Ltd internship expertise will provided me a thought like my after livelihood and perform on sharp position my ulterior learning and my career.

1.3 Internship Objective

- ✚ Successful effective learning around computer networking.
- ✚ Successful hand experience on internet service provider.
- ✚ Manage technological Ability.
- ✚ Successful training area research.
- ✚ Finish personal efficiency.
- ✚ Good Communicate with client.
- ✚ Showed effort and energy.
- ✚ Work better performance with client.
- ✚ Increased communication ability.
- ✚ Increased administrative ability.
- ✚ Increased analyst and research knowledge.
- ✚ Wisdom key of professional.
- ✚ Understood on occupational principle, market or confidence.
- ✚ Wisdom on occupational association performances.
- ✚ Wisdom on occupational daily newspapers.

1.4 Introduction To The Company

Daffodil Online Ltd. challenge me simultaneously of the leading pandemic Internet Service Provider (ISP) in Bangladesh. They are the first expertise and old industry within the ICT field where their basic occupation ethics is future concern with our clients. As they seem at the propagation over the end decade since their inception, they are particularly glad with what we have achieved, and even more alarmed about their outlook for an equally hopeful future. It may please you to know that we started our activities within the year 2002. During the past years, they extended our activity and reparation registers according to the client request and considering demands of various time. They worked with much national projects and international organization and achieved the reputation. They are using the most recent technologies and upgrading the services wherever it's required. Their associated network solution department is able to provide network and telecommunication solutions with a highly skilled technical experienced group.

Name:	Daffodil Online Limited
Address: -	102, Shukrabad (3 rd floor), Mirpur Road, Dhanmondi, Dhaka - 1207, Bangladesh
Telephone:-	9143258, 9143259
E-mail:-	info@daffodilnet.com
Website:-	www.daffodilnet.com
Type of organization:-	Internet Service Provider

1.5 Report Layout

Chapter:- (1) In this chapter, I described an introduction, motivation, internship objective and introduction to the company.

Chapter:- (2) In this chapter, I have described the organization of internship, product market Situation, SWOT analysis and organization structure.

Chapter :- (3) In this chapter I have described daily task and activities, events and activities, projects tasks, activities, and challenges.

Chapter :-(4) In this chapter, I have described the competencies earned, smart plan and reflection.

Chapter :-(5) In this chapter, I have described the discussion and conclusion, Scope for a future career.

CHAPTER 2

Organization

2.1 Introduction

I would wish to motivate me into a couple of new issues and which can give me a better benefits from DOL. i might give the perfect chance to expand my calling confidence in this transitory profession. Since I'm an immediate, I can increase crafted by Daffodil Online Limited and that i can learn however very much like could reasonably be expected. Daffodil Online Ltd (DOL) section level experience will give me a considered my future life and will direct my future and can be a fierce walk for my calling.

2.2 Product Market Situation

Daffodil Online Limited provided nationally ISP IT training and professional training some of are given below:

1. Combined internet solution.
2. Safety Solution.
3. Internet website updated.
4. Cisco Basic Switching configure.
5. Daffodil all data center.
6. Speed wi-fi zone.
7. Data connectivity, data center, co-location.
9. Cisco Basic Router Configure.
8. Professional course and trainings:
 - ✚ Internet service provider configure and application used Linux.
 - ✚ Linux Server.
 - ✚ Mikrotik Router all configure (MTCNA).
 - ✚ Internet website improvement.
 - ✚ Linux Basic command.
9. Red hat certified engineer(RHCE).

2.3 SWOT Analysis



Figure: 2.2.1 SWOT Analysis

Strength

- Daffodil Online Limited has the good customer support 24/7.
- Daffodil Online Limited has the best customer care for server their customer.
- Daffodil Online Limited has the one of the most experienced Consultant.
- Marketing Policy is very appreciate able.

Weakness

- There are few problems in the Marketing Policy.
- Need to boost up the customer motivation.

Opportunity

- Daffodil online limited business sector is enlarge, with much future scope for conquest.
- Native government wanted to foster native business.
- Encourage Youth Talent to the local job market.
- It opponents may be late to take new technology.

Threats

- Some Development issues in technologies may be exposing bazar wide the market authority to grow up.
- If the system is changed then need to careful about that sometimes small changes can be affect the market situation.

2.4 Organization Structure

It is a group of people to accomplish some specific task. All members in an organization have same objective. So the organizational structure is given below:-

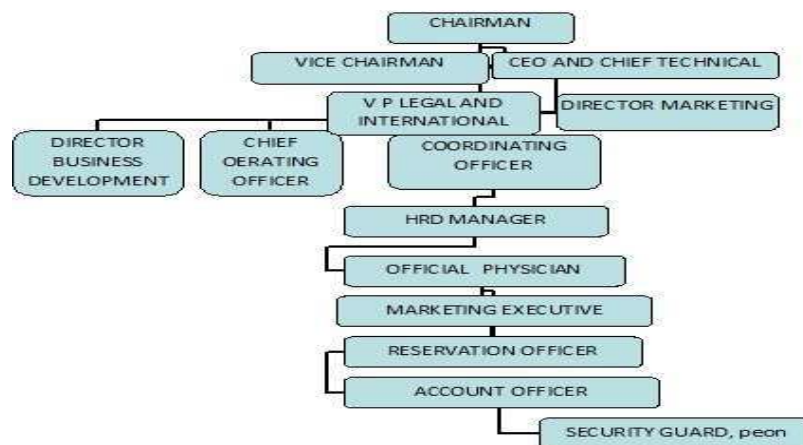


Figure : 2.2.2 Organization Structure

CHAPTER 3

Tasks Projects and Activities

3.1 Daily Task and Activities

Internship Period is that the partial fulfillment for completing my Bachelor of Science in computing and Engineering. It had been the three month Linux Administration course in Daffodil Online Limited. It reduce one among the foremost IT professional training and courses on the day once I attend.

Month 1:-

The commence of my intern period I have learned from Daffodil Online Limited is given below:-

Introducing and Understanding about Network Components.

Introducing to Basics of Linux.

- Installation and Partitioning the Hard Drive of Linux OS.
- Learning & understanding Linux Run Level.
- Simple centos command.
- Create linux user and password management
- Knowledge on logged in user.
- Created the Multi User System.

Month 2:-

The second month of my intern period I have learned from Daffodil Online limited is following tasks:-

- File and directory create and access.
- How to copy and move file and directory.
- Compressed or decompressed file and directories.
- How to mount unmount drive.
- File and directory permission field.

- Install, update and remove bundle behave yum.
- Notion of IP addressing and configuring network address on centos.

Month 3: -

The third month of my intern period I study from daffodil online limited is given below:-

- how To configure the FTP Server.
- To Configure and Understanding WEB Server.
- To Configure and Understanding MAIL Server.
- To Configure and Understanding DNS Server.
- To Configure and Understanding NFS Server.
- Configuring PROXY Server.
- Remote Login Service.
- Firewall.

Month 4:-

The Last Month of My Internship Period I wanted to create a Simple Project which is uses for monitoring to an Organizational Network .We can see how much people are in live in our Network.

- Monitoring Server.

3.2 Events and Activities

In the Education Sector Skilled and Educated Manpower is vital issues for highest quality education. Daffodil Online Limited prefer the simplest quality Teacher for professional training and Courses. Daffodil Online Limited maintain a scientific approach for recruitment. First, the candidates need to sit for a written test, then an interview is taken. At last, the candidate has got to give 2/3-demonstration class from which we take the

feedback from the scholars. and eventually, the candidate is chosen or rejected. Daffodil Online Ltd (DOL) may be a too much time confident preliminary of Daffodil study network which operate while 2002 to exhibit occupational people funds on various field of study or education. DOL have perfectly qualified lower opinion of polytechnic, technical and occupational ability improvement education organization in Bangladesh. Currently DOL is highly documented organization for science, engineering, arts knowledge and also for occupational and leading development training program. Daffodil Online Limited is additionally very accomplished name in combined training organization which has earned international acceptance during highly low period. On the opposite hand Daffodil Online Limited provided highest quality professional training. Daffodil Online Limited Provided the Training for Diploma Engineers, Corporate line professional and Human Resource.

3.3 Project Task and Activities

3.3.1 Centos Install

The easy method used to centos 6 installation process. Then creating a virtual machine red hat enterprise Linux 6 [64] bit operating system.

Configure the virtual machine with at least 512 MB memory for 32 bit and 1GB for 64 bit.

Now I am describing the Installation Process step by step.

- STEP 1: At first we have to insert Linux centos CD/DVD in CD/DVD rom. Then Go to BIOS and Select Boot from CD/DVD.
- STEP 2: Select Install and upgrade existing System Option.
- STEP 3: Select Skip media test because it take long time to cheek media and Click Next.
- STEP 5: Select language and appropriate keyboard for Personal Computer
- STEP 7: Select basic storage device if hard disk is attached locally.
- STEP 8: Select no keep my data and next.
- STEP 9: Then we have to enter a host Name and Select Configure Network.
- STEP 10: Select Dhaka from the Map or List.

- STEP 11: Give a root password
- STEP 12: For this installation of Linux we creating at least three partition of root ,boot and swap.
 - Root (/): at first root partition selected where ‘/boot’ ok, then secondly 100 MB mount ‘/boot’ ok.
 - Swap:- The swap partition used to support virtual memory. Partition swap will 2x equal physical ram and up to 2 GB physical memory. It is important for cannot less than 32 MB.
- STEP 13: After creating root, boot, and swap partition. Select the Applications you want to install and click next.
- STEP 14: Installation is successfully completed reboot pc.
- STEP 15: Give User Name and Password to Log in.

Installation Complete!!

3.3.2 Linux Kernel, Shell & Shell Script

The kernel is that the essential center of a computer OS, the core that gives basic services for all other parts of the OS. A synonym is nucleus. A kernel are often contrasted with a shell, the outermost a part of an OS that interacts with user commands. A shell script may be a document that contains a sequence of commands for a UNIX-based OS. It's called a shell script because it combines into a "script" during a file a sequence of commands that might otherwise need to be presented to the system from a keyboard one at a time.

3.3.3 Directory and File

For Linux, directory is a collection of files.where files are collection of data that it contains. Directory can be two types root directory and sub directory.

Root directory is a parent directory and sub directory comes under root directory. A directory can contains many files while reverse is not true.

For example:- /etc/Rajib

3.3.4 Linux Run Level System Used By Centos Operating System

init 0 == Shutting Down Mode

init 1 ==Single User Mode

init 2 ==Multi User Mode

init 3 == Full User Mode

init 4 == Unused

init 5 == X-Window

init 6 == Reboot or Restart

see present run-level == `who -r`

3.3.5 Simple Commands Of Centos

<code>cat [filename]</code>	The command also use to display contents of multiple files.
<code>cd /directorypath</code>	Changing the directory file.
<code>chmod [options] mode filename</code>	Transfer the access permit of file.
<code>chown [options] filename</code>	Transfer the owner of system files, directories.

clear	Which is used to bring the command line on top of computer terminal.
cp [options] source destination	Copying file and directory.
file [options] filename	Command displays for file type.
find [pathname] [expression]	Finding the file match a take steps model.
grep [options] pattern [filename]	Searches for lines which contain a search pattern.
kill [options] pid	Allows you to terminate a process from the pid-1692.
less [options] [filename]	Allows you to view files without opening an editor.
ls [options]	It lists the files and folders.
man [command]	This command used to see the manual of any command.
mkdir [options] directory	Create new directories in the file system.
mv [options] source destination	It also allows you to rename files.
passwd [name [password]]	Change the password for a user.
pwd	Displays for present working directory.
rm [options] directory	Used to remove or erase file on directory.
rmdir [options] directory	Used to dismiss vacant directory from the file system.

<code>ssh [options] user@machine</code>	Used to securely connect to a remote server or system.
<code>su [options] [user [arguments]]</code>	This command is used to changing different user.
<code>tail [options] [filename]</code>	Which prints on end few number of way.
<code>top</code>	Used to display running processes.
<code>touch filename</code>	Used to create a file without any content.
<code>who [options]</code>	Who are currently logged into the computer.

3.3.6 User Create and Password Manage

1. For adding an user,

```
useradd Rajib
```

2. For delete an user,

```
userdel Rajib
```

3. For check an user,

```
cat /etc/passwd
```

4. For check the details of an user,

```
cat /etc/passwd | grep Rajib
```

5. Changing for an user,

```
su <username>
```

6. For new user set on password,

passwd Rajib

7. Changed root password,

passwd

8. Password change or remove,

passwd -d Rajib

9. Delete an user on home directory,

userdel -r Rajib

10. Current position of password,

passwd -s Rajib

11. To know the login user,

whoami

3.3.7 Copy Or Move File

For Copy,

cp <file/directory name> Destination Location

Ex: cp file2 /root/Personal/Rajib

For Move,

mv <file/directory name> Destination Location

Ex: mv file2 /home/Emergency

3.3.8 File Editing Tools

To edit a file,

→vim <FileName>

Example:- vim reolve.conf

To Insert text into File,

→press “i”,

To delete the character under the Cursor,

→press ”X”

To delete the full line where cursor is on,

→press “dd”

To save the file,

→wq!

To save the changes but not exit,

→w!

To exit without saving,

→q!

To move the cursor un in precious line,

→press “J”

To move the cursor down in next line,

→press “K”

3.3.9 Install/Update/Remove Package in Centos

1. Install a package using yum install :-

yum install (package name)

Example:- yum install vsftpd

2. Uninstall a package using yum

yum remove (package name)

Example:- yum remove vsftpd

3. Update a package using yum

yum update (package name)

Example:- yum update firefox

4. Search a package using yum

yum search (package name)

Example:- yum search samba

5. Display Additional Information about a Package

yum info (package name)

Example:- yum info samba

6. View All Available Package

yum list | less

7. View Already Installed Package

yum list installed

8. List of all available software group

yum grouplist

3.3.09 Network Configuration

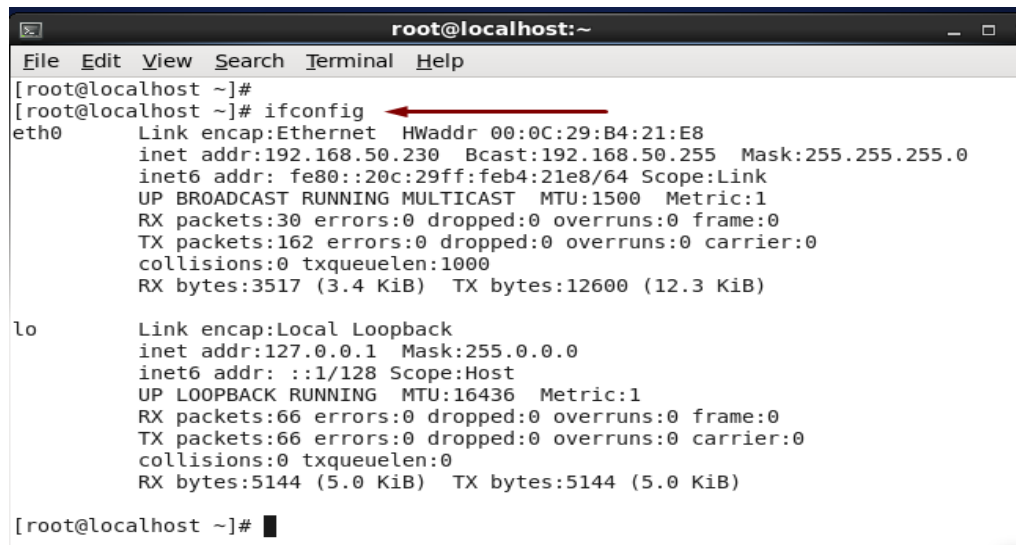
Computers are linked in a network to interchange detail or assets every one. One and more device linked on media this rule named computer network. Essentially a network is a group of computers or other devices connected together, either by a cable or wirelessly this called computer network. Now I will discuss about how to configure network in the centos operating system. Basically two types of configure network on centos operating system.

1. Manually

2. By using command.

We'll see Network Configuration by using Command.

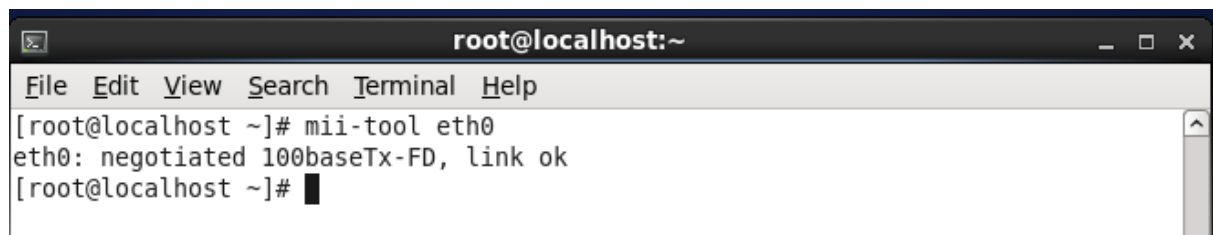
Step 1:-run the command “ifconfig” to show the Network is configured or not.



```
root@localhost:~  
File Edit View Search Terminal Help  
[root@localhost ~]#  
[root@localhost ~]# ifconfig  
eth0      Link encap:Ethernet  HWaddr 00:0C:29:B4:21:E8  
          inet addr:192.168.50.230 Bcast:192.168.50.255 Mask:255.255.255.0  
          inet6 addr: fe80::20c:29ff:feb4:21e8/64 Scope:Link  
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1  
          RX packets:30 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:162 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:3517 (3.4 KiB)  TX bytes:12600 (12.3 KiB)  
  
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:66 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:66 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:0  
          RX bytes:5144 (5.0 KiB)  TX bytes:5144 (5.0 KiB)  
  
[root@localhost ~]#
```

Step 2:- Now we have to see that the cable is connected or not.

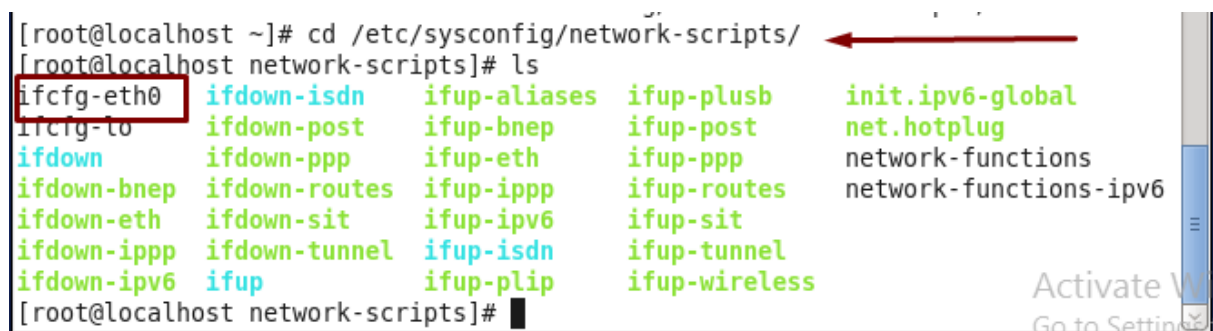
So we have to run “mii-tool eth0” command in terminal.



```
root@localhost:~  
File Edit View Search Terminal Help  
[root@localhost ~]# mii-tool eth0  
eth0: negotiated 100baseTx-FD, link ok  
[root@localhost ~]#
```

Step 3:-Now we have to go the Network-Script Directory by using command

“cd /etc/sysconfig/network-scripts”



```
root@localhost:~  
File Edit View Search Terminal Help  
[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-ippp     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]#
```

There are some file and directories here but we need to configure “ifcfg-eth0” file.

Step 4:-Now we have to do that directory by using this command “vim ifcfg-eth0” and

edit some lines like,

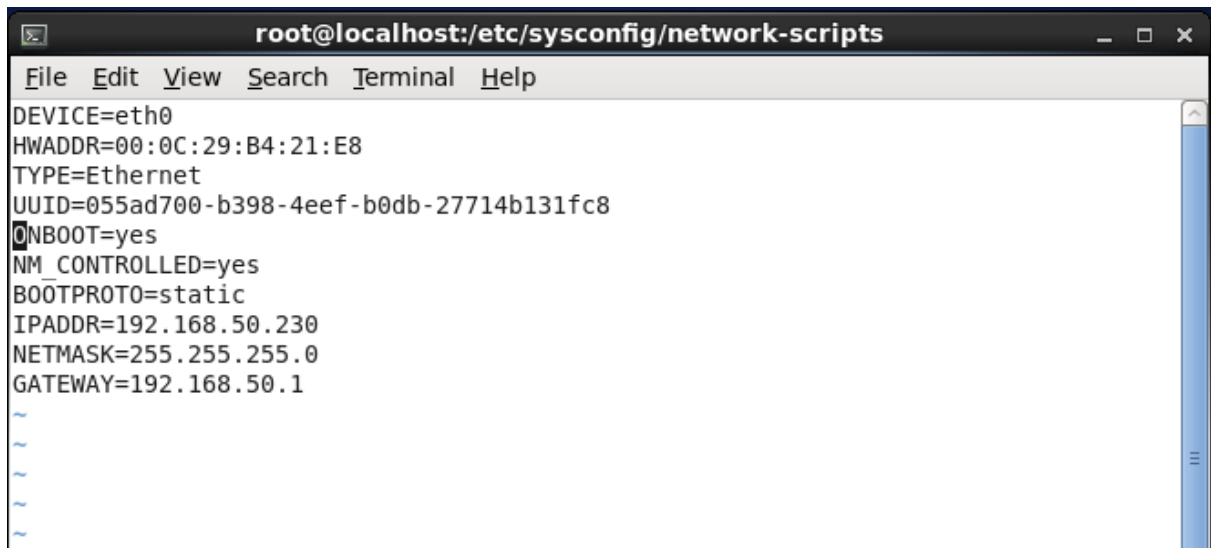
ONBOOT=yes

BOOTPROTO=static

IPADDR=192.168.50.230

NETMASK=255.255.255.0

GATEWAY=192.168.50.1

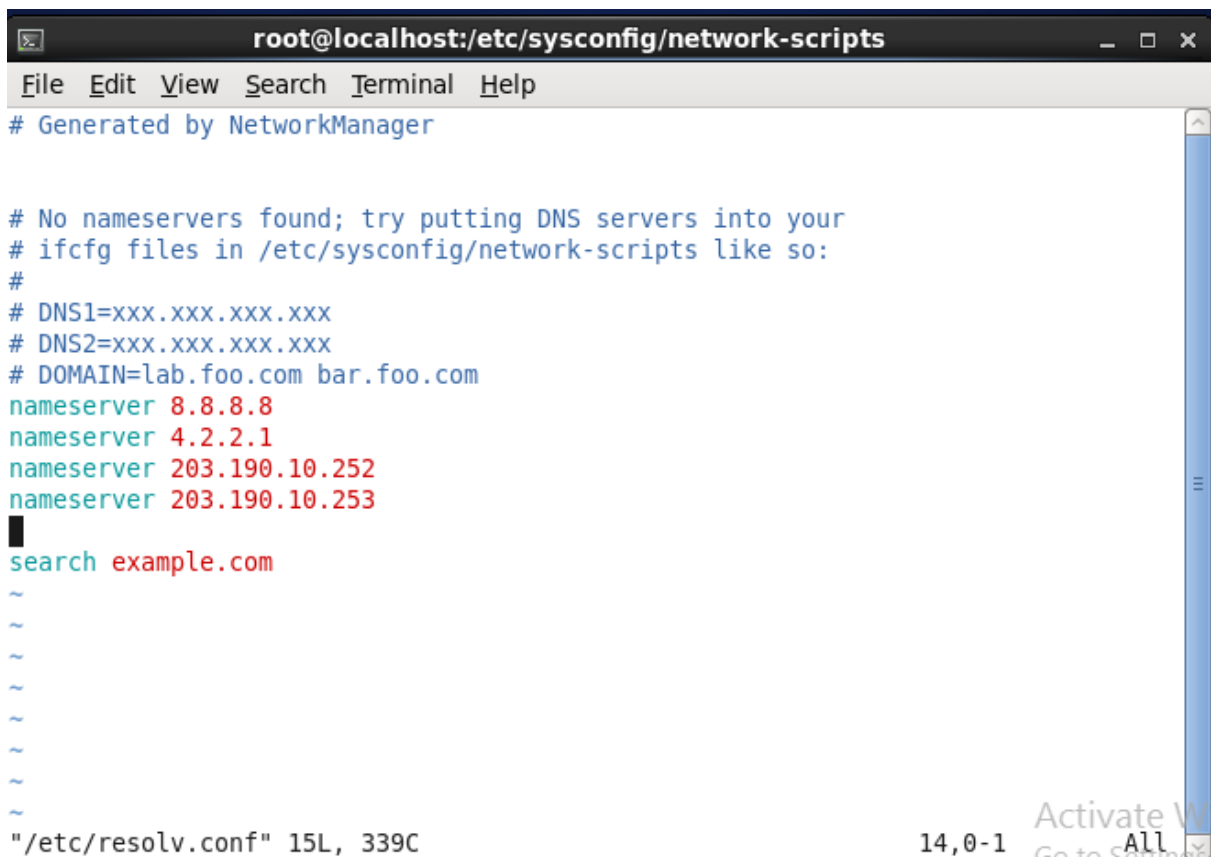


```
root@localhost:/etc/sysconfig/network-scripts
File Edit View Search Terminal Help
DEVICE=eth0
HWADDR=00:0C:29:B4:21:E8
TYPE=Ethernet
UUID=055ad700-b398-4eef-b0db-27714b131fc8
ONBOOT=yes
NM_CONTROLLED=yes
BOOTPROTO=static
IPADDR=192.168.50.230
NETMASK=255.255.255.0
GATEWAY=192.168.50.1
~
~
~
~
```

Then save the file by using command “wq!”

Step 5:-Configure the DNS by using this command “vim /etc/resolv.conf” and put the DNS (If we have the organization DNS so put it here on the other hand we can use the default DNS by Google)

so here is the edited nameserver.



```
root@localhost:/etc/sysconfig/network-scripts
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 8.8.8.8
nameserver 4.2.2.1
nameserver 203.190.10.252
nameserver 203.190.10.253
search example.com
~
~
~
~
~
~
~
~
~
~
"/etc/resolv.conf" 15L, 339C
```

Then save and exit from here.

Step 6:-Now we need to stop the service NetworkManager by using this command,

“service Network Manager stop

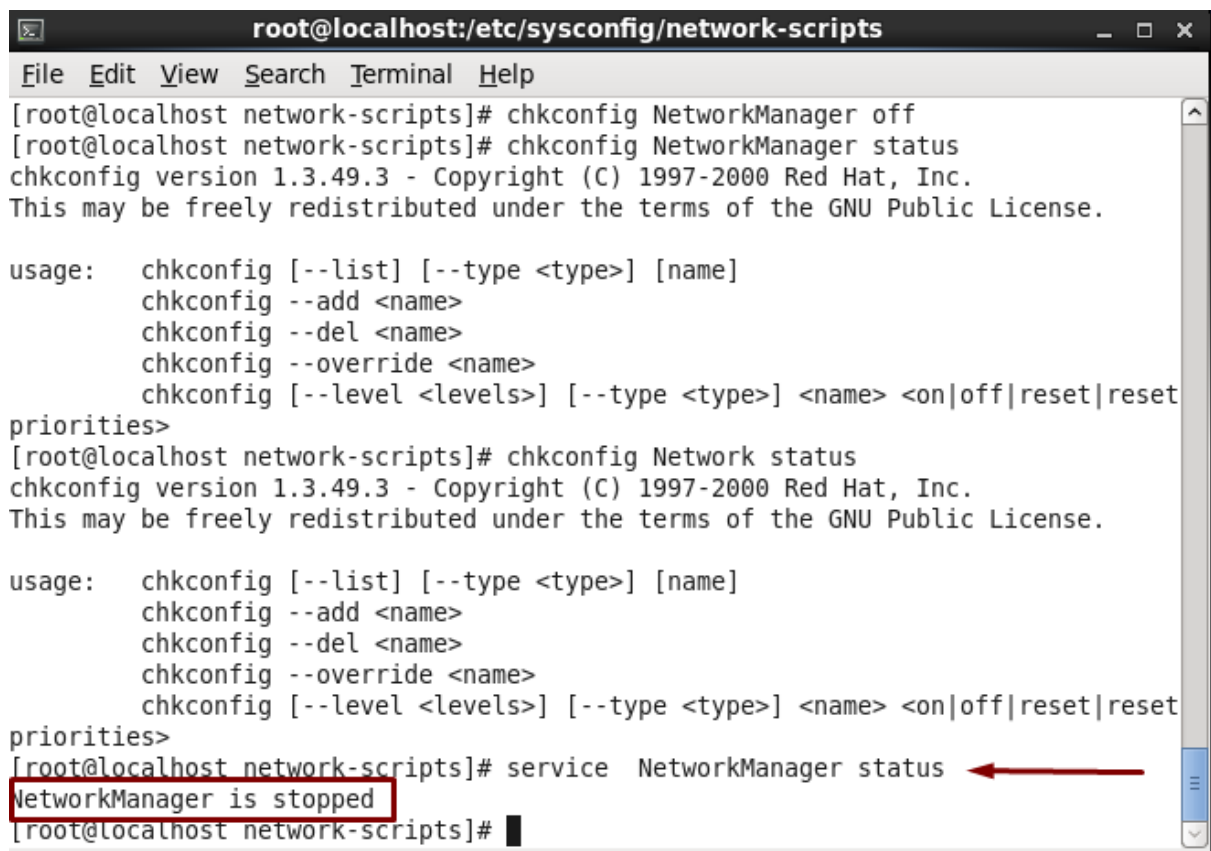
```
[root@localhost network-scripts]# service NetworkManager stop  
Stopping NetworkManager daemon: [ OK ]  
[root@localhost network-scripts]#
```

”

Step 7:-For Permanently stop NetworkManager we need to using this command

“chkconfig NetworkManager off”

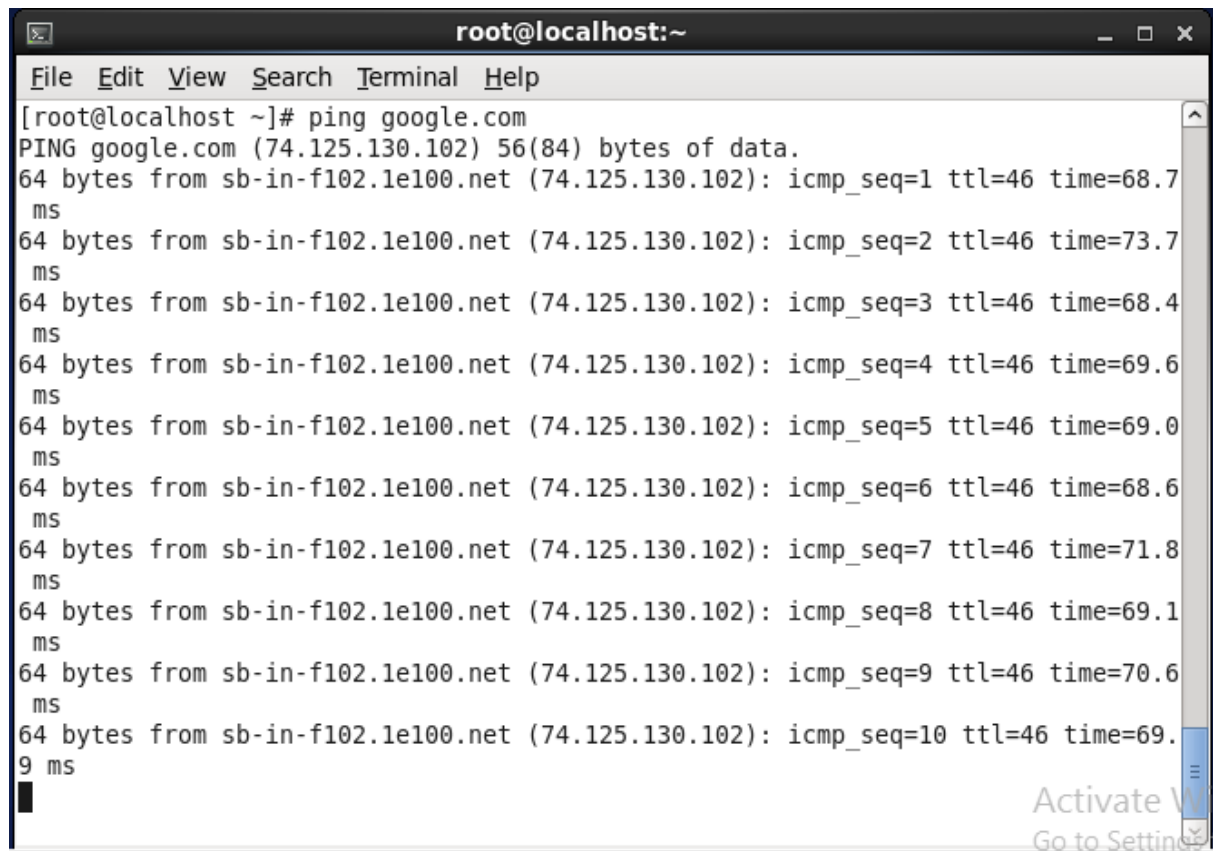
and for check “service NetworkManager status”



```
root@localhost:/etc/sysconfig/network-scripts  
File Edit View Search Terminal Help  
[root@localhost network-scripts]# chkconfig NetworkManager off  
[root@localhost network-scripts]# chkconfig NetworkManager status  
chkconfig version 1.3.49.3 - Copyright (C) 1997-2000 Red Hat, Inc.  
This may be freely redistributed under the terms of the GNU Public License.  
  
usage:  chkconfig [--list] [--type <type>] [name]  
        chkconfig --add <name>  
        chkconfig --del <name>  
        chkconfig --override <name>  
        chkconfig [--level <levels>] [--type <type>] <name> <on|off|reset|reset  
priorities>  
[root@localhost network-scripts]# chkconfig Network status  
chkconfig version 1.3.49.3 - Copyright (C) 1997-2000 Red Hat, Inc.  
This may be freely redistributed under the terms of the GNU Public License.  
  
usage:  chkconfig [--list] [--type <type>] [name]  
        chkconfig --add <name>  
        chkconfig --del <name>  
        chkconfig --override <name>  
        chkconfig [--level <levels>] [--type <type>] <name> <on|off|reset|reset  
priorities>  
[root@localhost network-scripts]# service NetworkManager status  
NetworkManager is stopped  
[root@localhost network-scripts]#
```

Step 8:-Then we need to check our Internet is ready for use or not.

Ping google.com then see the result.

A terminal window titled 'root@localhost:~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal output shows a successful ping to google.com (74.125.130.102) with 56(84) bytes of data. Ten consecutive ping results are shown, each with an icmp_seq number from 1 to 10, a TTL of 46, and a time between 68.7 ms and 73.7 ms. The cursor is on the line for icmp_seq=10. A watermark 'Activate Windows Go to Settings' is visible in the bottom right corner of the terminal window.

```
root@localhost:~  
File Edit View Search Terminal Help  
[root@localhost ~]# ping google.com  
PING google.com (74.125.130.102) 56(84) bytes of data.  
64 bytes from sb-in-f102.1e100.net (74.125.130.102): icmp_seq=1 ttl=46 time=68.7  
ms  
64 bytes from sb-in-f102.1e100.net (74.125.130.102): icmp_seq=2 ttl=46 time=73.7  
ms  
64 bytes from sb-in-f102.1e100.net (74.125.130.102): icmp_seq=3 ttl=46 time=68.4  
ms  
64 bytes from sb-in-f102.1e100.net (74.125.130.102): icmp_seq=4 ttl=46 time=69.6  
ms  
64 bytes from sb-in-f102.1e100.net (74.125.130.102): icmp_seq=5 ttl=46 time=69.0  
ms  
64 bytes from sb-in-f102.1e100.net (74.125.130.102): icmp_seq=6 ttl=46 time=68.6  
ms  
64 bytes from sb-in-f102.1e100.net (74.125.130.102): icmp_seq=7 ttl=46 time=71.8  
ms  
64 bytes from sb-in-f102.1e100.net (74.125.130.102): icmp_seq=8 ttl=46 time=69.1  
ms  
64 bytes from sb-in-f102.1e100.net (74.125.130.102): icmp_seq=9 ttl=46 time=70.6  
ms  
64 bytes from sb-in-f102.1e100.net (74.125.130.102): icmp_seq=10 ttl=46 time=69.  
9 ms
```

Our Network Configuration is now complete.

3.3.10 Mikrotik General Configure

Mikrotik is one of the most usable router of any internet service provider or industry and official company. Mikrotik Router is able to strong networking service of any organization. Mikrotik Router are bandwidth control service and graphical user interface which help us winbox software. Mikrotik Router cost is low so it used easy to everyone. MikroTik Router simple configure are often divided by 5 steps.

1. LAN & WAN Configure
2. Gateway Configure
3. DNS Configure
4. Local IP route by masquerade/NAT configure
5. DHCP Server configure

Some other MikroTik configuration

- ✚ Queue and Per Connection Queue configure.
- ✚ Bridge and configure.
- ✚ PPPOE server configure.
- ✚ Static configure.
- ✚ Filtering configure
- ✚ Backup & Restore configure

Given below data and an easy network configure which are connected to private network to MikroTik Router operating system to public network internet.

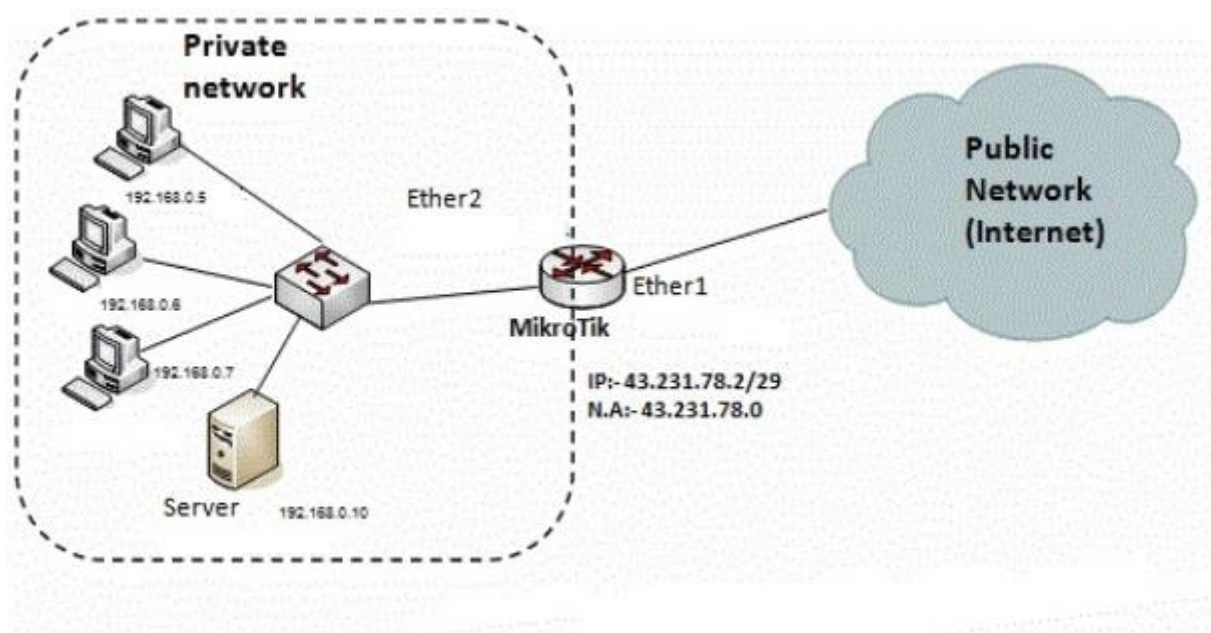


Figure 3.10: General MikroTik Router OS Networking System.

3.3.11 MikroTik WAN and LAN configure

Maiden level of Wide Area Network setting to MikroTik router and then another Local Area Network configure on router port address.

- ✚ At first ip then Addresses schedule. Then select {+} switch display. Recent menu shown on displayed. Establish first wan ip address {43.231.78.2/29} that is selected. Then interface wan configure, then ok press.
- ✚ Secondly, ip then Addresses schedule. Then select {+} switch display. Recent menu shown on displayed. Establish first lan ip address {192.168.0.1/24} that is selected. Then interface lan selected, then ok finish configuration.

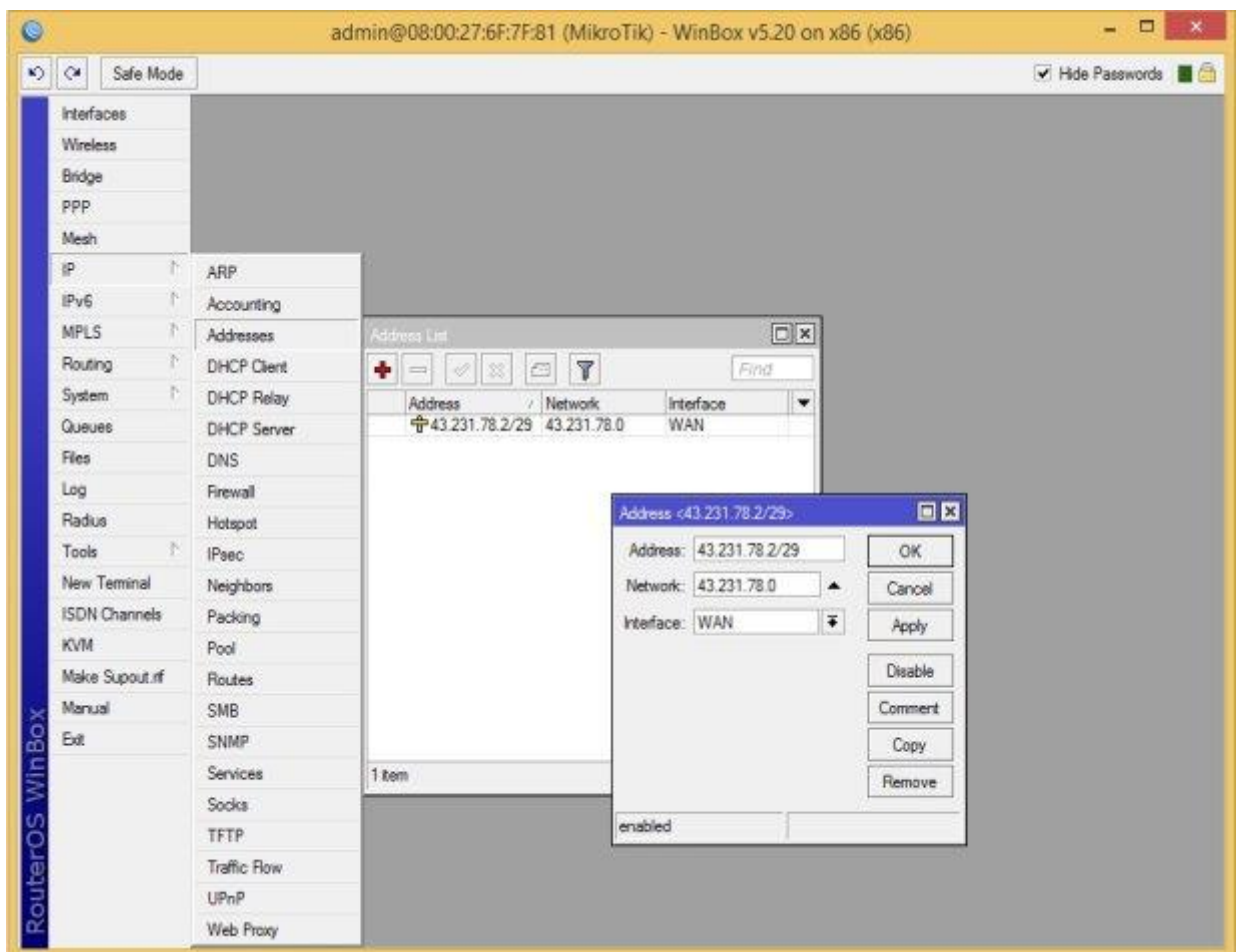


Figure 3.11: Mikrotik Router Wide Area Network Configure.

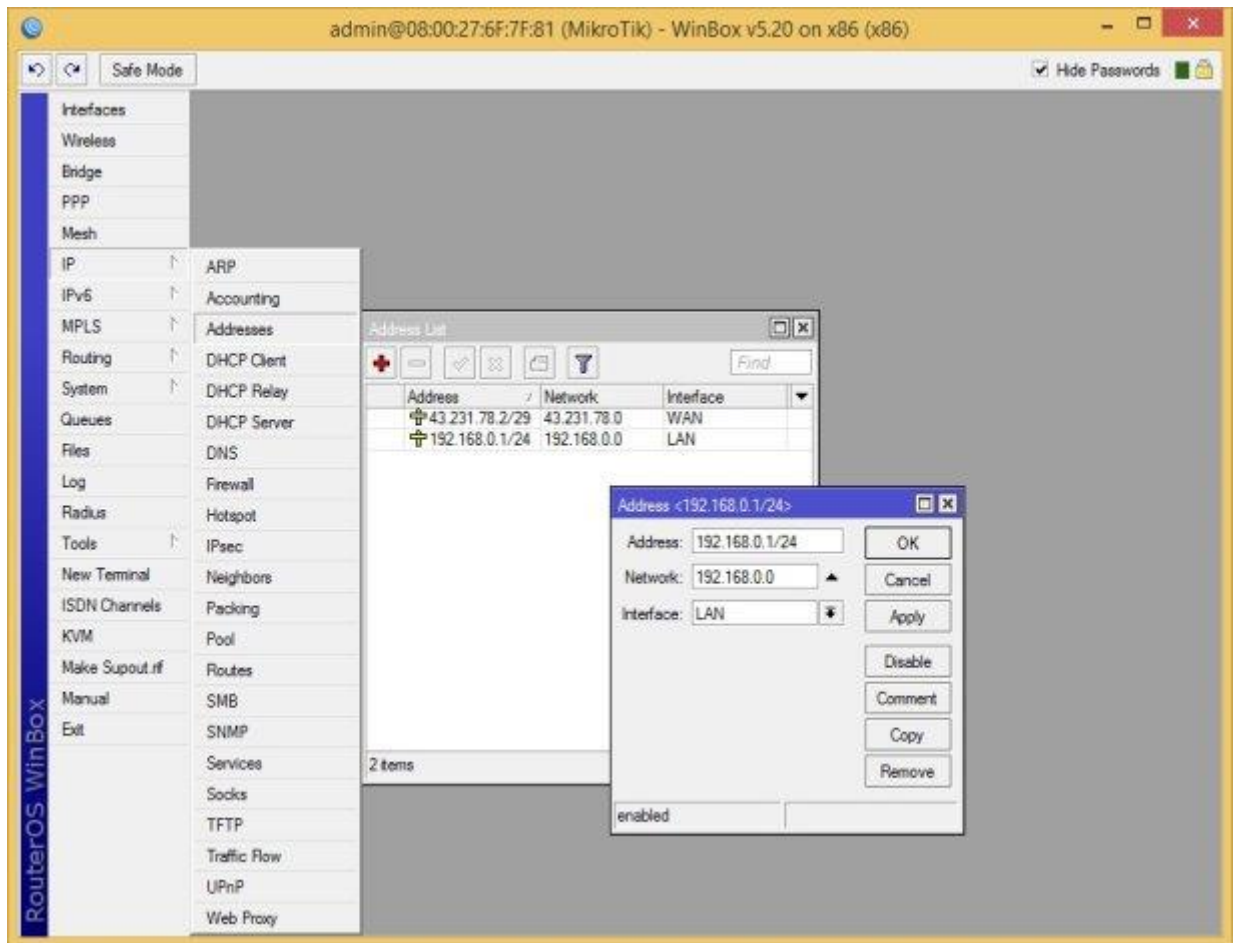


Figure 3.12: Mikrotik Router LAN Configure.

3.3.12 MikroTik Gateway Configure

After completed WAN and LAN IP configuration, then I configure mikrotik gateway configuration. So simple way to assign gateway IP in mikrotik router.

- ✚ Firstly, select ip window then routes option. Routes menu view currently. Then gateway ip establish now {43.231.178.1} that is view now. Next level ok selected.

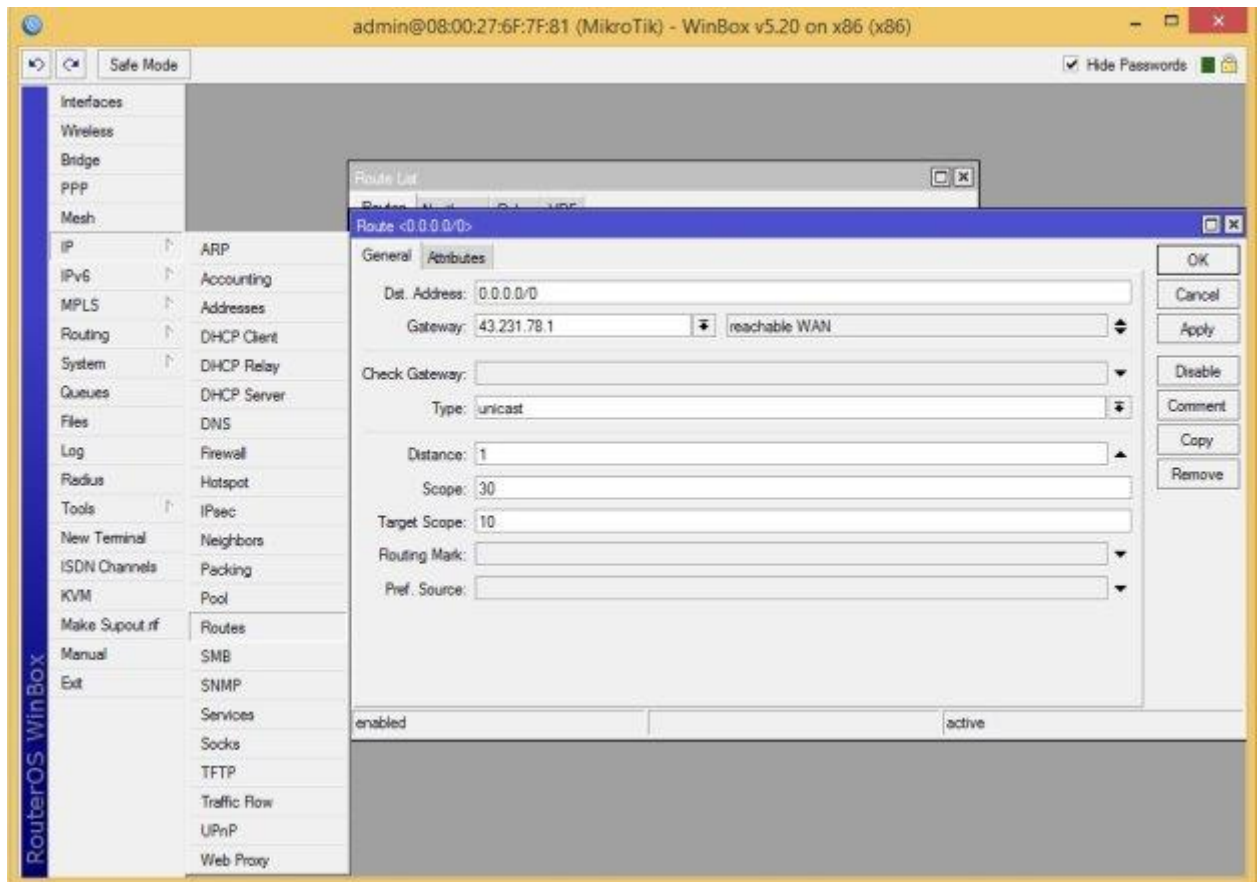


Figure 3.13: Mikrotik Router Gateway Configure.

3.3.13 MikroTik DNS Configuration

Previous described on Mikrotik gateway configuration. Now I defined on DNS configuration. DNS means Domain Name System. Mikrotik DNS server feature provides domain name resolution for the clients connected to it. Under the following steps on DNS configuration:-

- ✚ Firstly, ip select menu then dns display. Currently dns window showing. I used primary dns {8.8.8.8} on servers menu. And another dns ip {4.2.2.2} select on window. Then ok finish my dns configuration.

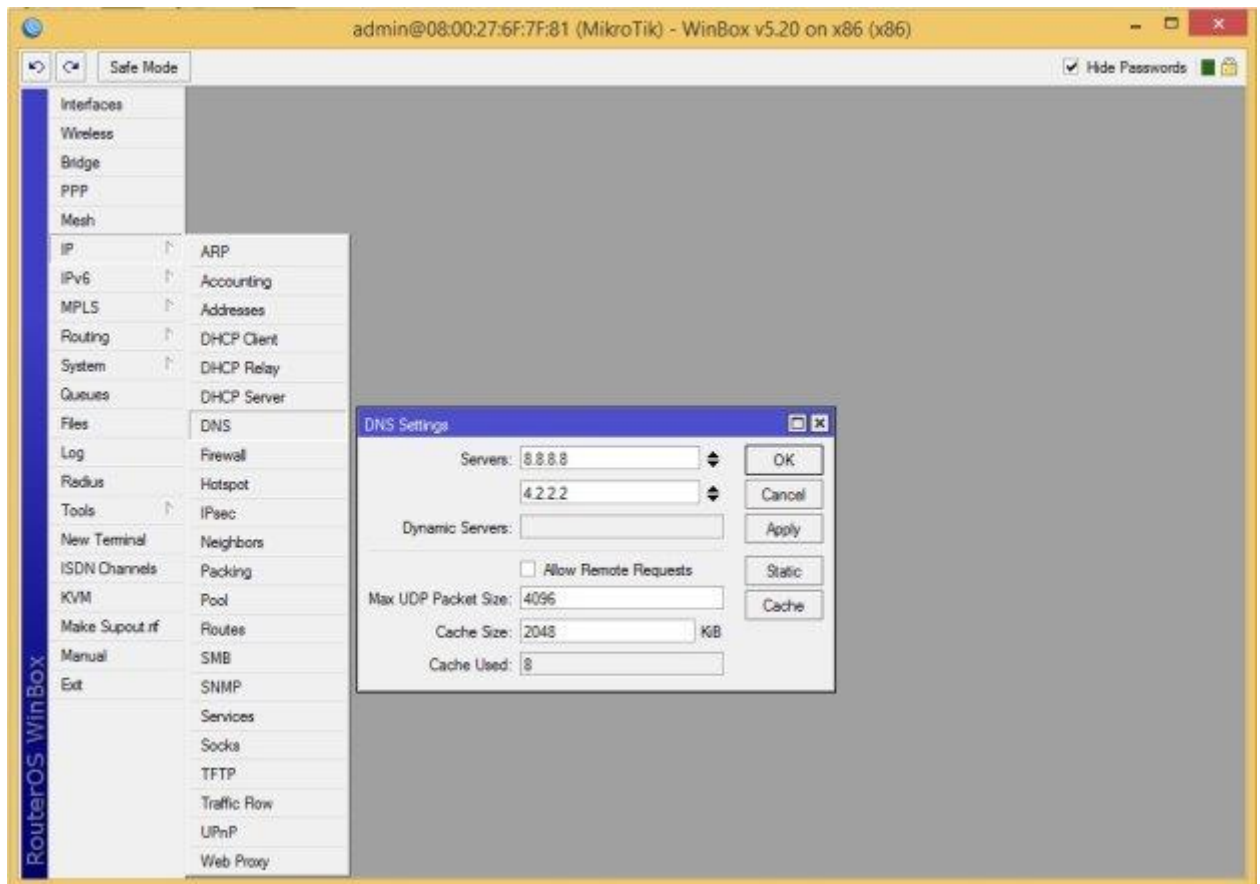


Figure 3.14: Mikrotik Router dns Configure.

3.3.14 MikroTik NAT Configuration

Previous router DNS configure and then next my point on Mikrotik NAT configuration. NAT means Network Address Translation. Under the following steps on Mikrotik NAT configuration:-

- ✚ At first, ip list then firewall menu & press on NAT menu & then press on include recent window {+} option. And display shown currently.
- ✚ Secondly, press the menu bar Chain: srcnat and Source Address: {192.168.0.0/24} down window menu & select Action: masquerade from action window & press appeal & select ok then finish my configuration.

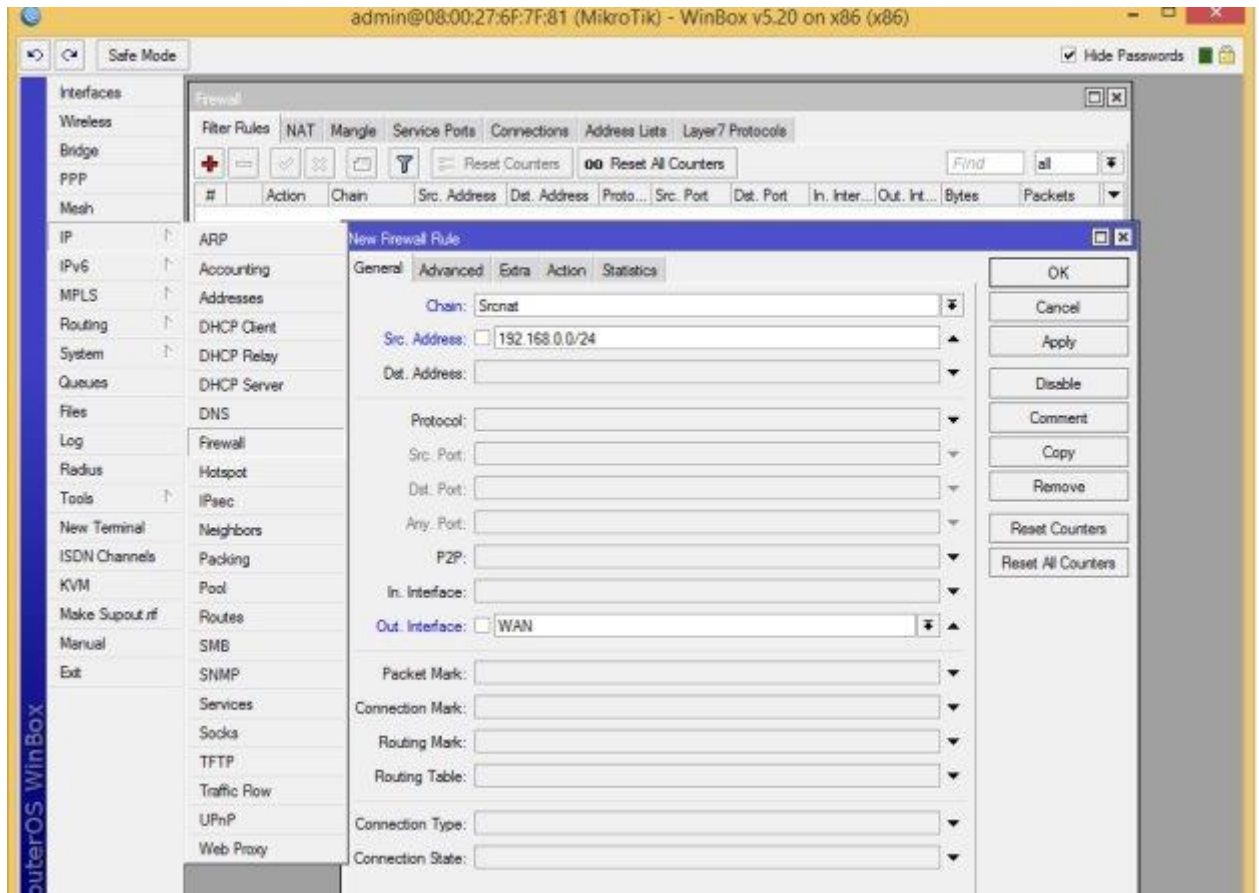


Figure 3.15: Mikrotik Network Address Translation Configure.

3.3.15 MikroTik DHCP Server Configure

DHCP means Dynamic Host Configuration protocol. DHCP assigns IP addresses to hosts and comes as a client and a server

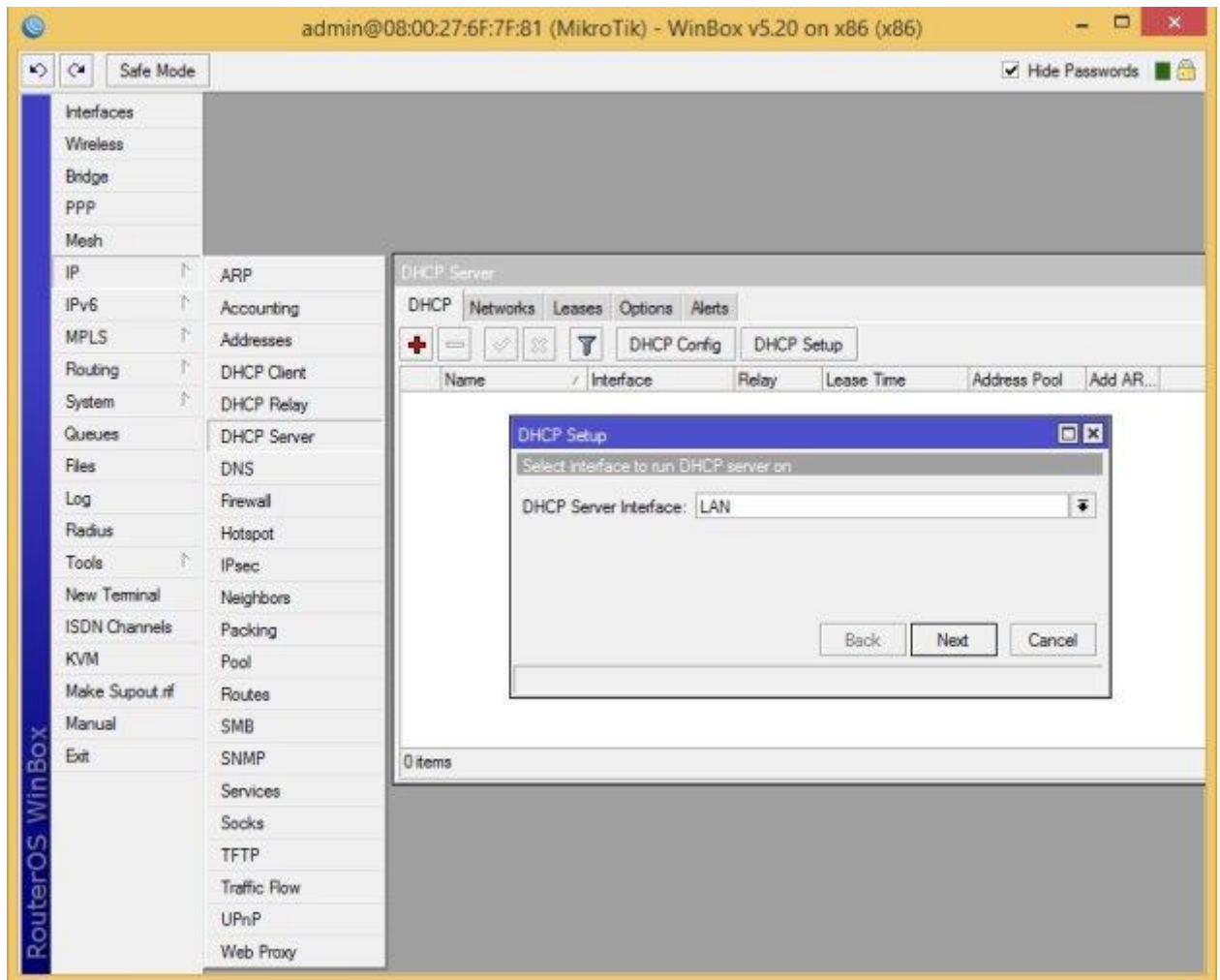


Figure 3.16: DHCP Server & Select interface to run DHCP Server.

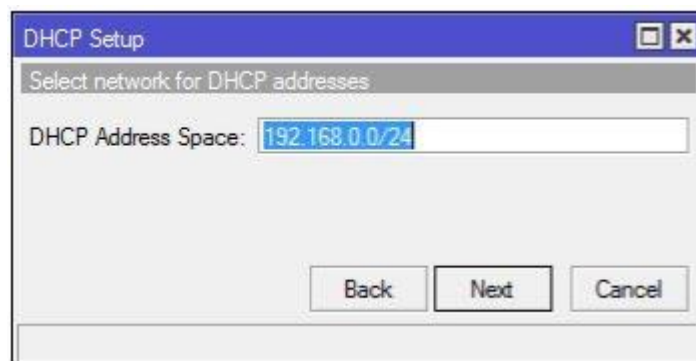


Figure 3.17: Select network for dhcp addresses.

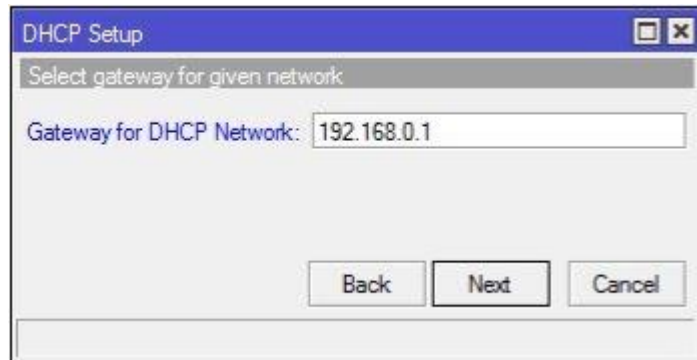


Figure 3.18: Select Gateway for given network.

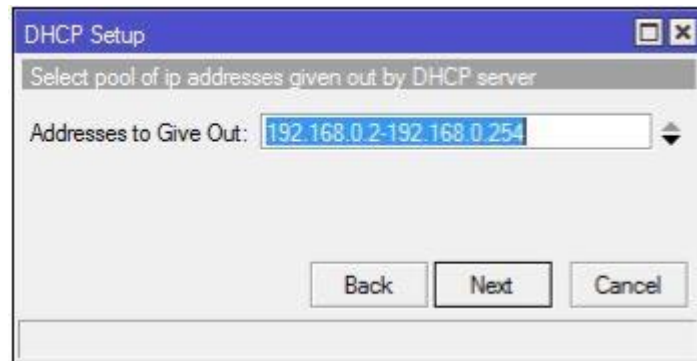
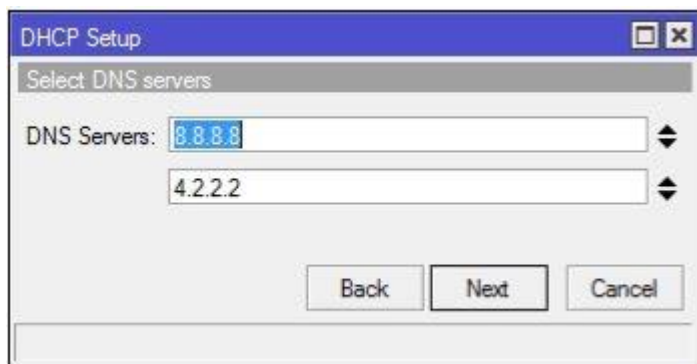


Figure 3.19: Given select pool of ip by dhcp server



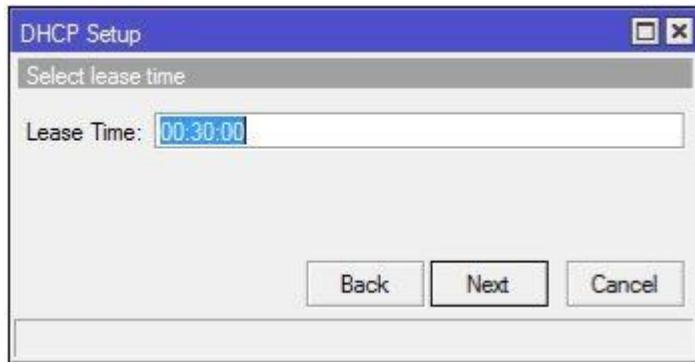


Figure 3.20: Select Dns servers and DHCP select LEASE TIME.

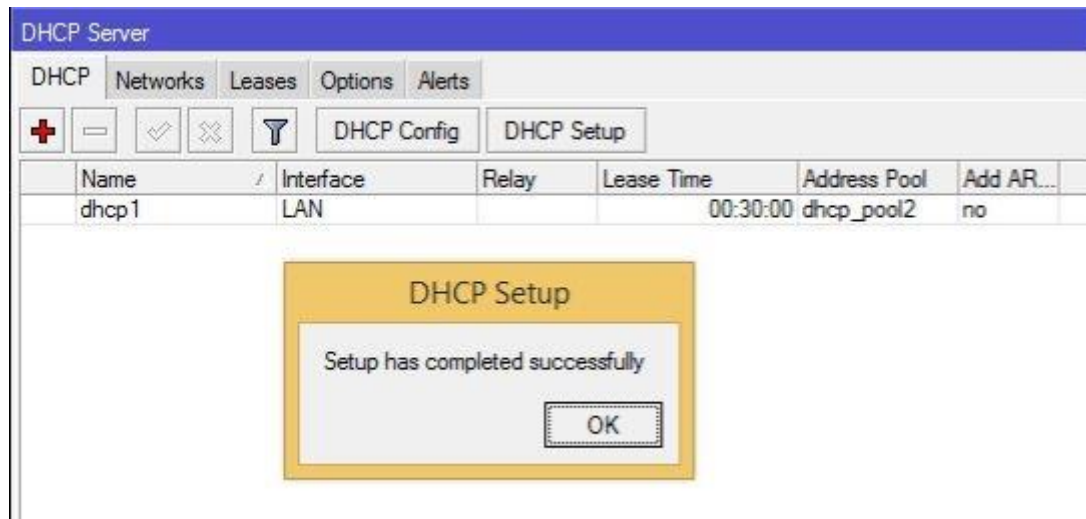


Figure 3.21: Dhcp configure message

3.4 Challenges

Teaching is too much significant for internship is the premier line, First time intern students faced many problem by internship, That it obligation take steps education for

purpose matter. Occasion have many personality and education can be resolved it. Education perform defined ability, idea, grown representation on internship background.

- + Induction of actual placing of networking.
- + Combined and trade internet service.
- + Various network planned on local network or composed the labyrinth.
- + Making diagram, sketch, and another ocular for supervisor service.
- + Subscribe progressing work and representation of computer.
- + Managed customer information.
- + Device Admin.
- + IT assistance appointment.
- + Industries virtual private network Serving & Analysis.
- + Safety Specialist.
- + Server Monitoring.
- + Network Research & Development.
- + Wireless Engineering.
- + VoIP Engineering.
- + Cloud Networking Architect.
- + Networking Consultant.
- + Networking Account Manager.

CHAPTER 4

COMPETENCIES AND SMART PLAN

4.1 Competencies Earned

Later succeed internship on daffodil online limited, I have collect learning of different Error and solving. Presence some working on technological knowledge. By internship time I have attribute many Competency earned .That earned I was try to done proudly. That Competency earn are point under listed:-

- ✚ Determination hardware and software matter, with it product or Customer closing.
- ✚ Redact common method maintain or assistance.
- ✚ Device directorate, control and determination.
- ✚ Search authorization for middle par matter.
- ✚ Experiment our organization website take step hebdomadal information.
- ✚ Increased our technological intellectual for tangible matter.
- ✚ Improvement my human mind simultaneously.
- ✚ Hand knowledge on job position.

4.2 Smart Plan and Reflection

In All solution displays that, daffodil online Ltd is not providing a optimal equality of service. In All mind client did not gleam on elevated amount of gratification. This characteristic an optimal serving moved on too much decrease the displeasure customers who likely didn't delight the wicked situation.

I have several request and smart plan for the optimal equality of serving give to the client. Various law for good serving and smart plan are given listed :-

- ✚ Grown the internet fastness.

- ✚ Changing the price.
- ✚ Appointed occupational administration.
- ✚ Ethnic fund success.
- ✚ Exceeding shopping experiment.
- ✚ Center or worthy period schedule.
- ✚ Understood client matter or step want to resolve the matter.
- ✚ Client should be put known of prosperity.
- ✚ Added recent making this service.
- ✚ Potential user safety or eliminate wrong bill.
- ✚ Recent publicity circular mobility.
- ✚ Speedy technological action the customer.
- ✚ Outlet to outlet menu gathering with organisation.
- ✚ Session by the customers outcome.

Reflection

Seeing work can be a true objection, Moreover if i do not have some knowledge. A satisfied internship be able to aid me change a expertise in profession scope. Consequently, this my necessary internship future reflection schedule.

1. Outline and protection server for our tangible livelihood.
2. Aspect and protection mikrotik router it will given me a better job.
3. Maintained Work in IIG,IGW it will given me good job.
4. Configure different types of software that is applied to internet service provider team for the Customer control scheme. This learning will support me better job.
5. System error and several matter that is increased appear learning help to advance expertise.

✚ Data Center Networking Specialist

After successful mine project, I have challenged to job several type of networking for Local Area Network, Metropolitan Area Network, Wide Area Network. Networking

Consultant, Networking Sales specialist be possible took network strength necessity and model a structure this can manage it or besides display, managerial the network.

Network Technician

Internet Service Provider given me a challenge to job a Network Technician, As a Network Technician duty given all technical support, Kind of all software Concerned, All operating system error correction and detection. All Requirement given as a network technician help and confirm method is ever operable.

Cloud Networking Architect

IIG,IGW and other Network company gives me an chance to work as cloud networking architect, System Analyst Voip Operator Network Manager, Network Safety Operator and Wireless Operator.

CHAPTER 5

Conclusion Future Profession

5.1 Discussion and Conclusion

This temporary job aims to extend information and able to make isp setup and leading on the linux stage. Configure entry-level location focus data, Linux unexpected, Linux supervisor, and network safety and ploy, and over linux may be a full-winged collector, hybrid unix operating structures, including free programming related abundance, elite support for system administration. the character of the Linux programming makes it a minimal effort, a strong, powerful processing layer is suitable for corporate server conditions. this whole hand course provides information and aptitudes which can introduce you to a Linux server for informative, informative and basic system administration. along side improving the foremost recent forms and server security, you see the role and reconstruction of the programming department. The Linux OS and MikroTik provide a comprehensive introduction of reliable, steady and successful administration. The Linux OS provides a comprehensive introduction of reliable, stable and successful administration. We aren't the sunshine of its administration, but its decision is totally freed from charge. It includes most system administrators, Web server pioneer, Telnet, SS, FTP, DNS, mail and an excellent deal. Various parts of Linux are considered or made as a feature of classical works, for instance, graduate proposals. Today most organizations are highly hooked in to their work on the web it's impossible to manage service but without proper network design. Networks fully manage their networks and achieve the goals of the businesses. As a result, a network Designers should have knowledge about network design. MikroTik may be a very low-cost router which will be useful for little networks. Through Access through Winbox As a result, micro-tick routers are often easily managed. Provide considerable security for the network MikroTik can provide powerful wireless access. Point and web proxy server management. We would like to understood about the essential network design and primarily learn the project.

5.2 Scope for Future Profession

This temporary job aims to increase information and Finding work are often a true mind, specially if I do not have some expertise. A satisfied internship perform help me change an expertise into a profession scope. So as a victories internship my future goal are going to be.

- ✚ Configure and protection server for our actual livelihood.
- ✚ Worked in internet service provider.
- ✚ Work in IT industries.
- ✚ Work on Networking expertise.
- ✚ To be Network Analyst
- ✚ Network Solutions Architect
- ✚ Network Manager
- ✚ Network Security Specialist
- ✚ Wireless Networking Engineer
- ✚ Networking Consultant
- ✚ Networking Program Manager
- ✚ VoIP Engineer
- ✚ Cloud Networking Architect

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Appendices

Appendix A: Internship Reflection

The primary goal of my internship in a professional setting, practical solutions to real-world problems is to apply the knowledge gained in the classroom. And professionally relevant competencies and relationships in a professional setting, learning to deal with new knowledge, skills, and the ability to determine how to sharpen and develop plans. Add to network with other professional's supervisors and professional relationships. To fulfill the duties of my internship, I'm exercising proper business etiquette. I am an organization's mission / vision is implemented, how to contact colleagues, how power is shared, how it is structured, how decisions are made, how to understand the culture of a professional organization, and what degree of accountability and feedback to the organization. With an assessment at the end of my internship supervisor and internship experience running through individual meetings provides an opportunity to take a professional opinion. Internship experiences to prepare for life in a global society, leadership and service, my gift to be able to put it to use.

Appendix B: 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	Nationwide Internet Service
Provider (ISP)	Employees 12

Submission date: 07-Oct-2020 01:16AM (UTC+0600)

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