INTERNSHIP REPORT NETWORK MANAGEMENT USING MIKROTIK AND OFFICE MANAGEMENT OF INTREPID

BY
Tofayel Ahmed
ID: 153-15-6502

This Report Presented In Partial Fulfillment of the Requirements For the Degreeof Bachelor of Science in Computer Science and Engineering

Supervised By

Shah Md Tanvir Siddiquee
Senior Lecturer
Department of CSE
Daffodil International University

Co-Supervised By

Ahmed AL Marouf
Lecturer
Department of CSE
Daffodil International University

DAFFODIL INTER NATION UNIVERSITY
DHAKA, BANGLADESH
December 2018

APPROVAL

This Internship Titled **"Network Management Using Mikrotik",** submitted by Tofayel Ahmed, ID No: 153-15-6502to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the degree of Bachelor of Science in Computer Science and Engraining B.Sc. And approved as its style and contents. The presentation has been held on 26thNovember.

MOARD OF EXAMINERS

Dr. Syed Akter Hossain   Chairman
Professor and Head
Department of Computer Science and Engineering
Faculty of Science and Information Technology
Daffodil International University

Narayan Ranjan Chakraborty   Internal Examiner
Assistant Professor
Department of Computer Science and Engineering
Faculty of Science and Information Technology
Daffodil International University

Md. Tarek Habib   Internal Examiner
Assistant Professor
Department of Computer Science and Engineering
Faculty of Science and Information Technology
Daffodil International University

Dr. Mohammad Shorif Uddin   External Examiner
Professor
Department of Computer Science and Engineering
Jahangirnagar University

DECLARATION

The hereby declare that, this Project has been done by under the supervision of **Shah Md Tanvir Siddquee, Senior Lecturer, Department of CSE** Daffodil International University Daffodil We additionally pronounce that neither this temporary job nor any piece of this entry level position has been submitted somewhere else for honor of any degree.

Supervised by:

Shah Md Tanvir Siddquee
Senior Lecturer
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Co-supervised by:

Ahmed Al Marouf
Lecturer
Lecturer Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Submitted by:

Tofayel Ahmed
ID: - 153-15-6502
Department of CSE
Daffodil International University

ACKNOLEDGEMENT

First I express the heartiest thanks and gratefulness to almighty God for His divine blessing makes us possible to complete finish the last year project/Internship job effectively

I really grateful and our profound our indebtedness to **Shah Md Tanvir Siddquee,** Senior Lecturer, Department of CSE Daffodil International University, Dhaka. Deep Knowledge and keen interest of our supervisor in the field of Hardware and Networking Troubleshooting to carry out this project. His endless patience ,scholarly guidance ,continual encouragement , constant and energetic supervision, constructive criticism , valuable advice ,reading many inferior draft and correcting them at all stage have made it possible to complete this project.

I would like to express the heartiest gratitude to **Dr. Syed Akther Hossain**, **Professor and Head** 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 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 parents.

ABSTRACT

A PC system or information arranges is an advanced media transmission organizes which enables hubs to share asset. In PC systems, registering gadgets trade information with one another utilizing associations (information joins) between hubs. A server is a PC program that gives a support of another PC projects (and its client). In a server farm, the physical PC that a server program keeps running in is likewise as often as possible alluded to as a server. That machine might be a devoted server or it might be utilized for different purposes too or the server is the item that handles a task. Regardless, the able hardware those supports this item is in like manner generally called a server. There is distinctive sort of work in the framework that is the reason in like manner one of a kind sorts of server have. Have For Example-FTP Server, Firewall, Interfaces, Routes, DNS, DHCP, VLAN, NAT, and Bridge. That is the reason I pick this subject of my report is "Server Installation and Configuration on ISP. Design and upkeep arrange gadgets (Router, Switch and Wireless Router/AP, Radio), Micro tic Maintains, server, organization site and different assets. Give PC, organize, programming, framework and IT bolster. Give framework organization and specialized help to work amass PC. Give every day IT communication is administrations to end clients. The report discussed the explanation behind the specific server using on ISP, hardware essential for the server, picking programming and foundation system of the item, very much arranged server plan the system.

TABLE OF CONTENTS

CONTENTS	PAGE

LIST OF FIGURES

CHAPTER-01

1.1 Introduction

This project named is "Network Management Using Mikrotik". Bangladesh is improvement country of Technology. Each out of them Internet is the most important of worldwide world And Internet become very essential part our day by day life. Now a day's not only big association but also internet has been using little organization and its demand is increasing day by day. As a result secure, reliable and appropriate administration of network turns into an essential issue. Again cost is another huge factor for this kind of task. Accordingly low budge, secure and easily sensible networking device. MikroTik is that sort of networking device. MikroTik give exceptionally reliable and secure network. It gives simple highlights to deal with a network and cost low. In our local market so, we can design and manage both little and huge network with this device. But MikroTik device is considered ideal for little network since this kind network configuration typically kept low. MikroTik is a Linux-based operating system known as MikroTik Router OS. MikroTik Router primary operating system is called Router OS which turns a consistent PC or MikroTik Router Board equipment into devoted router.

1.2 Objectives

1. How we talk with customers

2. Well ordered guidelines to give better administration to Clients.

3. To get a wide information about the systems administration.

4. To learn out how to introduce and design the different server and other programming.

1.1 Motivation

The management Fiber Optical Cable and Local Cable Network installation & maintenance Internet. Client's LAN/WAN troubleshoot. Hardware Maintenances Customer service. Network Equipment Maintenances. Operation & maintenance of LAN & WAN services Monitoring network using Solar wind software Configure and maintenance network devices (Router, Switch & Wireless Router/AP, Radio), Micro tic Maintains, server, company website and other resources Provide PC, network, software, system and IT support Provide system administration and technical support to work group computer Hardware & Software installation and troubleshooting Provide day-to-day IT support services to end users Assist in the site preparation of setting up office network by conducting site Visits Design, implementation and maintenance of office LAN, servers, workstations

1.2 Internship Goals

I will like to guarantee to network support engineering and my future life network engineering and bandwidth management system using to interconnection to computer networking condition apply to source of office management IT solution for computer and batter experience network engineering using my experience and skill – conceptualize, plan and implement initiatives that effectively facilitate the internal and external communication which affect the success of an entire organization along with my previous experiences to build up a successful career With over 02 years And five month internship of in-depth experience in the ISP sector installation & maintenance an internet connectivity, data connectivity & point to point connectivity over fiber optic communication to client end.

1.3 Report Layout

Chapter_1 described objective of internship, motivation of internship and internship goal.

Chapter_2 covered the methodology of my internship and company enterprise. In

Chapter_3 demonstrated preparing went to, doled out obligations, Linux fundamental charge and portrayed about various kind of steering setup (DHCP, DNS, BRIGE, and NAT) goal.

Chapter_4 portrayed results of internship

Chapter_5 described about my report decision and future extent of Linux and MikroTik.

2.1 About the Organization

First location into start in company cable network and next time this organization start the vision of C a b l e Network (UCN) and United Communications & Services (UCS) started as Intrepid International providing Cable TV service from early Establish in 1993Uttara and Banani Residential Area. To ease operations and licensing requirements, Intrepid International started giving Cable TV and ISP service as separate entity in residential area all Dhaka city internet service provider and cable Tv networking the any organization and Dohs area management networking communication system the organization.

2.2 Company Location Information

Intrepid Broadband Communication Company is one of the most significance organization for internship and giving ICT services and solution In Establish 2006 UCS acquired ISP license to provide internet service and is now providing Cable TV & Internet service in DOHS-Totally residential area of dhaka city all provide cable TV connection and internet service.

Name	Intrepid Broadband Communication Company Ltd.
Location	House-83, Road-6, Floor-GF.Dhaka. 1213, Bangladesh. Dhaka.
Telephone	02-9143258-60
Website	http://intrepidbd.com
E-mail	intrepidbd@yahoo.com
Model of association	Internet Service Provider And Cable TV connection
Officer	8

2.3 Target in company:

This company internet and cable Tv network provide the area in Uttara and Banana and dohs AREA Networking internet .provide area big side and others area and city and connected network Bangladesh all district and all others organization service must be suitable customer relationship and problem salve time argent and specific problem the face use and connected others befits and offer and relationship organization biggest service policy maintained and monitoring employee service and package rate vary suitable .

Chairman CEO

General Manager

Sr.Assistant Manager

Network Officer

Network Support Engineer (NSE)

Technician   Network and Fiber Optical

Assistant Technician Network and Fiber

Office Judgment

Figure 2.1 the Organizational Structure of Intrepid Broadband Communication Company

CHAPTER 03

TASKS, PROJECT AND ACTIVITIES

3.1 Daily Task and Activities

support selected area and location Daily Complaint entry and early solved internet connectivity and speed problem solution for office responsibility and Technician Network and Technician Optical Fiber monitoring and Assistant Technician Network and Assistant Technician Optical Fiber. Customer line check for customer id or address or user name searching using process Mikrtoikto win box or radius manager use to the process

3.2 Event and Activities

Daily new connection line internet or cable TV connection for Daily Complaint for office responsibility and Technician Network and Technician Optical Fiber monitoring and Assistant Technician Network and Assistant Technician Optical Fiber.

2.4 Roles in Job Market

- ✓ Provide PC, network, software, system and IT support. Marketing and Communications.
- ✓ Providing Support for server Installation System Development.
- ✓ Providing Support for server Installation System Development.
- ✓ Provide day-to-day IT support services to end users.
- ✓ Experience on Data Backup & recovery Solution.
- ✓ Providing Support for server Installation System Development.
- ✓ Configure Mail client for exchange /POP/IMAP and troubleshooting. Adequate knowledge on Hardware (PC/Printer) to isolate/ diagnosis the problem

CHAPTER 4
INTERNSHIP ROLES AND RESPONSIBILITY

3.1 Training Attended

Office start time in time entry and sign to site and office comp line list check and find out problem salving for my technician comp line for check out and salving for work pass and office other line working site and permit ion argent time destination for line connected to internet .and office phone call received and flow to networking Intrepid Broadband Communication Company Ltd. This organization internet provider so my office responsibility was new line connection for contract my customer and service say and re presented my organization so my duty time opportunity and corporate client for contract and line package rate sheared policy system customer convincing power for depended for use line client this organization .my office specific plans with customer requirement full service maintain technician and phone call for manage use line customer.

Month - 2 in the second month of entry level position on Intrepid Broadband Communication Company Ltd I have learned and played out the accompanying assignments:

Month – 3 the most recent month of entry level position on Intrepid Broadband Communication Company Ltd I have learned and

Play out the accompanying undertakings: IP addressing

- ✓ sub netting
- ✓ Configuring FTP Server.
- ✓ Cisco VLAN
- ✓ Switching configure

Month – 4 the last month of internship Intrepid Broadband Communication Company

Ltd I have learned and

Performed the following tasks:

- ✓ MikroTik Winbox

- ✓ Firewall

- ✓ ARP

- ✓ Backup and Monitoring

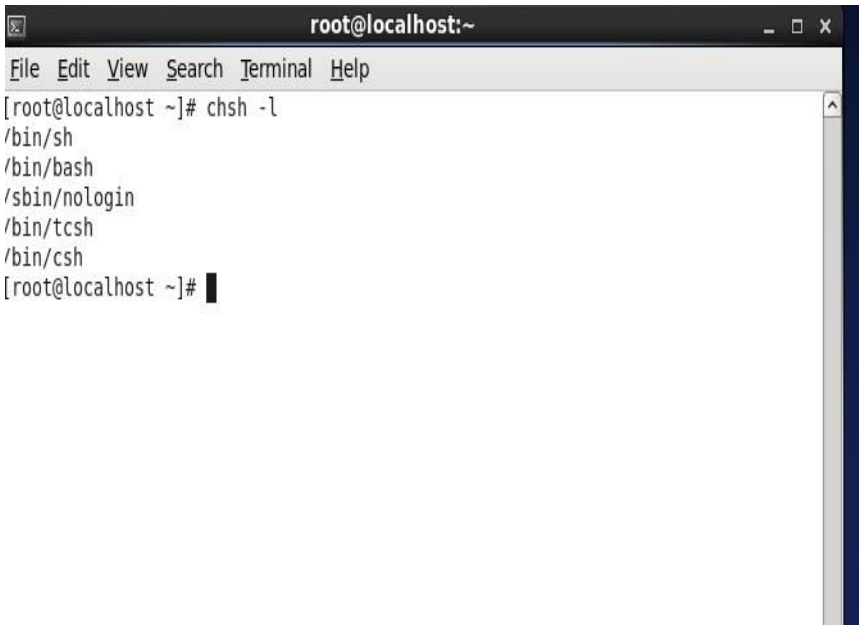## 3.2 Assigned Responsibilities

In an instruction part, talented and experienced instructors are the most critical issues to give quality training. Brave Broadband Communication Company Ltd never trade off in such manner. So as to have the best instructors, Intrepid Broadband Communication Company Ltd keeps up a methodical methodology. To start with, the hopefuls need to sit for a composed test, and afterward a meeting is taken. Finally, the competitor need to 2/3-showing class from which we take the criticism from the understudies. Lastly, the competitor is chosen or rejected. We generally give accentuation on the applicant.

3.3 Performed Tasks

For guaranteeing economical improvement in the public eye we should think to build up the human   cash-flow to address the difficulties of 21st Century and instruction is extraordinary Since its initiation, Intrepid Broadband Communication Company Ltd is working for creating and transmitting new aptitudes and learning in Technical and professional instruction and giving the abilities and apparatuses essential for 21st Century work

3.4 Files and Directories

A list is an aggregation of records and in addition distinctive libraries. Since an inventory can contain diverse files, we get a vault arrange. The best dimension of the chain of significance is the root library. Reports and inventories can be named by away. The root inventories are insinuated as/. Diverse libraries are suggested incidentally. The path contains names detached by/. A record can similarly be insinuated incidentally. If it is a vault, by then the way may end with a/.For example, etc/hostname the above implies a record hostname which is in the, etc library under the root registry 3

```
[root@localhost ~]# chsh -l
/bin/sh
/bin/bash
/sbin/nologin
/bin/tcsh
/bin/csh
[root@localhost ~]# 
```

Fig 3.4: Shows print another shell

3.5 Files and Directories

An index is an accumulation of documents as well as different registries. Since a catalog can contain different indexes, we get a registry order. The best level of the chain of importance is the root registry. Documents and catalogs can be named by away. The root catalogs are alluded to as/. Different registries are alluded to by the way. The way comprises of names isolated by/. A document can likewise be alluded to by the way. On the off chance that it is a registry, at that point the way may end with a/. An outright way begins at the foundation of the registry progressive system and names registries or documents under it. For instance:/and so on/hostname the above alludes to a document hostname which is in the and so on registry under the root directory 3

3.6 User Create and Password Management
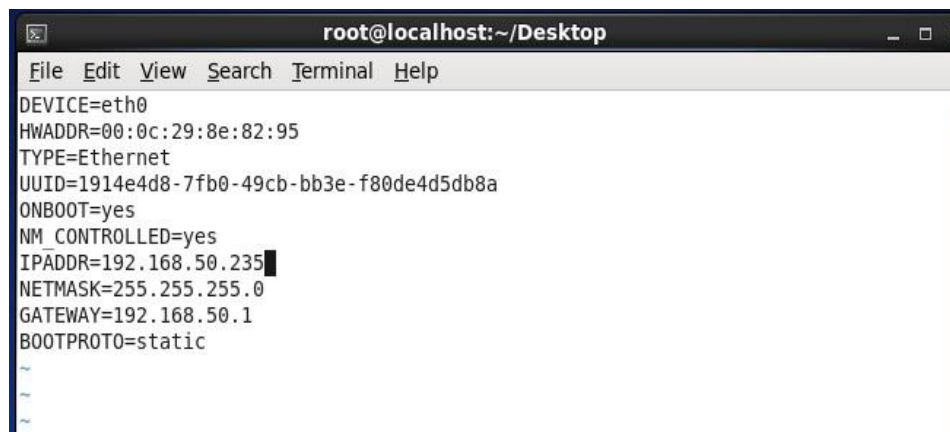
Adding a user = user add internship (username).

Set a Password to New User = password internship (username). Password Disable/Remove = password - internship (username). Verify user information = finger internship (username).

Locking an account = password -l internship (username). Unlock an account = password –u internship (username). Delete a user = user Intrepid internship (username).

Delete a user with home directory = user Intrepid – internship (username).

3.7 FTP Server Configuration (File Transfer Protocol)

The File Transfer Protocol (FTP) is a standard framework tradition used to trade PC archives beginning with one host then onto the following host over a TCP-based framework, for instance, the Web. A Simple Network with FTP Server showed up in Figure 3.12. FTP depends on a client server designing and uses separate control and data relationship between the client and the server. FTP customers may check themselves


```
root@localhost:~/Desktop                         _ □ x
File  Edit  View  Search  Terminal  Help
DEVICE=eth0
HWADDR=00:0c:29:8e:82:95
TYPE=Ethernet
UUID=1914e4d8-7fb0-49cb-bb3e-f80de4d5db8a
ONBOOT=yes
NM_CONTROLLED=yes
IPADDR=192.168.50.235
NETMASK=255.255.255.0
GATEWAY=192.168.50.1
BOOTPROTO=static
~
~
~
```

Fig 3.14: Screen print of a Vi Configuration

Step 3 I have to press on Esc button and write the command then show this page. When changes the line. Here I have to remove YES and write NO and save the page.

```
Example config file /etc/vsftpd/vsftpd.conf
#
# The default compiled in settings are fairly paranoid. This sample file
# loosens things up a bit, to make the ftp daemon more usable.
# Please see vsftpd.conf.5 for all compiled in defaults.
#
# READ THIS: This example file is NOT an exhaustive list of vsftpd options.
# Please read the vsftpd.conf.5 manual page to get a full idea of vsftpd's
# capabilities.
#
# Allow anonymous FTP? (Beware - allowed by default if you comment this out).
anonymous_enable=NO
#
# Uncomment this to allow local users to log in.
local_enable=YES
#
# Uncomment this to enable any form of FTP write command.
write_enable=YES
#
# Default umask for local users is 077. You may wish to change this to 022,
# if your users expect that (022 is used by most other ftpd's)
local_umask=022
#
```

Fig 3.15: Screen print 12 line of an anonymous enable No

Step 4 I have to press on Esc button and write the command ASCII upload and download enable=yes Then show this page. Press Enter key. Save this page.


```
                    root@localhost:~/Desktop                    _ □ x
File  Edit  View  Search  Terminal  Help
async_abor_enable=YES
#
# By default the server will pretend to allow ASCII mode but in fact ignore
# the request. Turn on the below options to have the server actually do ASCII
# mangling on files when in ASCII mode.
# Beware that on some FTP servers, ASCII support allows a denial of service
# attack (DoS) via the command "SIZE /big/file" in ASCII mode. vsftpd
# predicted this attack and has always been safe, reporting the size of the
# raw file.
# ASCII mangling is a horrible feature of the protocol.
ascii_upload_enable=YES
ascii_download_enable=YES
#
# You may fully customise the login banner string:
#ftpd_banner=Welcome to blah FTP service.
#
# You may specify a file of disallowed anonymous e-mail addresses. Apparently
```

Fig 3.16: Screen print upload and download
Step 5 Than user creates and password set.

Fig 3.17- Screen print create user and password set

Step 6 Now I restart service and the command is service network restart then press Enter key

Fig 3.16: Screen print upload and download enable

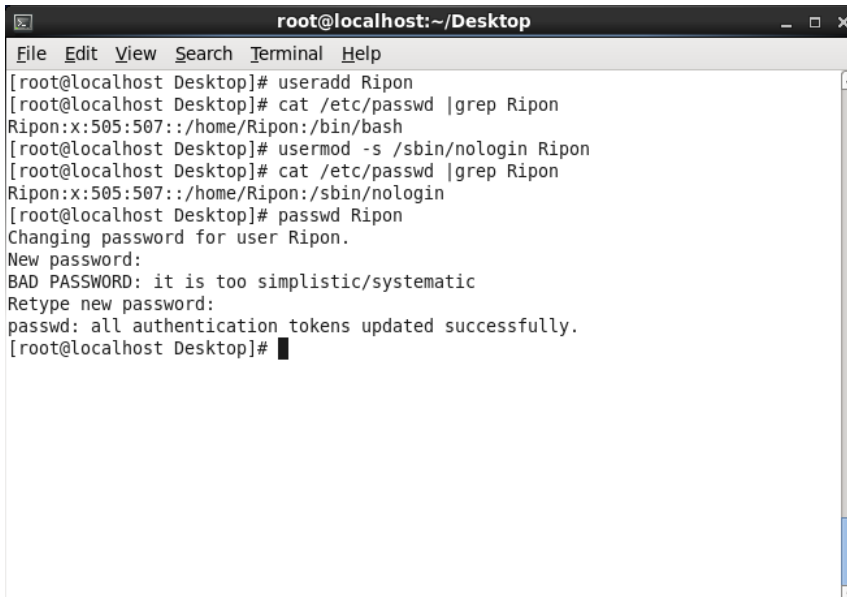**Step 5** Than user creates and password set.

Fig 3.17- Screen print create user and password set

Step 6 Now I restart service and the command is service network restart then press Enter key

Fig 3.16: Screen print of upload and download enable

Step 5 User creates and password set.

```
                  root@localhost:~/Desktop                 _ □ ✕
File  Edit  View  Search  Terminal  Help
[root@localhost Desktop]# useradd Ripon
[root@localhost Desktop]# cat /etc/passwd |grep Ripon
Ripon:x:505:507::/home/Ripon:/bin/bash
[root@localhost Desktop]# usermod -s /sbin/nologin Ripon
[root@localhost Desktop]# cat /etc/passwd |grep Ripon
Ripon:x:505:507::/home/Ripon:/sbin/nologin
[root@localhost Desktop]# passwd Ripon
Changing password for user Ripon.
New password:
BAD PASSWORD: it is too simplistic/systematic
Retype new password:
passwd: all authentication tokens updated successfully.
[root@localhost Desktop]# █
```

Fig 3.17- Screen print create user and password set

The service is the and the command is service network re start then press key

3.4.1Interface Configuration

After total establishment of MikroTik Routers, the following thing we have to do is arrange interface. For this power on the virtual machine and give secret key if watchword arranged generally keep clear the secret key field).The management of ip and system login and password press and control system of the here of configuration network management.
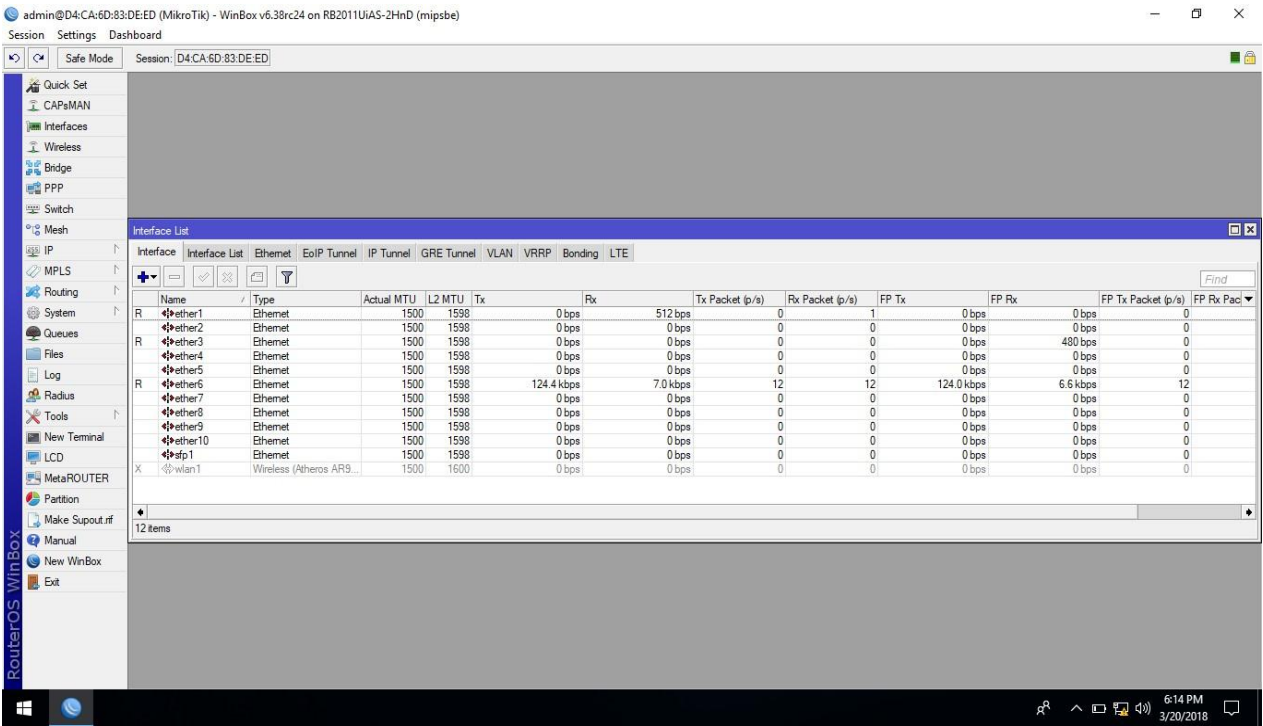
Figure 3.22- Shows Screen Print port of WAN and LAN.

Win box Interface Menu

We don't have much work to with interface menu. Fundamentally, login for the reason and interfacing connected networking for interface connection of the verify password and user name the login and control for the checking the interfacing menu toolbar and use the process of the radius manager
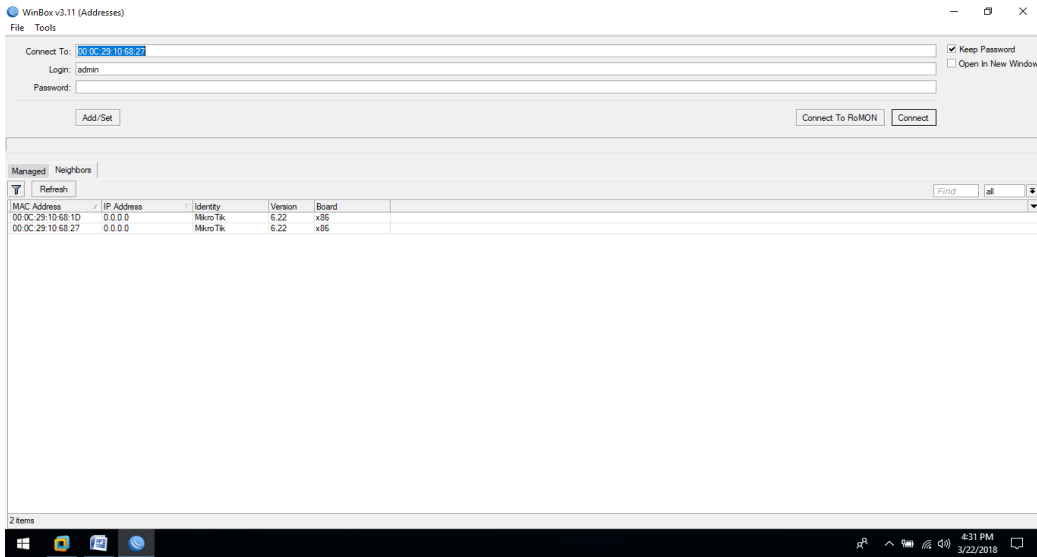
Figure 3.23: Shows Screen Print address of win box

MikroTik Router

MikroTik Is Ltd. referred to globally as MikroTik is a Latvian producer of PC organizing hardware. It offers remote items and switches. The time in the since 2014, the organization has in many workers maybe 150. The organization's items al time any working system flowing every person and careful knowledge power known for being low- estimated contrasting options to costly switches and Ethernet radio transfer lines

CHAPTER-5
CONCLUSION AND
FUTURE CAREER

4.1 Competencies Earned

Systems administration side has various fields of workstation such Network engineers are chargeable for executing, taking care of, helping, making and, now and again, arranging talk masterminds inside an association or among endeavors. Their inspiration is to guarantee the honesty of high availability organize foundation to offer most broad execution for his or her customers. Customers may be staff, clients, customers and suppliers. System architect may arrange inside as a section an association's IT bolster gathering, or remotely as a piece of a redistributed IT organizing consultancy firm working with some of customers. Commitments might be inspired by the scale and part of the using endeavor. For instance, in an expansive speculation money related establishment you can have explicit obligation for one place of the machine. In somewhat supervisor, the specialist may likewise need to issue shoot for any IT-related issue that develops.

4.1 Smart Plan

Frameworks organization side has different fields of workstation such Network engineers are chargeable for executing, dealing with, helping, making and, from time to time, orchestrating talk plans inside an affiliation or among undertakings. Their motivation is to ensure the trustworthiness of high accessibility compose establishment to offer most wide execution for his or her clients. Clients might be staff, customers, clients and providers. Framework modeler may orchestrate inside as an area an affiliation's IT support gathering, or remotely as a bit of a redistributed IT sorting out consultancy firm working with some of clients. Duties may be enlivened by the scale and part of the utilizing attempt. For example, in a sweeping hypothesis cash related foundation you can have express commitment for one place of the machine. In to some degree manager, the expert may in like manner need to issue shoot for any IT-related issue that creates.

4.2 Reflections

Understudies get the convenient inclusion in the field of building. It is help to collect contribution in building work. IT is a watchful and dynamic calling at present. I learned hands-on-fitness in framework and framework security structure. This experience will assist me with being making strong framework. Aide gives push traps and journeys that honed by. I understand how to oversee organize undertaking and how to beat key condition and rousing the experience to tackle a specialist gathering.

Appendices

Appendix A: Internship Reflection

The essential goal of my entry level position in an expert putting, objective responses to genuine universal unsettling influence is to utilize the understanding gained inside the classroom I am a specialist inside the standard course with clients and faultless graciousness and ace director and distinctive laborers to consider from viewing a perception of the overseeing, and moreover to advantage through correspondence. I am an effort duty is executed, a way to deal with hardening associate, how control is shared, how its miles advancement, how delight are made, a way to deal with get the subculture of an expert organization, and what declaration of ought to and contribution to the undertaking.

High Speed Internet Services Provider

@ Dhaka City

Company Detail

Name	Intrepid Broadband Communication Company Ltd.
Address	House-83, Road-6, Floor-GF.Dhaka. 1213, Bangladesh
Telephone	9898857
Website	http://intrepidbd.com
Organization Type	Internet Service Provider
Employees	180