

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

SUBMITTED BY

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This Report is presented in Partial Fulfillment of the Requirement for a
Bachelors Degree in Computer Science and Engineering

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APPROVAL

This Project/internship titled “**Configuration Of ISP Server on Mikrotik and Linux Platform**”, submitted by Iqbal Kabir, ID No: 162-15-8204 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 14th September 2019.

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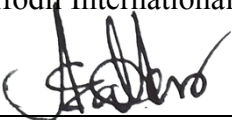
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DECLARATION

I hereby certify declare that this internship report is prepared by me, Iqbal Kabir, ID No: 162-15-8204 to the Department of Computer Science and Engineering (CSE), Daffodil International University. Under the supervision of **Shaon Bhatta Shuvo, Senior Lecturer Department of CSE** in Daffodil International University.

Again, I declare that no part of this internship report or this internship report has been submitted for any degree or diploma and I also announced that Daffodil Online Limited (DOL), a data centre and Internet service provider (ISP) based company, is collecting information from books and the Internet.

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I would like to thank the entire course partner at Daffodil International University who participated in this discussion while completing the course work.

Finally, I must acknowledge the continued support of parents and their respect for patients.

ABSTRACT

If two more computers are connected to one computer and are able to interchange data or information, we call the network. When we have to need a server called a special PC we want to enhancement the number of PCs and interchange data or information with each other. There are different types of network functions that make up different types of servers. Examples – Mail Server, Web server, Proxy server, FTP server, Firewall, DSN server. Each of them works severally, and without it, it's impossible to sustain a network. If the network is connected to the Internet and we want to protect your data, they must setup the server using the Linux Operating System. That's why I'm the subject of my report "Server Installation and Configuration of the ISP. The report discusses the goal of the Earmarked server using the ISP, hardware requirements for the server, selecting software and software installation processes, at every step server configuration and resolving easy server issues.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

I have chosen an internship to prepare myself as a skilled person in the job market and this program is competitive. So internship is very essential for skill development. I would like to achieve some special quality in order to prove myself as a skilled one, that's why I'm choosing an internship.

Now a day's security is very much needed for everything that we regularly use in our real life. Like this, network security is very essential because today we do most of our work through the internet. For example, online banking, data transfer, virtual data backup, etc. that's why today network security is very much concern for everyone. As network security is a complex subject but if anybody trying to implement it in real life then it would not be very complex for him/her.

The whole field of network security is huge at an evolutionary level. The largest range of studies covers a concise history with the introduction of the Internet and current developments in the security of a network. They are reviewed here to understand the types of attacks and the ways to prevent them.

It is known to everyone that basic network security begins with a username and password. Then it comes to the antivirus. It is also very common for everyone. Then if we consider a firewall, it is not much popular because many one of our country never use a firewall or they haven't any idea about it. As we are working on the Linux operating system, their one can customize much more security process according to his/her need or according to organization requirements. For example, Linux, IP Tables, PPOE, and many more security steps could be possible to add if someone needed.

Networks are subject to attacks from malicious sources and if one's it occurs then it is considered as a great loss for an organization or for a person. Because when the attacker was successful to gain access in any network or any server then the attacker would damage or collect important documents or might make disrupt the networks normally. operation. So to prevent a network from those types of attacks or from unauthorized access network security is essential.

1.2 Motivation

While I currently adhere to my Bachelors in Computer Science Engineering at Daffodil International University, I have realized the importance of acquiring practical knowledge that will supplement textbook knowledge and help students gain a broader view of the subject. In the internship, I learned that I was thoroughly skilled at managing Linux network and server and the details of Mikrotik. Linux has expanded at a high rate in the past few years, with the recent prolongation even among government agencies and the military. Linux is recognized by most corporations as an affordable device for those trying to cut back on hardware costs. The terms of the administrator of Linux continue to be about 25% of the total Linux related job market.

1.3 Objectives of the Internship Program

DIU- Daffodil International University places a great emphasis on the quality of experience in the CSE program. DIU partners with fourth-year students in its business with appropriate business or IT companies. An integral component of this intern computer science program, 6 credit hours worth of intern work dedicated to each student must be presented in the form of a full project graded by their engineering and technology, and a copy of this will be submitted to the Intern agency. The CSE program prepares a student for a professional career in the IT field by publishing them with academic guidance through 5 credit courses in the area of a large computer, and off-campus job experience through intern. Intern requires a student to translate his / her work into action by exposing his / her work to work and the opportunity to apply theoretical ideas to their real-life situations. The student has to submit a project and set it before an interview board which will have academics, practitioners and organizational representatives. The student must earn a passing grade to be identified on the intern.

1.4 Report Layout

The report arranges as follows–

Chapter-1: Introduction, Motivation, Objectives of Internship Program, Report layout

Chapter-2: about the Company, Product and Market Situation, Role in the Job market

Target Group, SWOT Analysis, Organizational Structure.

Chapter-3: Activities and Daily Task Initial setup, Challenge Linux basic command and described (Install, Upgrade, uninstall, yum configuration, IP configuration).

Introductions of Linux services (Web Server, DNS Server, DHCP Server, FTP Server,).

Chapter-4: Competencies Earned, Smart Plan, Reflections

Chapter-5: Scope for Further Career, Discussion and Conclusion

CHAPTER 2

INTERNSHIP ENTERPRISE

2.1 About of the Company

Daffodil Online Limited (DOL) has been one of the leading organizer and senior ISPs / ASPs in Bangladesh and has been providing One-Stop mobilized ICT services and solutions since July 2012. DOL will handle the greater portion challenging and demanding IT professional courses and day training Daffodil Online Ltd (DOL) is one of the fastest ISPs in Bangladesh to connect everyone to provide high-quality information and communication technology (ICT) services at a reasonable price. DOL uses the latest technology to upgrade wherever it is needed.

DOL has a very strong professional engineering and management team that deals with Sun, Cisco, Microsoft, Linux and Oracle and is actively involved with the world's leading computing associations including IEEE, ACM, ACS, BCS, and PMI. Our corporate social responsibility policy reinforces our sense of responsibility in communities, workstations, locations and market places.

2.2 Product and Market Situation

- Daffodil Online Limited prides itself on being the leading nationwide Internet Service Provider (ISP) in Bangladesh. They are the most experienced and oldest companies in the field of ICT where their core business principles, as they aim to develop decades of long-term relationships with our customers, are extremely proud of what we have achieved, and more enthusiastic about our vision for an equally committed future. Daffodil Online Ltd also offers various IT services and professional training services. These are given below.

Information Technology Services

DOL offers the following interactive courses:

- a. Security Solution.
- b. Website Development.
- c. Corporate Internet Solution.
- d. Domain Registration and Web Hosting.
- e. ISP (Internet Service Provider)

- f. State Of The Art Data Centers.
- g. Open Source Application Solution.
- h. High-speed Wi-Fi Zone.
- i. Data Connectivity, Datacenter and Co-Location.
- j. And all Computer Accessories.
- k. Bulk SMS Service.
- l. DNS Server and Proxy Solution, Mail Server Solution.
- m. Training And Professional Course

- **(PTS) Professional Training Service**

Administration and ISP Setup using Linux.

- a. CEH(Certified Ethical Hacking)on Training Course.
- b. Administration and ISP Setup using Mikrotik.
- c. Website Developed by Mysql and PHP.
- d. RHCSS (Red Hat Certified Security Specialist).
- e. Open source and ecommerce Joomla Virtue mart.
- f. RHCE (Red Hat Certified Engineer).
- g. Web site Development with Joomla.

2.3 Target Group

Small to medium-sized businesses are included in the customer base of all consumer companies, start-ups. The company plans to focus on Shoo clients, as it is the perfect target of our new high-speed offering and the potential for the largest development of the company's web solutions, assuming that these market part need particular pricing and service and more dedicated, dependable customers.

2.4 SWOT Analysis

SWOT stands on Strengths, Weaknesses, Opportunities, and Threats. SWOT analysis aims to identify the key internal and external factors seen as important to achieving an objective. Strengths and Weaknesses: characteristics of the business that place the business or project at advantage or disadvantage relative to others.

These are the internal factors within the organization.

Strengths:

- Gathering information from various sources.
- Business in Online.
- Easy working from home.
- Communication between people separated by distance (at home and at work)

Weakness:

- Many pricing tariffs and service options.
- Competition for small vendors.
- New entrants need invaluable levels of skills needed to survive in the market.
- Large sums of money required to set up Business.

Opportunities:

- The age structure of the population is changing.
- The number of families in the UK is increasing.
- Modify the regulatory framework.
- Introduction to facile tariffs.

Threats:

- It remains to be seen how much consumers may be tempted to accept Internet access.
- Economic crisis - homeowners are less likely to increase their broadband subscriptions, lack of confidence in the stock market's digital-communications market.

2.5 Organization Structure

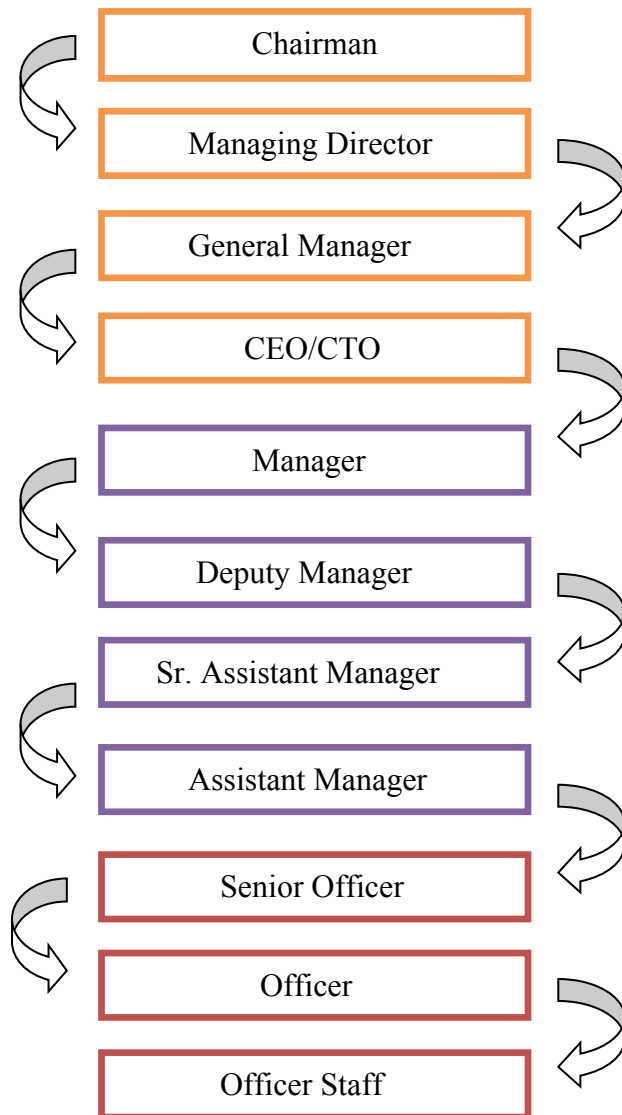


Figure 3.0: Shows Organogram of Daffodil Online Limited.

CHAPTER 3

INTERNSHIP ROLES AND RESPONSIBILITIES

- 3.1 MikroTik Router.
- 3.2 Cloud Core Router.
- 3.3 Mikrotik Configuration.
- 3.4 OSPF configuration.
- 3.5 Challenge.
- 4.1 Linux Partition/ CentOS Install.
- 4.2 Linux Run Level.
- 4.3 The Basic Command Of Linux CentOS.
- 4.4 User Create And Password Management.
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 - 4.5.3 Upgrading rpm.
 - 4.5.4 Uninstall.
 - 4.5.5 Basic Concept of FTP server.
 - 4.5.6 A Directory Using to Compress And Decompress.
 - 4.5.7 How to Add change delete and display IP address In CentOS.
 - 4.5.8 Web Server.
 - 4.5.9 DNS Server.

3.1 MikroTik Router

- MikroTik is a Latvian network equipment manufacturer.
- The company Develops and sells wired
 - Wireless network routers.
 - Network Switches.
 - Access points.

As well as Operating Systems and auxiliary Software.

Industry	Information Technology
Founded	1996
Headquarters	Lativa: Riga
Key people	John Tilly (CEO) Arnis Riekstins (CTO)
Products	Routers, Firewalls, Software (RouterOS)
Number Of	280(2019)

3.3 RouterOS

Mikrotik Router board Mikrotik router serves as the operating system of hardware. It can be converted to a router with all the necessary features and installed on a PC - Routing, Firewall, Bandwidth Management, Wireless Access points, Backhaul Links, Hotspot Gateways, VPN servers and more.

The router is a standalone operating system based on the Linux V2 kernel and our goal in Mikrotik is to make all of these features fast and simple installation and easy to use interface.

3.2 Cloud Core Router

- 36 Core networking CPU
- 12MB total on-chip cache
- 8Mpps standard forwarding
- 41.5Mpps fast path forwarding
- Up to 28Gbit/s throughput



Figure 3.1: Shows MikroTik Cloud Core Router.

3.3 MikroTik Configuration

Initial Step

Step One:

- Click on the Power Button of MikroTik Router.
- Plug-in UTP Cable into MikroTik LAN Port and other one Plug-in into the PC.
- Open the Winbox Software.
- When opened your Winbox software then you see a window. That window Show you an IP address and MAC address. And then click to the MAC address then write 'Admin' and click on to login button and remember that don't need to give the password.

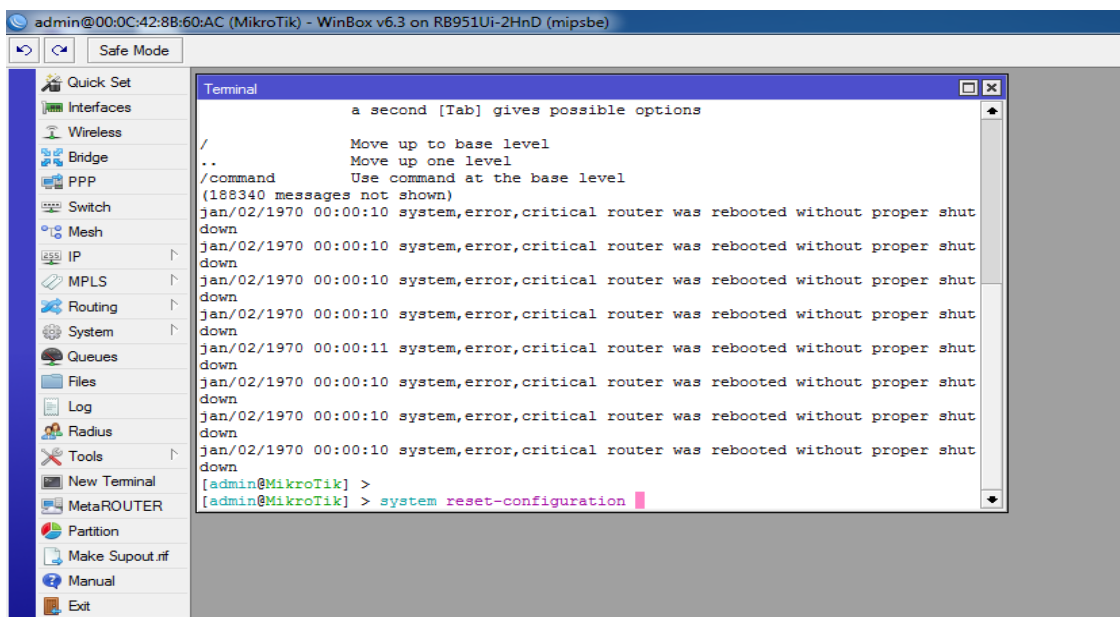


Figure 3.2: Shows IP MikroTik reset command.

Step two:

- Setting up Gateway or Defining routes.

PROCESS:

- Click on to IP Option and then go to the Route and click> add(+).
- And then go to the Gateway and set the gateway.
- Address will be default route 0.0.0.0/0.
- And then apply OK

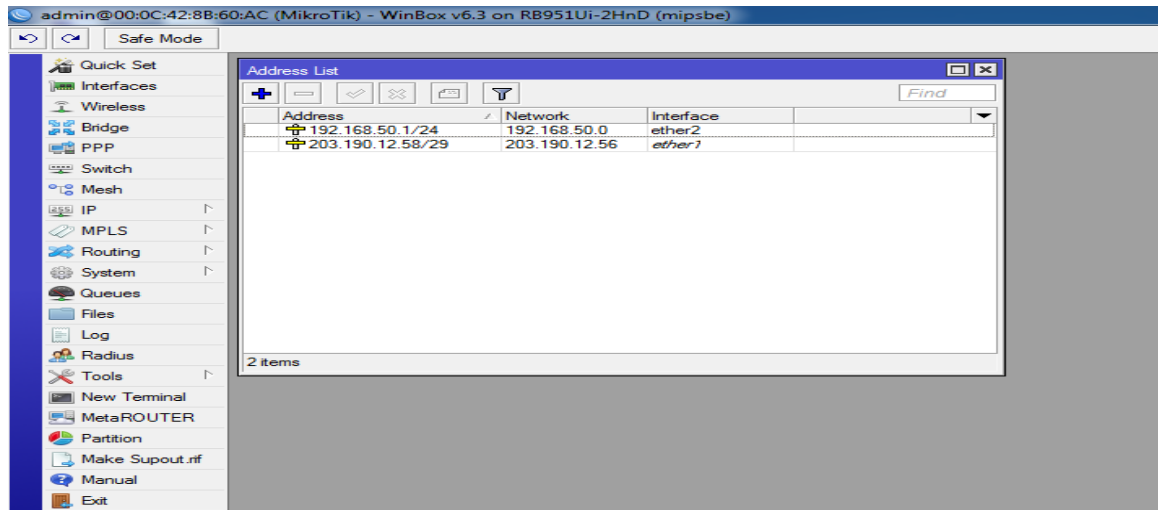


Figure 3.3: Shows IP add(+) set in MikroTik router.

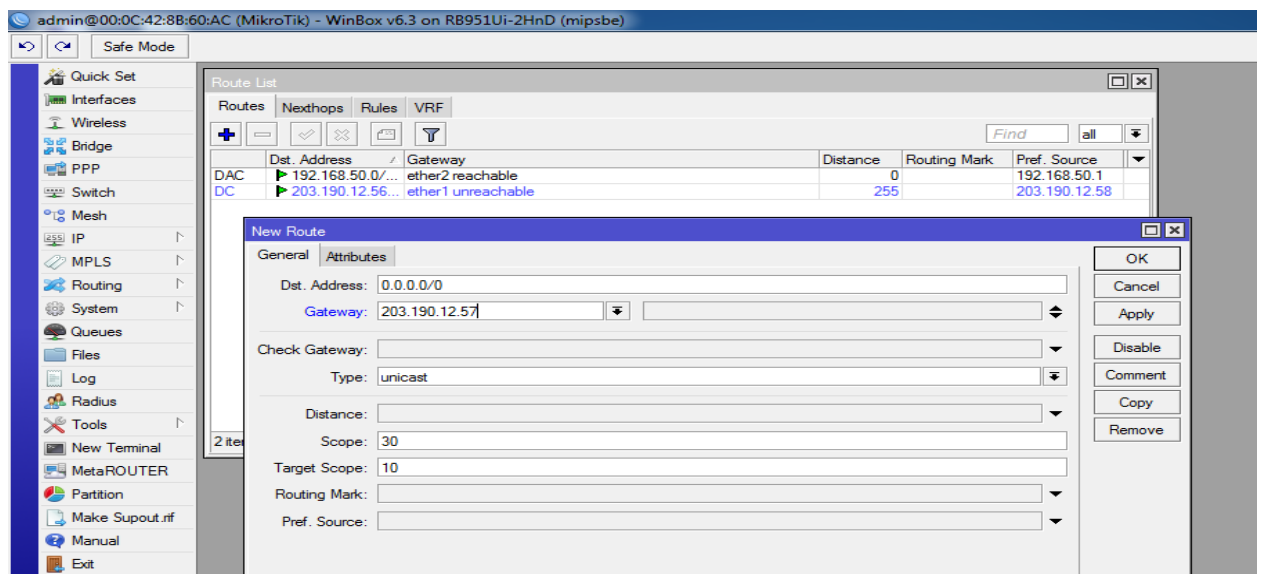


Figure 3.4: Shows Setup route IP add.

Step three:
PROCESS:

- Again go to the IP and then click on to Firewall option and it's shown a window and click the NAT option and click to add (+).
- And go to the General to make Chain: scnat, Select Src. Address: local block/IP with a subnet mask of the network.
- And then click Action option and make into Masquerade.
- Apply Ok

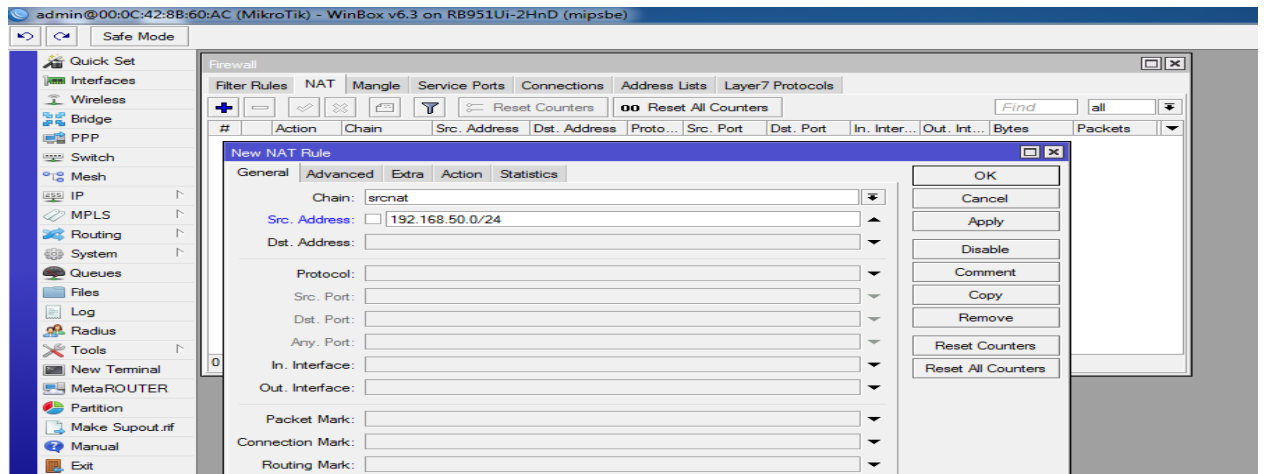


Figure 3.5: Shows Local network IP address NAT rule.

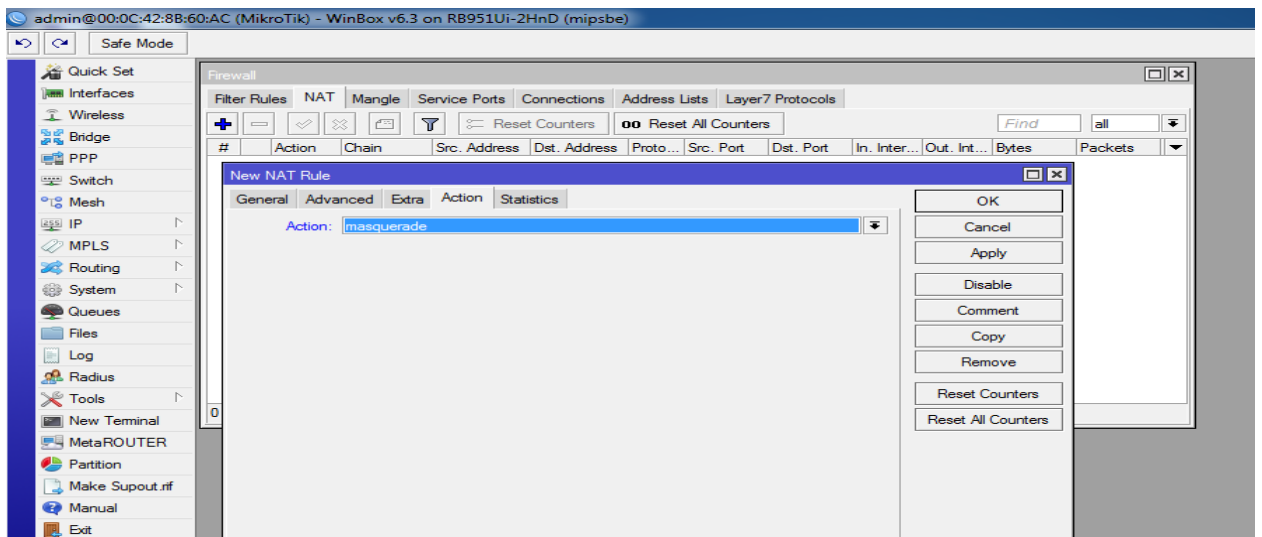


Figure 3.6: Shows Screen Print Shows in Screen Print Firewall.

Step Four:
PROCESS:

- Click on Bridge option and then added (Bridge n, Here n = 1,2,3..).
- And click on to the setting option and Tick mark to 3 option.

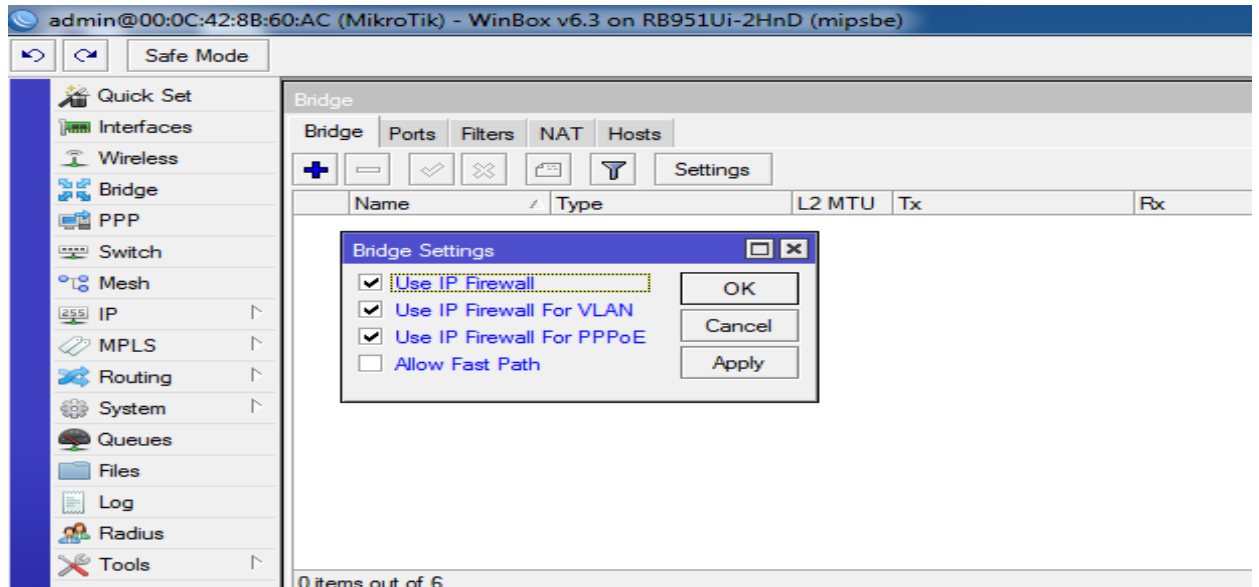


Figure 3.7: Shows Screen Print Router interface port in graphically.

PORT:

- Ether2, Ether3 is LAN, Ether4, Ether5 is Wlan1

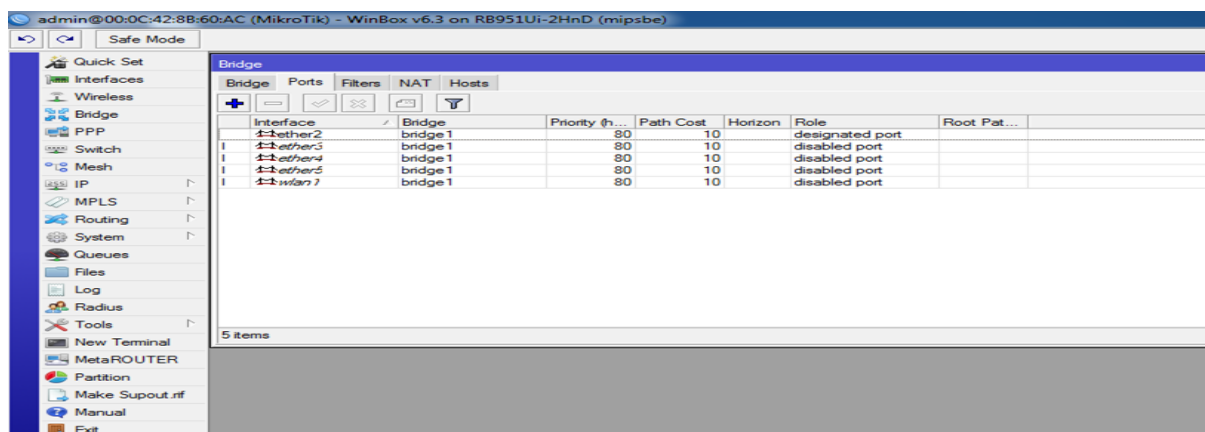


Figure 3.8: Shows Screen Print Router interface port in graphically.

Step Five:

PROCESS:

- Go to the IP option and then go to DHCP Server and click the DHCP setup option. interface> Bridge 1 (Bridge Name) and then tap to next button again and again after finishing.

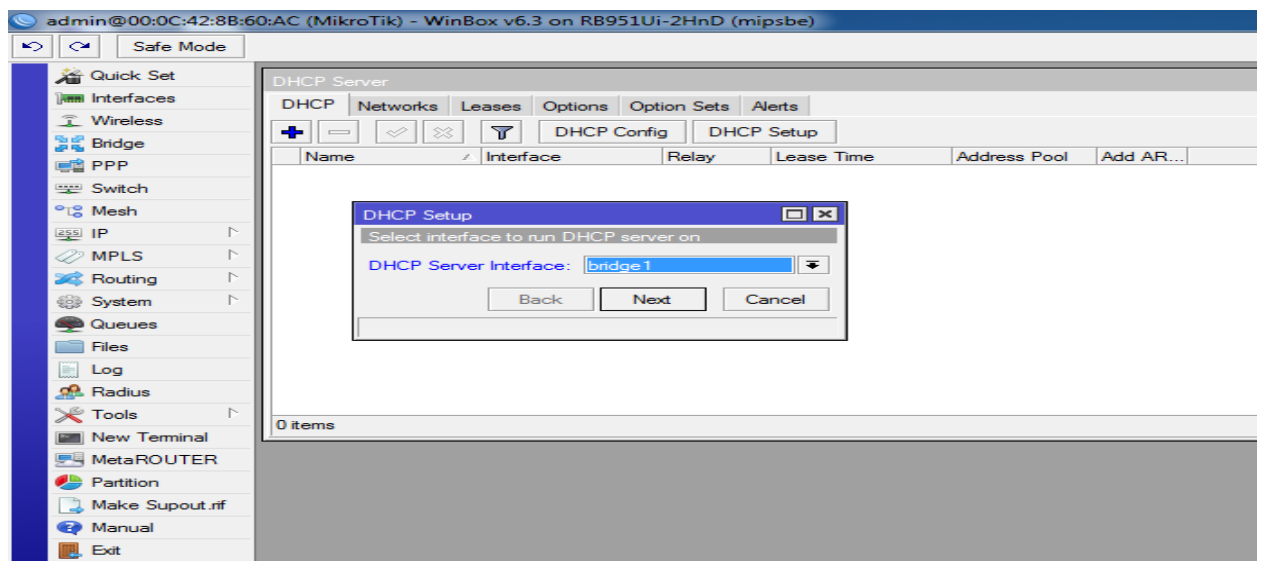


Figure 3.9: Shows Screen Print DHCP Setup Screen Print.

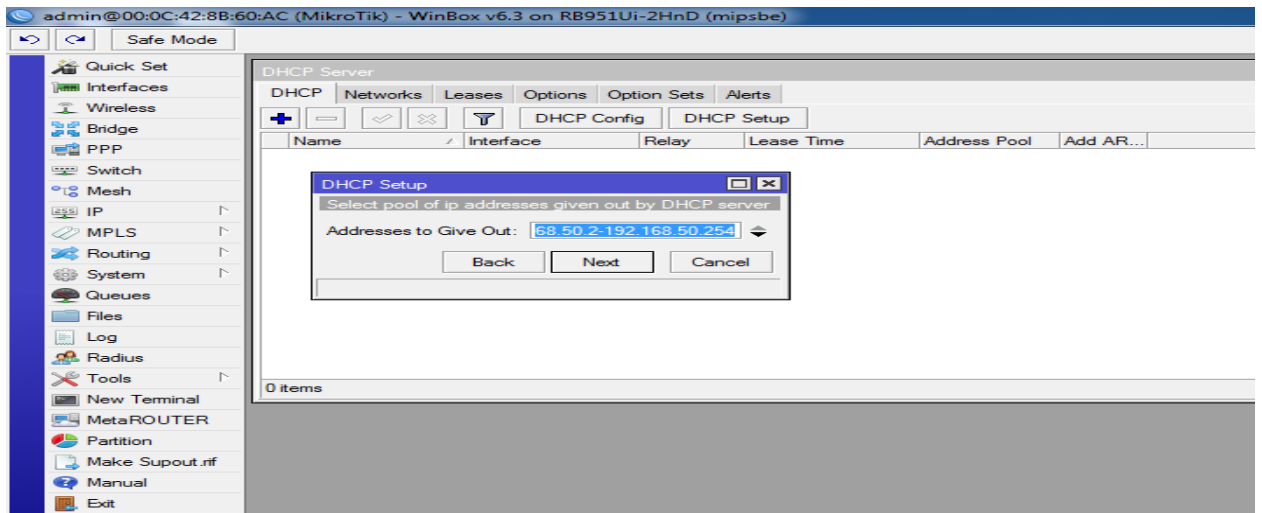


Figure 3.10: Shows Screen Print Local Network IP pool address.

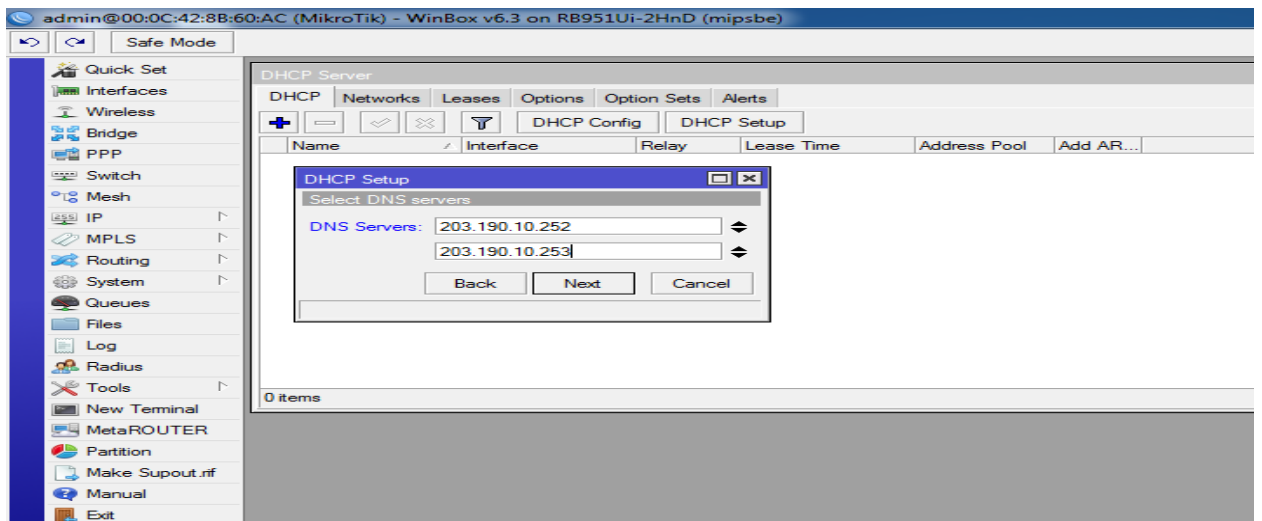


Figure 3.11: Shows Screen Print Setup DNS IP address

Step six:

- Wireless LAN Configuration.

PROCESS:

- Click on Wireless option and select the wlan1 and mode will be > IP bridge

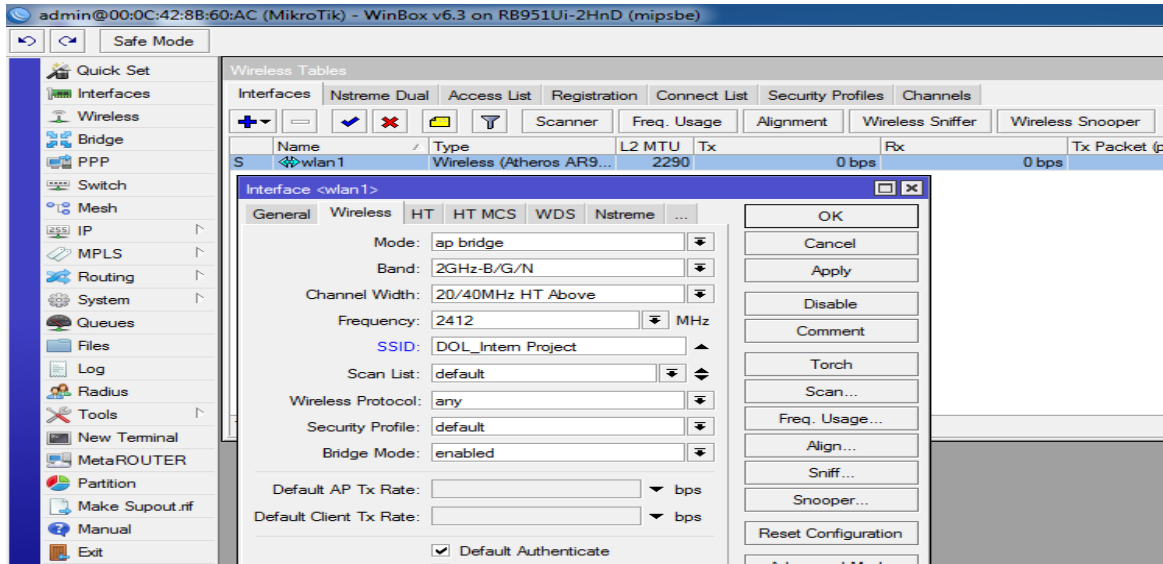


Figure 3.12: Shows Screen Print Wireless sitting SSID Mode.

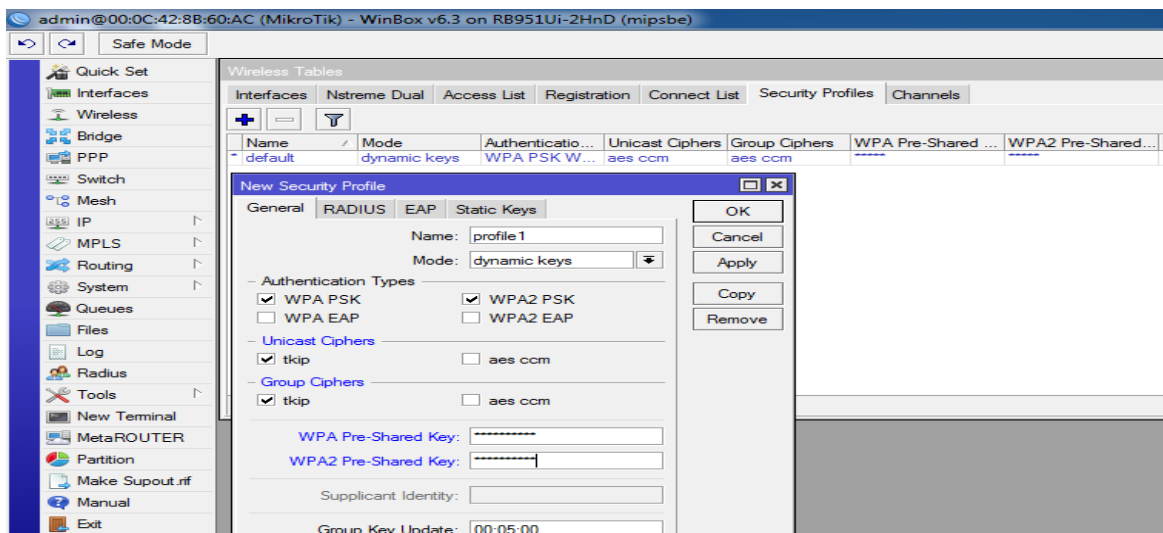


Figure 3.13: Shows Screen Print Wireless password setting.

3.4 OSPF Configuration

For the project network, I configured the OSPF through the existing OSPF system on the Mikrotik router which is supplied from the Juniper router in the data center. As a result, it becomes a relative point-to-point OSPF for the network, and it was easy to configure. The configuration of OSPF on the Mikrotik router using the GUI and command-line interface is given below.

GUI Configuration:

Step One:

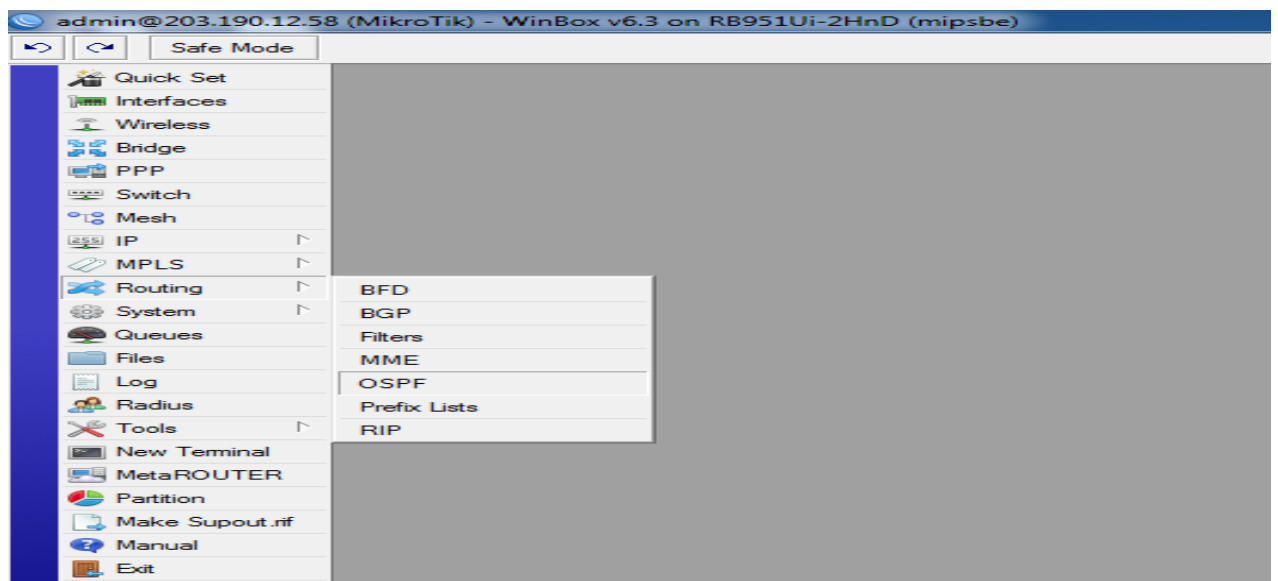


Figure 3.14: Shows Screen Print Routing protocol OSPF selecting.

\

Step Two:

- Go to the Network Configuration.
- First of all, I have to configure the WAN.
- And then I will be configured the network for OSPF.

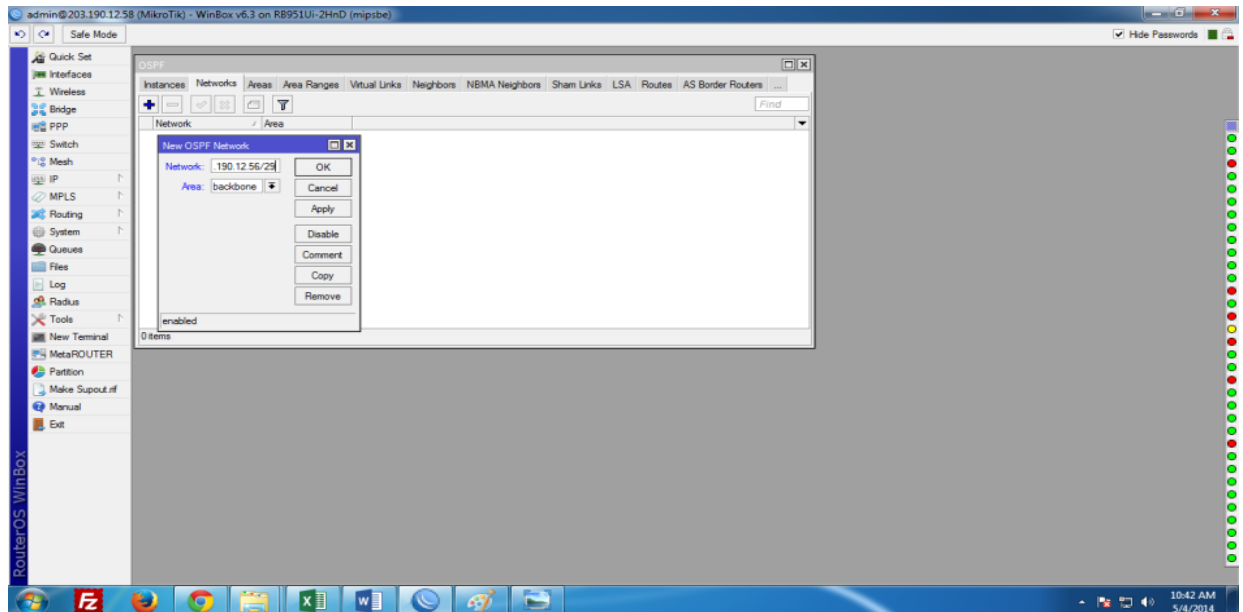


Figure 3.15: Shows Screen Print Network and then the LAN network.

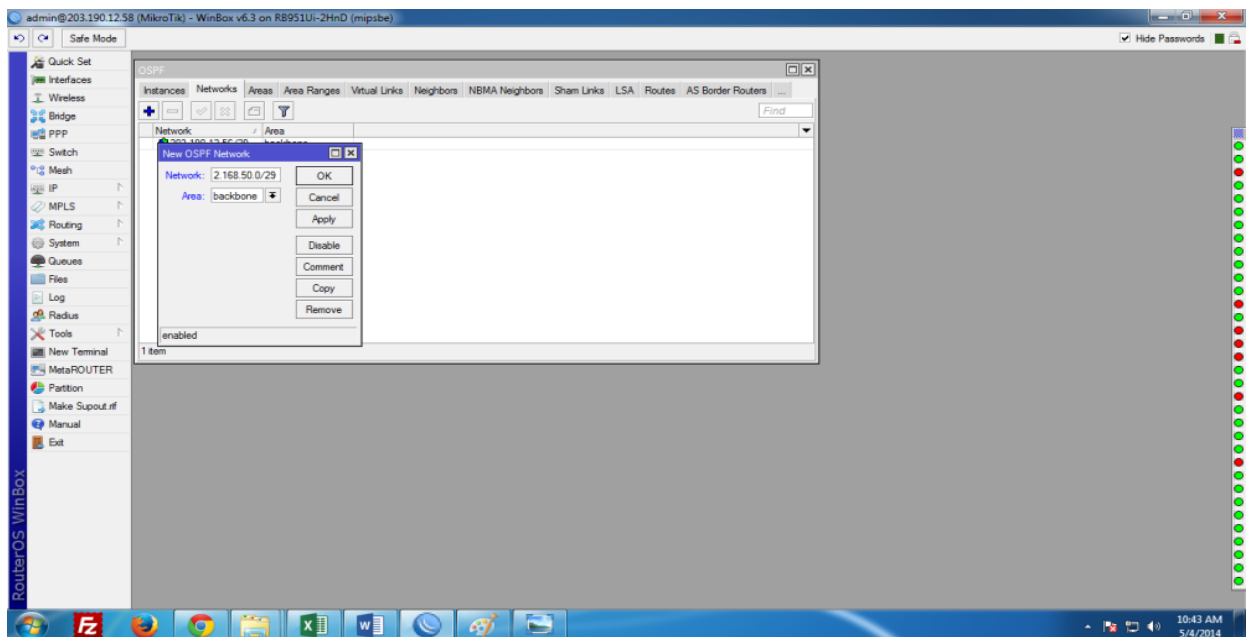


Figure 3.16: Shows Screen Print OSPF LAN network configuration.

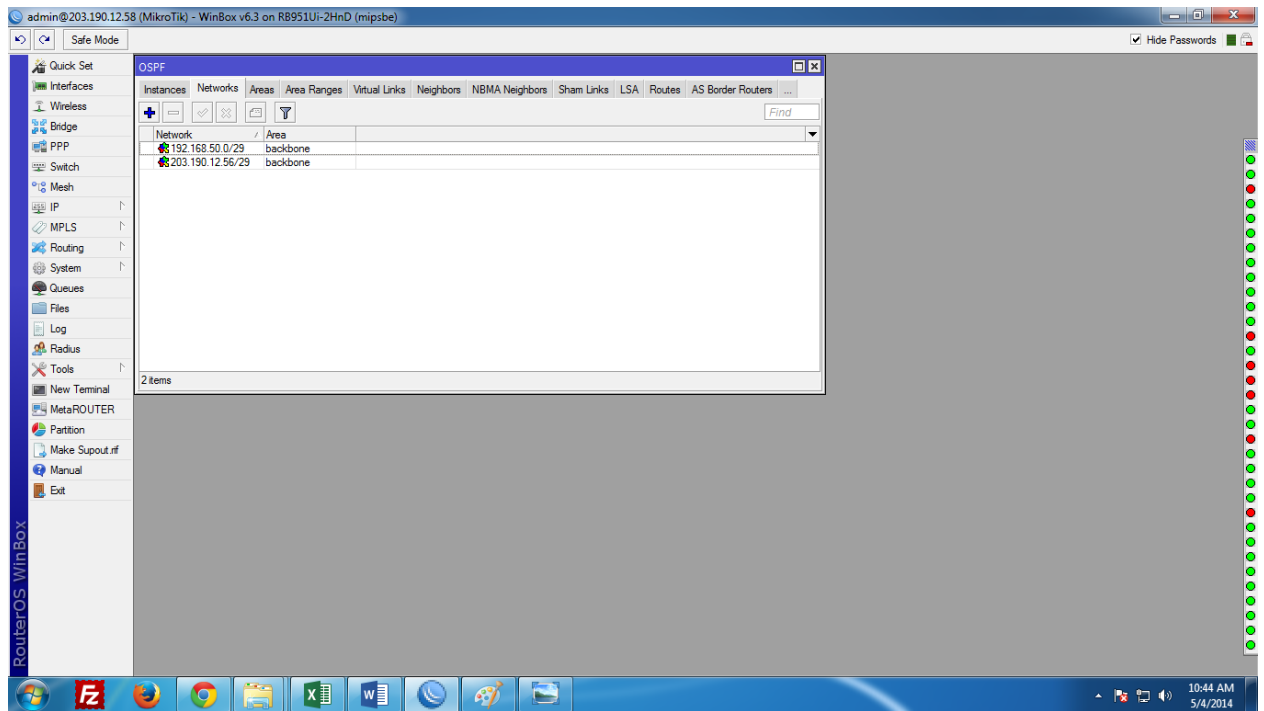


Figure 3.17: Shows WAN and OSPF LAN IP address setup

Step Three:

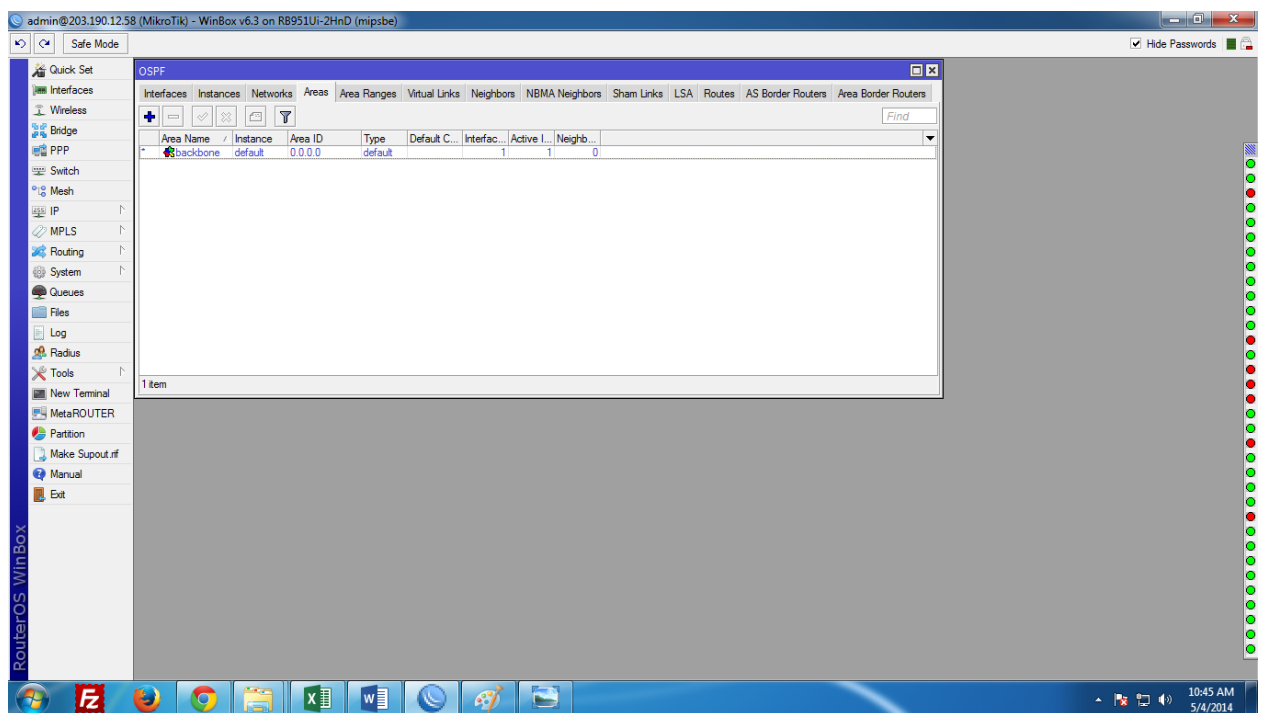


Figure 3.18: Shows Selection Area shows

Step Four:

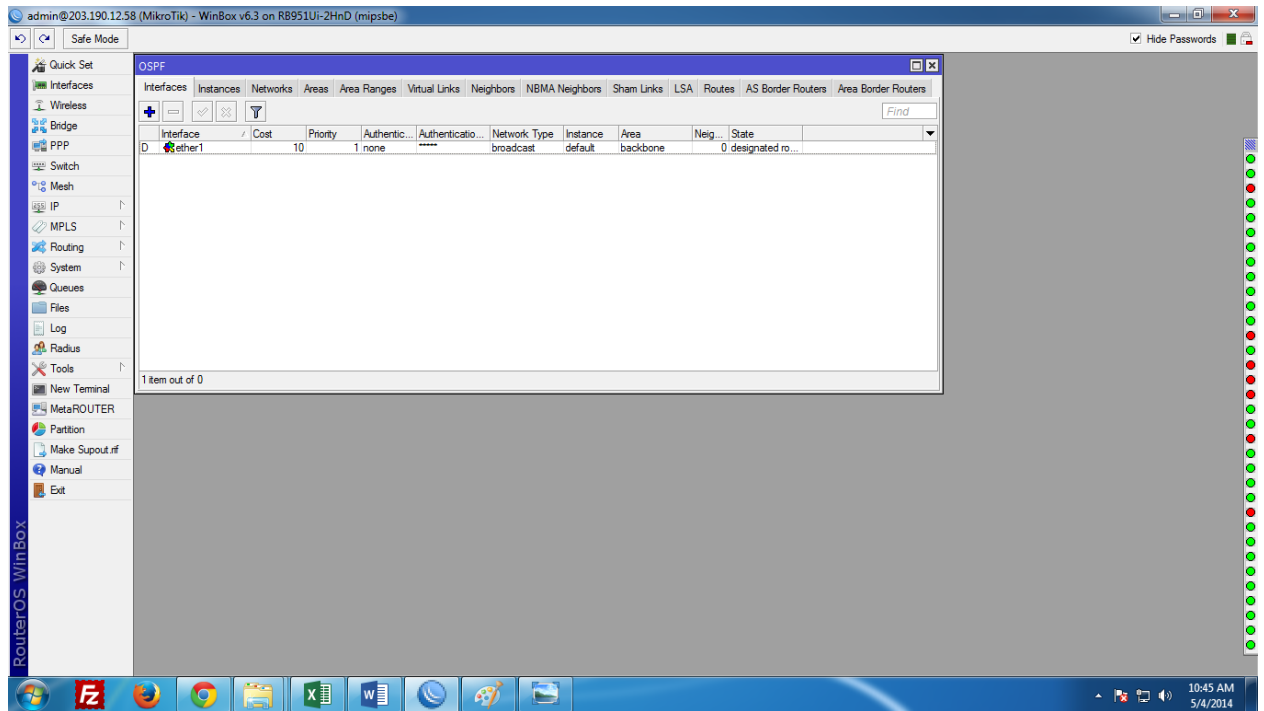


Figure 3.19: : Shows Selection of interface

3.5 Challenges

There are no job challenges, but after sharing my four months of internship experience and happy moments with friends, I find that there are some common challenge interns. I think it's one of three things: unpaid/low paid and they are running out of the experience.

Sometimes not enough: I don't have enough work to do. I crashed by moving my fingers to my desk, showing the temptation to follow on Facebook.

Extra work: Some workplaces can take advantage of young workers with very little repetitive work for very long periods of time because interns are happy to have a foot in the door.

Scared to ask questions: Suddenly work is coming, and finally I have the chance to prove myself! But I'm not sure about X, Y, Z ... I can feel the pressure of being an independent and self-sufficient worker but the accuracy is even better!

Compete with other interns: Fortunately, I was an intern; We ask each other questions and can easily create teams with projects that have worked in groups that have such collaborative relationships. A recommendation or a good letter for future job opening interns will compete in another office environment; it may not be so friendly.

A New Lifestyle: As a recent college graduate, I was getting used to a new lifestyle that could possibly be a bit weird. Instead of getting eight periods of sleep a day and going to a few classes every day, I'm sitting 9-5 at the desk. Saving money to my parents and a new living situation can make socializing more difficult than ever.

CentOS Install

3.5.1 Linux Partition:

- First of all, we also have to create at least 3 partition root, boot, and swap.

ROOT PARTITION: /

- A root partition where the "/" root directory is in all files (excluding / boot) is the root partition. Requires a minimum of 5 GB of HDD space.
-

BOOT PARTITION: /boot

- Partition Boot (200 MB): Includes the operating system kernel (which allows your system to boot Linux) and files/boot/ used during the bootstrap process. Due to limitations, native Extreme Partitioning is required to maintain these files.

SWAP PARTITION: swap

- SWAP partitioning is used to support also virtual memory. If your system does not have enough RAM to store the data, the data is written to the intern.

3.5.2 Linux Run Level

#init 0 > Shutdown, #init 1 > Single of user mode, #init 2 > Multi of user mode, #init 3 > Full multi of User Mode, #init 4 > Unused, #init 5 > X-windows, #init 6 > Reboot,

Select the current Run-level > who-r.

3.5.3 The Basic command of Linux CentOS

- Command of Shutdown > Power off, #init 0, Shutdown-h now.
- Command of Reboot > Reboot /#init 6.
- Command of Logout > log the current user off the system.
- Command of |Display or change data of time > data.
- Command of Display a Calendar >cal, cal 2019, cal 10 2014.
- Command of Present working Directory > PWD.
- Command of Create a file > touch.
- Command of Directory >mkdir.

- Command of Information List about of file > ls.
- Command of Change the Working directory > cd/ root/ desktop.

3.5.4 Create User and password Management

- ADD a User > adduser Iqbal.
- Set the Password for a new user > passwd Iqbal
- Remove/Disable Password > passwd -d Iqbal.
- Verify Information of user > finger Iqbal.
- Lock the account > passwd -l Iqbal.
- Unlock the account > passwd -u Iqbal
- User id Delete > userdel Iqbal.

3.5.5 VI Editor in Linux

3 mode of VI editor

- Command Mode
- Insert Mode
- Execute Mode

[root@localhost ~]# vi iqbal

Welcome to Department of CSE

Command to Save this File:

:wq! - Write & quit.

:x! - Save & exit.

:w -Write but not quit.

:q! -Exit without saving.

3.5.6 Install Package in Linux

Package means the application system. In Linux operating system used different types of package for varies function. In 5.3 describe different types of package. How to install a package and use this type of package and describe this package function.

3.5.7 Install Command

```
[root@localhost]# yum install FTP -y
[root@localhost]#
```

3.5.8 Upgrading rpm

```
[root@localhost Packages]# rpm -Uvh finger-0.17-39.el6.x86_64.rpm
warning: finger-0.17-39.el6.x86_64.rpm: Header V3 RSA/SHA256 Signature, key ID
fd431d51: NOKEY
Preparing... [100%]
Package finger-0.17-39.el6.x86_64 is already installed
[root@localhost Packages]#
```

3.5.9 Uninstall

```
[root@localhost]# yum remove FTP -y
[root@localhost]#
```

3.5.10 Basic Concept of FTP server

- The FTP (File Transfer Protocol) is basically a network protocol which is used to transfer data from client to server through a network, such as over the internet.
- FTP is a mostly used protocol for exchanging file over any TCP/IP based network to exploit system are involved.
- FTP is built on a client-server model architecture and use to separate control and data connection between the client and the server
- One has the permission to configure FTP server ways while configuring, and the two ways are 1. user-based 2. Non-user based

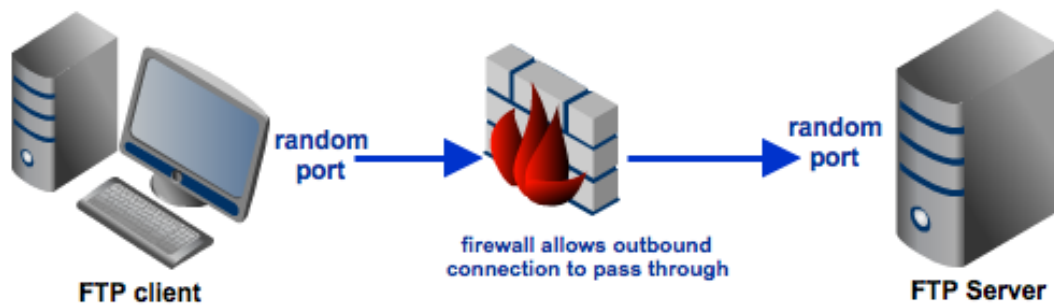


Figure 3.20: Shows Simple network of FTP server.

3.5.11 A Directory Using tar and Untar to Compress and Decompress

- Compress Directory : `tar cvfarchive_name_tardir_name/` e.g `tar cvfbackup.tarcls` or `tar cvxfmytarfile.tar.gz/ home`.
- Extract a compressed Directory: `tar xvfbackup.tar` or `tar xvzfmytarfile.tar.gz`

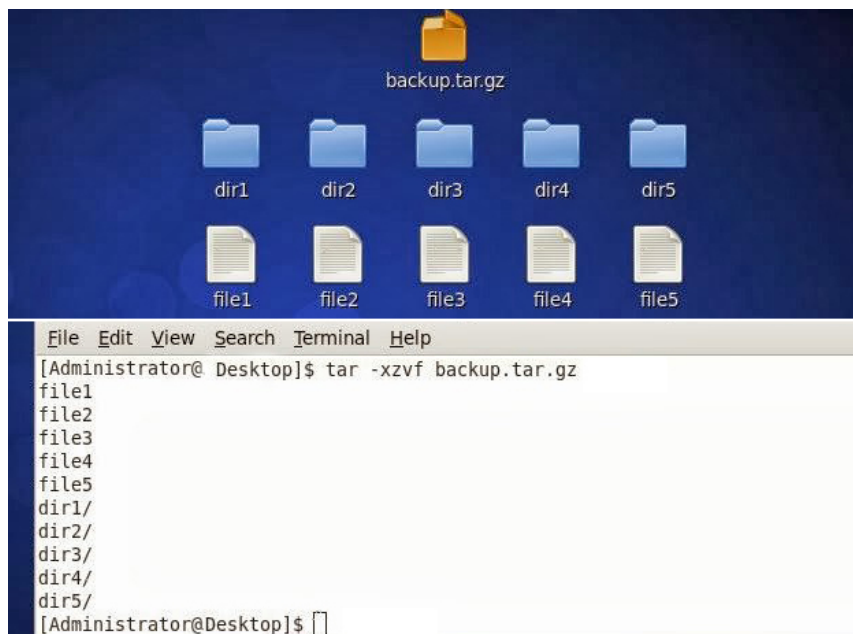
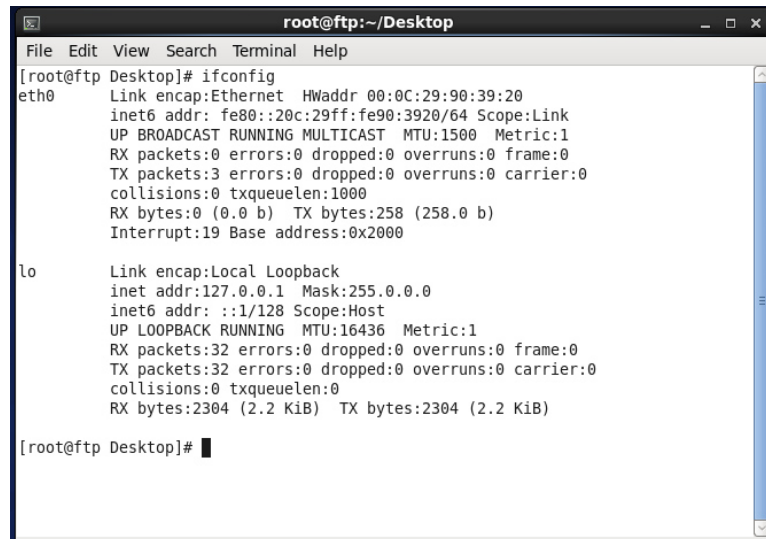


Figure 3.21: Shows Screen Print in tar and untar

3.5.12 How to add change delete and display IP address In CentOS

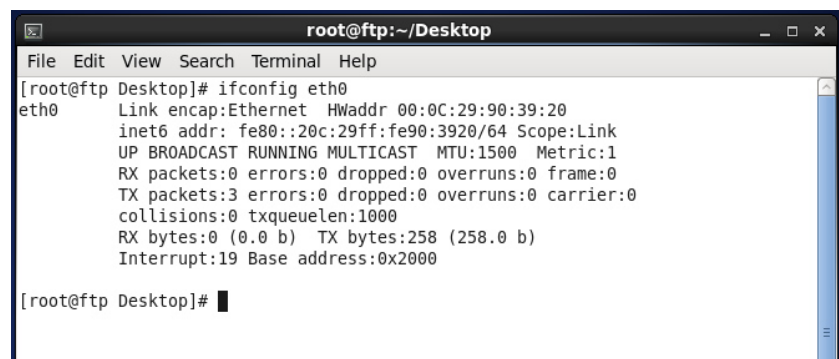


```
root@ftp:~/Desktop
File Edit View Search Terminal Help
[root@ftp Desktop]# ifconfig
eth0      Link encap:Ethernet  HWaddr 00:0C:29:90:39:20
          inet6 addr: fe80::20c:29ff:fe90:3920/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:3 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 b)  TX bytes:258 (258.0 b)
          Interrupt:19 Base address:0x2000

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:32 errors:0 dropped:0 overruns:0 frame:0
          TX packets:32 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:2304 (2.2 KiB)  TX bytes:2304 (2.2 KiB)

[root@ftp Desktop]#
```

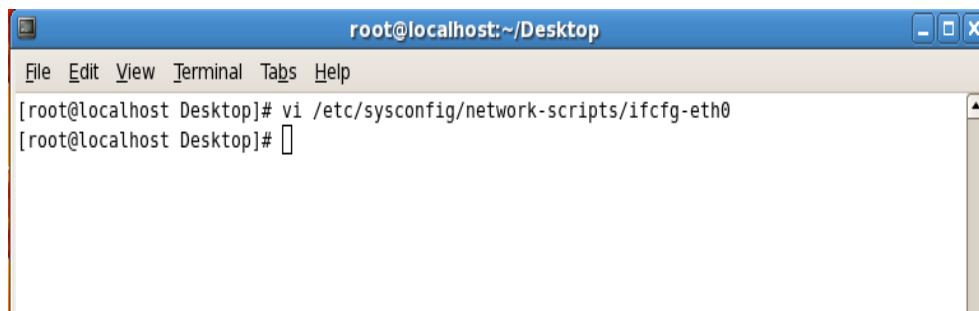
Figure 3.22: Shows if-config or if-config eth0 interface ip address



```
root@ftp:~/Desktop
File Edit View Search Terminal Help
[root@ftp Desktop]# ifconfig eth0
eth0      Link encap:Ethernet  HWaddr 00:0C:29:90:39:20
          inet6 addr: fe80::20c:29ff:fe90:3920/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:3 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 b)  TX bytes:258 (258.0 b)
          Interrupt:19 Base address:0x2000

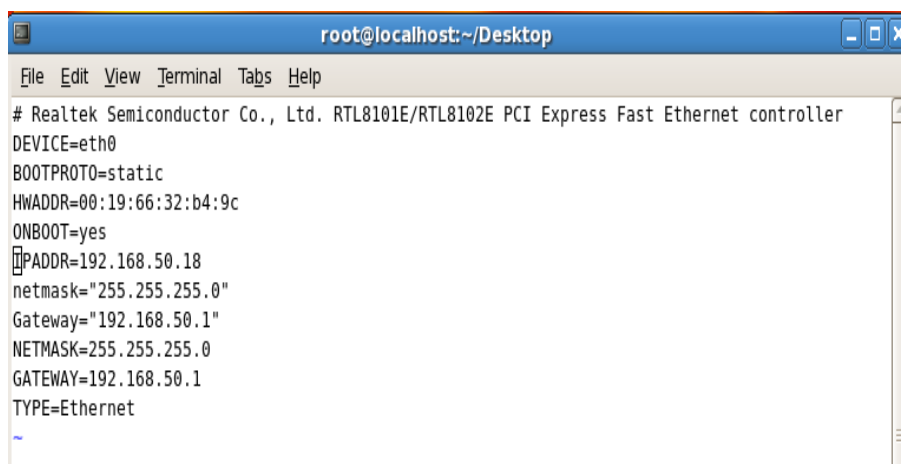
[root@ftp Desktop]#
```

Figure 3.23: Shows IP address and Mac address in command if-config eth0



```
root@localhost:~/Desktop
File Edit View Terminal Tabs Help
[root@localhost Desktop]# vi /etc/sysconfig/network-scripts/ifcfg-eth0
[root@localhost Desktop]#
```

Figure 3.24: Shows Screen Print Setup IP Address Permanently.



```
root@localhost:~/Desktop
File Edit View Terminal Tabs Help
# Realtek Semiconductor Co., Ltd. RTL8101E/RTL8102E PCI Express Fast Ethernet controller
DEVICE=eth0
BOOTPROTO=static
HWADDR=00:19:66:32:b4:9c
ONBOOT=yes
IPADDR=192.168.50.18
netmask="255.255.255.0"
Gateway="192.168.50.1"
NETMASK=255.255.255.0
GATEWAY=192.168.50.1
TYPE=Ethernet
~
~
```

Figure 3.25: Shows Edit ip address:vi /etc/sysconfig/network-scripts/ifcfg-eth0

3.5.13 Web Server

A web server is a computer framework that processes requests via HTTP (Hypertext Transfer Protocol), the basic system convention used to transmit data to the World Wide Web. The term can represent the entire structure or especially the product that recognizes and controls HTTP requests. The primary task of a web server is to store, process and distribute web pages to customers. Communication between client and server using the Hypertext Transfer Protocol (HTTP). Distributed pages are often HTML documents, which may include text content as well as images, style sheets, and scripts.

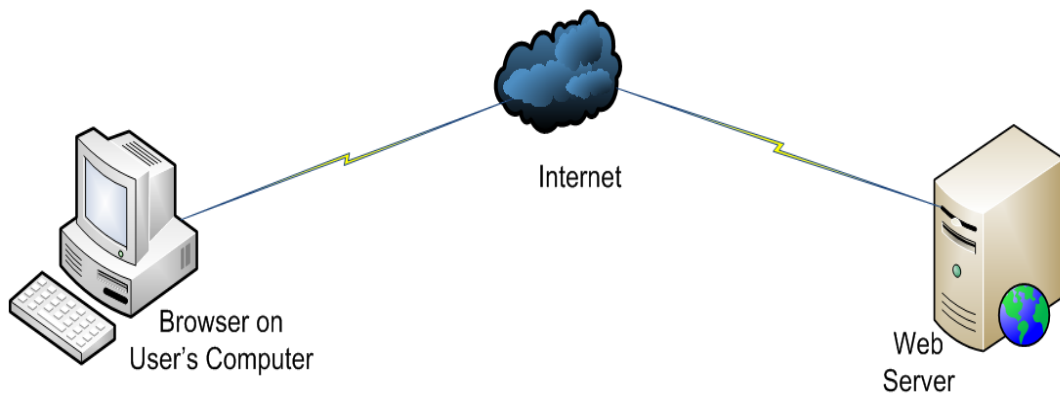


Figure 3.26: Shows Screen Print Basic function of Web Server

\

3.5.14 DNS Configuration

Works Of DNS:

It converts name to IP address.

And IP Address to Name.

Zone Files:

Forward Zone File: name to IP address.

Reverse Zone File: IP Address to Name

Package name: bind

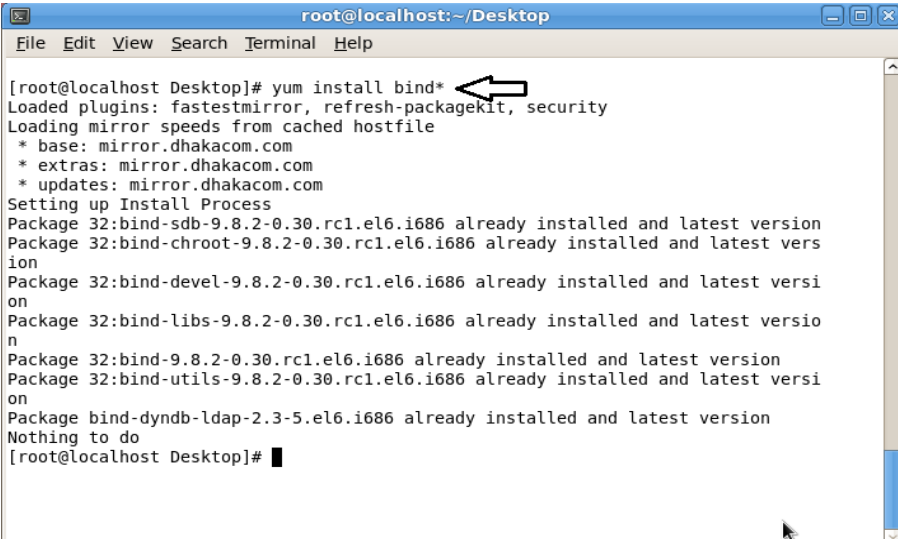
Default Port : 53

Configuration Files name : named.config

Step One:

At first we have to install package of dns name bind : yum install bind*

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

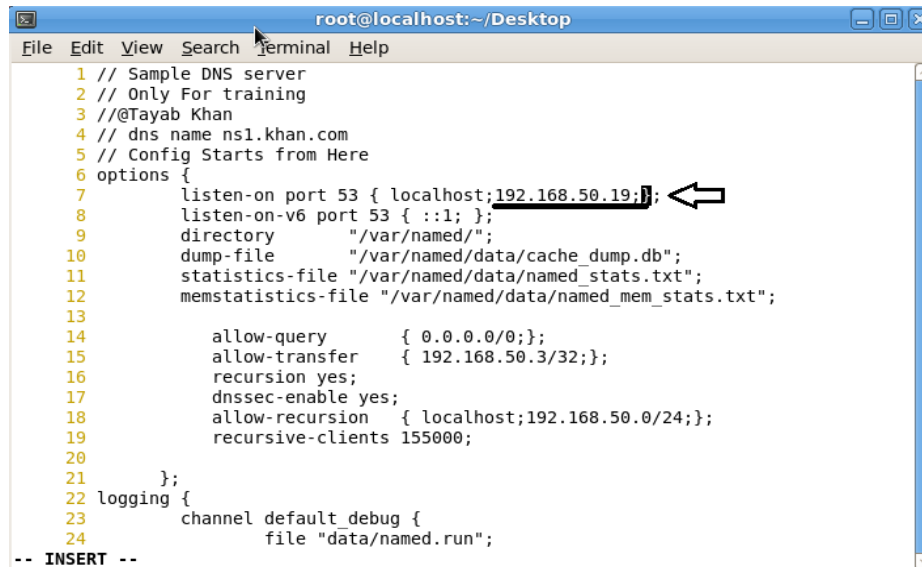


```
root@localhost:~/Desktop
File Edit View Search Terminal Help
[root@localhost Desktop]# yum install bind*
Loaded plugins: fastestmirror, refresh-packagekit, security
Loading mirror speeds from cached hostfile
 * base: mirror.dhakacom.com
 * extras: mirror.dhakacom.com
 * updates: mirror.dhakacom.com
Setting up Install Process
Package 32:bind-sdb-9.8.2-0.30.rc1.el6.i686 already installed and latest version
Package 32:bind-chroot-9.8.2-0.30.rc1.el6.i686 already installed and latest version
Package 32:bind-devel-9.8.2-0.30.rc1.el6.i686 already installed and latest version
Package 32:bind-libs-9.8.2-0.30.rc1.el6.i686 already installed and latest version
Package 32:bind-9.8.2-0.30.rc1.el6.i686 already installed and latest version
Package 32:bind-utils-9.8.2-0.30.rc1.el6.i686 already installed and latest version
Package bind-dyndb-ldap-2.3-5.el6.i686 already installed and latest version
Nothing to do
[root@localhost Desktop]#
```

Figure 3.27: Shows install DNS in command yum install bind*.

Step Two:

Edit the configuration file using vi editor : vi /var/named/chroot/etc/named.conf
And go to line no 7 enter local host IP address.

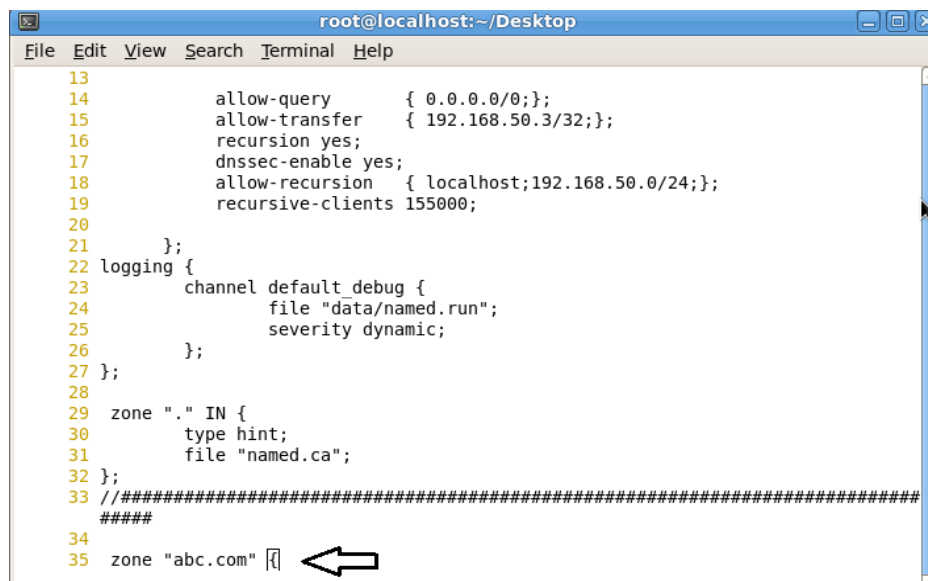


```
root@localhost:~/Desktop
File Edit View Search Terminal Help
1 // Sample DNS server
2 // Only For training
3 //@Tayab Khan
4 // dns name ns1.khan.com
5 // Config Starts from Here
6 options {
7     listen-on port 53 { localhost;192.168.50.19;};
8     listen-on-v6 port 53 { ::1; };
9     directory      "/var/named/";
10    dump-file       "/var/named/data/cache_dump.db";
11    statistics-file "/var/named/data/named_stats.txt";
12    memstatistics-file "/var/named/data/named_mem_stats.txt";
13
14    allow-query     { 0.0.0.0/0;};
15    allow-transfer  { 192.168.50.3/32;};
16    recursion yes;
17    dnssec-enable yes;
18    allow-recursion { localhost;192.168.50.0/24;};
19    recursive-clients 155000;
20
21 };
22 logging {
23     channel default_debug {
24         file "data/named.run";
25         severity dynamic;
26     };
27 };
28 zone "." IN {
29     type hint;
30     file "named.ca";
31 };
32 //#####
33 #####
34
35 zone "abc.com" [ ]
```

Figure 3.28: Shows My pc ip address is 192.168.50.19

Step three:

Enter a web address of forward zone. I used abc.com for testing.



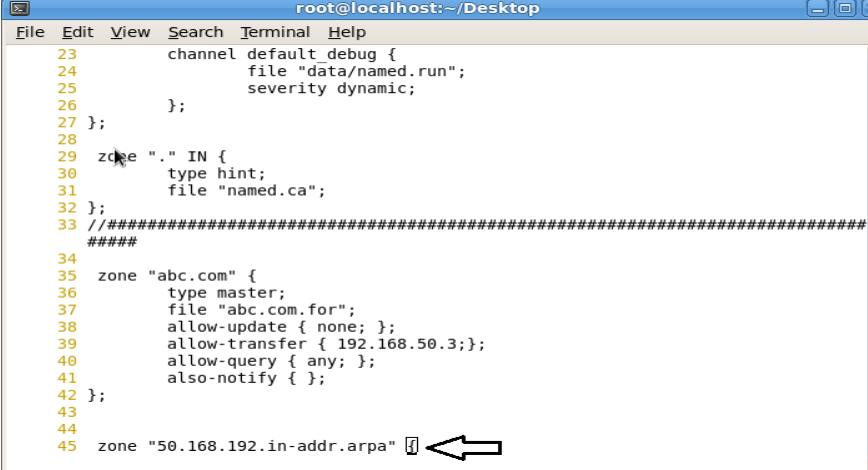
```
root@localhost:~/Desktop
File Edit View Search Terminal Help
13
14     allow-query     { 0.0.0.0/0;};
15     allow-transfer  { 192.168.50.3/32;};
16     recursion yes;
17     dnssec-enable yes;
18     allow-recursion { localhost;192.168.50.0/24;};
19     recursive-clients 155000;
20
21 };
22 logging {
23     channel default_debug {
24         file "data/named.run";
25         severity dynamic;
26     };
27 };
28 zone "." IN {
29     type hint;
30     file "named.ca";
31 };
32 //#####
33 #####
34
35 zone "abc.com" [ ]
```

Figure 3.29: Shows used abc.com for testing.

\Step four:

Enter AN IP Address For Reverse Zone We Have To Write IP Address In Backward Method:

192.168.50.19 as 50.168.192 without Network Portion



```
root@localhost:~/Desktop
File Edit View Search Terminal Help
23 channel default_debug {
24     file "data/named.run";
25     severity dynamic;
26 };
27 };
28
29 zone "." IN {
30     type hint;
31     file "named.ca";
32 };
33 //#####
34 #####
35 zone "abc.com" {
36     type master;
37     file "abc.com.for";
38     allow-update { none; };
39     allow-transfer { 192.168.50.3; };
40     allow-query { any; };
41     also-notify { };
42 };
43
44
45 zone "50.168.192.in-addr.arpa" { ←
```

Figure 3.30: Shows Enter AN IP Address For Reverse Zone.

Step five:

vi /var/named/chroot/var/named/abc.com

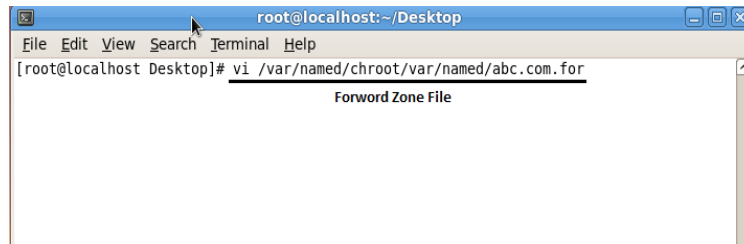


Figure 3.31: Shows forward zone file command in command.

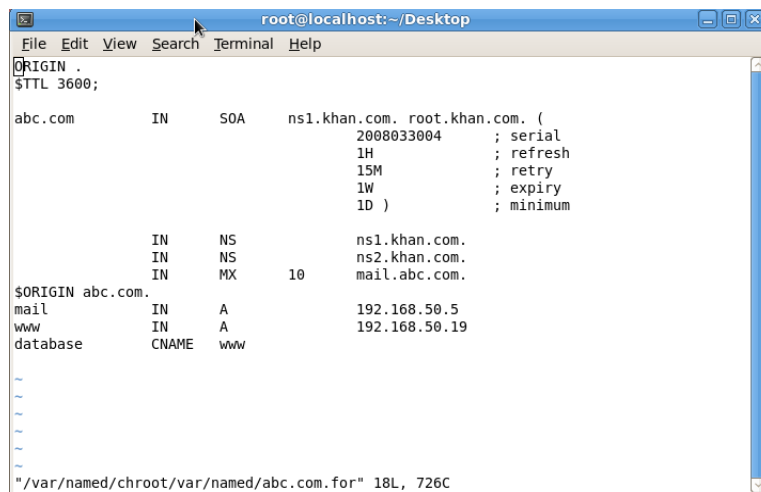
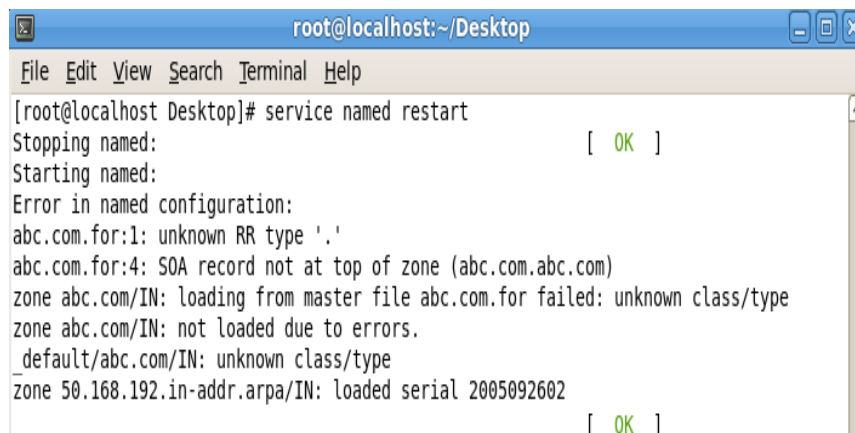


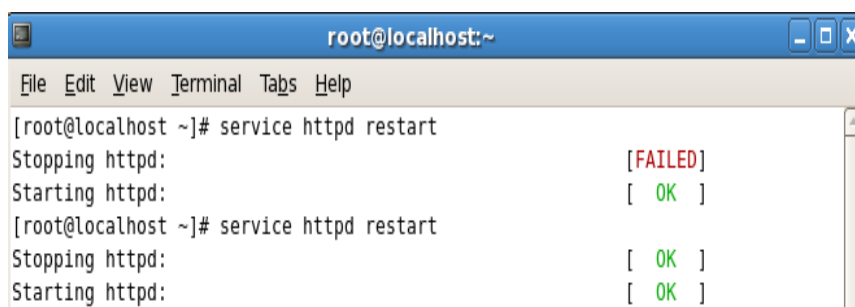
Figure 3.32: Shows Forward zone file create.

Step Seven:



```
root@localhost:~/Desktop
File Edit View Search Terminal Help
[root@localhost Desktop]# service named restart
Stopping named:                [ OK ]
Starting named:
Error in named configuration:
abc.com.for:1: unknown RR type '.'
abc.com.for:4: SOA record not at top of zone (abc.com.abc.com)
zone abc.com/IN: loading from master file abc.com.for failed: unknown class/type
zone abc.com/IN: not loaded due to errors.
_default/abc.com/IN: unknown class/type
zone 50.168.192.in-addr.arpa/IN: loaded serial 2005092602
[ OK ]
```

Figure 3.35: Shows Restart the Service.



```
root@localhost:~
File Edit View Terminal Tabs Help
[root@localhost ~]# service httpd restart
Stopping httpd:                 [FAILED]
Starting httpd:                 [ OK ]
[root@localhost ~]# service httpd restart
Stopping httpd:                 [ OK ]
Starting httpd:                 [ OK ]
```

Figure 3.36: Shows Restart Web Server Service.

Step eight:

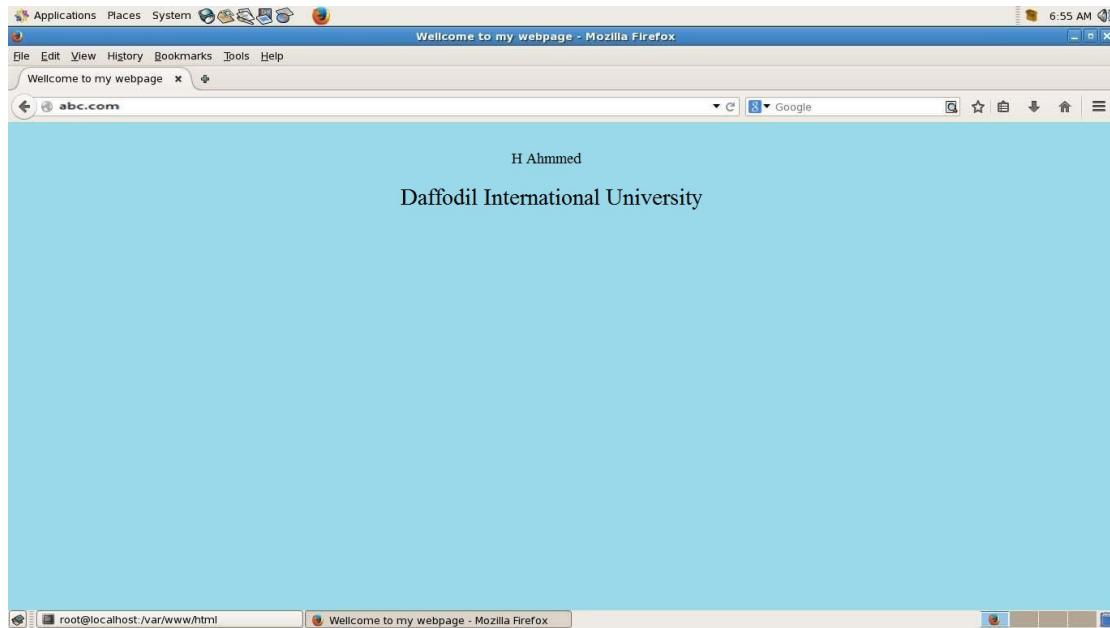


Figure 3.37: Shows Go to Browser and type abc.com.

CHAPTER 4

COMPETENCIES AND SMART PLAN

4.1 Competencies Earned

Earning contest learning outcomes is a statement that expects a student to be able to know, understand what the outcome of a learning process is. The installation and decommissioning of both network and server machines on two datacenters combine with the leadership role in implementing advanced Linux software, for example, LDAP HA, program learning outcomes, field, and internship evaluation. Learning Outcomes. Install and configure software and upgrades; Install, configure, and test network employer services In addition, the internship will provide a guide to organizational policies and procedures in line with the results of caregiver oversight.

4.2 Smart Plan

Every organization should have a smart plan to achieve success. Basically a combination of some common things creates a smart plan.

4.3 Reflections

Daffodil Online Limited started its operations in 2002. They work with many national projects and international organizations and gain a reputation. They are using the latest technology and upgrade services wherever they are needed. They are the corporate network solutions division with a highly skilled technical expertise group capable of providing state-of-the-art network and telecommunications solutions.

CHAPTER 5

CONCLUSION AND FUTURE CAREER

5.1 Discussion and Conclusion:

This final chapter will be an overview of my internship where I discuss the importance of an internship program run by operating systems: Microsoft Windows NT / 2000, Linux, and UNIX. Linux In University "To find out more about this project, read or search through their past discussions, ask a new four-year university for an open-source programming internship. The original discussion was not relatively structured, involved numerous for all practical purposes, an internship program. In large measure this experience is our experience, Overview of Learning and Skills. Its main events take part in training sessions for editorial meetings and internship program development, management of final financial events, game theory UNIX, Linux, MSDOS, Windows 95/98 / NT, and Macintosh. Using Linux as an Operating System - Usually when open source all about Linux.

5.2 Scope for Further Career:

This internship utilizes exemplary knowledge for decision-making systems using exemplary knowledge. Private and public organizations employ developers for their development and maintenance.

My future scope is desired.

- **Network Administrator.**

- Network Engineer.

- Linux Administrator.

- Indemnity Engineer.

- Industrial Engineer.

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Fax	880-2-8116103
E-mail	info@daffodilnet.com
Website	www.daffodilnet.com
Type of Organization	Nation wide Internet Service Provider (ISP)
Employees	10

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