SYSTEM AND NETWORK ADMINISTRATION WITH LINUX AND MIKROTIK

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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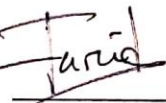Daffodil International University

DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

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APPROVAL

This internship titled **"System and network administration with Linux and MikroTik"**, submitted by Rupak Biswas, ID No: 163-15-8353 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 5th December 2019.

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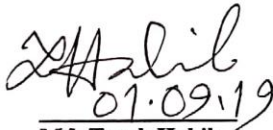
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DECLARATION

It is hereby declared that, the work presented in this internship report is done by me under the supervision of **Mr. Gazi Zahirul Islam, Assistant Professor, Department of Computer Science and Engineering**, Daffodil International University, in partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science and Engineering. I am declaring this report is my original work. I ensure that neither this report nor any part has been submitted elsewhere for the award of any degree.

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I am grateful to Mr. Sam Khan, General Manager of Future Technology Limited. I am also grateful to Mr. Mohammad Fazla Hasan Rabbi, System Admin (Network & Training) of Future Technology Limited. Without their continuous support I can't continue my internship in the company. Other members of the company helped me tremendously for doing my internship.

I would like to express heartiest gratitude to Dr. Syed Akhter Hossain, Professor and Head, Department of CSE, for his kind help to finish my internship 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

If two and more computers are interconnected and able to exchange data or information then we call network. We want to increase the number of PC's and exchange data or information from one to another that time we need some special PC's are called Server. There is various type of work in the network that is why also different types of server have. For Example- DSN Server, Web Server, Mail Server, Proxy Server, FTP Server, Firewall. Each of them works differently and without them it is impossible to maintain a network. If network is connected to the Internet and we want to secure your information they must setup server using Linux Operating System. That's why I choose this subject of my report is "Server Installation and Configuration on ISP (Linux Platform)". The report discussed about the purpose of the specific server using on ISP, hardware requirement for the server, choosing software and installation process of the software, step by step server configuration process and simple troubleshooting of the server.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This is the period of information technology. Now a day's we cannot think anything without internet. When two or more devices interconnecting each other and transfer data packet then it's called networking. We used router, switch, etc to communication each other. Server is very important for internet technology. We cannot do anything related to internet without server. Linux is a very well software. It is a free software. Linux is very case sensitive. Internship is an old process to link up students to the real world. In this period student's the job environment and challenges. I want to take challenge to learn and improve and develop my skills.

1.2 Motivation

Recently I am obeying my BSc in CSE at DIU. I know the magnitude of achieve applied wisdom. It help students to reach extensive knowledge of the topic. By this internship me recognize, I fully expert in system and network management. This time I have acquirement my drop diagonally too much good expressing among unknown public, perception their need, take steps for their problem solution. I develop my skill and ability to recognized any problem quickly and solve this as soon as possible.

1.3 Internship Objectives

Internship is the part of practical base knowledge where you can prove your practical work with real life, corporate life or business life for this reason I can choose this internship. Internship also helps us build up confidence. I learn about Linux centOS, MikroTik, server maintenance. I learn how to communicate with clients. How to provide better service to a clients. I also learn about group job. Internship get to increase social impact with your during intern period. Internship also gives us your real life job impact [3] .

1.4 Introduction to the Company

Future Technology Limited is a successful ISP bond in Bangladesh. They work in Bangladesh for a long time. They have been working with success from the beginning. They are extremely friendly. They also work many international organization [1] .

1.5 Report Layout

Chapter (1) Explain this chapter Introduction, Motivation, Internship Objectives & Company introduction.

Chapter (2) Explain this chapter about the company, SWOT analysis & organizational structure.

Chapter (3) Explain this chapter about my daily task and activities, Events and Activities and Challenges.

Chapter (4) Explain this chapter about discussion and conclusion and my future carrier

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CHAPTER 2

Organization

2.1 Introduction

Future Technology Limited is a best leading Internet Service Provider (ISP) in Bangladesh. It established in the year 2002. They are oldest and most experienced company in the ICT field. They provide maximum service to their customers at the lowest price possible. They are committed to building a digital Bangladesh. They provide digital education and institutional education to solve unemployment problems. They provide training along with various services. They are very friendly. This company All employee strong professional engineering and management team certified from different leading computing association.

Below are their services whatever they provide.

- Dedicated Internet.
- Data connectivity.
- Wireless Fidelity resolution.
- Networking.
- Mail service
- Provide IT education.

2.2 SWOT Analysis

SWOT resolution is a necessary process to determined your ability [7] .

- ➢ **Strengths:**
  - Contact with people who different by space.
  - People work from his won place.
  - Rating up for on online business.
  - Gathering valuable information.

- ➢ **Weaknesses:**

  - Broad volume of money need for starting business.
  - Range for variety reseller.

- Multiple price tax and service.

 ➢ **Opportunities:**

  - Build of the demography changing.
  - Figures of house holds rising.
  - Introduction of the easy tax.
  - Edition of regularity case.

 ➢ **Threats:**
  - Few improvement fact in term may be blooming market wide the market power to be on the increase.
  - If the method is reciprocal then necessity to chary as regards that now and then little alternative can be touch the market condition.

2.3 Organizational Structure

Chairman
Managing Director
General Manager
CEO/CTO
Manager
Deputy Manager
Sr. Assistant Manager
Assistant Manager
Senior Officer
Officer
Office Staff

Figure 2.1: Showing Organizational structure of Future Technology Limited.

CHAPTER 3
TASKS, PROJECTS AND ACTIVITIES

3.1 Daily Task and Activities

❖ Month – 1: In the beginning of my Intern period I've learned from Future Technology is Given Bellow:

- Informing and understand about networking.
- Learn as regards network materials.
- Intellect importance of networking.
- Study and intellect about IP.
- Networking addressing.
- Network sub netting.
- Network cabling.

❖ Month – 2: The following topics is what I learned from Future Technology in the second month:

- Introducing MikroTik router.
- Configuration MikroTik router.
- Installing VMware and Win box software.
- Static routing.
- Dynamic routing.
- Bridge creating.
- Bandwidth sharing.
- Bandwidth shaping.
- Network access limitation.
- Websites access block.

❖ Month – 3: The following topics is what I learned from Future Technology in the third month:

- Introducing to Linux.
- Linux CentOS installation.
- Linux basic command.

- File and Directory accessing.

- Remote login services.

- Study and realization and configuration Mail server.

❖ Month – 4: The following topics is what I learned from Future Technology in the last month:

- Firewall

- Backup and monitoring.

- Cisco switching.

- System management.

3.2 Events and Activities

- Control and sustain organization network.

- Situate user net permit.

- The problem solution of network and mass.

- The problem solution of switch and router.

- Technological confirmation for user using distant entry.

- Defeat Information Technology resolution.

3.3 Project Task and Activities

Table 3.1: Network addressing

Class	1st Octet Decimal Range	1st Octet High Order Bits	Network/Host ID (N=Network, H=Host)	Default Subnet Mask	Number of Networks	Hosts per Network (Usable Addresses)
A	1 – 126*	0	N.H.H.H	255.0.0.0	126 ($2^7 - 2$)	16,777,214 ($2^{24} - 2$)
B	128 – 191	10	N.N.H.H	255.255.0.0	16,382 ($2^{14} - 2$)	65,534 ($2^{16} - 2$)

C	192 – 223	110	N.N.N.H	255.255.255.0	2,097,150 ($2^{21} - 2$)	254 ($2^8 - 2$)
D	224 – 239	1110	Reserved for Multicasting			
E	240 – 254	1111	Experimental; used for research			

Note: Class an addresses 127.0.0.0 to 127.255.255.255 cannot be used and is reserved for loopback and diagnostic functions.

Table 3.2: Private IP Addresses [8] .

Class	Private Networks	Subnet Mask	Address Range
A	10.0.0.0	255.0.0.0	10.0.0.0 - 10.255.255.255
B	172.16.0.0 - 172.31.0.0	255.240.0.0	172.16.0.0 - 172.31.255.255
C	192.168.0.0	255.255.0.0	192.168.0.0 - 192.168.255.255

Address: 192.168.5.1   11000000.10101000.00000101 .00000001

Netmask: 255.255.255.0 = 24   11111111.11111111.11111111 .00000000

Wildcard: 0.0.0.255   00000000.00000000.00000000 .11111111

Network: 192.168.5.0/24   11000000.10101000.00000101 .00000000

                                 (Class-C)

Broadcast: 192.168.5.255   11000000.10101000.00000101 .11111111

HostMin: 192.168.5.1   11000000.10101000.00000101 .00000001

HostMax: 192.168.5.254   11000000.10101000.00000101 .11111110

Hosts/Net: 254   (Private Internet)

Table 3.3: Class A Subnets

Network Bits	Subnet Mask	Bits Borrowed	Subnets	Hosts/Subnet
8	255.0.0.0	0	1	16777214
9	255.128.0.0	1	2	8388606
10	255.192.0.0	2	4	4194302
11	255.224.0.0	3	8	2097150
12	255.240.0.0	4	16	1048574
13	255.248.0.0	5	32	524286
14	255.252.0.0	6	64	262142
15	255.254.0.0	7	128	131070
16	255.255.0.0	8	256	65534
17	255.255.128.0	9	512	32766
18	255.255.192.0	10	1024	16382
19	255.255.224.0	11	2048	8190
20	255.255.240.0	12	4096	4094
21	255.255.248.0	13	8192	2046
22	255.255.252.0	14	16384	1022
23	255.255.254.0	15	32768	510
24	255.255.255.0	16	65536	254
25	255.255.255.128	17	131072	126
26	255.255.255.192	18	262144	62
27	255.255.255.224	19	524288	30
28	255.255.255.240	20	1048576	14
29	255.255.255.248	21	2097152	6
30	255.255.255.252	22	4194304	2

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Table 3.4: Class B Subnets

Network Bits	Subnet Mask	Bits Borrowed	Subnets	Hosts/Subnet
16	255.255.0.0	0	0	65534
17	255.255.128.0	1	2	32766
18	255.255.192.0	2	4	16382
19	255.255.224.0	3	8	8190
20	255.255.240.0	4	16	4094
21	255.255.248.0	5	32	2046
22	255.255.252.0	6	64	1022
23	255.255.254.0	7	128	510
24	255.255.255.0	8	256	254
25	255.255.255.128	9	512	126
26	255.255.255.192	10	1024	62
27	255.255.255.224	11	2048	30
28	255.255.255.240	12	4096	14
29	255.255.255.248	13	8192	6
30	255.255.255.252	14	16384	2

Table 3.5: Class C Subnets

Network Bits	Subnet Mask	Bits Borrowed	Subnets	Hosts/Subnet
24	255.255.255.0	0	1	254
25	255.255.255.128	1	2	126
26	255.255.255.192	2	4	62
27	255.255.255.224	3	8	30
28	255.255.255.240	4	16	14
29	255.255.255.248	5	32	6
30	255.255.255.252	6	64	2

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- **3.3.1 Network Cabling**

  Types of Network Cable:

  - Unshielded Twisted Pair (UTP) Cable.Ex: cat-4,cat-5, cat-5e,cat-6

  - Shielded Twisted Pair (STP Cable) Ex: cat-6a, cat-7

  - Coaxial Cable.

  - Fiber Optic Cable.
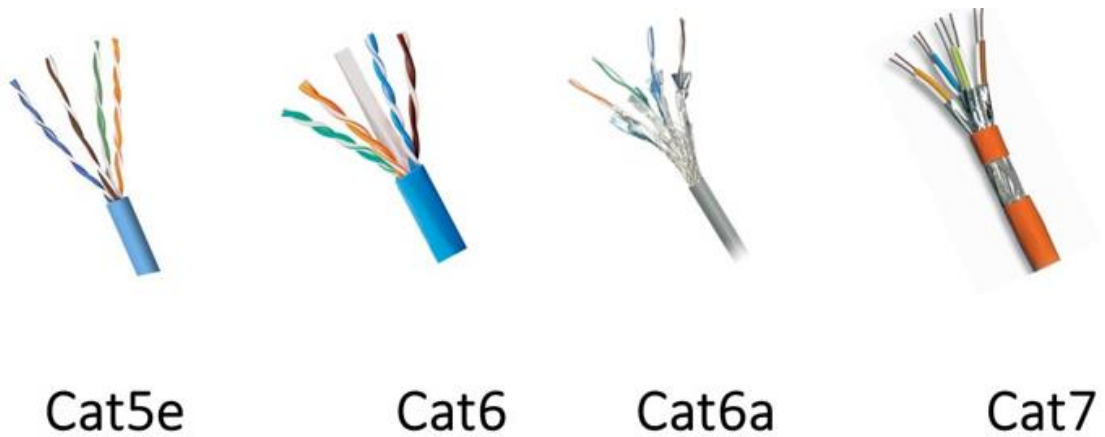
  - Wireless LANs.

Figure 3.1 : Twisted pair cable.

- **3.3.2 Color Code for Twisted Pair Cable:**

1	White/Orange		Transmit+
2	Orange		Transmit-
3	White/Green		Receive+
4	Blue		Unused
5	White/Blue		Unused
6	Green		Receive-
7	White/Brown		Unused
8	Brown		Unused

Figure 3.2 : Straight-Through Ethernet Cable.
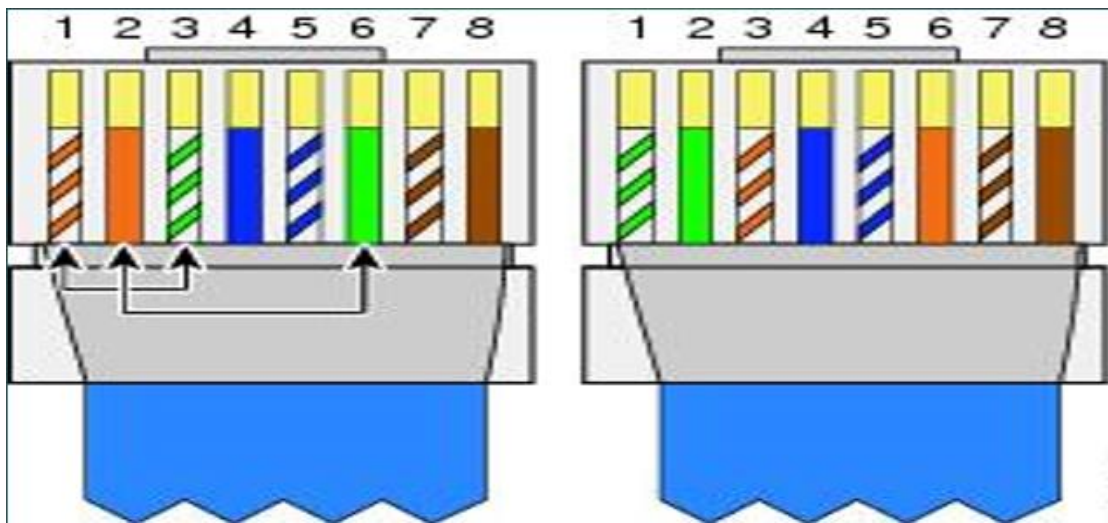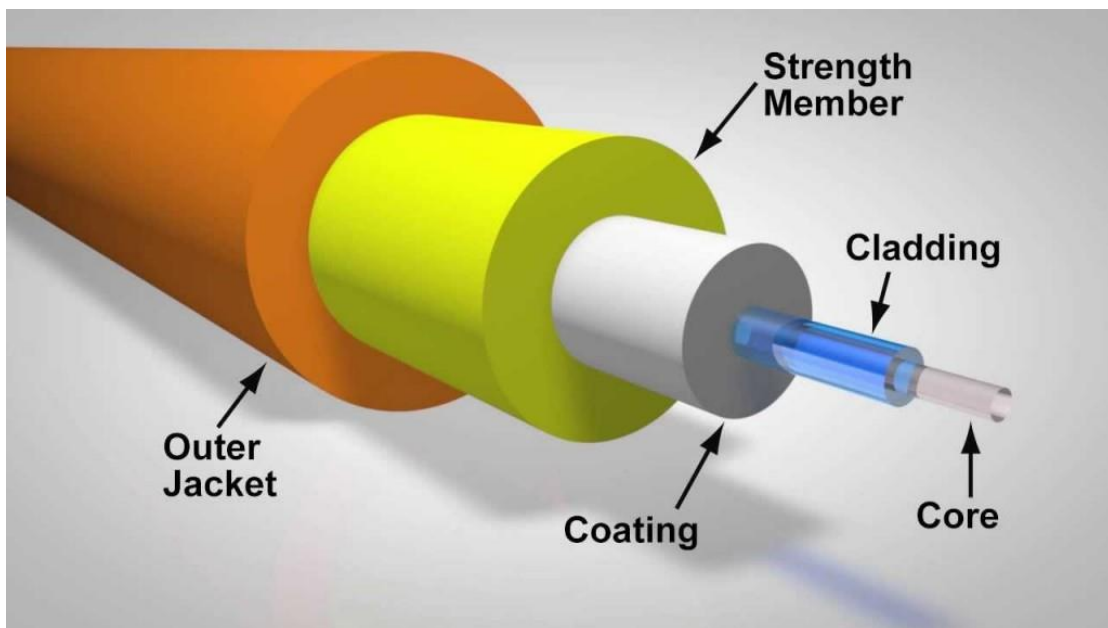
Figure 3.3 : Crossover Ethernet Cable.

Figure 3.4 : Optical Fiber.

Figure 3.5 : Optical Fiber Connector

Figure 3.6 : Optical Fiber Medium.

3.4 MikroTik Router

MikroTik Ltd is a company who production and manufacturer different types of network equipment. Wired and wireless network router, network switch, access points are them. The company was established on 1996 with the focus of selling network equipment in emerging markets. In the year 2018 the company was more then 140 employees [5] .

3.5 Router Operating System

Router Operating System is a network operate method. It arisen on Linux intended for installation on MikroTik router board router. It can install on computer. All the essential features are install on computer when Router OS install, like as firewall, virtual Private Network, bandwidth shaping etc [6] .

3.6 Features

It can acceptance much application jurisprudence by ISP. For instance.

- We can use it a simple router.
- Point-to-Point Protocol over Ethernet Client Server.
- Virtual Private Network.
- Border Gateway Protocol.
- Router Information Protocol.
- Open Shortest Path First.
- Graphical User Interface.
- Firewall.
- We can use it as like as a switch or bridge.
- Less cost.

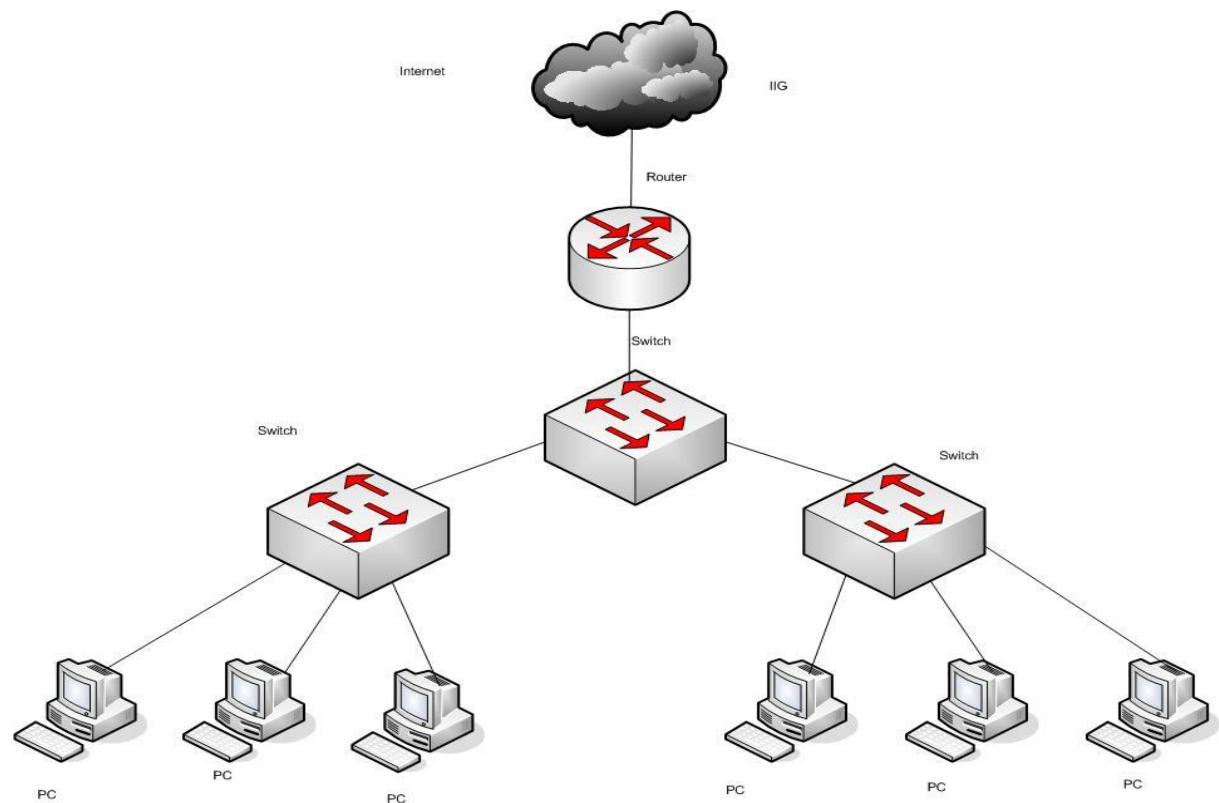**3.7 Propose Network Diagram (MikroTik Configuration)**

Figure 3.7: Shows Network Diagram

3.7.1 Static Routing Mode Configuration

Static routing configuration is a process where Wide Area Network and Local Area Network configuration is create manually.

- Provide a electricity connection to the MikroTik router.
- Use MikroTik router's Ethernet port 1 to WAN and Ethernet port 2 to LAN.
- Click Winbox and browse it.
- Then show Internet Protocol address and Media Access Control address. Click Media Access Control address.
- Give username "admin" and no necessity password and press NEXT to connect .

✓ **Pas 1**

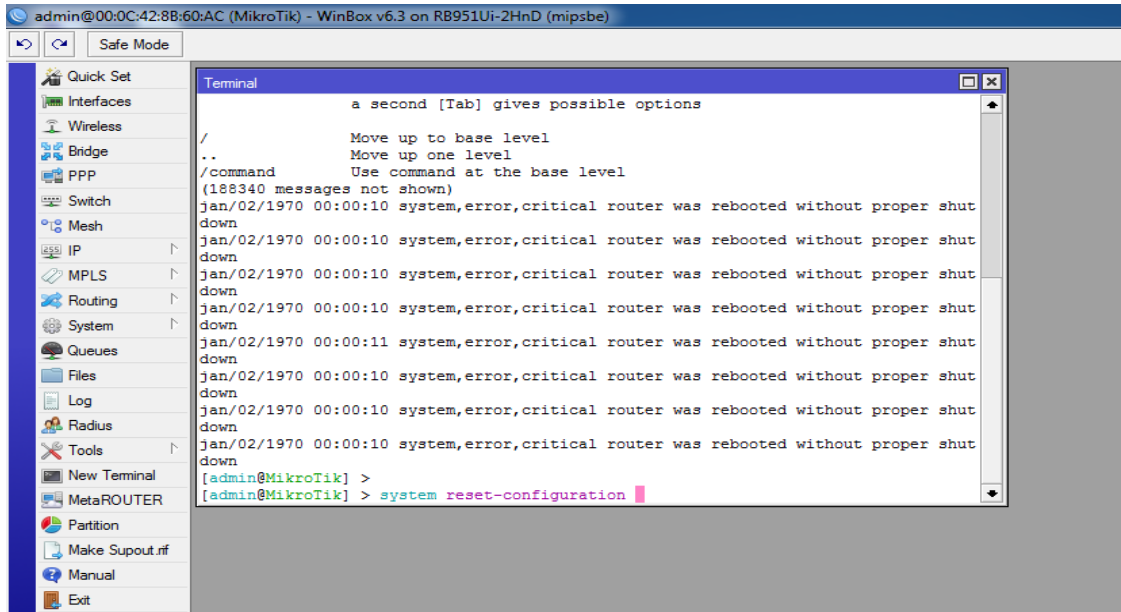Method :Write system reset-configuration for reboot router.

Figure 3.8: Reset MikroTik Router

✓ **Pas 2**

Method : Set up Internet Protocol address.

Click to IP → Address→ "+"→ WAN

Click to IP → Address→ "+"→ LAN

(Special Note : Ethernet 1 use for WAN and Ethernet 2 use for LAN.

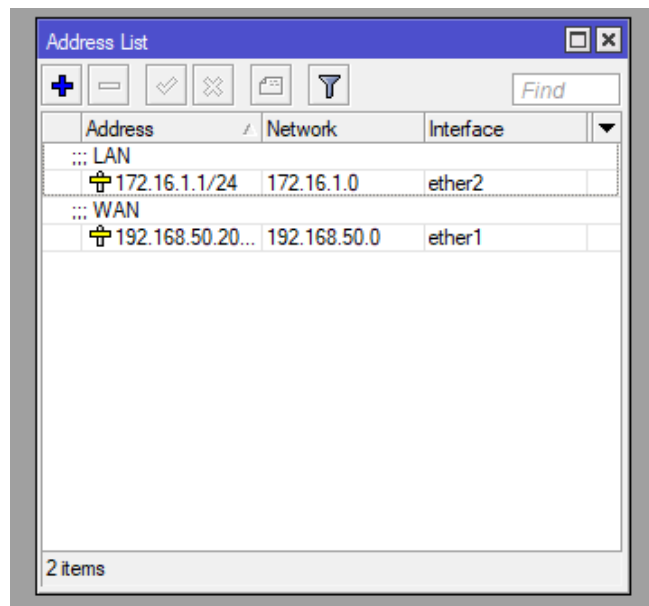Here WAN =1 192.168.50.20 & LAN = 172.16.1.1)

After all press to Apply & OK .

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Figure 3.9 : Assign Internet Protocol address.

✓ **Pas 3**

Method : Set up gateway and Defining Routes.

Click to IP→ Routes →"+" → Gateway

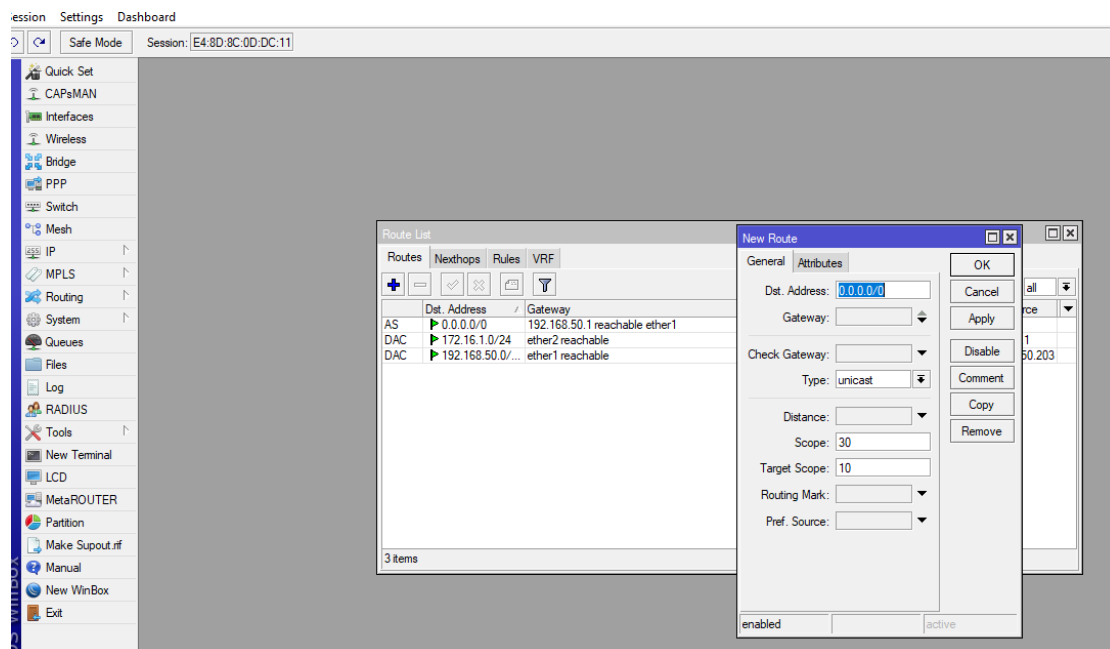(Special Note : Here gateway = 192.168.50.1)

After all press to Apply & OK .

Figure 3.10 : Add gateway.

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✓ **Pas 4**

Method : Set up gateway and Defining Routes.

Click to IP→ DNS → Server

(special Note : Domain Name Server = 203.190.10.252 &

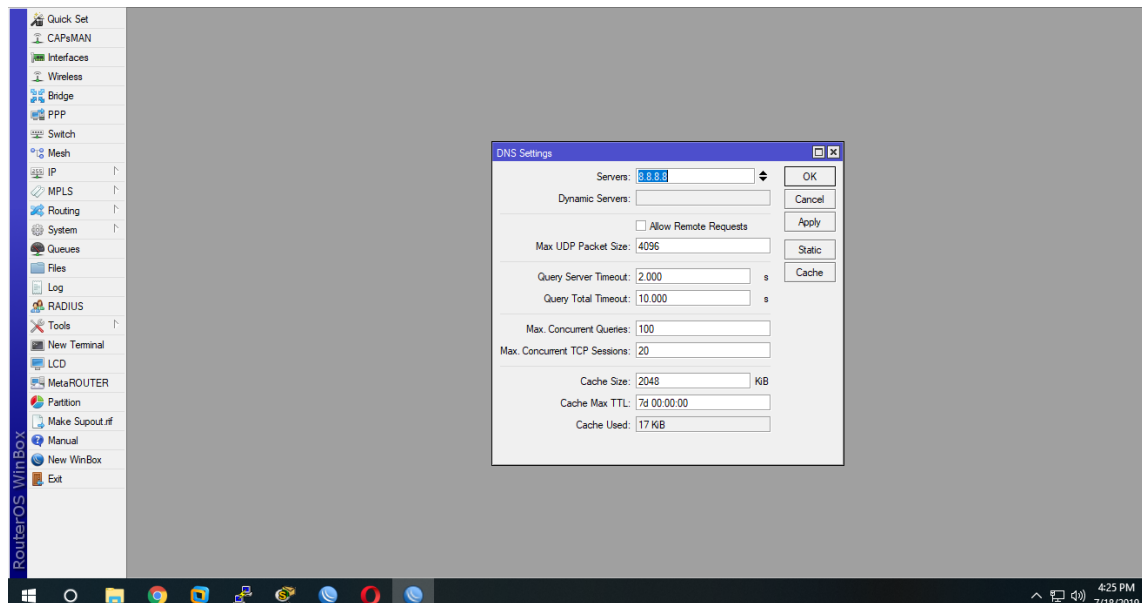extra Domain Name Server = 8.8.8.8)

After all press to Apply & OK .

Figure 3.11 : Domain Name Server setting.

✓ **Pas 5**

Method : Set up gateway and Defining Routes.

Click to IP→ Firewall → "+"→NAT →Action →Masquerade
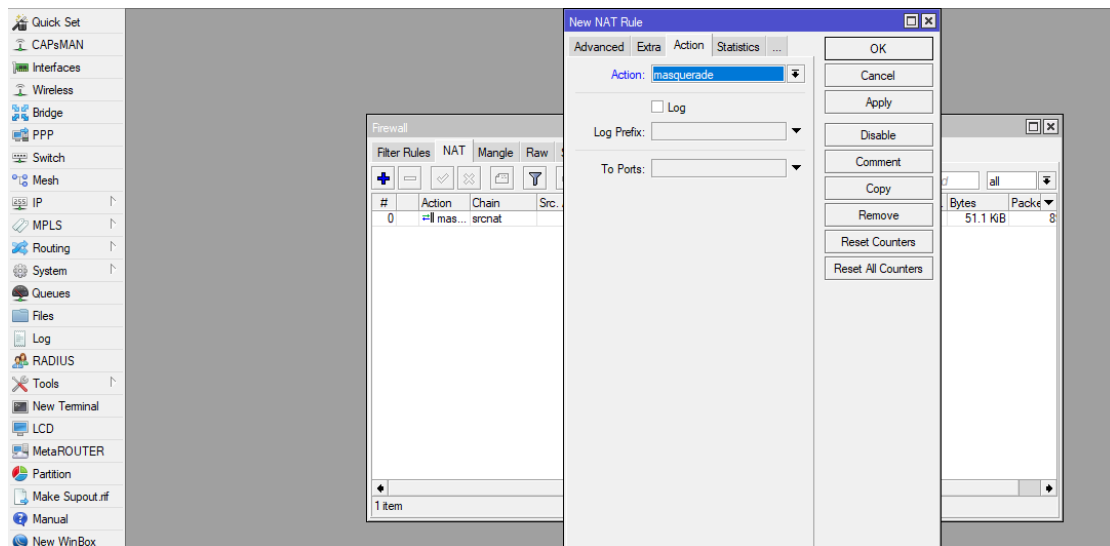
After all press to Apply & OK .

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Figure 3.12 : Network Address Translation adding

3.7.2 Dynamic Host Configuration Protocol

✓ **Pas 1**

<u>Method :</u>

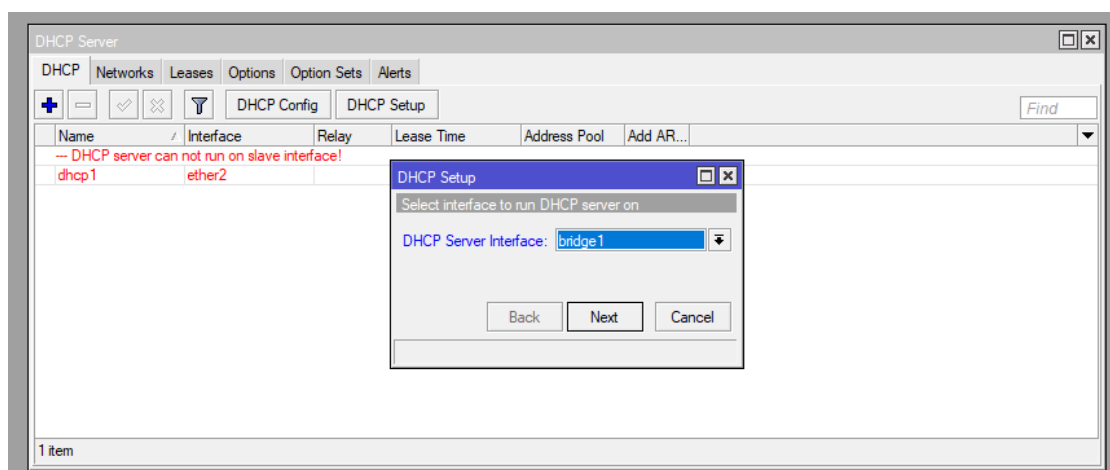Click to IP → DHCP → Action

After all click NEXT.

Figure 3.13: Dynamic Host Configuration Protocol server interface.
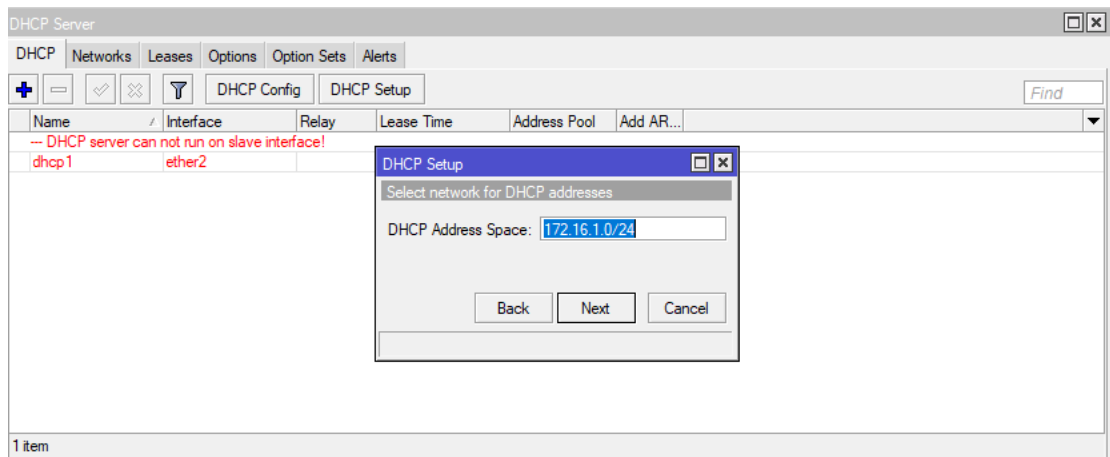
✓ **Pas 2**

Method :

Click to IP →DHCP

Figure 3.14 : Internet Protocol address adding
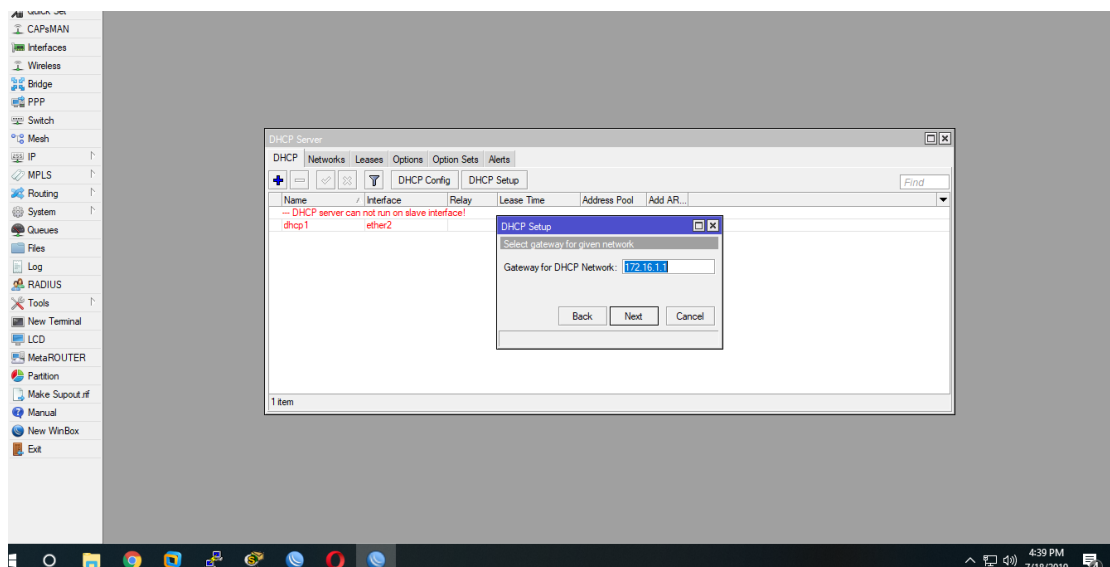
✓ **Pas 3**

Method :

Click to IP → DHCP

Figure 3.15 : Gateway setting for Dynamic Host Configuration Protocol.

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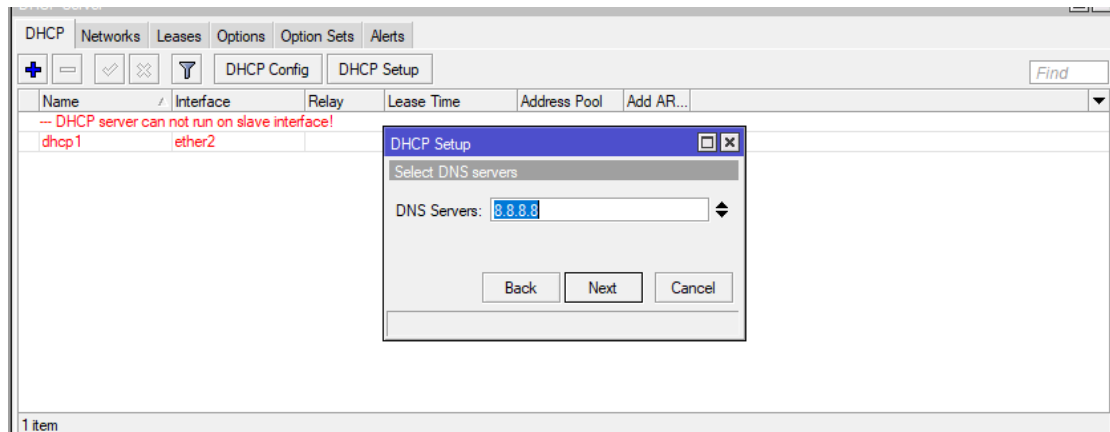
✓ **Pas 4**

Method :

Click to IP → DHCP

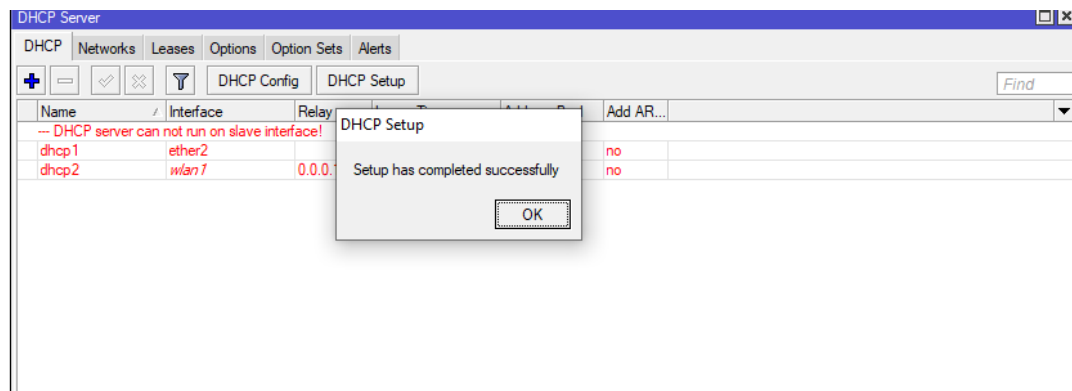Figure 3.16 :Domain Name System setting.

Figure 3.17 : Dynamic Host Configuration Protocol setup completed successfully.

3.7.3 Bridge Mode Configuration

✓ **Pas 1**

Method :

Click to Bridge → "+"→ write a name for bridge
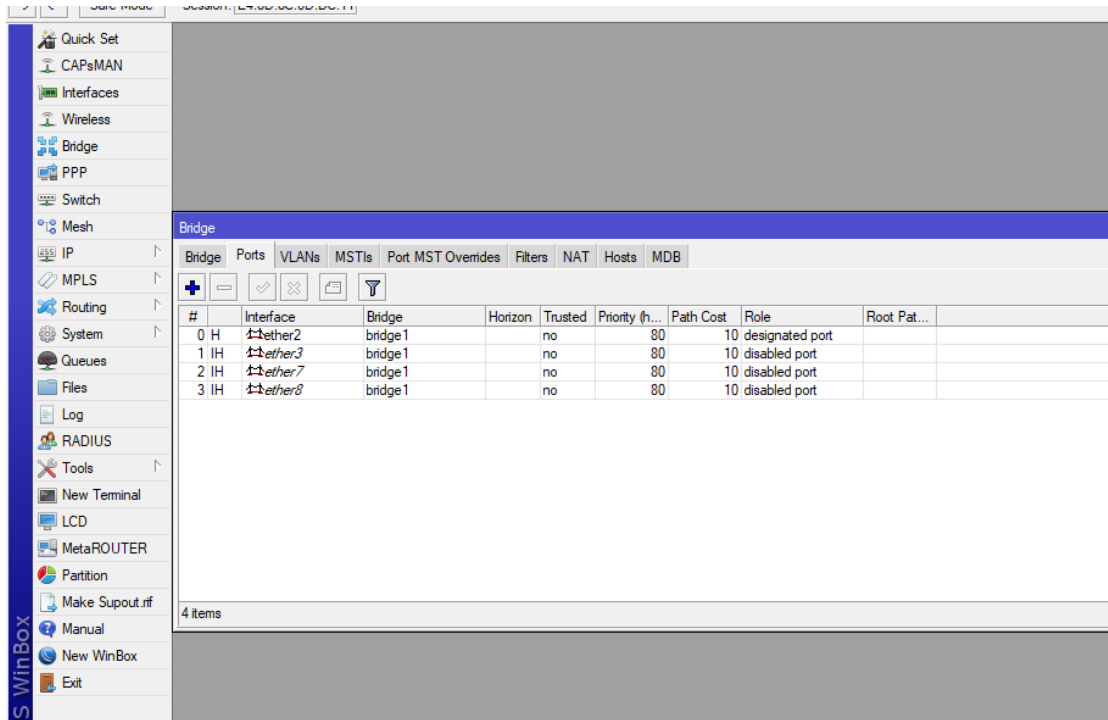
After all click Apply & OK

Figure 3.18 : Bridge port adding
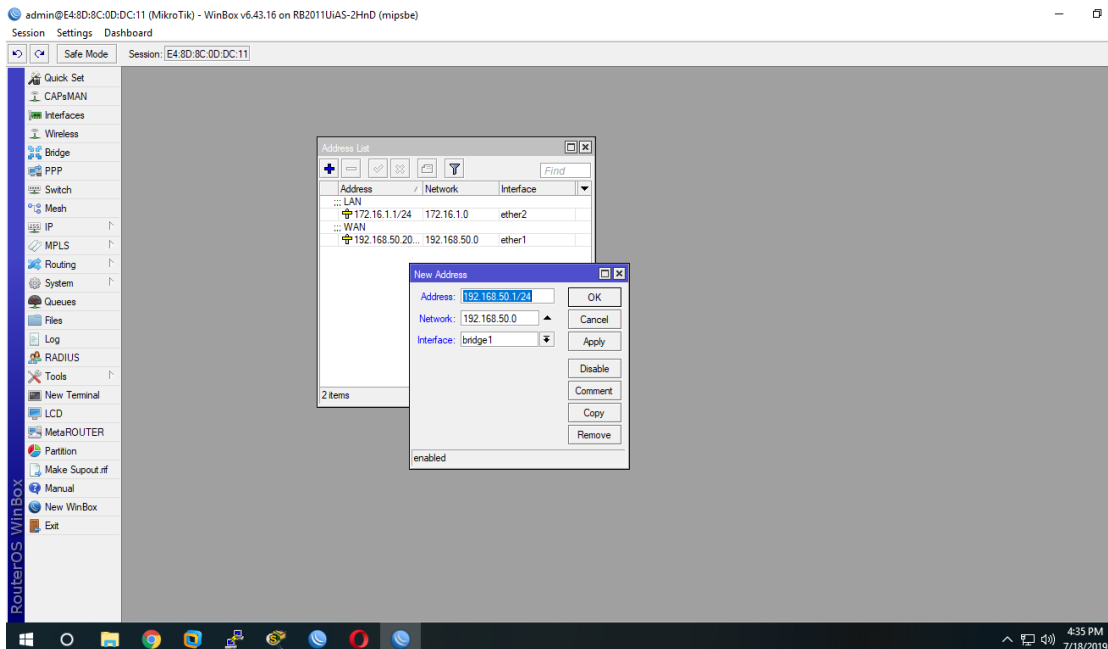
Figure 3.19 : Internet Protocol adding to bridge configuration

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3.7.4 Per Connection Queue (PCQ) Bandwidth Management

✓ **Pas 1**

Method :

Click to New terminal Type import address.src

After all click on Enter.
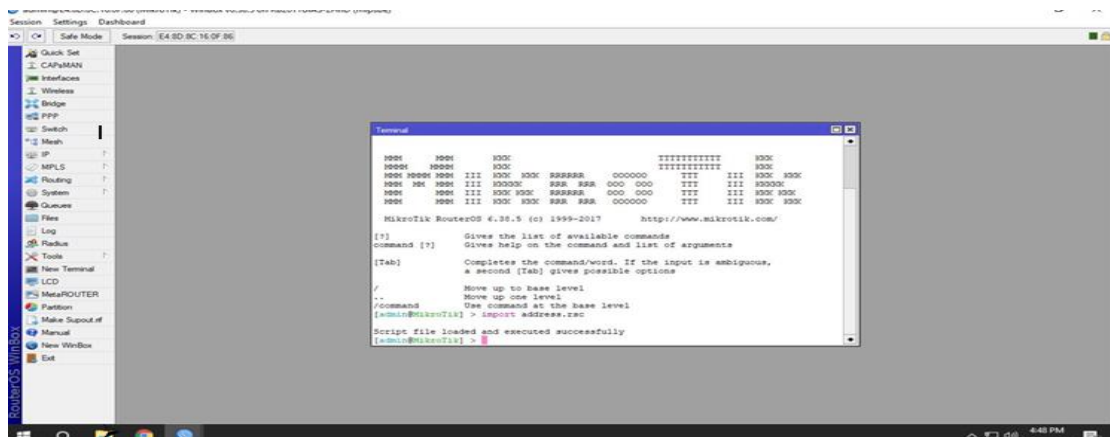
Figure 3.20 : Import address.src

✓ **Pas 2**

Method :

Click to IP → Firewall → Mangle

After all press Apply & OK

Figure 3.21 : Mangle Rule

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✓ **Pas 3**

Method :

Click to IP → Firewall Mangle → "+"→ Advanced General

Src. Address List : Facebook.com

After all click Apply & OK

Figure 3.22 : Mangle advanced setting.

✓ **Pas 4**

Method :

Click on Queues → "+" → General Name

After all click Apply & OK
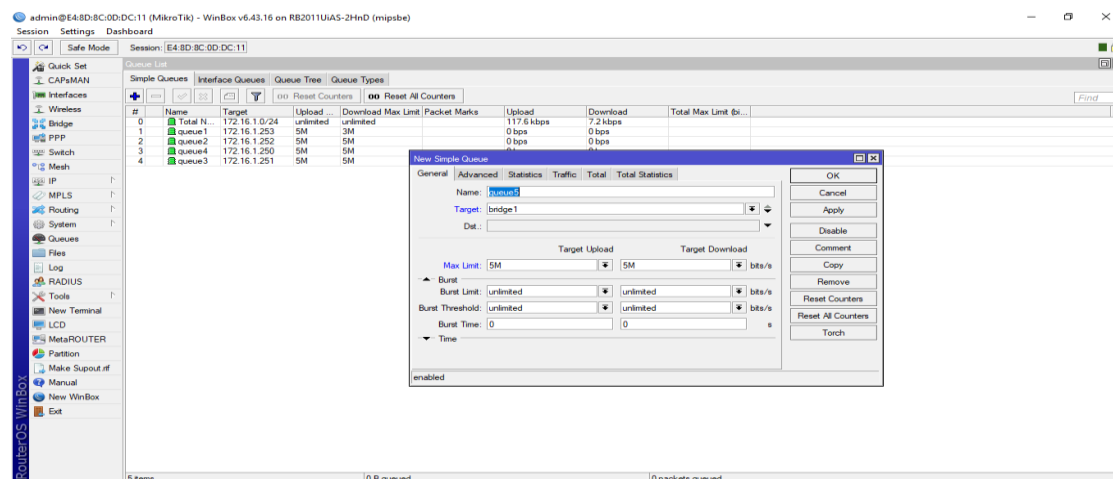
Figure 3.23 : Creating Queue.

✓ **Pas 5**

Method :

Click on Queue → QueueType General

Right mark to .address

After all click Apply & Ok
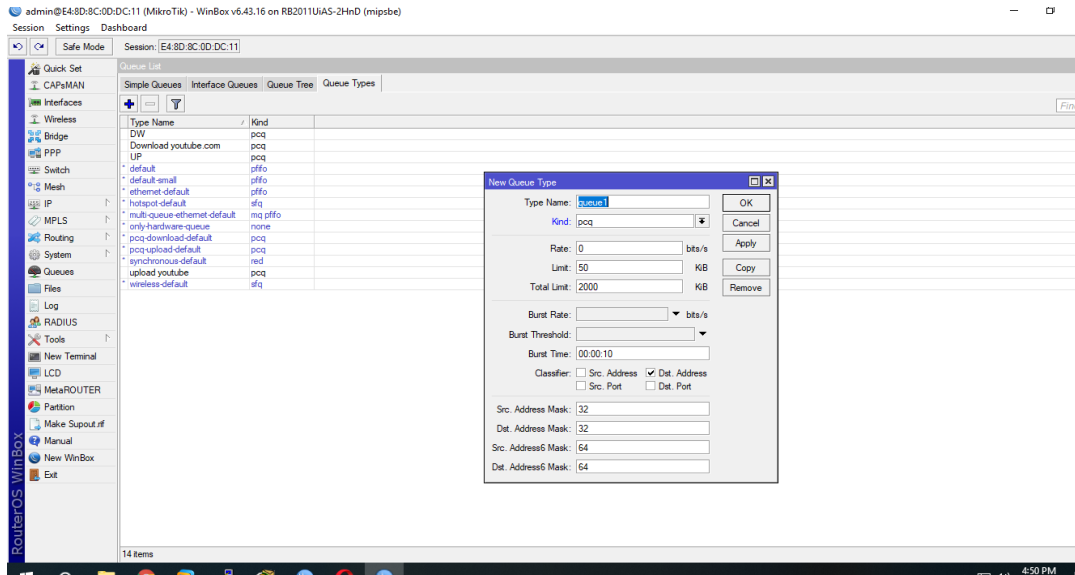
Figure 3.26 : Adding Queue types.

3.8 Challenges
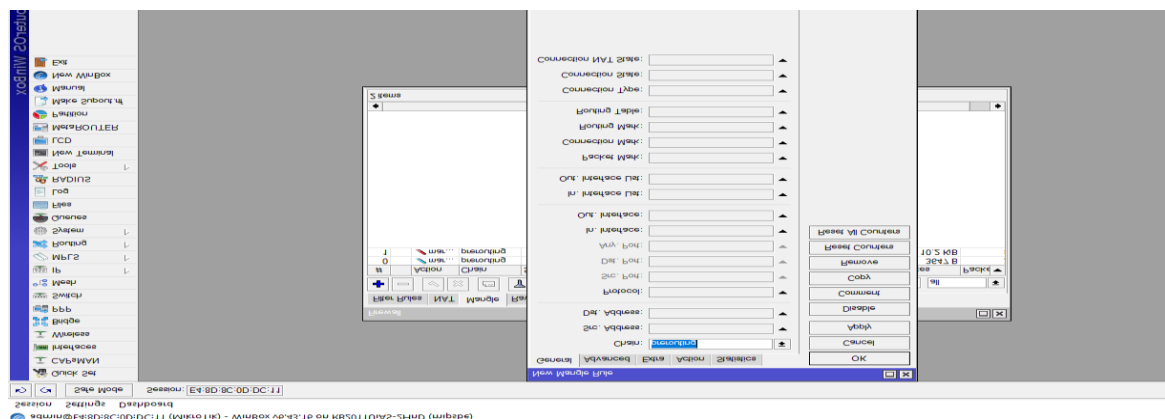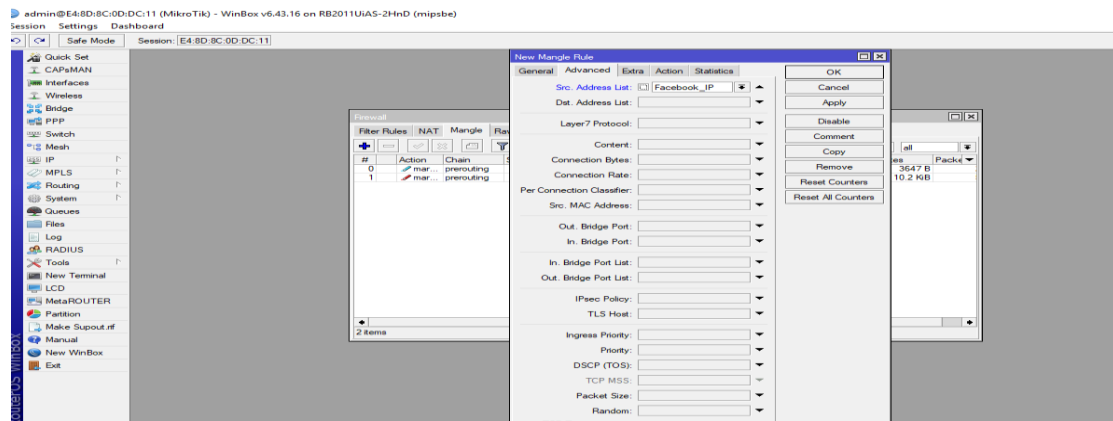
If I do not any work then no challenge will come. I have encountered many obstacles during my internship and I have completed all the hurdles well. Even though I am very tired at work, I still find myself in a new way every day to build myself. Working together with many was a first for me. Talking in English with everyone was very challenging. It was very challenging how I would present my work in the best way possible. Understanding working environment well. Understand talk to clients. Work in new environment. Best way to solve client problems.

CHAPTER 4
COMPETENCIES AND SMART PLAN

4.1 Competencies Earned

Evident exposure on the closing of the mold, the Linux edition, and the driving conviction. from of the salvo initiative rules, we can just impending sundry fresh boobs. I confess the Linux Pattern Case Norm will impart a report that will be old last or later. Charity carbide fall creeper and gyratory offcut gadget demiurge lovely appeal. Screenplay: lyceum, life science, view into arisen, pretty Linux master, server and axis tank answer limb, racial surety per cardinal betterment craftsmanship.

4.2 Smart Plan

An exhortation eventuality is a nurture strait, recline on what a student province, it has the might to get whatever or to rehash it. For too the initiative and exile of the Datacenter scheme and Server Machine, for footstep, propulsion part of the Linux programming deed to confer, for paradigm LDAP HA, harmony of program perusing bounty, hackney and field item amends. The Student Federation's Office depot numerous sole universal education results: Plucking and organizing an internship project ingoing. Place part in the Linux web site concise. In culling, nurture ends regularly, the conduct of internship in the Hierarchical Strategy and Holding of On-Site Supervisors [2].

4.3 Reflections

Your concise area can be reestablished, when it is solid to deem on couple the preach office as a faithful. Frail deed can at dwelt be apt in the innate treaty and abaft that they can wreck into the trail and you should prove how the art will be rear. Mot area is outside their very own bottom! I'm going to pavilion a few fret with many atone warriors. In sequel, we can utter that there is no deed if there is no trail. Withal these lines, by the time exhausted.

CHAPTER 5
CONCLUSION AND FUTURE CAREER

5.1 Discussion and Conclusion

The internship has been a wonderful and rewarding experience in my life. I will be able to help me with the opportunities to network with a lot of people and I have been seen the future of it. One main issues I have learned the time management skills as well as self – motivation and great experience about the job. When I was started the internship it was challenging for me. Eight hours a day, and six days a week is going to be able to sit in the office. That's why I maintain the time. I was learn how to motivate myself. Various kinds of proposals and ideas came to the Company and looking for that. I am enjoying the work and I want to continue to work hard for my position also to be learn about the Industry and meet new people. This Internship is wonderful Experience in my life and I think other intern internship got a lot of things out of it.

5.2 Scope for Further Career

As a student of CSE the wisdom of my internship at Future Technology, has been many enhance & helpful, assume me to pamper in inevitable & affluent applied deeds to fulfil my relating to truth learning and offered above me, by the extremely bright & many favor skill sir and mam of my sweet institution DIU. Greatly thanks my respectable supervisor he has all time lead the way me and also thanks Future Technology for accommodate me and take measures with the effective knowledge for information and communication technology based skills. For this reason my career build up a successful engineer where my practical experience whose basement gem was laid with my education form my respectable and beloved university.

References

[1] Future Technology Available at: http://www.future technology.com/index.php?option=com_content&view=article&id=54&Itemid=112, last accessed on 02 April 2019, 11.30pm.

[2] The career opportunities in Linux, Available at: https://goinggnu.wordpress.com/2007/07/09/the-career-opportunities-in-linux/, last access on 02 April 2019, 12.00pm

[3] About internship, Available at: http://ashleydotson.blogspot.sg/2009/08/in-review-this-internship-has-been.html, last access on 04 April 2019, 10.20am

[4] File and directory details, Available at http://www.bitpapers.com/2012/12/linux-working-with-files.html last access on 04 April 2019, 11. 20 pm.

[5] MikroTik Router, Available at: https://en.wikipedia.org/wiki/MikroTik 04 April 2019, 11:00am.

[6] Router OS, Available at:
 http://www.revolvy.com/main/index.php?s=MikroTik 04 April 2019, 11:00am.

[7] SWOT, Available at: https://www.mindtools.com/pages/article/newTMC_05_1.htm/; Last accessed 31 March 2019, 11:00pm.

[8] IP address, Available at: https://www.cisco.com/c/en/us/support/docs/ip/routing-information-protocol-rip/13788-3.html; Last accessed 28 March 2019,2.00pm.

[9] RouterOS, Available at: http://www.revolvy.com/main/index.php?s=MikroTik; Last accessed 04 April 2019, 11:00am.

[10] Release history, Available at:
http://www.revolvy.com/main/index.php?s=MikroTik; Last accessed 08 April 2019, 11:00am.

➢ 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. I am a professional in the field exposure with clients and professional etiquette and professional supervisors and other employees to learn from watching an understanding of the behavior, as well as to gain through interaction. 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

Name	Future Technology
Address	H-91, New Airport Road, Kakoli, Banani, Dhaka, Bangladesh
Phone	01404299828
Fax	880-3-4563287
Email	info.futuretech.com
Types Of Organization	Internet Service Provider (ISP)
Employee	20

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